

# Appendix I

Country/Economy Profiles



## Country/Economy Profiles

The following tables provide detailed profiles for each of the 141 economies in the Global Innovation Index (GII) 2015. They are constructed around four sections.

**1** Five key indicators at the beginning of each profile are intended to put the economy into context. They present the population in millions,<sup>1</sup> GDP in US\$ billions, and GDP per capita in PPP current international dollars.<sup>2</sup> The fourth indicator categorizes the economy into income group and the fifth indicates its geographical region.<sup>3</sup>

**2** The next section provides the economy's scores and rankings on the GII, the Innovation Output Sub-Index, the Innovation Input Sub-Index, and the Innovation Efficiency Ratio.

The GII ranking for the 2014 edition comes next. Because two economies dropped out in 2015, and because of adjustments made to the GII framework every year and other technical factors not directly related to actual performance (missing data, updates of data, etc.), the GII rankings are not directly comparable from one year to the next. Please refer to Annex 2 of Chapter 1 for details.

Scores are normalized in the 0–100 range except for the Innovation Efficiency Ratio, for which scores revolve around the

number 1 (this index is calculated as the ratio between the Output and Input Sub-Indices).

The Innovation Input Sub-Index score is calculated as the simple average of the scores in the first five pillars, while the Innovation Output

The 2015 GII includes 79 indicators and three types of data. Composite indicators are identified with an asterisk (\*), survey questions from the World Economic Forum's Executive Opinion Survey are identified with a dagger (†), and the remaining indicators are all hard data series.

For hard data, the original value is provided (except for indicators 7.3.1, 7.3.2, and 7.3.4, for which the raw data were provided under the condition that only the normalized scores be published). Normalized scores in the 0–100 range are provided for everything else (index and survey data, sub-pillars, pillars, and indices).

When data are either not available or out of date (the cut-off year is 2004), 'n/a' is used. To the right of the indicator title, a clock symbol indicates that the country's data for that indicator are older than the base year. More details, including the year of the data in question, are available in Appendix II.

For further details, see Appendix III, Sources and Definitions, and Appendix IV, Technical Notes.

**4** To the far right of each column, a solid circle indicates that an indicator is one of the strengths of the country/economy in question, and a hollow circle indicates that it is a weakness.

| Albania  |                                                  |                     |            |
|----------|--------------------------------------------------|---------------------|------------|
| <b>1</b> | <b>Key indicators</b>                            |                     | <b>4</b>   |
|          | Population (millions)                            | 3.2                 |            |
|          | GDP (US\$ billion)                               | 15.1                |            |
|          | GDP per capita (PPP)                             | 4,583               |            |
|          | Income group                                     | Upper middle income |            |
|          | Region                                           | Europe              |            |
| <b>2</b> | <b>Global Innovation Index (out of 141)</b>      | <b>87</b>           |            |
|          | Innovation Input Sub-Index                       | 88.1                |            |
|          | Innovation Output Sub-Index                      | 41.2                |            |
|          | Innovation Efficiency Ratio                      | 2.15                |            |
| <b>3</b> | <b>Global Innovation Index 2014 (out of 141)</b> | <b>94</b>           |            |
| <b>1</b> | <b>Institutions</b>                              | <b>60.1</b>         | <b>70</b>  |
| 1.1      | Political stability                              | 65.6                | 87         |
| 1.2      | Government effectiveness                         | 65.6                | 87         |
| 1.3      | Regulatory quality                               | 58.5                | 81         |
| 1.4      | Rule of law                                      | 52.5                | 65         |
| 1.5      | Control of corruption                            | 52.5                | 65         |
| 1.6      | Business environment                             | 27.2                | 35         |
| 1.7      | Ease of starting a business                      | 21.0                | 34         |
| 1.8      | Ease of closing a business                       | 61.4                | 42         |
| 1.9      | Ease of paying taxes                             | 54.0                | 50         |
| <b>2</b> | <b>Human capital &amp; research</b>              | <b>21.8</b>         | <b>101</b> |
| 2.1      | Education                                        | 38.0                | 81         |
| 2.2      | Expenditure on education, % GDP                  | 3.8                 | 100        |
| 2.3      | Gross expenditure on research, % GDP             | 0.9                 | 99         |
| 2.4      | School life expectancy, years                    | 10.9                | 99         |
| 2.5      | PEER scores in reading, maths, & science         | 59.2                | 57         |
| 2.6      | High teacher value, secondary                    | 1.68                | 61         |
| 2.7      | Science education                                | 25.7                | 85         |
| 2.8      | Science employment, % of pop.                    | 55.5                | 47         |
| 2.9      | Graduates in science & engineering, %            | 1.08                | 88         |
| 2.10     | Science research productivity                    | 1.3                 | 79         |
| 2.11     | Research & development (R&D), % GDP              | 1.7                 | 108        |
| 2.12     | Researcher productivity, % GDP                   | 14.73               | 79         |
| 2.13     | Gross expenditure on R&D, % GDP                  | 1.02                | 99         |
| 2.14     | OECD university rankings average score top 1%    | 40.0                | 71         |
| <b>3</b> | <b>Infrastructure</b>                            | <b>39.0</b>         | <b>71</b>  |
| 3.1      | Information & communication technologies (ICT)   | 44.2                | 74         |
| 3.2      | ICT use                                          | 48.0                | 84         |
| 3.3      | ICT use                                          | 48.0                | 84         |
| 3.4      | ICT use                                          | 48.0                | 84         |
| 3.5      | ICT use                                          | 48.0                | 84         |
| 3.6      | ICT use                                          | 48.0                | 84         |
| 3.7      | ICT use                                          | 48.0                | 84         |
| 3.8      | ICT use                                          | 48.0                | 84         |
| 3.9      | ICT use                                          | 48.0                | 84         |
| 3.10     | ICT use                                          | 48.0                | 84         |
| 3.11     | ICT use                                          | 48.0                | 84         |
| 3.12     | ICT use                                          | 48.0                | 84         |
| 3.13     | ICT use                                          | 48.0                | 84         |
| 3.14     | ICT use                                          | 48.0                | 84         |
| 3.15     | ICT use                                          | 48.0                | 84         |
| 3.16     | ICT use                                          | 48.0                | 84         |
| 3.17     | ICT use                                          | 48.0                | 84         |
| 3.18     | ICT use                                          | 48.0                | 84         |
| 3.19     | ICT use                                          | 48.0                | 84         |
| 3.20     | ICT use                                          | 48.0                | 84         |
| 3.21     | ICT use                                          | 48.0                | 84         |
| 3.22     | ICT use                                          | 48.0                | 84         |
| 3.23     | ICT use                                          | 48.0                | 84         |
| 3.24     | ICT use                                          | 48.0                | 84         |
| 3.25     | ICT use                                          | 48.0                | 84         |
| 3.26     | ICT use                                          | 48.0                | 84         |
| 3.27     | ICT use                                          | 48.0                | 84         |
| 3.28     | ICT use                                          | 48.0                | 84         |
| 3.29     | ICT use                                          | 48.0                | 84         |
| 3.30     | ICT use                                          | 48.0                | 84         |
| 3.31     | ICT use                                          | 48.0                | 84         |
| 3.32     | ICT use                                          | 48.0                | 84         |
| 3.33     | ICT use                                          | 48.0                | 84         |
| 3.34     | ICT use                                          | 48.0                | 84         |
| 3.35     | ICT use                                          | 48.0                | 84         |
| 3.36     | ICT use                                          | 48.0                | 84         |
| 3.37     | ICT use                                          | 48.0                | 84         |
| 3.38     | ICT use                                          | 48.0                | 84         |
| 3.39     | ICT use                                          | 48.0                | 84         |
| 3.40     | ICT use                                          | 48.0                | 84         |
| 3.41     | ICT use                                          | 48.0                | 84         |
| 3.42     | ICT use                                          | 48.0                | 84         |
| 3.43     | ICT use                                          | 48.0                | 84         |
| 3.44     | ICT use                                          | 48.0                | 84         |
| 3.45     | ICT use                                          | 48.0                | 84         |
| 3.46     | ICT use                                          | 48.0                | 84         |
| 3.47     | ICT use                                          | 48.0                | 84         |
| 3.48     | ICT use                                          | 48.0                | 84         |
| 3.49     | ICT use                                          | 48.0                | 84         |
| 3.50     | ICT use                                          | 48.0                | 84         |
| 3.51     | ICT use                                          | 48.0                | 84         |
| 3.52     | ICT use                                          | 48.0                | 84         |
| 3.53     | ICT use                                          | 48.0                | 84         |
| 3.54     | ICT use                                          | 48.0                | 84         |
| 3.55     | ICT use                                          | 48.0                | 84         |
| 3.56     | ICT use                                          | 48.0                | 84         |
| 3.57     | ICT use                                          | 48.0                | 84         |
| 3.58     | ICT use                                          | 48.0                | 84         |
| 3.59     | ICT use                                          | 48.0                | 84         |
| 3.60     | ICT use                                          | 48.0                | 84         |
| 3.61     | ICT use                                          | 48.0                | 84         |
| 3.62     | ICT use                                          | 48.0                | 84         |
| 3.63     | ICT use                                          | 48.0                | 84         |
| 3.64     | ICT use                                          | 48.0                | 84         |
| 3.65     | ICT use                                          | 48.0                | 84         |
| 3.66     | ICT use                                          | 48.0                | 84         |
| 3.67     | ICT use                                          | 48.0                | 84         |
| 3.68     | ICT use                                          | 48.0                | 84         |
| 3.69     | ICT use                                          | 48.0                | 84         |
| 3.70     | ICT use                                          | 48.0                | 84         |
| 3.71     | ICT use                                          | 48.0                | 84         |
| 3.72     | ICT use                                          | 48.0                | 84         |
| 3.73     | ICT use                                          | 48.0                | 84         |
| 3.74     | ICT use                                          | 48.0                | 84         |
| 3.75     | ICT use                                          | 48.0                | 84         |
| 3.76     | ICT use                                          | 48.0                | 84         |
| 3.77     | ICT use                                          | 48.0                | 84         |
| 3.78     | ICT use                                          | 48.0                | 84         |
| 3.79     | ICT use                                          | 48.0                | 84         |
| 3.80     | ICT use                                          | 48.0                | 84         |
| 3.81     | ICT use                                          | 48.0                | 84         |
| 3.82     | ICT use                                          | 48.0                | 84         |
| 3.83     | ICT use                                          | 48.0                | 84         |
| 3.84     | ICT use                                          | 48.0                | 84         |
| 3.85     | ICT use                                          | 48.0                | 84         |
| 3.86     | ICT use                                          | 48.0                | 84         |
| 3.87     | ICT use                                          | 48.0                | 84         |
| 3.88     | ICT use                                          | 48.0                | 84         |
| 3.89     | ICT use                                          | 48.0                | 84         |
| 3.90     | ICT use                                          | 48.0                | 84         |
| 3.91     | ICT use                                          | 48.0                | 84         |
| 3.92     | ICT use                                          | 48.0                | 84         |
| 3.93     | ICT use                                          | 48.0                | 84         |
| 3.94     | ICT use                                          | 48.0                | 84         |
| 3.95     | ICT use                                          | 48.0                | 84         |
| 3.96     | ICT use                                          | 48.0                | 84         |
| 3.97     | ICT use                                          | 48.0                | 84         |
| 3.98     | ICT use                                          | 48.0                | 84         |
| 3.99     | ICT use                                          | 48.0                | 84         |
| 3.100    | ICT use                                          | 48.0                | 84         |

Notes: \* Indicates a strength, † indicates a weakness, ‡ indicates a survey question.

Indicates that the country's data are older than the base year; see Appendix I for details, including the year of the data.

Sub-Index is calculated as the simple average of the scores in the last two pillars.

**3** Pillars are identified by single-digit numbers, sub-pillars by two-digit numbers, and indicators by three-digit numbers. For example, *indicator 1.3.1, ease of starting a business*, appears under *sub-pillar 1.3, Business environment*, which in turn appears under *pillar 1, Institutions*.

All top ranks (of 1) are highlighted as strengths; for the remaining indicators, strengths and weaknesses of a particular economy are based on the percentage of economies with scores that fall below its score (i.e., percent ranks).

- For a given economy, strengths (●) are those scores with percent ranks greater than the 10th largest percent rank among the 79 indicators in that economy.
- Similarly, for that economy, weaknesses (○) are those scores with percent ranks lower than the 10th smallest percent rank among the 79 indicators in that economy.

Percent ranks embed more information than ranks and allow for comparisons of ranks of series with missing data and ties in ranks. Examples from Ireland illustrate this point:

1. Strengths for Ireland are all indicators with percent ranks above 0.96 (10th largest percent rank for Ireland); weaknesses are all indicators with percent ranks below 0.60 (Ireland's 10th smallest percent rank).
2. Ireland ranks 6th out of 141 economies in 4.2.1, *ease of protecting investors*, with a percent rank of 0.96; this indicator is a strength for Ireland.
3. Ireland also ranks 6th in 5.2.4, *JV-strategic alliance deals/tr PPP\$ GDP*, but with a percent rank of 0.94 (because only 94 countries are covered by that indicator), this indicator is not a strength for Ireland.
4. The rank of 58 (percent rank of 0.57) in 4.3.2, *intensity of local competition*, is a weakness for Ireland. By contrast, the rank of 96 for Myanmar for that same indicator is a strength for Myanmar (with

a percent rank of 0.28, this is above the cutoff for strengths for Myanmar, which is 0.24).

Percent ranks are not reported in the Country/Economy Profiles but they are presented in the Data Tables (Appendix II).

## Notes

- 1 Data are from the United Nations, Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 2012 Revision*.
- 2 Data for GDP and GDP per capita are from the International Monetary Fund *World Economic Outlook 2014* database.
- 3 Income group is according to the World Bank Income Group Classification (July 2013): LI = low income; LM = lower-middle income; UM = upper-middle income; and HI = high income. Geographical regions are based on the United Nations Classification: EUR = Europe; NAC = Northern America; LCN = Latin America and the Caribbean; CSA = Central and Southern Asia; SEAO = South East Asia and Oceania; NAWA = Northern Africa and Western Asia; and SSF = Sub-Saharan Africa.

## Index of Country/Economy Profiles

| Country/Economy                | Page | Country/Economy        | Page | Country/Economy         | Page | Country/Economy                | Page |
|--------------------------------|------|------------------------|------|-------------------------|------|--------------------------------|------|
| Albania.....                   | 162  | Egypt.....             | 198  | Lithuania.....          | 234  | Senegal.....                   | 270  |
| Algeria.....                   | 163  | El Salvador.....       | 199  | Luxembourg.....         | 235  | Serbia.....                    | 271  |
| Angola.....                    | 164  | Estonia.....           | 200  | Madagascar.....         | 236  | Seychelles.....                | 272  |
| Argentina.....                 | 165  | Ethiopia.....          | 201  | Malawi.....             | 237  | Singapore.....                 | 273  |
| Armenia.....                   | 166  | Fiji.....              | 202  | Malaysia.....           | 238  | Slovakia.....                  | 274  |
| Australia.....                 | 167  | Finland.....           | 203  | Mali.....               | 239  | Slovenia.....                  | 275  |
| Austria.....                   | 168  | France.....            | 204  | Malta.....              | 240  | South Africa.....              | 276  |
| Azerbaijan.....                | 169  | Gambia.....            | 205  | Mauritius.....          | 241  | Spain.....                     | 277  |
| Bahrain.....                   | 170  | Georgia.....           | 206  | Mexico.....             | 242  | Sri Lanka.....                 | 278  |
| Bangladesh.....                | 171  | Germany.....           | 207  | Moldova, Rep.....       | 243  | Sudan.....                     | 279  |
| Barbados.....                  | 172  | Ghana.....             | 208  | Mongolia.....           | 244  | Swaziland.....                 | 280  |
| Belarus.....                   | 173  | Greece.....            | 209  | Montenegro.....         | 245  | Sweden.....                    | 281  |
| Belgium.....                   | 174  | Guatemala.....         | 210  | Morocco.....            | 246  | Switzerland.....               | 282  |
| Bhutan.....                    | 175  | Guinea.....            | 211  | Mozambique.....         | 247  | Tajikistan.....                | 283  |
| Bolivia, Plurinational St..... | 176  | Guyana.....            | 212  | Myanmar.....            | 248  | Tanzania, United Rep.....      | 284  |
| Bosnia and Herzegovina.....    | 177  | Honduras.....          | 213  | Namibia.....            | 249  | TFYR of Macedonia.....         | 285  |
| Botswana.....                  | 178  | Hong Kong (China)..... | 214  | Nepal.....              | 250  | Thailand.....                  | 286  |
| Brazil.....                    | 179  | Hungary.....           | 215  | Netherlands.....        | 251  | Togo.....                      | 287  |
| Bulgaria.....                  | 180  | Iceland.....           | 216  | New Zealand.....        | 252  | Trinidad and Tobago.....       | 288  |
| Burkina Faso.....              | 181  | India.....             | 217  | Nicaragua.....          | 253  | Tunisia.....                   | 289  |
| Burundi.....                   | 182  | Indonesia.....         | 218  | Niger.....              | 254  | Turkey.....                    | 290  |
| Cabo Verde.....                | 183  | Iran, Islamic Rep..... | 219  | Nigeria.....            | 255  | Uganda.....                    | 291  |
| Cambodia.....                  | 184  | Ireland.....           | 220  | Norway.....             | 256  | Ukraine.....                   | 292  |
| Cameroon.....                  | 185  | Israel.....            | 221  | Oman.....               | 257  | United Arab Emirates.....      | 293  |
| Canada.....                    | 186  | Italy.....             | 222  | Pakistan.....           | 258  | United Kingdom.....            | 294  |
| Chile.....                     | 187  | Jamaica.....           | 223  | Panama.....             | 259  | United States of America.....  | 295  |
| China.....                     | 188  | Japan.....             | 224  | Paraguay.....           | 260  | Uruguay.....                   | 296  |
| Colombia.....                  | 189  | Jordan.....            | 225  | Peru.....               | 261  | Uzbekistan.....                | 297  |
| Costa Rica.....                | 190  | Kazakhstan.....        | 226  | Philippines.....        | 262  | Venezuela, Bolivarian Rep..... | 298  |
| Côte d'Ivoire.....             | 191  | Kenya.....             | 227  | Poland.....             | 263  | Viet Nam.....                  | 299  |
| Croatia.....                   | 192  | Korea, Rep.....        | 228  | Portugal.....           | 264  | Yemen.....                     | 300  |
| Cyprus.....                    | 193  | Kuwait.....            | 229  | Qatar.....              | 265  | Zambia.....                    | 301  |
| Czech Republic.....            | 194  | Kyrgyzstan.....        | 230  | Romania.....            | 266  | Zimbabwe.....                  | 302  |
| Denmark.....                   | 195  | Latvia.....            | 231  | Russian Federation..... | 267  |                                |      |
| Dominican Republic.....        | 196  | Lebanon.....           | 232  | Rwanda.....             | 268  |                                |      |
| Ecuador.....                   | 197  | Lesotho.....           | 233  | Saudi Arabia.....       | 269  |                                |      |

## Albania

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 3.2                 |
| GDP (US\$ billions) .....   | 13.3                |
| GDP per capita, PPP\$ ..... | 9,903.5             |
| Income group .....          | Upper-middle income |
| Region .....                | Europe              |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>30.7</b>                         | <b>87</b> |
| Innovation Output Sub-Index .....                | 20.3                                | 112       |
| Innovation Input Sub-Index .....                 | 41.2                                | 73        |
| Innovation Efficiency Ratio .....                | 0.5                                 | 129 ○     |
| Global Innovation Index 2014 (out of 143) .....  | 30.5                                | 94        |

|                                                       |             |           |
|-------------------------------------------------------|-------------|-----------|
| <b>1 Institutions.....</b>                            | <b>60.1</b> | <b>70</b> |
| 1.1 Political environment.....                        | 49.0        | 72        |
| 1.1.1 Political stability*.....                       | 65.6        | 62        |
| 1.1.2 Government effectiveness*.....                  | 32.4        | 87        |
| 1.2 Regulatory environment .....                      | 58.5        | 91        |
| 1.2.1 Regulatory quality*.....                        | 52.5        | 65        |
| 1.2.2 Rule of law*.....                               | 32.4        | 95        |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 20.8        | 96        |
| 1.3 Business environment.....                         | 72.7        | 56        |
| 1.3.1 Ease of starting a business*.....               | 91.9        | 36 ●      |
| 1.3.2 Ease of resolving insolvency*.....              | 61.4        | 42 ●      |
| 1.3.3 Ease of paying taxes*.....                      | 64.8        | 102       |

|                                                                |             |            |
|----------------------------------------------------------------|-------------|------------|
| <b>2 Human capital &amp; research.....</b>                     | <b>21.8</b> | <b>101</b> |
| 2.1 Education .....                                            | 38.0        | 91         |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....       | 3.3         | 105        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....       | n/a         | n/a        |
| 2.1.3 School life expectancy, years.....                       | n/a         | n/a        |
| 2.1.4 PISA scales in reading, maths, & science.....            | 395.2       | 57 ○       |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 14.8        | 63         |
| 2.2 Tertiary education.....                                    | 25.7        | 85         |
| 2.2.1 Tertiary enrolment, % gross.....                         | 55.5        | 47         |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 13.8        | 88         |
| 2.2.3 Tertiary inbound mobility, %.....                        | 1.3         | 78         |
| 2.3 Research & development (R&D).....                          | 1.7         | 108        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 147.9       | 79         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.2         | 99         |
| 2.3.3 QS university ranking, average score top 3*.....         | 0.0         | 73 ○       |

|                                                              |             |           |
|--------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure.....</b>                                 | <b>39.0</b> | <b>71</b> |
| 3.1 Information & communication technologies (ICTs).....     | 44.2        | 74        |
| 3.1.1 ICT access*.....                                       | 46.2        | 84        |
| 3.1.2 ICT use*.....                                          | 32.6        | 63        |
| 3.1.3 Government's online service*.....                      | 44.9        | 72        |
| 3.1.4 E-participation*.....                                  | 52.9        | 59        |
| 3.2 General infrastructure.....                              | 26.8        | 88        |
| 3.2.1 Electricity output, kWh/cap.....                       | 1,495.3     | 86        |
| 3.2.2 Logistics performance*.....                            | n/a         | n/a       |
| 3.2.3 Gross capital formation, % GDP.....                    | 24.9        | 45        |
| 3.3 Ecological sustainability .....                          | 46.0        | 40 ●      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 12.3        | 10 ●      |
| 3.3.2 Environmental performance*.....                        | 54.7        | 61        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 1.1         | 63        |

|                                                     |             |             |
|-----------------------------------------------------|-------------|-------------|
| <b>4 Market sophistication .....</b>                | <b>59.1</b> | <b>24 ●</b> |
| 4.1 Credit.....                                     | 35.8        | 53          |
| 4.1.1 Ease of getting credit*.....                  | 65.0        | 34          |
| 4.1.2 Domestic credit to private sector, % GDP..... | 37.6        | 88          |
| 4.1.3 Microfinance gross loans, % GDP .....         | 2.6         | 22 ●        |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 72.5 | 3     |
| 4.2.1 Ease of protecting investors*.....                | 72.5 | 7 ●   |
| 4.2.2 Market capitalization, % GDP.....                 | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP.....          | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a   |
| 4.3 Trade & competition .....                           | 68.9 | 99    |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 1.1  | 36 ●  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 41.5 | 131 ○ |

|                                                                     |             |            |
|---------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                              | <b>26.2</b> | <b>118</b> |
| 5.1 Knowledge workers.....                                          | 22.9        | 113        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 16.1        | 89         |
| 5.1.2 Firms offering formal training, % firms.....                  | 23.8        | 80         |
| 5.1.3 GERD performed by business, % of GDP.....                     | n/a         | n/a        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....               | 3.3         | 79         |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 9.0         | 66         |
| 5.2 Innovation linkages .....                                       | 19.7        | 126 ○      |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 22.3        | 128 ○      |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 33.4        | 120 ○      |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 7.4         | 54         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.1         | 50         |
| 5.3 Knowledge absorption.....                                       | 36.0        | 58         |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 0.4         | 63         |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 3.6         | 116 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.6         | 36 ●       |
| 5.3.4 FDI net inflows, % GDP.....                                   | 11.5        | 10 ●       |

|                                                                    |             |            |
|--------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                  | <b>18.5</b> | <b>110</b> |
| 6.1 Knowledge creation.....                                        | 2.9         | 126        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 0.1         | 99         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                    | 0.0         | 86         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....             | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....            | 5.3         | 96         |
| 6.1.5 Citable documents H index.....                               | 40.0        | 127 ○      |
| 6.2 Knowledge impact.....                                          | 26.0        | 117        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                      | 0.7         | 82         |
| 6.2.2 New businesses/th pop. 15–64.....                            | 0.9         | 74         |
| 6.2.3 Computer software spending, % GDP.....                       | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....              | 5.5         | 58         |
| 6.2.5 High- & medium-high-tech manufactures, % .....               | 1.0         | 99 ○       |
| 6.3 Knowledge diffusion.....                                       | 26.7        | 74         |
| 6.3.1 Royalty & license fees receipts, % total trade.....          | 0.0         | 86         |
| 6.3.2 High-tech exports less re-exports, % total trade.....        | 0.2         | 94         |
| 6.3.3 Comm., computer & info. services exp., % total trade.....    | 3.4         | 16 ●       |
| 6.3.4 FDI net outflows, % GDP .....                                | 0.2         | 81         |

|                                                                |             |            |
|----------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                | <b>22.0</b> | <b>114</b> |
| 7.1 Intangible assets .....                                    | 29.6        | 129 ○      |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | 49.9        | 52         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | 0.2         | 50         |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 40.1        | 119 ○      |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 34.2        | 126 ○      |
| 7.2 Creative goods & services.....                             | 19.5        | 69         |
| 7.2.1 Cultural & creative services exports, % total trade..... | 0.8         | 18 ●       |
| 7.2.2 National feature films/mn pop. 15–69.....                | n/a         | n/a        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, %.....        | n/a         | n/a        |
| 7.2.5 Creative goods exports, % total trade.....               | 0.1         | 84         |
| 7.3 Online creativity.....                                     | 9.2         | 81         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 6.8         | 53         |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 1.7         | 76         |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 2,576.7     | 47         |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 39.9                             |
| GDP (US\$ billions) .....   | 214.1                            |
| GDP per capita, PPP\$ ..... | 7,815.9                          |
| Income group .....          | Upper-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>24.4</b>                         | <b>126</b> |
| Innovation Output Sub-Index .....                 | 16.7                                | 129        |
| Innovation Input Sub-Index .....                  | 32.1                                | 119        |
| Innovation Efficiency Ratio .....                 | 0.5                                 | 125        |
| Global Innovation Index 2014 (out of 143) .....   | 24.2                                | 133        |

|                                                                |             |             |
|----------------------------------------------------------------|-------------|-------------|
| <b>1 Institutions .....</b>                                    | <b>45.1</b> | <b>120</b>  |
| 1.1 Political environment .....                                | 30.2        | 120         |
| 1.1.1 Political stability* .....                               | 35.2        | 123         |
| 1.1.2 Government effectiveness* .....                          | 25.1        | 106         |
| 1.2 Regulatory environment .....                               | 52.2        | 108         |
| 1.2.1 Regulatory quality* .....                                | 16.2        | 135         |
| 1.2.2 Rule of law* .....                                       | 29.5        | 105         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 17.3        | 78 ●        |
| 1.3 Business environment .....                                 | 52.8        | 127         |
| 1.3.1 Ease of starting a business* .....                       | 74.1        | 114         |
| 1.3.2 Ease of resolving insolvency* .....                      | 42.7        | 91          |
| 1.3.3 Ease of paying taxes* .....                              | 41.6        | 133         |
| <b>2 Human capital &amp; research .....</b>                    | <b>26.2</b> | <b>82 ●</b> |
| 2.1 Education .....                                            | 45.4        | 67          |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....       | 4.3         | 77          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | n/a         | n/a         |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....         | 14.0        | 58 ●        |
| 2.1.4 PISA scales in reading, maths, & science .....           | n/a         | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | n/a         | n/a         |
| 2.2 Tertiary education .....                                   | 32.2        | 69 ●        |
| 2.2.1 Tertiary enrolment, % gross .....                        | 31.5        | 75 ●        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 25.0        | 26 ●        |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....          | 0.5         | 91          |
| 2.3 Research & development (R&D) .....                         | 1.1         | 115         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 164.7       | 71          |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.1         | 112         |
| 2.3.3 QS university ranking, average score top 3* .....        | 0.0         | 73 ○        |
| <b>3 Infrastructure .....</b>                                  | <b>31.4</b> | <b>95</b>   |
| 3.1 Information & communication technologies (ICTs) .....      | 16.9        | 128         |
| 3.1.1 ICT access* .....                                        | 44.6        | 93          |
| 3.1.2 ICT use* .....                                           | 7.3         | 115         |
| 3.1.3 Government's online service* .....                       | 7.9         | 136 ○       |
| 3.1.4 E-participation* .....                                   | 7.8         | 137 ○       |
| 3.2 General infrastructure .....                               | 40.1        | 38 ●        |
| 3.2.1 Electricity output, kWh/cap .....                        | 1,491.6     | 87          |
| 3.2.2 Logistics performance* .....                             | 24.9        | 91          |
| 3.2.3 Gross capital formation, % GDP .....                     | 37.7        | 9 ●         |
| 3.3 Ecological sustainability .....                            | 37.3        | 72 ●        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 9.4         | 33 ●        |
| 3.3.2 Environmental performance* .....                         | 50.1        | 82          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 0.2         | 115         |
| <b>4 Market sophistication .....</b>                           | <b>36.8</b> | <b>124</b>  |
| 4.1 Credit .....                                               | 7.0         | 135         |
| 4.1.1 Ease of getting credit* .....                            | 10.0        | 133 ○       |
| 4.1.2 Domestic credit to private sector, % GDP .....           | 16.7        | 123         |
| 4.1.3 Microfinance gross loans, % GDP .....                    | n/a         | n/a         |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 45.0 | 41    |
| 4.2.1 Ease of protecting investors* .....                      | 45.0 | 114   |
| 4.2.2 Market capitalization, % GDP .....                       | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP .....                | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a   |
| 4.3 Trade & competition .....                                  | 58.3 | 131   |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 8.6  | 113   |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 46.7 | 129 ○ |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                                        | <b>20.9</b> | <b>135</b> |
| 5.1 Knowledge workers .....                                                   | 21.5        | 118        |
| 5.1.1 Knowledge-intensive employment, % .....                                 | 17.6        | 82         |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 17.3        | 95         |
| 5.1.3 GERD performed by business, % of GDP .....                              | n/a         | n/a        |
| 5.1.4 GERD financed by business, % .....                                      | n/a         | n/a        |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> .....         | 4.4         | 77         |
| 5.2 Innovation linkages .....                                                 | 20.0        | 125        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 21.1        | 129 ○      |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 38.6        | 102        |
| 5.2.3 GERD financed by abroad, % .....                                        | n/a         | n/a        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 87         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.0         | 103        |
| 5.3 Knowledge absorption .....                                                | 21.4        | 132        |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.2         | 85         |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 7.3         | 61 ●       |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.2         | 118        |
| 5.3.4 FDI net inflows, % GDP .....                                            | 0.8         | 118        |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>17.8</b> | <b>115</b> |
| 6.1 Knowledge creation .....                                                  | 4.0         | 113        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | 0.2         | 88         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | 0.0         | 95         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 4.2         | 107        |
| 6.1.5 Citable documents H index .....                                         | 89.0        | 81 ●       |
| 6.2 Knowledge impact .....                                                    | 34.4        | 87         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 1.6         | 57 ●       |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 0.5         | 85         |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.0         | 114        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 29.1        | 38 ●       |
| 6.3 Knowledge diffusion .....                                                 | 14.9        | 128        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 97         |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.0         | 126 ○      |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.4         | 103        |
| 6.3.4 FDI net outflows, % GDP .....                                           | (0.1)       | 113        |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                       | <b>15.6</b> | <b>131</b> |
| 7.1 Intangible assets .....                                           | 20.6        | 135 ○      |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP <sup>Ⓐ</sup> .....      | 6.9         | 99         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP <sup>Ⓐ</sup> .....   | 0.0         | 68 ○       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 34.5        | 131 ○      |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 35.2        | 125        |
| 7.2 Creative goods & services .....                                   | 8.1         | 105        |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.2         | 52         |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | n/a         | n/a        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 1.5         | 51         |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.2         | 62         |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.0         | 128 ○      |
| 7.3 Online creativity .....                                           | 13.1        | 75 ●       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 0.5         | 116        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 0.1         | 121        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 399.7       | 95         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 48.7        | 66         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Angola

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 22.1                |
| GDP (US\$ billions) .....   | 128.6               |
| GDP per capita, PPP\$ ..... | 6,484.7             |
| Income group .....          | Upper-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                              | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>26.2</b>                         | <b>120</b> |
| Innovation Output Sub-Index .....                            | 26.5                                | 80 ●       |
| Innovation Input Sub-Index .....                             | 25.9                                | 137        |
| Innovation Efficiency Ratio .....                            | 1.0                                 | 1 ●        |
| Global Innovation Index 2014 (out of 143) .....              | 23.8                                | 135        |
| <b>1 Institutions.....</b>                                   | <b>35.2</b>                         | <b>135</b> |
| 1.1 Political environment.....                               | 31.2                                | 119        |
| 1.1.1 Political stability*.....                              | 55.0                                | 86 ●       |
| 1.1.2 Government effectiveness*.....                         | 7.5                                 | 137        |
| 1.2 Regulatory environment .....                             | 35.5                                | 134        |
| 1.2.1 Regulatory quality*.....                               | 19.8                                | 130        |
| 1.2.2 Rule of law*.....                                      | 13.6                                | 138        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 31.0                                | 130        |
| 1.3 Business environment.....                                | 39.0                                | 138        |
| 1.3.1 Ease of starting a business*.....                      | 56.6                                | 135        |
| 1.3.2 Ease of resolving insolvency*.....                     | 0.0                                 | 139 ○      |
| 1.3.3 Ease of paying taxes*.....                             | 60.4                                | 110        |
| <b>2 Human capital &amp; research.....</b>                   | <b>13.6</b>                         | <b>130</b> |
| 2.1 Education .....                                          | 34.9                                | 102 ●      |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....     | 3.5                                 | 99 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | n/a                                 | n/a        |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....       | 11.3                                | 101        |
| 2.1.4 PISA scales in reading, maths, & science.....          | n/a                                 | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....      | 27.4                                | 102        |
| 2.2 Tertiary education.....                                  | 5.8                                 | 133        |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....         | 7.5                                 | 119        |
| 2.2.2 Graduates in science & engineering, % .....            | n/a                                 | n/a        |
| 2.2.3 Tertiary inbound mobility, %.....                      | n/a                                 | n/a        |
| 2.3 Research & development (R&D).....                        | 0.3                                 | 123        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....            | 57.0                                | 87         |
| 2.3.2 Gross expenditure on R&D, % GDP.....                   | n/a                                 | n/a        |
| 2.3.3 QS university ranking, average score top 3*.....       | 0.0                                 | 73 ○       |
| <b>3 Infrastructure.....</b>                                 | <b>21.1</b>                         | <b>128</b> |
| 3.1 Information & communication technologies (ICTs).....     | 22.3                                | 119        |
| 3.1.1 ICT access*.....                                       | 25.2                                | 126        |
| 3.1.2 ICT use*.....                                          | 10.6                                | 109        |
| 3.1.3 Government's online service*.....                      | 29.9                                | 106        |
| 3.1.4 E-participation*.....                                  | 23.5                                | 115        |
| 3.2 General infrastructure.....                              | 12.3                                | 135        |
| 3.2.1 Electricity output, kWh/cap.....                       | 269.6                               | 112        |
| 3.2.2 Logistics performance*.....                            | 19.5                                | 104        |
| 3.2.3 Gross capital formation, % GDP.....                    | 14.8                                | 125        |
| 3.3 Ecological sustainability .....                          | 28.7                                | 102 ●      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 9.5                                 | 29 ●       |
| 3.3.2 Environmental performance*.....                        | 28.7                                | 130        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.1                                 | 131        |
| <b>4 Market sophistication .....</b>                         | <b>35.3</b>                         | <b>131</b> |
| 4.1 Credit.....                                              | 3.8                                 | 140 ○      |
| 4.1.1 Ease of getting credit*.....                           | 5.0                                 | 138 ○      |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 23.5                                | 112        |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> .....     | 0.0                                 | 79         |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 51.7 | 23    |
| 4.2.1 Ease of protecting investors*.....                       | 51.7 | 83 ●  |
| 4.2.2 Market capitalization, % GDP.....                        | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP.....                 | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                  | n/a  | n/a   |
| 4.3 Trade & competition .....                                  | 50.3 | 137   |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 7.4  | 103 ● |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 26.7 | 133 ○ |

## 5 Business sophistication .....

|                                                                               |       |       |
|-------------------------------------------------------------------------------|-------|-------|
| 5.1 Knowledge workers.....                                                    | 26.5  | 102   |
| 5.1.1 Knowledge-intensive employment, %.....                                  | n/a   | n/a   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 23.5  | 82 ●  |
| 5.1.3 GERD performed by business, % of GDP.....                               | n/a   | n/a   |
| 5.1.4 GERD financed by business, % .....                                      | n/a   | n/a   |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a   | n/a   |
| 5.2 Innovation linkages .....                                                 | 23.2  | 111   |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 16.9  | 132 ○ |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 26.3  | 131 ○ |
| 5.2.3 GERD financed by abroad, %.....                                         | n/a   | n/a   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                           | n/a   | n/a   |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                            | n/a   | n/a   |
| 5.3 Knowledge absorption.....                                                 | 23.2  | 124   |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.0   | 123   |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | n/a   | n/a   |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.9   | 64 ●  |
| 5.3.4 FDI net inflows, % GDP.....                                             | (3.5) | 139 ○ |

## 6 Knowledge & technology outputs .....

|                                                                         |      |       |
|-------------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation.....                                             | 0.6  | 141 ○ |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                    | n/a  | n/a   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                         | 0.0  | 96    |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                  | n/a  | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                 | 0.3  | 139 ○ |
| 6.1.5 Citable documents H index.....                                    | 28.0 | 134   |
| 6.2 Knowledge impact.....                                               | 43.7 | 43    |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                           | 2.0  | 43 ●  |
| 6.2.2 New businesses/th pop. 15–64.....                                 | n/a  | n/a   |
| 6.2.3 Computer software spending, % GDP.....                            | n/a  | n/a   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                   | 0.3  | 134   |
| 6.2.5 High- & medium-high-tech manufactures, % .....                    | n/a  | n/a   |
| 6.3 Knowledge diffusion.....                                            | 48.2 | 21 ●  |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> ..... | 0.0  | 83 ●  |
| 6.3.2 High-tech exports less re-exports, % total trade.....             | n/a  | n/a   |
| 6.3.3 Comm., computer & info. services exp., % total trade.....         | n/a  | n/a   |
| 6.3.4 FDI net outflows, % GDP.....                                      | 4.9  | 10 ●  |

## 7 Creative outputs .....

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 7.1 Intangible assets .....                                    | 33.2 | 123   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | n/a  | n/a   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | n/a  | n/a   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 38.8 | 124   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 27.6 | 132 ○ |
| 7.2 Creative goods & services.....                             | n/a  | n/a   |
| 7.2.1 Cultural & creative services exports, % total trade..... | n/a  | n/a   |
| 7.2.2 National feature films/mn pop. 15–69.....                | n/a  | n/a   |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | n/a  | n/a   |
| 7.2.4 Printing & publishing output manufactures, %.....        | n/a  | n/a   |
| 7.2.5 Creative goods exports, % total trade.....               | n/a  | n/a   |
| 7.3 Online creativity.....                                     | 0.1  | 131   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 0.0  | 140 ○ |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 0.0  | 133   |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 58.5 | 118   |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | n/a  | n/a   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 41.8                            |
| GDP (US\$ billions) .....   | 540.2                           |
| GDP per capita, PPP\$ ..... | 18,917.3                        |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>34.3</b>                         | <b>72</b> |
| Innovation Output Sub-Index .....                 | 29.4                                | 63        |
| Innovation Input Sub-Index .....                  | 39.2                                | 81        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 52        |
| Global Innovation Index 2014 (out of 143) .....   | 35.1                                | 70        |

|                                                        |             |            |
|--------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                            | <b>48.0</b> | <b>111</b> |
| 1.1 Political environment .....                        | 49.6        | 71         |
| 1.1.1 Political stability* .....                       | 65.6        | 61         |
| 1.1.2 Government effectiveness* .....                  | 33.6        | 85         |
| 1.2 Regulatory environment .....                       | 40.3        | 128 ○      |
| 1.2.1 Regulatory quality* .....                        | 21.5        | 128 ○      |
| 1.2.2 Rule of law* .....                               | 28.2        | 106        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 30.3        | 127 ○      |
| 1.3 Business environment .....                         | 54.2        | 120        |
| 1.3.1 Ease of starting a business* .....               | 72.6        | 117        |
| 1.3.2 Ease of resolving insolvency* .....              | 45.1        | 78         |
| 1.3.3 Ease of paying taxes* .....                      | 45.0        | 129 ○      |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research .....</b>                    | <b>37.7</b> | <b>44</b> |
| 2.1 Education .....                                            | 49.8        | 54        |
| 2.1.1 Expenditure on education, % GDP .....                    | 5.1         | 52        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 19.6        | 59        |
| 2.1.3 School life expectancy, years .....                      | 17.9        | 6 ●       |
| 2.1.4 PISA scales in reading, maths, & science .....           | 396.7       | 55        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....        | 10.9        | 32        |
| 2.2 Tertiary education .....                                   | 39.1        | 48        |
| 2.2.1 Tertiary enrolment, % gross .....                        | 80.3        | 10 ●      |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 13.5        | 89        |
| 2.2.3 Tertiary inbound mobility, % .....                       | n/a         | n/a       |
| 2.3 Research & development (R&D) .....                         | 24.1        | 39        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 1,255.8     | 43        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.6         | 56        |
| 2.3.3 QS university ranking, average score top 3* .....        | 43.8        | 32 ●      |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure .....</b>                                 | <b>38.2</b> | <b>74</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 52.6        | 52        |
| 3.1.1 ICT access* .....                                       | 66.2        | 52        |
| 3.1.2 ICT use* .....                                          | 34.2        | 61        |
| 3.1.3 Government's online service* .....                      | 55.1        | 55        |
| 3.1.4 E-participation* .....                                  | 54.9        | 54        |
| 3.2 General infrastructure .....                              | 25.4        | 98        |
| 3.2.1 Electricity output, kWh/cap .....                       | 3,280.0     | 57        |
| 3.2.2 Logistics performance* .....                            | 42.1        | 58        |
| 3.2.3 Gross capital formation, % GDP .....                    | 18.0        | 111       |
| 3.3 Ecological sustainability .....                           | 36.6        | 76        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 8.2         | 49        |
| 3.3.2 Environmental performance* .....                        | 49.6        | 83        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 1.4         | 53        |

|                                                      |             |            |
|------------------------------------------------------|-------------|------------|
| <b>4 Market sophistication .....</b>                 | <b>35.9</b> | <b>127</b> |
| 4.1 Credit .....                                     | 17.9        | 118        |
| 4.1.1 Ease of getting credit* .....                  | 50.0        | 65         |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 15.8        | 126 ○      |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.0         | 83 ○       |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 24.0 | 130 ○ |
| 4.2.1 Ease of protecting investors* .....               | 57.5 | 60    |
| 4.2.2 Market capitalization, % GDP .....                | 5.7  | 100 ○ |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.2  | 87    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 58    |
| 4.3 Trade & competition .....                           | 65.9 | 113   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 5.6  | 87    |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 51.2 | 125 ○ |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                | <b>36.3</b> | <b>61</b> |
| 5.1 Knowledge workers .....                                           | 46.1        | 43        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....            | 24.6        | 58        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....      | 63.6        | 6 ●       |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....         | 0.1         | 55        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                 | 21.3        | 59        |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> ..... | 16.9        | 31        |
| 5.2 Innovation linkages .....                                         | 17.7        | 130 ○     |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 43.9        | 64        |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 35.3        | 115       |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                   | 0.6         | 94 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 85 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 0.0         | 61        |
| 5.3 Knowledge absorption .....                                        | 45.0        | 26 ●      |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 2.6         | 6 ●       |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 10.5        | 29 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 1.2         | 51        |
| 5.3.4 FDI net inflows, % GDP .....                                    | 1.7         | 93        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>22.2</b> | <b>95</b> |
| 6.1 Knowledge creation .....                                     | 9.7         | 71        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.7         | 70        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | n/a         | n/a       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 0.2         | 47        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 8.5         | 71        |
| 6.1.5 Citable documents H index .....                            | 249.0       | 35 ●      |
| 6.2 Knowledge impact .....                                       | 30.0        | 104       |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 1.4         | 62        |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 0.5         | 91        |
| 6.2.3 Computer software spending, % GDP .....                    | 0.2         | 71 ○      |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 7.1         | 49        |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | n/a         | n/a       |
| 6.3 Knowledge diffusion .....                                    | 27.0        | 72        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.1         | 48        |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 2.6         | 45        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 1.9         | 43        |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.2         | 84        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>36.5</b> | <b>50</b> |
| 7.1 Intangible assets .....                                     | 44.0        | 77        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 70.4        | 25 ●      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 45.9        | 107       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 47.1        | 94        |
| 7.2 Creative goods & services .....                             | 20.4        | 65        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.9         | 15 ●      |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 5.9         | 33        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 15.0        | 29        |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a         | n/a       |
| 7.2.5 Creative goods exports, % total trade .....               | 0.2         | 82        |
| 7.3 Online creativity .....                                     | 37.8        | 36        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 3.6         | 65        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 38.5        | 17 ●      |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 3,777.6     | 35 ●      |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 81.2        | 31        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Armenia

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 3.0                              |
| GDP (US\$ billions) .....   | 10.3                             |
| GDP per capita, PPP\$ ..... | 6,539.8                          |
| Income group .....          | Lower-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>37.3</b>                         | <b>61</b> |
| Innovation Output Sub-Index .....                 | 32.8                                | 51        |
| Innovation Input Sub-Index .....                  | 41.8                                | 69        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 34        |
| Global Innovation Index 2014 (out of 143) .....   | 36.1                                | 65        |

|                                                                |             |            |
|----------------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                                    | <b>67.0</b> | <b>57</b>  |
| 1.1 Political environment .....                                | 54.5        | 59         |
| 1.1.1 Political stability* .....                               | 65.9        | 60         |
| 1.1.2 Government effectiveness* .....                          | 43.2        | 63         |
| 1.2 Regulatory environment .....                               | 70.3        | 53         |
| 1.2.1 Regulatory quality* .....                                | 53.9        | 62         |
| 1.2.2 Rule of law* .....                                       | 39.3        | 79         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 11.0        | 41         |
| 1.3 Business environment .....                                 | 76.0        | 42         |
| 1.3.1 Ease of starting a business* .....                       | 97.8        | 4 ●        |
| 1.3.2 Ease of resolving insolvency* .....                      | 48.1        | 66         |
| 1.3.3 Ease of paying taxes* .....                              | 82.1        | 36         |
| <b>2 Human capital &amp; research .....</b>                    | <b>19.0</b> | <b>105</b> |
| 2.1 Education .....                                            | 26.4        | 127 ○      |
| 2.1.1 Expenditure on education, % GDP .....                    | 2.3         | 122 ○      |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 17.7        | 71         |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....         | 12.3        | 88         |
| 2.1.4 PISA scales in reading, maths, & science .....           | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | n/a         | n/a        |
| 2.2 Tertiary education .....                                   | 27.9        | 80         |
| 2.2.1 Tertiary enrolment, % gross .....                        | 46.1        | 58         |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 15.9        | 78         |
| 2.2.3 Tertiary inbound mobility, % .....                       | 3.0         | 53         |
| 2.3 Research & development (R&D) .....                         | 2.7         | 98         |
| 2.3.1 Researchers, FTE/mn pop. ....                            | n/a         | n/a        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                    | 0.2         | 83         |
| 2.3.3 QS university ranking, average score top 3* .....        | 0.0         | 73 ○       |
| <b>3 Infrastructure .....</b>                                  | <b>37.3</b> | <b>76</b>  |
| 3.1 Information & communication technologies (ICTs) .....      | 50.2        | 57         |
| 3.1.1 ICT access* .....                                        | 56.4        | 68         |
| 3.1.2 ICT use* .....                                           | 30.2        | 70         |
| 3.1.3 Government's online service* .....                       | 61.4        | 43         |
| 3.1.4 E-participation* .....                                   | 52.9        | 59         |
| 3.2 General infrastructure .....                               | 25.4        | 97         |
| 3.2.1 Electricity output, kWh/cap .....                        | 2,705.7     | 66         |
| 3.2.2 Logistics performance* .....                             | 26.1        | 87         |
| 3.2.3 Gross capital formation, % GDP .....                     | 22.4        | 62         |
| 3.3 Ecological sustainability .....                            | 36.3        | 77         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 6.5         | 79         |
| 3.3.2 Environmental performance* .....                         | 61.7        | 45         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 0.2         | 120 ○      |
| <b>4 Market sophistication .....</b>                           | <b>54.7</b> | <b>36</b>  |
| 4.1 Credit .....                                               | 59.6        | 11 ●       |
| 4.1.1 Ease of getting credit* .....                            | 65.0        | 34         |
| 4.1.2 Domestic credit to private sector, % GDP .....           | 45.2        | 75         |
| 4.1.3 Microfinance gross loans, % GDP .....                    | 8.4         | 1 ●        |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 26.1 | 113   |
| 4.2.1 Ease of protecting investors* .....               | 60.0 | 47    |
| 4.2.2 Market capitalization, % GDP .....                | 1.3  | 107 ○ |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.0  | 106 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.1  | 30    |
| 4.3 Trade & competition .....                           | 78.3 | 61    |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 2.3  | 48    |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 64.5 | 82    |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>31.0</b> | <b>89</b> |
| 5.1 Knowledge workers .....                                         | 39.8        | 65        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 26.9        | 52        |
| 5.1.2 Firms offering formal training, % firms .....                 | 14.2        | 101 ○     |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a       |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a       |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 27.4        | 5 ●       |
| 5.2 Innovation linkages .....                                       | 20.8        | 122 ○     |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 34.2        | 109 ○     |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 36.9        | 110 ○     |
| 5.2.3 GERD financed by abroad, % .....                              | 2.8         | 75        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.1         | 51        |
| 5.3 Knowledge absorption .....                                      | 32.4        | 72        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | n/a         | n/a       |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 5.7         | 87        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 1.1         | 55        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 3.5         | 50        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>30.6</b> | <b>46</b> |
| 6.1 Knowledge creation .....                                     | 25.4        | 38        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 5.4         | 18 ●      |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.2         | 53        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 1.7         | 17        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 28.5        | 27 ●      |
| 6.1.5 Citable documents H index .....                            | 116.0       | 61        |
| 6.2 Knowledge impact .....                                       | 36.6        | 72        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 4.6         | 11 ●      |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 1.5         | 54        |
| 6.2.3 Computer software spending, % GDP .....                    | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 0.7         | 119 ○     |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 4.2         | 91 ○      |
| 6.3 Knowledge diffusion .....                                    | 29.7        | 60        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | n/a         | n/a       |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.2         | 93        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.8         | 21 ●      |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.2         | 85        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>35.1</b> | <b>55</b> |
| 7.1 Intangible assets .....                                     | 51.3        | 40        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 86.2        | 18 ●      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 1.1         | 29        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 59.2        | 54        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 59.3        | 44        |
| 7.2 Creative goods & services .....                             | 23.7        | 53        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.3         | 47        |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 13.1        | 12 ●      |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % .....        | 1.6         | 43        |
| 7.2.5 Creative goods exports, % total trade .....               | 0.5         | 58        |
| 7.3 Online creativity .....                                     | 14.1        | 74        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 3.4         | 67        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 4.4         | 57        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 4,651.3     | 30 ●      |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 23.6                        |
| GDP (US\$ billions) .....   | 1,444.2                     |
| GDP per capita, PPP\$ ..... | 44,345.9                    |
| Income group .....          | High income                 |
| Region .....                | South East Asia and Oceania |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>55.2</b>                         | <b>17</b> |
| Innovation Output Sub-Index .....                 | 45.6                                | 24        |
| Innovation Input Sub-Index .....                  | 64.8                                | 10        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 72        |
| Global Innovation Index 2014 (out of 143) .....   | 55.0                                | 17        |

|                                                                |             |            |
|----------------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                                    | <b>89.3</b> | <b>11</b>  |
| 1.1 Political environment .....                                | 87.3        | 13         |
| 1.1.1 Political stability* .....                               | 89.3        | 17         |
| 1.1.2 Government effectiveness* .....                          | 85.3        | 11         |
| 1.2 Regulatory environment .....                               | 93.8        | 12         |
| 1.2.1 Regulatory quality* .....                                | 95.4        | 7 ●        |
| 1.2.2 Rule of law* .....                                       | 94.3        | 10         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 11.7        | 44         |
| 1.3 Business environment .....                                 | 86.9        | 12         |
| 1.3.1 Ease of starting a business* .....                       | 96.5        | 7 ●        |
| 1.3.2 Ease of resolving insolvency* .....                      | 81.6        | 13         |
| 1.3.3 Ease of paying taxes* .....                              | 82.5        | 34         |
| <b>2 Human capital &amp; research .....</b>                    | <b>57.0</b> | <b>9</b>   |
| 2.1 Education .....                                            | 54.3        | 32         |
| 2.1.1 Expenditure on education, % GDP .....                    | 5.1         | 54         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 17.9        | 69 ○       |
| 2.1.3 School life expectancy, years .....                      | 20.2        | 1 ●        |
| 2.1.4 PISA scales in reading, maths, & science .....           | 512.5       | 14         |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | n/a         | n/a        |
| 2.2 Tertiary education .....                                   | 52.9        | 13         |
| 2.2.1 Tertiary enrolment, % gross .....                        | 86.3        | 6 ●        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 15.9        | 77 ○       |
| 2.2.3 Tertiary inbound mobility, % .....                       | 18.3        | 7          |
| 2.3 Research & development (R&D) .....                         | 63.9        | 10         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 4,280.4     | 16         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 2.3         | 15         |
| 2.3.3 QS university ranking, average score top 3* .....        | 86.8        | 5 ●        |
| <b>3 Infrastructure .....</b>                                  | <b>63.7</b> | <b>4 ●</b> |
| 3.1 Information & communication technologies (ICTs) .....      | 86.0        | 7 ●        |
| 3.1.1 ICT access* .....                                        | 82.3        | 20         |
| 3.1.2 ICT use* .....                                           | 74.8        | 11         |
| 3.1.3 Government's online service* .....                       | 92.9        | 8          |
| 3.1.4 E-participation* .....                                   | 94.1        | 7          |
| 3.2 General infrastructure .....                               | 55.0        | 13         |
| 3.2.1 Electricity output, kWh/cap .....                        | 10,544.5    | 12         |
| 3.2.2 Logistics performance* .....                             | 84.1        | 16         |
| 3.2.3 Gross capital formation, % GDP .....                     | 26.9        | 37         |
| 3.3 Ecological sustainability .....                            | 50.1        | 27         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 6.9         | 69 ○       |
| 3.3.2 Environmental performance* .....                         | 82.4        | 3 ●        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 3.2         | 31         |
| <b>4 Market sophistication .....</b>                           | <b>66.7</b> | <b>9</b>   |
| 4.1 Credit .....                                               | 65.5        | 6 ●        |
| 4.1.1 Ease of getting credit* .....                            | 90.0        | 4 ●        |
| 4.1.2 Domestic credit to private sector, % GDP .....           | 125.8       | 20         |
| 4.1.3 Microfinance gross loans, % GDP .....                    | n/a         | n/a        |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| 4.2 Investment .....                                                  | 46.2        | 36         |
| 4.2.1 Ease of protecting investors* .....                             | 56.7        | 67         |
| 4.2.2 Market capitalization, % GDP .....                              | 83.8        | 19         |
| 4.2.3 Total value of stocks traded, % GDP .....                       | 68.5        | 11         |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                        | 0.1         | 29         |
| 4.3 Trade & competition .....                                         | 88.5        | 10         |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> .....        | 1.8         | 43         |
| 4.3.2 Intensity of local competition <sup>†</sup> .....               | 83.2        | 6 ●        |
| <b>5 Business sophistication .....</b>                                | <b>47.4</b> | <b>23</b>  |
| 5.1 Knowledge workers .....                                           | 66.7        | 10         |
| 5.1.1 Knowledge-intensive employment, % .....                         | 43.8        | 15         |
| 5.1.2 Firms offering formal training, % firms .....                   | n/a         | n/a        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....         | 1.3         | 16         |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                 | 61.9        | 7          |
| 5.1.5 Females employed w/advanced degrees, % total .....              | 22.6        | 15         |
| 5.2 Innovation linkages .....                                         | 41.2        | 38         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 64.1        | 20         |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 53.1        | 40         |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                   | 1.6         | 84 ○       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 10         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 0.7         | 20         |
| 5.3 Knowledge absorption .....                                        | 34.4        | 63         |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 1.2         | 20         |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 9.6         | 37         |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 0.7         | 78 ○       |
| 5.3.4 FDI net inflows, % GDP .....                                    | 3.2         | 60         |
| <b>6 Knowledge &amp; technology outputs .....</b>                     | <b>34.8</b> | <b>39</b>  |
| 6.1 Knowledge creation .....                                          | 34.9        | 26         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                 | 2.9         | 34         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                      | 1.6         | 26         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....               | 1.1         | 26         |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....              | 47.7        | 10         |
| 6.1.5 Citable documents H index .....                                 | 583.0       | 10         |
| 6.2 Knowledge impact .....                                            | 46.2        | 32         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                        | 1.4         | 64         |
| 6.2.2 New businesses/th pop. 15–64 .....                              | 12.2        | 8          |
| 6.2.3 Computer software spending, % GDP .....                         | 0.3         | 46 ○       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                | 12.5        | 31         |
| 6.2.5 High- & medium-high-tech manufactures, % .....                  | 20.4        | 56         |
| 6.3 Knowledge diffusion .....                                         | 23.2        | 99 ○       |
| 6.3.1 Royalty & license fees receipts, % total trade .....            | 0.2         | 32         |
| 6.3.2 High-tech exports less re-exports, % total trade .....          | 1.7         | 54         |
| 6.3.3 Comm., computer & info. services exp., % total trade .....      | 0.9         | 79 ○       |
| 6.3.4 FDI net outflows, % GDP .....                                   | (0.3)       | 114 ○      |
| <b>7 Creative outputs .....</b>                                       | <b>56.5</b> | <b>7 ●</b> |
| 7.1 Intangible assets .....                                           | 53.3        | 34         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 65.9        | 31         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 1.4         | 23         |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 64.3        | 34         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 69.3        | 17         |
| 7.2 Creative goods & services .....                                   | 44.8        | 7          |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.1         | 61 ○       |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 1.6         | 64 ○       |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 68.2        | 3 ●        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 6.1         | 1 ●        |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.6         | 51         |
| 7.3 Online creativity .....                                           | 74.4        | 6 ●        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 77.6        | 10         |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 73.2        | 14         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 7,868.5     | 9          |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 88.6        | 17         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Austria

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 8.5         |
| GDP (US\$ billions) .....   | 437.1       |
| GDP per capita, PPP\$ ..... | 43,796.0    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank        |
|---------------------------------------------------------------|-------------------------------------|-------------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>54.1</b>                         | <b>18</b>   |
| Innovation Output Sub-Index .....                             | 47.2                                | 18          |
| Innovation Input Sub-Index .....                              | 60.9                                | 19          |
| Innovation Efficiency Ratio .....                             | 0.8                                 | 37          |
| Global Innovation Index 2014 (out of 143) .....               | 53.4                                | 20          |
| <b>1 Institutions .....</b>                                   | <b>88.7</b>                         | <b>12 ●</b> |
| 1.1 Political environment .....                               | 90.5                                | 9 ●         |
| 1.1.1 Political stability* .....                              | 97.4                                | 4 ●         |
| 1.1.2 Government effectiveness* .....                         | 83.7                                | 15          |
| 1.2 Regulatory environment .....                              | 95.9                                | 8 ●         |
| 1.2.1 Regulatory quality* .....                               | 87.2                                | 17          |
| 1.2.2 Rule of law* .....                                      | 96.3                                | 6 ●         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 8.0                                 | 1 ●         |
| 1.3 Business environment .....                                | 79.5                                | 31          |
| 1.3.1 Ease of starting a business* .....                      | 83.4                                | 82 ○        |
| 1.3.2 Ease of resolving insolvency* .....                     | 78.8                                | 15          |
| 1.3.3 Ease of paying taxes* .....                             | 76.4                                | 58 ○        |
| <b>2 Human capital &amp; research .....</b>                   | <b>57.4</b>                         | <b>8 ●</b>  |
| 2.1 Education .....                                           | 56.3                                | 22          |
| 2.1.1 Expenditure on education, % GDP .....                   | 5.8                                 | 35          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 30.5                                | 22          |
| 2.1.3 School life expectancy, years .....                     | 15.7                                | 28          |
| 2.1.4 PISA scales in reading, maths, & science .....          | 500.3                               | 18          |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 9.5                                 | 23          |
| 2.2 Tertiary education .....                                  | 57.5                                | 7 ●         |
| 2.2.1 Tertiary enrolment, % gross .....                       | 72.4                                | 22          |
| 2.2.2 Graduates in science & engineering, % .....             | 25.4                                | 22          |
| 2.2.3 Tertiary inbound mobility, % .....                      | 15.4                                | 11 ●        |
| 2.3 Research & development (R&D) .....                        | 58.3                                | 16          |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 4,699.5                             | 11 ●        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 2.9                                 | 9 ●         |
| 2.3.3 QS university ranking, average score top 3* .....       | 49.8                                | 26          |
| <b>3 Infrastructure .....</b>                                 | <b>55.2</b>                         | <b>23</b>   |
| 3.1 Information & communication technologies (ICTs) .....     | 70.8                                | 25          |
| 3.1.1 ICT access* .....                                       | 82.8                                | 17          |
| 3.1.2 ICT use* .....                                          | 62.8                                | 22          |
| 3.1.3 Government's online service* .....                      | 74.8                                | 23          |
| 3.1.4 E-participation* .....                                  | 62.7                                | 40          |
| 3.2 General infrastructure .....                              | 42.7                                | 33          |
| 3.2.1 Electricity output, kWh/cap .....                       | 7,618.9                             | 25          |
| 3.2.2 Logistics performance* .....                            | 75.9                                | 21          |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.9                                | 74 ○        |
| 3.3 Ecological sustainability .....                           | 52.2                                | 21          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 9.3                                 | 35          |
| 3.3.2 Environmental performance* .....                        | 78.3                                | 8 ●         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 2.8                                 | 38          |
| <b>4 Market sophistication .....</b>                          | <b>56.5</b>                         | <b>30</b>   |
| 4.1 Credit .....                                              | 48.1                                | 28          |
| 4.1.1 Ease of getting credit* .....                           | 60.0                                | 48          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 112.1                               | 26          |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a         |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                             | 32.8        | 79 ○      |
| 4.2.1 Ease of protecting investors* .....                        | 63.3        | 31        |
| 4.2.2 Market capitalization, % GDP .....                         | 26.0        | 61 ○      |
| 4.2.3 Total value of stocks traded, % GDP .....                  | 11.6        | 37        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                   | 0.1         | 26        |
| 4.3 Trade & competition .....                                    | 88.5        | 12 ●      |
| 4.3.1 Applied tariff rate, weighted mean, % .....                | 1.0         | 9         |
| 4.3.2 Intensity of local competition† .....                      | 80.3        | 13 ●      |
| <b>5 Business sophistication .....</b>                           | <b>47.0</b> | <b>24</b> |
| 5.1 Knowledge workers .....                                      | 56.1        | 27        |
| 5.1.1 Knowledge-intensive employment, % .....                    | 39.8        | 24        |
| 5.1.2 Firms offering formal training, % firms .....              | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP .....                 | 2.0         | 10        |
| 5.1.4 GERD financed by business, % .....                         | 44.5        | 28        |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 10.3        | 62 ○      |
| 5.2 Innovation linkages .....                                    | 43.6        | 26        |
| 5.2.1 University/industry research collaboration† .....          | 61.3        | 23        |
| 5.2.2 State of cluster development† .....                        | 65.8        | 15        |
| 5.2.3 GERD financed by abroad, % .....                           | 16.4        | 27        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 64 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 1.4         | 12 ●      |
| 5.3 Knowledge absorption .....                                   | 41.3        | 37        |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 0.8         | 38        |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 8.9         | 49        |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 1.8         | 23        |
| 5.3.4 FDI net inflows, % GDP .....                               | 3.3         | 52        |
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>43.0</b> | <b>17</b> |
| 6.1 Knowledge creation .....                                     | 37.9        | 23        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 5.6         | 16        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 3.5         | 14        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 1.5         | 20        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 34.6        | 21        |
| 6.1.5 Citable documents H index .....                            | 416.0       | 17        |
| 6.2 Knowledge impact .....                                       | 41.3        | 51        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | (0.0)       | 100 ○     |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 0.5         | 89 ○      |
| 6.2.3 Computer software spending, % GDP .....                    | 0.6         | 13        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 11.9        | 34        |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 42.4        | 18        |
| 6.3 Knowledge diffusion .....                                    | 49.9        | 16        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.5         | 24        |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 9.0         | 24        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.8         | 20        |
| 6.3.4 FDI net outflows, % GDP .....                              | 3.8         | 17        |
| <b>7 Creative outputs .....</b>                                  | <b>51.3</b> | <b>17</b> |
| 7.1 Intangible assets .....                                      | 54.9        | 30        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....              | 69.8        | 26        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....           | 2.5         | 7 ●       |
| 7.1.3 ICTs & business model creation† .....                      | 65.4        | 31        |
| 7.1.4 ICTs & organizational model creation† .....                | 58.5        | 47        |
| 7.2 Creative goods & services .....                              | 33.7        | 31        |
| 7.2.1 Cultural & creative services exports, % total trade .....  | 0.7         | 26        |
| 7.2.2 National feature films/mn pop. 15–69 .....                 | 7.5         | 25        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....             | 55.4        | 9         |
| 7.2.4 Printing & publishing output manufactures, % .....         | 1.5         | 45 ○      |
| 7.2.5 Creative goods exports, % total trade .....                | 1.4         | 34        |
| 7.3 Online creativity .....                                      | 61.7        | 15        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....       | 43.5        | 20        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                      | 85.5        | 9 ●       |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                           | 4,879.5     | 26        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                  | 81.8        | 30 ○      |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

○ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 9.5                              |
| GDP (US\$ billions) .....   | 74.1                             |
| GDP per capita, PPP\$ ..... | 11,675.7                         |
| Income group .....          | Upper-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>30.1</b>                         | <b>93</b> |
| Innovation Output Sub-Index .....                 | 22.6                                | 103       |
| Innovation Input Sub-Index .....                  | 37.6                                | 89        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 115       |
| Global Innovation Index 2014 (out of 143) .....   | 29.6                                | 101       |

|                                                               |             |             |
|---------------------------------------------------------------|-------------|-------------|
| <b>1 Institutions .....</b>                                   | <b>56.2</b> | <b>81</b>   |
| 1.1 Political environment .....                               | 41.6        | 94          |
| 1.1.1 Political stability* .....                              | 54.0        | 90          |
| 1.1.2 Government effectiveness* .....                         | 29.1        | 95          |
| 1.2 Regulatory environment .....                              | 53.0        | 107         |
| 1.2.1 Regulatory quality* .....                               | 36.5        | 105         |
| 1.2.2 Rule of law* .....                                      | 29.7        | 103         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 21.7        | 101         |
| 1.3 Business environment .....                                | 74.1        | 51          |
| 1.3.1 Ease of starting a business* .....                      | 95.5        | 12 ●        |
| 1.3.2 Ease of resolving insolvency* .....                     | 43.0        | 88          |
| 1.3.3 Ease of paying taxes* .....                             | 83.8        | 30 ●        |
| <b>2 Human capital &amp; research .....</b>                   | <b>21.9</b> | <b>100</b>  |
| 2.1 Education .....                                           | 31.2        | 114         |
| 2.1.1 Expenditure on education, % GDP .....                   | 2.4         | 121 ○       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | n/a         | n/a         |
| 2.1.3 School life expectancy, years .....                     | 11.9        | 92          |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | n/a         | n/a         |
| 2.2 Tertiary education .....                                  | 22.1        | 97          |
| 2.2.1 Tertiary enrolment, % gross .....                       | 20.4        | 90          |
| 2.2.2 Graduates in science & engineering, % .....             | 16.2        | 73          |
| 2.2.3 Tertiary inbound mobility, % .....                      | 2.5         | 59          |
| 2.3 Research & development (R&D) .....                        | 12.3        | 62          |
| 2.3.1 Researchers, FTE/mn pop. ....                           | n/a         | n/a         |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 0.2         | 88          |
| 2.3.3 QS university ranking, average score top 3* .....       | 19.8        | 54          |
| <b>3 Infrastructure .....</b>                                 | <b>37.1</b> | <b>78</b>   |
| 3.1 Information & communication technologies (ICTs) .....     | 47.8        | 69          |
| 3.1.1 ICT access* .....                                       | 60.7        | 65          |
| 3.1.2 ICT use* .....                                          | 44.0        | 49          |
| 3.1.3 Government's online service* .....                      | 43.3        | 76          |
| 3.1.4 E-participation* .....                                  | 43.1        | 76          |
| 3.2 General infrastructure .....                              | 23.5        | 107         |
| 3.2.1 Electricity output, kWh/cap .....                       | 2,471.8     | 71          |
| 3.2.2 Logistics performance* .....                            | 14.7        | 115 ○       |
| 3.2.3 Gross capital formation, % GDP .....                    | 23.5        | 53          |
| 3.3 Ecological sustainability .....                           | 40.1        | 59          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 9.6         | 28 ●        |
| 3.3.2 Environmental performance* .....                        | 55.5        | 58          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.4         | 90          |
| <b>4 Market sophistication .....</b>                          | <b>52.0</b> | <b>47 ●</b> |
| 4.1 Credit .....                                              | 26.8        | 83          |
| 4.1.1 Ease of getting credit* .....                           | 40.0        | 93          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 25.5        | 107         |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 2.8         | 18 ●        |

|                                                   |      |       |
|---------------------------------------------------|------|-------|
| 4.2 Investment .....                              | 59.2 | 10    |
| 4.2.1 Ease of protecting investors* .....         | 59.2 | 49    |
| 4.2.2 Market capitalization, % GDP .....          | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP .....   | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....    | n/a  | n/a   |
| 4.3 Trade & competition .....                     | 70.1 | 95    |
| 4.3.1 Applied tariff rate, weighted mean, % ..... | 4.5  | 76    |
| 4.3.2 Intensity of local competition† .....       | 55.8 | 116 ○ |

|                                                                         |             |              |
|-------------------------------------------------------------------------|-------------|--------------|
| <b>5 Business sophistication .....</b>                                  | <b>20.7</b> | <b>136 ○</b> |
| 5.1 Knowledge workers .....                                             | 23.8        | 110          |
| 5.1.1 Knowledge-intensive employment, % .....                           | 23.4        | 64           |
| 5.1.2 Firms offering formal training, % firms .....                     | 20.3        | 90           |
| 5.1.3 GERD performed by business, % of GDP .....                        | 0.0         | 77           |
| 5.1.4 GERD financed by business, % .....                                | 4.6         | 74           |
| 5.1.5 Females employed w/advanced degrees, % total .....                | 12.9        | 49           |
| 5.2 Innovation linkages .....                                           | 17.4        | 133 ○        |
| 5.2.1 University/industry research collaboration† .....                 | 36.0        | 101          |
| 5.2.2 State of cluster development† .....                               | 40.1        | 96           |
| 5.2.3 GERD financed by abroad, % .....                                  | 0.2         | 97 ○         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                    | 0.0         | 78 ○         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓔ</sup> .....        | 0.0         | 91           |
| 5.3 Knowledge absorption .....                                          | 21.0        | 134 ○        |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓔ</sup> ..... | 0.1         | 101          |
| 5.3.2 High-tech imports less re-imports, % total trade .....            | 3.9         | 112 ○        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....        | 0.5         | 91           |
| 5.3.4 FDI net inflows, % GDP .....                                      | 3.6         | 49 ●         |

|                                                                         |             |            |
|-------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                       | <b>19.0</b> | <b>108</b> |
| 6.1 Knowledge creation .....                                            | 2.8         | 130 ○      |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                   | 1.0         | 61         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                        | 0.0         | 99 ○       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                 | 0.1         | 57 ○       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                | 2.7         | 120        |
| 6.1.5 Citable documents H index .....                                   | 50.0        | 116        |
| 6.2 Knowledge impact .....                                              | 33.0        | 94         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                          | 2.9         | 31 ●       |
| 6.2.2 New businesses/th pop. 15–64 .....                                | 0.7         | 81         |
| 6.2.3 Computer software spending, % GDP .....                           | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                  | 1.6         | 102        |
| 6.2.5 High- & medium-high-tech manufactures, % .....                    | 10.9        | 73         |
| 6.3 Knowledge diffusion .....                                           | 21.2        | 107        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓔ</sup> ..... | 0.0         | 114 ○      |
| 6.3.2 High-tech exports less re-exports, % total trade .....            | 0.3         | 92         |
| 6.3.3 Comm., computer & info. services exp., % total trade .....        | 0.4         | 99         |
| 6.3.4 FDI net outflows, % GDP .....                                     | 2.0         | 34 ●       |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>26.2</b> | <b>93</b> |
| 7.1 Intangible assets .....                                     | 39.8        | 91        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 22.4        | 77        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 0.2         | 49        |
| 7.1.3 ICTs & business model creation† .....                     | 63.2        | 40 ●      |
| 7.1.4 ICTs & organizational model creation† .....               | 62.5        | 26 ●      |
| 7.2 Creative goods & services .....                             | 20.1        | 68        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.0         | 69        |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 26.1        | 1 ●       |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % .....        | 0.7         | 83        |
| 7.2.5 Creative goods exports, % total trade .....               | 0.0         | 125 ○     |
| 7.3 Online creativity .....                                     | 5.1         | 92        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 1.3         | 100       |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 1.4         | 84        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 1,709.4     | 59        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓔ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



# Bahrain

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 1.3                              |
| GDP (US\$ billions) .....   | 33.9                             |
| GDP per capita, PPP\$ ..... | 36,039.2                         |
| Income group .....          | High income                      |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>37.7</b>                         | <b>59</b> |
| Innovation Output Sub-Index .....                 | 29.1                                | 65        |
| Innovation Input Sub-Index .....                  | 46.2                                | 48        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 105       |
| Global Innovation Index 2014 (out of 143) .....   | 36.3                                | 62        |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                                    | <b>65.3</b> | <b>58</b> |
| 1.1 Political environment .....                                | 44.1        | 83        |
| 1.1.1 Political stability* .....                               | 31.0        | 132 ○     |
| 1.1.2 Government effectiveness* .....                          | 57.2        | 43        |
| 1.2 Regulatory environment .....                               | 80.2        | 31        |
| 1.2.1 Regulatory quality* .....                                | 63.8        | 45        |
| 1.2.2 Rule of law* .....                                       | 57.0        | 51        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 8.0         | 1 ●       |
| 1.3 Business environment .....                                 | 71.7        | 59        |
| 1.3.1 Ease of starting a business* .....                       | 76.9        | 107       |
| 1.3.2 Ease of resolving insolvency* .....                      | 44.2        | 82        |
| 1.3.3 Ease of paying taxes* .....                              | 93.9        | 8 ●       |
| <b>2 Human capital &amp; research .....</b>                    | <b>28.4</b> | <b>71</b> |
| 2.1 Education .....                                            | 44.6        | 70        |
| 2.1.1 Expenditure on education, % GDP .....                    | 2.7         | 114 ○     |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | n/a         | n/a       |
| 2.1.3 School life expectancy, years .....                      | n/a         | n/a       |
| 2.1.4 PISA scales in reading, maths, & science .....           | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 9.8         | 28        |
| 2.2 Tertiary education .....                                   | 33.2        | 65        |
| 2.2.1 Tertiary enrolment, % gross .....                        | 33.5        | 72        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 17.9        | 64        |
| 2.2.3 Tertiary inbound mobility, % .....                       | 8.5         | 21        |
| 2.3 Research & development (R&D) .....                         | 7.5         | 74        |
| 2.3.1 Researchers, FTE/mn pop. ....                            | n/a         | n/a       |
| 2.3.2 Gross expenditure on R&D, % GDP .....                    | 0.0         | 115 ○     |
| 2.3.3 QS university ranking, average score top 3* .....        | 14.3        | 59        |
| <b>3 Infrastructure .....</b>                                  | <b>52.5</b> | <b>27</b> |
| 3.1 Information & communication technologies (ICTs) .....      | 81.0        | 10 ●      |
| 3.1.1 ICT access* .....                                        | 77.2        | 29        |
| 3.1.2 ICT use* .....                                           | 70.6        | 16 ●      |
| 3.1.3 Government's online service* .....                       | 93.7        | 7 ●       |
| 3.1.4 E-participation* .....                                   | 82.4        | 14 ●      |
| 3.2 General infrastructure .....                               | 47.7        | 21 ●      |
| 3.2.1 Electricity output, kWh/cap .....                        | 18,765.2    | 4 ●       |
| 3.2.2 Logistics performance* .....                             | 47.0        | 50        |
| 3.2.3 Gross capital formation, % GDP .....                     | 18.9        | 102       |
| 3.3 Ecological sustainability .....                            | 28.8        | 100       |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 3.8         | 112 ○     |
| 3.3.2 Environmental performance* .....                         | 51.8        | 73        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 1.1         | 64        |
| <b>4 Market sophistication .....</b>                           | <b>46.8</b> | <b>71</b> |
| 4.1 Credit .....                                               | 30.9        | 70        |
| 4.1.1 Ease of getting credit* .....                            | 40.0        | 93        |
| 4.1.2 Domestic credit to private sector, % GDP .....           | 69.1        | 51        |
| 4.1.3 Microfinance gross loans, % GDP .....                    | n/a         | n/a       |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 33.2 | 77  |
| 4.2.1 Ease of protecting investors* .....               | 50.0 | 91  |
| 4.2.2 Market capitalization, % GDP .....                | 52.2 | 36  |
| 4.2.3 Total value of stocks traded, % GDP .....         | 1.0  | 65  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a |
| 4.3 Trade & competition .....                           | 76.3 | 68  |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 5.7  | 89  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 72.6 | 44  |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>38.1</b> | <b>48</b> |
| 5.1 Knowledge workers .....                                         | n/a         | n/a       |
| 5.1.1 Knowledge-intensive employment, % .....                       | n/a         | n/a       |
| 5.1.2 Firms offering formal training, % firms .....                 | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a       |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a       |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a       |
| 5.2 Innovation linkages .....                                       | 47.3        | 19 ●      |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 37.9        | 87        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 55.6        | 31        |
| 5.2.3 GERD financed by abroad, % .....                              | 30.4        | 15 ●      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.1         | 1 ●       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.0         | 75        |
| 5.3 Knowledge absorption .....                                      | 28.9        | 96        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | n/a         | n/a       |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 4.2         | 109       |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a         | n/a       |
| 5.3.4 FDI net inflows, % GDP .....                                  | 3.0         | 65        |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>25.0</b> | <b>75</b> |
| 6.1 Knowledge creation .....                                      | 1.9         | 137 ○     |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 0.1         | 106 ○     |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | 0.0         | 85        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 2.6         | 121 ○     |
| 6.1.5 Citable documents H index .....                             | 43.0        | 122 ○     |
| 6.2 Knowledge impact .....                                        | 34.5        | 86        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | 1.5         | 61        |
| 6.2.2 New businesses/th pop. 15–64 .....                          | n/a         | n/a       |
| 6.2.3 Computer software spending, % GDP .....                     | 0.3         | 27        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 4.8         | 64        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 9.9         | 78        |
| 6.3 Knowledge diffusion .....                                     | 38.6        | 36        |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | n/a         | n/a       |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 0.0         | 123 ○     |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | n/a         | n/a       |
| 6.3.4 FDI net outflows, % GDP .....                               | 3.2         | 21 ●      |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>33.2</b> | <b>65</b> |
| 7.1 Intangible assets .....                                           | 42.8        | 84        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 7.4         | 97 ○      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 64.2        | 36        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 61.6        | 30        |
| 7.2 Creative goods & services .....                                   | 23.2        | 56        |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 34.8        | 1 ●       |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 8.5         | 38        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.0         | 72        |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....        | 0.0         | 126 ○     |
| 7.3 Online creativity .....                                           | 24.0        | 54        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 6.7         | 54        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 1.8         | 74        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 1,547.7     | 64        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 75.9        | 44        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 158.5                     |
| GDP (US\$ billions) .....   | 185.4                     |
| GDP per capita, PPP\$ ..... | 2,215.6                   |
| Income group .....          | Low income                |
| Region .....                | Central and Southern Asia |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>23.7</b>                         | <b>129</b> |
| Innovation Output Sub-Index .....                | 17.9                                | 126        |
| Innovation Input Sub-Index .....                 | 29.5                                | 129        |
| Innovation Efficiency Ratio .....                | 0.6                                 | 112        |
| Global Innovation Index 2014 (out of 143) .....  | 24.4                                | 129        |

|          |                                                        |             |            |
|----------|--------------------------------------------------------|-------------|------------|
| <b>1</b> | <b>Institutions.....</b>                               | <b>40.9</b> | <b>129</b> |
| 1.1      | Political environment.....                             | 21.8        | 133        |
| 1.1.1    | Political stability*.....                              | 24.3        | 134 ○      |
| 1.1.2    | Government effectiveness*.....                         | 19.2        | 119        |
| 1.2      | Regulatory environment .....                           | 39.4        | 129        |
| 1.2.1    | Regulatory quality*.....                               | 23.1        | 124        |
| 1.2.2    | Rule of law*.....                                      | 25.5        | 115        |
| 1.2.3    | Cost of redundancy dismissal, salary weeks.....        | 31.0        | 129        |
| 1.3      | Business environment.....                              | 61.6        | 97         |
| 1.3.1    | Ease of starting a business*.....                      | 81.4        | 94         |
| 1.3.2    | Ease of resolving insolvency*.....                     | 29.5        | 124        |
| 1.3.3    | Ease of paying taxes*.....                             | 74.0        | 65 ●       |
| <b>2</b> | <b>Human capital &amp; research.....</b>               | <b>14.5</b> | <b>126</b> |
| 2.1      | Education .....                                        | 20.7        | 135 ○      |
| 2.1.1    | Expenditure on education, % GDP <sup>Ⓐ</sup> .....     | 2.2         | 123        |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap.....     | 13.9        | 88         |
| 2.1.3    | School life expectancy, years <sup>Ⓐ</sup> .....       | 10.0        | 116        |
| 2.1.4    | PISA scales in reading, maths, & science.....          | n/a         | n/a        |
| 2.1.5    | Pupil-teacher ratio, secondary .....                   | 32.2        | 111        |
| 2.2      | Tertiary education.....                                | 17.3        | 108        |
| 2.2.1    | Tertiary enrolment, % gross.....                       | 13.2        | 103        |
| 2.2.2    | Graduates in science & engineering, % .....            | 15.6        | 80         |
| 2.2.3    | Tertiary inbound mobility, % <sup>Ⓐ</sup> .....        | 0.1         | 111 ○      |
| 2.3      | Research & development (R&D).....                      | 5.6         | 80         |
| 2.3.1    | Researchers, FTE/mn pop. ....                          | n/a         | n/a        |
| 2.3.2    | Gross expenditure on R&D, % GDP.....                   | n/a         | n/a        |
| 2.3.3    | QS university ranking, average score top 3*.....       | 5.6         | 67         |
| <b>3</b> | <b>Infrastructure.....</b>                             | <b>27.3</b> | <b>109</b> |
| 3.1      | Information & communication technologies (ICTs).....   | 25.6        | 112        |
| 3.1.1    | ICT access*.....                                       | 25.7        | 124        |
| 3.1.2    | ICT use*.....                                          | 2.7         | 128        |
| 3.1.3    | Government's online service*.....                      | 34.6        | 92         |
| 3.1.4    | E-participation*.....                                  | 39.2        | 82         |
| 3.2      | General infrastructure.....                            | 28.3        | 78         |
| 3.2.1    | Electricity output, kWh/cap.....                       | 317.0       | 109        |
| 3.2.2    | Logistics performance*.....                            | 20.5        | 101        |
| 3.2.3    | Gross capital formation, % GDP.....                    | 29.2        | 24 ●       |
| 3.3      | Ecological sustainability .....                        | 28.0        | 106        |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 9.8         | 26 ●       |
| 3.3.2    | Environmental performance*.....                        | 25.6        | 136 ○      |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.1         | 125        |
| <b>4</b> | <b>Market sophistication .....</b>                     | <b>39.0</b> | <b>115</b> |
| 4.1      | Credit.....                                            | 23.0        | 99         |
| 4.1.1    | Ease of getting credit*.....                           | 30.0        | 113        |
| 4.1.2    | Domestic credit to private sector, % GDP.....          | 41.8        | 81         |
| 4.1.3    | Microfinance gross loans, % GDP .....                  | 2.2         | 24 ●       |

|       |                                                          |      |       |
|-------|----------------------------------------------------------|------|-------|
| 4.2   | Investment .....                                         | 34.3 | 74    |
| 4.2.1 | Ease of protecting investors*.....                       | 60.8 | 41 ●  |
| 4.2.2 | Market capitalization, % GDP.....                        | 13.1 | 80    |
| 4.2.3 | Total value of stocks traded, % GDP.....                 | 9.4  | 40 ●  |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP.....                  | n/a  | n/a   |
| 4.3   | Trade & competition .....                                | 59.8 | 129   |
| 4.3.1 | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 13.0 | 133 ○ |
| 4.3.2 | Intensity of local competition <sup>†</sup> .....        | 65.4 | 76    |

|          |                                                                         |             |            |
|----------|-------------------------------------------------------------------------|-------------|------------|
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>25.6</b> | <b>122</b> |
| 5.1      | Knowledge workers.....                                                  | 28.7        | 97         |
| 5.1.1    | Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                    | 20.0        | 73         |
| 5.1.2    | Firms offering formal training, % firms.....                            | 21.9        | 87         |
| 5.1.3    | GERD performed by business, % of GDP.....                               | n/a         | n/a        |
| 5.1.4    | GERD financed by business, %.....                                       | n/a         | n/a        |
| 5.1.5    | Females employed w/advanced degrees, % total.....                       | n/a         | n/a        |
| 5.2      | Innovation linkages .....                                               | 25.2        | 100        |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 26.0        | 126        |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 47.5        | 63         |
| 5.2.3    | GERD financed by abroad, %.....                                         | n/a         | n/a        |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 73         |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                           | 0.0         | 108 ○      |
| 5.3      | Knowledge absorption.....                                               | 23.0        | 126        |
| 5.3.1    | Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 113        |
| 5.3.2    | High-tech imports less re-imports, % total trade.....                   | 9.4         | 41 ●       |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.1         | 121 ○      |
| 5.3.4    | FDI net inflows, % GDP.....                                             | 1.2         | 108        |

|          |                                                                         |             |            |
|----------|-------------------------------------------------------------------------|-------------|------------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>17.6</b> | <b>116</b> |
| 6.1      | Knowledge creation.....                                                 | 5.1         | 103        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                         | 0.1         | 97         |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a        |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a        |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....                      | 2.8         | 117        |
| 6.1.5    | Citable documents H index.....                                          | 112.0       | 65 ●       |
| 6.2      | Knowledge impact.....                                                   | 29.4        | 106        |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, %.....                                 | 3.4         | 24 ●       |
| 6.2.2    | New businesses/th pop. 15–64.....                                       | 0.1         | 101 ○      |
| 6.2.3    | Computer software spending, % GDP.....                                  | 0.2         | 72 ○       |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 0.5         | 123        |
| 6.2.5    | High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 10.9        | 74         |
| 6.3      | Knowledge diffusion.....                                                | 18.3        | 117        |
| 6.3.1    | Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 110 ○      |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | 0.1         | 102        |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.3         | 69         |
| 6.3.4    | FDI net outflows, % GDP .....                                           | 0.0         | 103        |

|          |                                                                 |             |            |
|----------|-----------------------------------------------------------------|-------------|------------|
| <b>7</b> | <b>Creative outputs .....</b>                                   | <b>18.3</b> | <b>124</b> |
| 7.1      | Intangible assets .....                                         | 32.0        | 126        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                   | 16.1        | 92         |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a        |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....               | 45.7        | 109        |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....         | 42.5        | 107        |
| 7.2      | Creative goods & services.....                                  | 8.7         | 102        |
| 7.2.1    | Cultural & creative services exports, % total trade.....        | 0.0         | 86 ○       |
| 7.2.2    | National feature films/mn pop. 15–69.....                       | 0.5         | 94         |
| 7.2.3    | Global ent. & media output/th pop. 15–69.....                   | n/a         | n/a        |
| 7.2.4    | Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.5         | 46 ●       |
| 7.2.5    | Creative goods exports, % total trade <sup>Ⓐ</sup> .....        | 0.1         | 98         |
| 7.3      | Online creativity.....                                          | 0.4         | 118        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69.....             | 0.4         | 120        |
| 7.3.2    | Country-code TLDs/th pop. 15–69.....                            | 0.0         | 132        |
| 7.3.3    | Wikipedia edits/pop. 15–69.....                                 | 121.6       | 111        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69.....                        | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Barbados

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 0.3                             |
| GDP (US\$ billions) .....   | 4.3                             |
| GDP per capita, PPP\$ ..... | 25,193.3                        |
| Income group .....          | High income                     |
| Region .....                | Latin America and the Caribbean |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>42.5</b>                         | <b>37</b> |
| Innovation Output Sub-Index .....                | 38.0                                | 36        |
| Innovation Input Sub-Index .....                 | 46.9                                | 46        |
| Innovation Efficiency Ratio .....                | 0.8                                 | 25        |
| Global Innovation Index 2014 (out of 143) .....  | 40.8                                | 41        |

|          |                                                                  |             |            |
|----------|------------------------------------------------------------------|-------------|------------|
| <b>1</b> | <b>Institutions.....</b>                                         | <b>79.8</b> | <b>27</b>  |
| 1.1      | Political environment.....                                       | 86.9        | 15 ●       |
| 1.1.1    | Political stability*.....                                        | 96.1        | 8 ●        |
| 1.1.2    | Government effectiveness*.....                                   | 77.8        | 23 ●       |
| 1.2      | Regulatory environment .....                                     | 75.4        | 41         |
| 1.2.1    | Regulatory quality*.....                                         | 59.2        | 54         |
| 1.2.2    | Rule of law*.....                                                | 74.2        | 28         |
| 1.2.3    | Cost of redundancy dismissal, salary weeks.....                  | 16.0        | 73         |
| 1.3      | Business environment.....                                        | 77.1        | 36         |
| 1.3.1    | Ease of starting a business*.....                                | 84.4        | 77         |
| 1.3.2    | Ease of resolving insolvency*.....                               | 74.1        | 24 ●       |
| 1.3.3    | Ease of paying taxes*.....                                       | 73.0        | 74         |
| <b>2</b> | <b>Human capital &amp; research.....</b>                         | <b>30.5</b> | <b>62</b>  |
| 2.1      | Education .....                                                  | 49.9        | 52         |
| 2.1.1    | Expenditure on education, % GDP .....                            | 5.6         | 39         |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 25.0        | 39         |
| 2.1.3    | School life expectancy, years <sup>Ⓐ</sup> .....                 | 15.4        | 34         |
| 2.1.4    | PISA scales in reading, maths, & science.....                    | n/a         | n/a        |
| 2.1.5    | Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 14.6        | 60         |
| 2.2      | Tertiary education.....                                          | 41.5        | 39         |
| 2.2.1    | Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 60.8        | 40         |
| 2.2.2    | Graduates in science & engineering, % <sup>Ⓐ</sup> .....         | 15.0        | 83 ○       |
| 2.2.3    | Tertiary inbound mobility, % <sup>Ⓐ</sup> .....                  | 13.8        | 12 ●       |
| 2.3      | Research & development (R&D).....                                | -           | 128 ○      |
| 2.3.1    | Researchers, FTE/mn pop. ....                                    | n/a         | n/a        |
| 2.3.2    | Gross expenditure on R&D, % GDP .....                            | n/a         | n/a        |
| 2.3.3    | QS university ranking, average score top 3*.....                 | -           | 73 ○       |
| <b>3</b> | <b>Infrastructure.....</b>                                       | <b>29.2</b> | <b>100</b> |
| 3.1      | Information & communication technologies (ICTs).....             | 40.6        | 83         |
| 3.1.1    | ICT access*.....                                                 | 78.6        | 24         |
| 3.1.2    | ICT use*.....                                                    | 52.0        | 37         |
| 3.1.3    | Government's online service*.....                                | 22.0        | 119 ○      |
| 3.1.4    | E-participation*.....                                            | 9.8         | 133 ○      |
| 3.2      | General infrastructure.....                                      | 13.6        | 134 ○      |
| 3.2.1    | Electricity output, kWh/cap.....                                 | n/a         | n/a        |
| 3.2.2    | Logistics performance*.....                                      | n/a         | n/a        |
| 3.2.3    | Gross capital formation, % GDP.....                              | 14.5        | 127 ○      |
| 3.3      | Ecological sustainability .....                                  | 33.3        | 86         |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq.....                | n/a         | n/a        |
| 3.3.2    | Environmental performance*.....                                  | 45.5        | 93         |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP.....           | 1.1         | 62         |
| <b>4</b> | <b>Market sophistication .....</b>                               | <b>41.5</b> | <b>105</b> |
| 4.1      | Credit.....                                                      | 30.3        | 72         |
| 4.1.1    | Ease of getting credit*.....                                     | 35.0        | 102 ○      |
| 4.1.2    | Domestic credit to private sector, % GDP <sup>Ⓐ</sup> .....      | 80.6        | 39         |
| 4.1.3    | Microfinance gross loans, % GDP .....                            | n/a         | n/a        |

|       |                                                          |       |       |
|-------|----------------------------------------------------------|-------|-------|
| 4.2   | Investment .....                                         | 31.9  | 85    |
| 4.2.1 | Ease of protecting investors*.....                       | 30.8  | 138 ○ |
| 4.2.2 | Market capitalization, % GDP.....                        | 106.4 | 11 ●  |
| 4.2.3 | Total value of stocks traded, % GDP .....                | 0.4   | 80    |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP.....                  | n/a   | n/a   |
| 4.3   | Trade & competition .....                                | 62.2  | 122 ○ |
| 4.3.1 | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 14.8  | 135 ○ |
| 4.3.2 | Intensity of local competition <sup>†</sup> .....        | 76.4  | 26    |

|          |                                                                         |             |           |
|----------|-------------------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>53.8</b> | <b>12</b> |
| 5.1      | Knowledge workers.....                                                  | 47.0        | 41        |
| 5.1.1    | Knowledge-intensive employment, %.....                                  | 30.9        | 46        |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 35.5        | 50        |
| 5.1.3    | GERD performed by business, % of GDP .....                              | n/a         | n/a       |
| 5.1.4    | GERD financed by business, % .....                                      | n/a         | n/a       |
| 5.1.5    | Females employed w/advanced degrees, % total.....                       | n/a         | n/a       |
| 5.2      | Innovation linkages .....                                               | 60.5        | 4 ●       |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 49.9        | 41        |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 46.1        | 71        |
| 5.2.3    | GERD financed by abroad, % .....                                        | n/a         | n/a       |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a       |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                           | 6.7         | 1 ●       |
| 5.3      | Knowledge absorption.....                                               | 53.7        | 8 ●       |
| 5.3.1    | Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.9         | 34        |
| 5.3.2    | High-tech imports less re-imports, % total trade.....                   | n/a         | n/a       |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 1.9         | 20 ●      |
| 5.3.4    | FDI net inflows, % GDP <sup>Ⓐ</sup> .....                               | 12.2        | 8 ●       |

|          |                                                                         |             |             |
|----------|-------------------------------------------------------------------------|-------------|-------------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>42.4</b> | <b>18 ●</b> |
| 6.1      | Knowledge creation.....                                                 | 32.7        | 30          |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                         | 0.7         | 71          |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | 38.8        | 1 ●         |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a         |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....                      | 14.2        | 52          |
| 6.1.5    | Citable documents H index.....                                          | 55.0        | 113 ○       |
| 6.2      | Knowledge impact.....                                                   | 36.5        | 73          |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, %.....                                 | (1.0)       | 110 ○       |
| 6.2.2    | New businesses/th pop. 15–64.....                                       | n/a         | n/a         |
| 6.2.3    | Computer software spending, % GDP.....                                  | n/a         | n/a         |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 10.3        | 40          |
| 6.2.5    | High- & medium-high-tech manufactures, % .....                          | n/a         | n/a         |
| 6.3      | Knowledge diffusion.....                                                | 58.0        | 8 ●         |
| 6.3.1    | Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.2         | 42          |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | n/a         | n/a         |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.8         | 47          |
| 6.3.4    | FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 7.7         | 7 ●         |

|          |                                                          |             |           |
|----------|----------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs .....</b>                            | <b>33.6</b> | <b>63</b> |
| 7.1      | Intangible assets .....                                  | 44.3        | 75        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....            | 49.7        | 53        |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....         | n/a         | n/a       |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....        | 53.5        | 76        |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....  | 52.3        | 68        |
| 7.2      | Creative goods & services.....                           | n/a         | n/a       |
| 7.2.1    | Cultural & creative services exports, % total trade..... | n/a         | n/a       |
| 7.2.2    | National feature films/mn pop. 15–69.....                | n/a         | n/a       |
| 7.2.3    | Global ent. & media output/th pop. 15–69.....            | n/a         | n/a       |
| 7.2.4    | Printing & publishing output manufactures, %.....        | n/a         | n/a       |
| 7.2.5    | Creative goods exports, % total trade.....               | n/a         | n/a       |
| 7.3      | Online creativity.....                                   | 12.2        | 76        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69.....      | 19.3        | 31        |
| 7.3.2    | Country-code TLDs/th pop. 15–69.....                     | 1.7         | 77        |
| 7.3.3    | Wikipedia edits/pop. 15–69.....                          | 2,125.3     | 51        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69.....                 | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



**Key indicators**

|                            |                     |
|----------------------------|---------------------|
| Population (millions)..... | 9.3                 |
| GDP (US\$ billions).....   | 76.1                |
| GDP per capita, PPP\$..... | 16,327.4            |
| Income group.....          | Upper-middle income |
| Region.....                | Europe              |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>38.2</b>                         | <b>53</b> |
| Innovation Output Sub-Index.....                 | 31.5                                | 58        |
| Innovation Input Sub-Index.....                  | 44.9                                | 55        |
| Innovation Efficiency Ratio.....                 | 0.7                                 | 73        |
| Global Innovation Index 2014 (out of 143).....   | 37.1                                | 58        |

|                                                              |             |             |
|--------------------------------------------------------------|-------------|-------------|
| <b>1 Institutions.....</b>                                   | <b>53.2</b> | <b>94</b>   |
| 1.1 Political environment.....                               | 39.7        | 101         |
| 1.1.1 Political stability*.....                              | 63.5        | 66          |
| 1.1.2 Government effectiveness*.....                         | 15.9        | 127 ○       |
| 1.2 Regulatory environment.....                              | 47.1        | 118 ○       |
| 1.2.1 Regulatory quality*.....                               | 18.7        | 132 ○       |
| 1.2.2 Rule of law*.....                                      | 24.0        | 119 ○       |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 21.7        | 101 ○       |
| 1.3 Business environment.....                                | 72.8        | 55          |
| 1.3.1 Ease of starting a business*.....                      | 91.9        | 35          |
| 1.3.2 Ease of resolving insolvency*.....                     | 48.2        | 65          |
| 1.3.3 Ease of paying taxes*.....                             | 78.3        | 50          |
| <b>2 Human capital &amp; research.....</b>                   | <b>43.0</b> | <b>32 ●</b> |
| 2.1 Education.....                                           | 63.2        | 7 ●         |
| 2.1.1 Expenditure on education, % GDP.....                   | 5.1         | 53          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | n/a         | n/a         |
| 2.1.3 School life expectancy, years.....                     | 15.7        | 29 ●        |
| 2.1.4 PISA scales in reading, maths, & science.....          | n/a         | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary.....                    | 7.8         | 2 ●         |
| 2.2 Tertiary education.....                                  | 49.9        | 18 ●        |
| 2.2.1 Tertiary enrolment, % gross.....                       | 92.9        | 5 ●         |
| 2.2.2 Graduates in science & engineering, %.....             | 27.2        | 17 ●        |
| 2.2.3 Tertiary inbound mobility, %.....                      | 2.4         | 60          |
| 2.3 Research & development (R&D).....                        | 15.8        | 53          |
| 2.3.1 Researchers, FTE/mn pop.....                           | n/a         | n/a         |
| 2.3.2 Gross expenditure on R&D, % GDP.....                   | 0.7         | 49          |
| 2.3.3 QS university ranking, average score top 3*.....       | 15.5        | 57          |
| <b>3 Infrastructure.....</b>                                 | <b>42.0</b> | <b>60</b>   |
| 3.1 Information & communication technologies (ICTs).....     | 47.8        | 67          |
| 3.1.1 ICT access*.....                                       | 73.9        | 35          |
| 3.1.2 ICT use*.....                                          | 49.9        | 38          |
| 3.1.3 Government's online service*.....                      | 32.3        | 95          |
| 3.1.4 E-participation*.....                                  | 35.3        | 88          |
| 3.2 General infrastructure.....                              | 42.3        | 36          |
| 3.2.1 Electricity output, kWh/cap.....                       | 3,255.7     | 58          |
| 3.2.2 Logistics performance*.....                            | 24.3        | 94          |
| 3.2.3 Gross capital formation, % GDP.....                    | 37.7        | 8 ●         |
| 3.3 Ecological sustainability.....                           | 35.7        | 79          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 4.7         | 102 ○       |
| 3.3.2 Environmental performance*.....                        | 67.7        | 32          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.4         | 88          |
| <b>4 Market sophistication.....</b>                          | <b>56.1</b> | <b>32 ●</b> |
| 4.1 Credit.....                                              | 23.3        | 97          |
| 4.1.1 Ease of getting credit*.....                           | 40.0        | 93          |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 24.1        | 110 ○       |
| 4.1.3 Microfinance gross loans, % GDP.....                   | n/a         | n/a         |

|                                                                       |             |             |
|-----------------------------------------------------------------------|-------------|-------------|
| 4.2 Investment.....                                                   | 51.7        | 23          |
| 4.2.1 Ease of protecting investors*.....                              | 51.7        | 83          |
| 4.2.2 Market capitalization, % GDP.....                               | n/a         | n/a         |
| 4.2.3 Total value of stocks traded, % GDP.....                        | n/a         | n/a         |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                         | n/a         | n/a         |
| 4.3 Trade & competition.....                                          | 93.3        | 2 ●         |
| 4.3.1 Applied tariff rate, weighted mean, %.....                      | 2.0         | 45          |
| 4.3.2 Intensity of local competition <sup>†</sup> .....               | n/a         | n/a         |
| <b>5 Business sophistication.....</b>                                 | <b>30.3</b> | <b>94</b>   |
| 5.1 Knowledge workers.....                                            | 59.6        | 23 ●        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....            | 35.9        | 33          |
| 5.1.2 Firms offering formal training, % firms.....                    | 51.1        | 25 ●        |
| 5.1.3 GERD performed by business, % of GDP.....                       | 0.4         | 35          |
| 5.1.4 GERD financed by business, %.....                               | 43.8        | 32          |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> ..... | 33.8        | 1 ●         |
| 5.2 Innovation linkages.....                                          | 8.1         | 137 ○       |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | n/a         | n/a         |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | n/a         | n/a         |
| 5.2.3 GERD financed by abroad, %.....                                 | 7.9         | 49          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                   | 0.0         | 61          |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....      | 0.0         | 76          |
| 5.3 Knowledge absorption.....                                         | 23.2        | 125 ○       |
| 5.3.1 Royalty & license fees payments, % total trade.....             | 0.3         | 73          |
| 5.3.2 High-tech imports less re-imports, % total trade.....           | 5.7         | 88          |
| 5.3.3 Comm., computer & info. services imp., % total trade.....       | 0.4         | 99 ○        |
| 5.3.4 FDI net inflows, % GDP.....                                     | 3.1         | 63          |
| <b>6 Knowledge &amp; technology outputs.....</b>                      | <b>37.1</b> | <b>32 ●</b> |
| 6.1 Knowledge creation.....                                           | 48.2        | 15 ●        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                  | 8.9         | 7 ●         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                       | 0.1         | 66          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                | 6.3         | 1 ●         |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....               | 6.3         | 90          |
| 6.1.5 Citable documents H index.....                                  | 114.0       | 63          |
| 6.2 Knowledge impact.....                                             | 38.9        | 61          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                         | 2.8         | 35          |
| 6.2.2 New businesses/th pop. 15–64.....                               | 1.1         | 63          |
| 6.2.3 Computer software spending, % GDP.....                          | n/a         | n/a         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                 | 0.8         | 118 ○       |
| 6.2.5 High- & medium-high-tech manufactures, %.....                   | 31.4        | 35          |
| 6.3 Knowledge diffusion.....                                          | 24.1        | 90          |
| 6.3.1 Royalty & license fees receipts, % total trade.....             | 0.1         | 65          |
| 6.3.2 High-tech exports less re-exports, % total trade.....           | 1.8         | 52          |
| 6.3.3 Comm., computer & info. services exp., % total trade.....       | 1.7         | 54          |
| 6.3.4 FDI net outflows, % GDP.....                                    | 0.4         | 72          |
| <b>7 Creative outputs.....</b>                                        | <b>26.0</b> | <b>94</b>   |
| 7.1 Intangible assets.....                                            | 44.9        | 70          |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                    | 97.0        | 14 ●        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                 | 1.1         | 28          |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | n/a         | n/a         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | n/a         | n/a         |
| 7.2 Creative goods & services.....                                    | 6.6         | 113 ○       |
| 7.2.1 Cultural & creative services exports, % total trade.....        | 0.0         | 72 ○        |
| 7.2.2 National feature films/mn pop. 15–69.....                       | 0.6         | 91 ○        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | n/a         | n/a         |
| 7.2.4 Printing & publishing output manufactures, %.....               | n/a         | n/a         |
| 7.2.5 Creative goods exports, % total trade.....                      | 0.4         | 65          |
| 7.3 Online creativity.....                                            | 7.7         | 84          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 2.0         | 88          |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 7.3         | 47          |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 1,864.6     | 57          |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | n/a         | n/a         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Belgium

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 11.1        |
| GDP (US\$ billions) .....   | 534.7       |
| GDP per capita, PPP\$ ..... | 38,826.5    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>50.9</b>                         | <b>25</b> |
| Innovation Output Sub-Index .....                             | 43.2                                | 28        |
| Innovation Input Sub-Index .....                              | 58.6                                | 21        |
| Innovation Efficiency Ratio .....                             | 0.7                                 | 59        |
| Global Innovation Index 2014 (out of 143) .....               | 51.7                                | 23        |
| <b>1 Institutions .....</b>                                   | <b>83.3</b>                         | <b>19</b> |
| 1.1 Political environment .....                               | 85.6                                | 17        |
| 1.1.1 Political stability* .....                              | 86.8                                | 27        |
| 1.1.2 Government effectiveness* .....                         | 84.4                                | 14 ●      |
| 1.2 Regulatory environment .....                              | 80.2                                | 30        |
| 1.2.1 Regulatory quality* .....                               | 82.2                                | 19        |
| 1.2.2 Rule of law* .....                                      | 85.0                                | 20        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 19.7                                | 90 ○      |
| 1.3 Business environment .....                                | 84.2                                | 18        |
| 1.3.1 Ease of starting a business* .....                      | 94.4                                | 14 ●      |
| 1.3.2 Ease of resolving insolvency* .....                     | 83.9                                | 10 ●      |
| 1.3.3 Ease of paying taxes* .....                             | 74.2                                | 63        |
| <b>2 Human capital &amp; research .....</b>                   | <b>51.4</b>                         | <b>18</b> |
| 2.1 Education .....                                           | 57.1                                | 19        |
| 2.1.1 Expenditure on education, % GDP .....                   | 6.5                                 | 22        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 38.6                                | 8 ●       |
| 2.1.3 School life expectancy, years .....                     | 16.3                                | 18        |
| 2.1.4 PISA scales in reading, maths, & science .....          | 509.8                               | 15        |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | n/a                                 | n/a       |
| 2.2 Tertiary education .....                                  | 40.2                                | 44        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 70.8                                | 24        |
| 2.2.2 Graduates in science & engineering, % .....             | 16.4                                | 72 ○      |
| 2.2.3 Tertiary inbound mobility, % .....                      | 9.0                                 | 18        |
| 2.3 Research & development (R&D) .....                        | 56.8                                | 17        |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 4,020.8                             | 21        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 2.4                                 | 13        |
| 2.3.3 QS university ranking, average score top 3* .....       | 66.3                                | 15        |
| <b>3 Infrastructure .....</b>                                 | <b>52.5</b>                         | <b>28</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 68.7                                | 29        |
| 3.1.1 ICT access* .....                                       | 82.6                                | 18        |
| 3.1.2 ICT use* .....                                          | 61.8                                | 25        |
| 3.1.3 Government's online service* .....                      | 67.7                                | 31        |
| 3.1.4 E-participation* .....                                  | 62.7                                | 40        |
| 3.2 General infrastructure .....                              | 46.8                                | 25        |
| 3.2.1 Electricity output, kWh/cap .....                       | 7,430.5                             | 28        |
| 3.2.2 Logistics performance* .....                            | 96.1                                | 3 ●       |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.3                                | 82 ○      |
| 3.3 Ecological sustainability .....                           | 41.9                                | 51        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 6.5                                 | 80 ○      |
| 3.3.2 Environmental performance* .....                        | 66.6                                | 36        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 2.5                                 | 42        |
| <b>4 Market sophistication .....</b>                          | <b>54.9</b>                         | <b>35</b> |
| 4.1 Credit .....                                              | 36.8                                | 50        |
| 4.1.1 Ease of getting credit* .....                           | 45.0                                | 80 ○      |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 89.4                                | 36        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a       |

|                                                                  |             |             |
|------------------------------------------------------------------|-------------|-------------|
| 4.2 Investment .....                                             | 37.5        | 61          |
| 4.2.1 Ease of protecting investors* .....                        | 61.7        | 38          |
| 4.2.2 Market capitalization, % GDP .....                         | 60.1        | 31          |
| 4.2.3 Total value of stocks traded, % GDP .....                  | 20.7        | 29          |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                   | 0.1         | 28          |
| 4.3 Trade & competition .....                                    | 90.4        | 6 ●         |
| 4.3.1 Applied tariff rate, weighted mean, % .....                | 1.0         | 9           |
| 4.3.2 Intensity of local competition† .....                      | 84.1        | 5 ●         |
| <b>5 Business sophistication .....</b>                           | <b>51.0</b> | <b>14 ●</b> |
| 5.1 Knowledge workers .....                                      | 68.9        | 8 ●         |
| 5.1.1 Knowledge-intensive employment, % .....                    | 44.4        | 12          |
| 5.1.2 Firms offering formal training, % firms .....              | n/a         | n/a         |
| 5.1.3 GERD performed by business, % of GDP .....                 | 1.6         | 12          |
| 5.1.4 GERD financed by business, % <sup>Ⓔ</sup> .....            | 60.2        | 12          |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 23.2        | 12          |
| 5.2 Innovation linkages .....                                    | 43.4        | 27          |
| 5.2.1 University/industry research collaboration† .....          | 76.3        | 6 ●         |
| 5.2.2 State of cluster development† .....                        | 61.6        | 20          |
| 5.2.3 GERD financed by abroad, % <sup>Ⓔ</sup> .....              | 13.0        | 36          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 40          |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 0.8         | 18          |
| 5.3 Knowledge absorption .....                                   | 40.8        | 39          |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 0.7         | 45          |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 9.6         | 38          |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 2.0         | 18          |
| 5.3.4 FDI net inflows, % GDP .....                               | (0.6)       | 133 ○       |
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>36.1</b> | <b>36</b>   |
| 6.1 Knowledge creation .....                                     | 39.0        | 22          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 1.5         | 57          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 2.5         | 18          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a         | n/a         |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 40.5        | 15          |
| 6.1.5 Citable documents H index .....                            | 502.0       | 13 ●        |
| 6.2 Knowledge impact .....                                       | 41.9        | 50          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 0.0         | 98 ○        |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 2.5         | 42          |
| 6.2.3 Computer software spending, % GDP .....                    | 0.7         | 6 ●         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 8.1         | 45          |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 35.0        | 29          |
| 6.3 Knowledge diffusion .....                                    | 27.3        | 70          |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.8         | 18          |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 10.0        | 21          |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.7         | 24          |
| 6.3.4 FDI net outflows, % GDP .....                              | (4.9)       | 123 ○       |
| <b>7 Creative outputs .....</b>                                  | <b>50.4</b> | <b>20</b>   |
| 7.1 Intangible assets .....                                      | 50.8        | 43          |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....              | 45.5        | 57 ○        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....           | 1.6         | 18          |
| 7.1.3 ICTs & business model creation† .....                      | 68.0        | 23          |
| 7.1.4 ICTs & organizational model creation† .....                | 66.2        | 23          |
| 7.2 Creative goods & services .....                              | 39.4        | 19          |
| 7.2.1 Cultural & creative services exports, % total trade .....  | 1.4         | 5 ●         |
| 7.2.2 National feature films/mn pop. 15–69 .....                 | 9.0         | 19          |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....             | 46.2        | 15          |
| 7.2.4 Printing & publishing output manufactures, % .....         | 1.4         | 54 ○        |
| 7.2.5 Creative goods exports, % total trade .....                | 1.8         | 23          |
| 7.3 Online creativity .....                                      | 60.4        | 16          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....       | 25.8        | 26          |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                      | 80.7        | 11 ●        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                           | 6,650.7     | 17          |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                  | 86.0        | 23          |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 0.8                       |
| GDP (US\$ billions) .....   | 2.1                       |
| GDP per capita, PPP\$ ..... | 6,864.3                   |
| Income group .....          | Lower-middle income       |
| Region .....                | Central and Southern Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>26.1</b>                         | <b>121</b> |
| Innovation Output Sub-Index .....                 | 12.9                                | 135 ○      |
| Innovation Input Sub-Index .....                  | 39.2                                | 82         |
| Innovation Efficiency Ratio .....                 | 0.3                                 | 138 ○      |
| Global Innovation Index 2014 (out of 143) .....   | 31.8                                | 86         |

|                                                               |             |             |
|---------------------------------------------------------------|-------------|-------------|
| <b>1 Institutions .....</b>                                   | <b>62.7</b> | <b>63 ●</b> |
| 1.1 Political environment .....                               | 67.5        | 44 ●        |
| 1.1.1 Political stability* .....                              | 83.9        | 34 ●        |
| 1.1.2 Government effectiveness* .....                         | 51.1        | 51 ●        |
| 1.2 Regulatory environment .....                              | 67.9        | 64 ●        |
| 1.2.1 Regulatory quality* .....                               | 18.6        | 133 ○       |
| 1.2.2 Rule of law* .....                                      | 54.1        | 55 ●        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 8.3         | 19 ●        |
| 1.3 Business environment .....                                | 52.9        | 126         |
| 1.3.1 Ease of starting a business* .....                      | 85.0        | 76          |
| 1.3.2 Ease of resolving insolvency* .....                     | 0.0         | 139 ○       |
| 1.3.3 Ease of paying taxes* .....                             | 73.6        | 68 ●        |
| <b>2 Human capital &amp; research .....</b>                   | <b>17.5</b> | <b>114</b>  |
| 2.1 Education .....                                           | 45.0        | 69          |
| 2.1.1 Expenditure on education, % GDP .....                   | 5.5         | 41 ●        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 33.6        | 13 ●        |
| 2.1.3 School life expectancy, years .....                     | 12.6        | 83          |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 19.9        | 83          |
| 2.2 Tertiary education .....                                  | 7.4         | 129         |
| 2.2.1 Tertiary enrolment, % gross .....                       | 9.4         | 114         |
| 2.2.2 Graduates in science & engineering, % .....             | n/a         | n/a         |
| 2.2.3 Tertiary inbound mobility, % .....                      | n/a         | n/a         |
| 2.3 Research & development (R&D) .....                        | 0.0         | 128 ○       |
| 2.3.1 Researchers, FTE/mn pop. ....                           | n/a         | n/a         |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | n/a         | n/a         |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0         | 73 ○        |
| <b>3 Infrastructure .....</b>                                 | <b>41.8</b> | <b>61 ●</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 27.1        | 109         |
| 3.1.1 ICT access* .....                                       | 31.8        | 113         |
| 3.1.2 ICT use* .....                                          | 16.7        | 97          |
| 3.1.3 Government's online service* .....                      | 24.4        | 113         |
| 3.1.4 E-participation* .....                                  | 35.3        | 88          |
| 3.2 General infrastructure .....                              | 64.8        | 4 ●         |
| 3.2.1 Electricity output, kWh/cap .....                       | n/a         | n/a         |
| 3.2.2 Logistics performance* .....                            | 6.6         | 125 ○       |
| 3.2.3 Gross capital formation, % GDP .....                    | 51.5        | 2 ●         |
| 3.3 Ecological sustainability .....                           | 33.6        | 85          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | n/a         | n/a         |
| 3.3.2 Environmental performance* .....                        | 46.9        | 91          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.9         | 68          |
| <b>4 Market sophistication .....</b>                          | <b>48.2</b> | <b>63 ●</b> |
| 4.1 Credit .....                                              | 45.6        | 32          |
| 4.1.1 Ease of getting credit* .....                           | 50.0        | 65          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 46.1        | 72          |
| 4.1.3 Microfinance gross loans, % GDP <sup>a)</sup> .....     | 6.1         | 5 ●         |

|                                                                 |      |       |
|-----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                            | 50.0 | 29    |
| 4.2.1 Ease of protecting investors* .....                       | 50.0 | 91    |
| 4.2.2 Market capitalization, % GDP .....                        | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP .....                 | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                  | n/a  | n/a   |
| 4.3 Trade & competition .....                                   | 48.8 | 138 ○ |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>a)</sup> ..... | 17.8 | 137 ○ |
| 4.3.2 Intensity of local competition <sup>†</sup> .....         | 60.2 | 102   |

|                                                                     |             |            |
|---------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                              | <b>25.7</b> | <b>121</b> |
| 5.1 Knowledge workers .....                                         | 21.9        | 115        |
| 5.1.1 Knowledge-intensive employment, % .....                       | 16.5        | 88         |
| 5.1.2 Firms offering formal training, % firms <sup>a)</sup> .....   | 23.3        | 83         |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a        |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a        |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 1.1         | 83 ○       |
| 5.2 Innovation linkages .....                                       | 38.0        | 51 ●       |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 28.1        | 122        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 42.9        | 80         |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a        |
| 5.3 Knowledge absorption .....                                      | 17.3        | 139 ○      |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.0         | 122 ○      |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 3.3         | 119        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.4         | 103        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 1.1         | 110        |

|                                                                  |            |              |
|------------------------------------------------------------------|------------|--------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>2.6</b> | <b>141 ○</b> |
| 6.1 Knowledge creation .....                                     | 5.2        | 102          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.6        | 74           |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | n/a        | n/a          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a        | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 7.3        | 79           |
| 6.1.5 Citable documents H index .....                            | 20.0       | 140 ○        |
| 6.2 Knowledge impact .....                                       | 2.4        | 138 ○        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | n/a        | n/a          |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 0.2        | 97           |
| 6.2.3 Computer software spending, % GDP .....                    | n/a        | n/a          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 1.7        | 100          |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | n/a        | n/a          |
| 6.3 Knowledge diffusion .....                                    | 0.3        | 138 ○        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.0        | 105          |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.0        | 124 ○        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | n/a        | n/a          |
| 6.3.4 FDI net outflows, % GDP .....                              | n/a        | n/a          |

|                                                                 |             |            |
|-----------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                 | <b>23.3</b> | <b>107</b> |
| 7.1 Intangible assets .....                                     | 29.0        | 130        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 2.9         | 102 ○      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 45.4        | 111        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 41.4        | 112        |
| 7.2 Creative goods & services .....                             | 33.6        | 32         |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a         | n/a        |
| 7.2.2 National feature films/mn pop. 15–69 <sup>a)</sup> .....  | 58.5        | 1 ●        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a         | n/a        |
| 7.2.5 Creative goods exports, % total trade <sup>a)</sup> ..... | 0.0         | 120        |
| 7.3 Online creativity .....                                     | 1.5         | 111        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 2.4         | 82         |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 0.9         | 87         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 178.9       | 109        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>a)</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Bolivia, Plurinational State of

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 10.8                            |
| GDP (US\$ billions) .....   | 34.4                            |
| GDP per capita, PPP\$ ..... | 5,616.5                         |
| Income group .....          | Lower-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>28.6</b>                         | <b>104</b> |
| Innovation Output Sub-Index .....                 | 24.7                                | 92         |
| Innovation Input Sub-Index .....                  | 32.5                                | 118        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 45 ●       |
| Global Innovation Index 2014 (out of 143) .....   | 27.8                                | 111        |

## 1 Institutions ..... 30.9 139 ○

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 1.1 Political environment .....                                     | 43.1 | 87    |
| 1.1.1 Political stability* .....                                    | 55.6 | 84    |
| 1.1.2 Government effectiveness* .....                               | 30.6 | 91    |
| 1.2 Regulatory environment .....                                    | 11.5 | 139 ○ |
| 1.2.1 Regulatory quality* .....                                     | 26.8 | 121 ○ |
| 1.2.2 Rule of law* .....                                            | 19.1 | 128 ○ |
| 1.2.3 Cost of redundancy dismissal, salary weeks <sup>Ⓐ</sup> ..... | 82.3 | 138 ○ |
| 1.3 Business environment .....                                      | 38.0 | 140 ○ |
| 1.3.1 Ease of starting a business* .....                            | 59.1 | 134 ○ |
| 1.3.2 Ease of resolving insolvency* .....                           | 42.8 | 90    |
| 1.3.3 Ease of paying taxes* .....                                   | 12.2 | 141 ○ |

## 2 Human capital & research ..... 26.0 84

|                                                           |       |      |
|-----------------------------------------------------------|-------|------|
| 2.1 Education .....                                       | 44.2  | 71   |
| 2.1.1 Expenditure on education, % GDP .....               | 6.4   | 23 ● |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 20.3  | 56 ● |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....    | 13.2  | 76   |
| 2.1.4 PISA scales in reading, maths, & science .....      | n/a   | n/a  |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....   | 18.2  | 79   |
| 2.2 Tertiary education .....                              | 31.8  | 71   |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....      | 37.7  | 68   |
| 2.2.2 Graduates in science & engineering, % .....         | n/a   | n/a  |
| 2.2.3 Tertiary inbound mobility, % .....                  | n/a   | n/a  |
| 2.3 Research & development (R&D) .....                    | 1.8   | 105  |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....         | 162.1 | 72   |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....  | 0.2   | 96   |
| 2.3.3 QS university ranking, average score top 3* .....   | 0.0   | 73 ○ |

## 3 Infrastructure ..... 28.7 104

|                                                               |       |       |
|---------------------------------------------------------------|-------|-------|
| 3.1 Information & communication technologies (ICTs) .....     | 35.1  | 94    |
| 3.1.1 ICT access* .....                                       | 41.1  | 98    |
| 3.1.2 ICT use* .....                                          | 18.6  | 92    |
| 3.1.3 Government's online service* .....                      | 39.4  | 82    |
| 3.1.4 E-participation* .....                                  | 41.2  | 79    |
| 3.2 General infrastructure .....                              | 18.7  | 124 ○ |
| 3.2.1 Electricity output, kWh/cap .....                       | 729.6 | 99    |
| 3.2.2 Logistics performance* .....                            | 16.3  | 111   |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.8  | 76    |
| 3.3 Ecological sustainability .....                           | 32.3  | 89    |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 6.2   | 86    |
| 3.3.2 Environmental performance* .....                        | 50.5  | 78    |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.8   | 71    |

## 4 Market sophistication ..... 46.4 73

|                                                      |      |      |
|------------------------------------------------------|------|------|
| 4.1 Credit .....                                     | 49.8 | 24 ● |
| 4.1.1 Ease of getting credit* .....                  | 35.0 | 102  |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 47.0 | 70   |
| 4.1.3 Microfinance gross loans, % GDP .....          | 14.7 | 1 ●  |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 22.9 | 133 ○ |
| 4.2.1 Ease of protecting investors* .....               | 40.8 | 128 ○ |
| 4.2.2 Market capitalization, % GDP .....                | 16.4 | 78    |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.1  | 102 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a   |
| 4.3 Trade & competition .....                           | 66.6 | 108   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 3.7  | 61 ●  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 46.0 | 130 ○ |

## 5 Business sophistication ..... 30.5 92

|                                                                               |      |      |
|-------------------------------------------------------------------------------|------|------|
| 5.1 Knowledge workers .....                                                   | 39.6 | 66 ● |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                    | 15.3 | 92   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 57.1 | 14 ● |
| 5.1.3 GERD performed by business, % of GDP .....                              | n/a  | n/a  |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                         | 5.2  | 73   |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | n/a  | n/a  |
| 5.2 Innovation linkages .....                                                 | 22.3 | 115  |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 42.3 | 70   |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 41.0 | 91   |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 1.9  | 81   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a  | n/a  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.0  | 70   |
| 5.3 Knowledge absorption .....                                                | 29.5 | 94   |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.4  | 64   |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 7.9  | 55 ● |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.6  | 83   |
| 5.3.4 FDI net inflows, % GDP .....                                            | 5.7  | 27 ● |

## 6 Knowledge & technology outputs ..... 20.0 102

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation .....                                                  | 5.4  | 100   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a  | n/a   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a  | n/a   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a  | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 3.2  | 113   |
| 6.1.5 Citable documents H index .....                                         | 71.0 | 94    |
| 6.2 Knowledge impact .....                                                    | 34.3 | 88    |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 3.1  | 28 ●  |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 0.6  | 84    |
| 6.2.3 Computer software spending, % GDP .....                                 | 0.2  | 63    |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 3.3  | 75    |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | n/a  | n/a   |
| 6.3 Knowledge diffusion .....                                                 | 20.3 | 111   |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.1  | 62    |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.4  | 82    |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.0  | 77    |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 0.0  | 105 ○ |

## 7 Creative outputs ..... 29.4 84

|                                                                 |       |      |
|-----------------------------------------------------------------|-------|------|
| 7.1 Intangible assets .....                                     | 47.4  | 60   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | n/a   | n/a  |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a   | n/a  |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 47.7  | 99   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 47.2  | 92   |
| 7.2 Creative goods & services .....                             | 20.3  | 66 ● |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.2   | 48   |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....   | 4.1   | 42 ● |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a   | n/a  |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a   | n/a  |
| 7.2.5 Creative goods exports, % total trade .....               | 1.1   | 38 ● |
| 7.3 Online creativity .....                                     | 2.4   | 105  |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 2.1   | 87   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 0.6   | 95   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 590.5 | 90   |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a   | n/a  |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 3.8                 |
| GDP (US\$ billions) .....   | 18.0                |
| GDP per capita, PPP\$ ..... | 8,589.8             |
| Income group .....          | Upper-middle income |
| Region .....                | Europe              |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>32.3</b>                         | <b>79</b> |
| Innovation Output Sub-Index .....                 | 18.2                                | 122 ○     |
| Innovation Input Sub-Index .....                  | 46.4                                | 47        |
| Innovation Efficiency Ratio .....                 | 0.4                                 | 135 ○     |
| Global Innovation Index 2014 (out of 143) .....   | 32.4                                | 81        |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                                   | <b>59.6</b> | <b>71</b> |
| 1.1 Political environment .....                               | 42.1        | 92        |
| 1.1.1 Political stability* .....                              | 55.1        | 85        |
| 1.1.2 Government effectiveness* .....                         | 29.2        | 94        |
| 1.2 Regulatory environment .....                              | 71.0        | 50        |
| 1.2.1 Regulatory quality* .....                               | 45.6        | 76        |
| 1.2.2 Rule of law* .....                                      | 43.2        | 68        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 9.2         | 28 ●      |
| 1.3 Business environment .....                                | 65.6        | 81        |
| 1.3.1 Ease of starting a business* .....                      | 72.5        | 118 ○     |
| 1.3.2 Ease of resolving insolvency* .....                     | 66.2        | 32 ●      |
| 1.3.3 Ease of paying taxes* .....                             | 58.2        | 116 ○     |
| <b>2 Human capital &amp; research .....</b>                   | <b>39.9</b> | <b>38</b> |
| 2.1 Education .....                                           | 89.6        | 1         |
| 2.1.1 Expenditure on education, % GDP .....                   | n/a         | n/a       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | n/a         | n/a       |
| 2.1.3 School life expectancy, years .....                     | n/a         | n/a       |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 11.1        | 33 ●      |
| 2.2 Tertiary education .....                                  | 27.6        | 81        |
| 2.2.1 Tertiary enrolment, % gross .....                       | n/a         | n/a       |
| 2.2.2 Graduates in science & engineering, % .....             | n/a         | n/a       |
| 2.2.3 Tertiary inbound mobility, % .....                      | 6.5         | 26 ●      |
| 2.3 Research & development (R&D) .....                        | 2.6         | 99        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓔ</sup> .....             | 150.6       | 77        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓔ</sup> .....      | 0.3         | 80        |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0         | 73 ○      |
| <b>3 Infrastructure .....</b>                                 | <b>30.9</b> | <b>96</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 36.3        | 92        |
| 3.1.1 ICT access* .....                                       | 56.3        | 69        |
| 3.1.2 ICT use* .....                                          | 37.1        | 59        |
| 3.1.3 Government's online service* .....                      | 28.3        | 110       |
| 3.1.4 E-participation* .....                                  | 23.5        | 115 ○     |
| 3.2 General infrastructure .....                              | 24.9        | 100       |
| 3.2.1 Electricity output, kWh/cap .....                       | 3,676.8     | 53        |
| 3.2.2 Logistics performance* .....                            | 29.9        | 78        |
| 3.2.3 Gross capital formation, % GDP .....                    | 19.8        | 88        |
| 3.3 Ecological sustainability .....                           | 31.4        | 92        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 4.2         | 106 ○     |
| 3.3.2 Environmental performance* .....                        | 45.8        | 92        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 3.8         | 25 ●      |
| <b>4 Market sophistication .....</b>                          | <b>61.6</b> | <b>18</b> |
| 4.1 Credit .....                                              | 35.4        | 54        |
| 4.1.1 Ease of getting credit* .....                           | 65.0        | 34        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 62.0        | 54        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 1.8         | 28        |

|                                                                     |             |              |
|---------------------------------------------------------------------|-------------|--------------|
| 4.2 Investment .....                                                | 54.2        | 17           |
| 4.2.1 Ease of protecting investors* .....                           | 54.2        | 75           |
| 4.2.2 Market capitalization, % GDP .....                            | n/a         | n/a          |
| 4.2.3 Total value of stocks traded, % GDP .....                     | n/a         | n/a          |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                      | n/a         | n/a          |
| 4.3 Trade & competition .....                                       | 95.3        | 1 ●          |
| 4.3.1 Applied tariff rate, weighted mean, % .....                   | 1.4         | 39 ●         |
| 4.3.2 Intensity of local competition <sup>†</sup> .....             | n/a         | n/a          |
| <b>5 Business sophistication .....</b>                              | <b>40.1</b> | <b>41</b>    |
| 5.1 Knowledge workers .....                                         | 33.6        | 84           |
| 5.1.1 Knowledge-intensive employment, % .....                       | n/a         | n/a          |
| 5.1.2 Firms offering formal training, % firms .....                 | 52.1        | 21 ●         |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓔ</sup> .....       | 0.2         | 53           |
| 5.1.4 GERD financed by business, % <sup>Ⓔ</sup> .....               | 1.2         | 84 ○         |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a          |
| 5.2 Innovation linkages .....                                       | 62.2        | 3            |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | n/a         | n/a          |
| 5.2.2 State of cluster development <sup>†</sup> .....               | n/a         | n/a          |
| 5.2.3 GERD financed by abroad, % <sup>Ⓔ</sup> .....                 | 48.7        | 7 ●          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a          |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a          |
| 5.3 Knowledge absorption .....                                      | 24.5        | 119 ○        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.1         | 106 ○        |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 5.4         | 92           |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.8         | 65           |
| 5.3.4 FDI net inflows, % GDP .....                                  | 1.8         | 91           |
| <b>6 Knowledge &amp; technology outputs .....</b>                   | <b>23.0</b> | <b>89</b>    |
| 6.1 Knowledge creation .....                                        | 5.0         | 105          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....               | 0.2         | 90           |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                    | 0.1         | 59           |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....             | n/a         | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....            | 9.1         | 70           |
| 6.1.5 Citable documents H index .....                               | 49.0        | 117 ○        |
| 6.2 Knowledge impact .....                                          | 38.7        | 63           |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                      | 0.3         | 90           |
| 6.2.2 New businesses/th pop. 15–64 .....                            | 0.7         | 80           |
| 6.2.3 Computer software spending, % GDP .....                       | n/a         | n/a          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....              | 21.3        | 18 ●         |
| 6.2.5 High- & medium-high-tech manufactures, % .....                | n/a         | n/a          |
| 6.3 Knowledge diffusion .....                                       | 25.2        | 86           |
| 6.3.1 Royalty & license fees receipts, % total trade .....          | 0.2         | 39           |
| 6.3.2 High-tech exports less re-exports, % total trade .....        | 0.9         | 66           |
| 6.3.3 Comm., computer & info. services exp., % total trade .....    | n/a         | n/a          |
| 6.3.4 FDI net outflows, % GDP .....                                 | 0.1         | 88           |
| <b>7 Creative outputs .....</b>                                     | <b>13.4</b> | <b>135 ○</b> |
| 7.1 Intangible assets .....                                         | 9.9         | 137 ○        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                 | 17.9        | 88 ○         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....              | 0.5         | 41           |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....             | n/a         | n/a          |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....       | n/a         | n/a          |
| 7.2 Creative goods & services .....                                 | 6.9         | 112          |
| 7.2.1 Cultural & creative services exports, % total trade .....     | 0.0         | 73 ○         |
| 7.2.2 National feature films/mn pop. 15–69 .....                    | 3.9         | 43           |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                | n/a         | n/a          |
| 7.2.4 Printing & publishing output manufactures, % .....            | n/a         | n/a          |
| 7.2.5 Creative goods exports, % total trade .....                   | 0.2         | 79           |
| 7.3 Online creativity .....                                         | 26.9        | 49           |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....          | 2.8         | 75           |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                         | 2.5         | 68           |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                              | 3,913.2     | 34 ●         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                     | 73.4        | 51           |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Botswana

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 2.0                 |
| GDP (US\$ billions) .....   | 15.8                |
| GDP per capita, PPP\$ ..... | 17,106.3            |
| Income group .....          | Upper-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>30.5</b>                         | <b>90</b> |
| Innovation Output Sub-Index .....                | 21.3                                | 108       |
| Innovation Input Sub-Index .....                 | 39.6                                | 79        |
| Innovation Efficiency Ratio .....                | 0.5                                 | 120       |
| Global Innovation Index 2014 (out of 143) .....  | 30.9                                | 92        |

|          |                                                                  |             |           |
|----------|------------------------------------------------------------------|-------------|-----------|
| <b>1</b> | <b>Institutions.....</b>                                         | <b>69.0</b> | <b>48</b> |
| 1.1      | Political environment.....                                       | 69.6        | 40 ●      |
| 1.1.1    | Political stability*.....                                        | 90.3        | 14 ●      |
| 1.1.2    | Government effectiveness*.....                                   | 48.9        | 56        |
| 1.2      | Regulatory environment .....                                     | 68.6        | 60        |
| 1.2.1    | Regulatory quality*.....                                         | 65.3        | 41 ●      |
| 1.2.2    | Rule of law*.....                                                | 63.4        | 39 ●      |
| 1.2.3    | Cost of redundancy dismissal, salary weeks.....                  | 21.7        | 100       |
| 1.3      | Business environment.....                                        | 68.8        | 70        |
| 1.3.1    | Ease of starting a business*.....                                | 71.7        | 119       |
| 1.3.2    | Ease of resolving insolvency*.....                               | 57.2        | 47 ●      |
| 1.3.3    | Ease of paying taxes*.....                                       | 77.5        | 55        |
| <b>2</b> | <b>Human capital &amp; research.....</b>                         | <b>23.4</b> | <b>93</b> |
| 2.1      | Education .....                                                  | 56.0        | 24 ●      |
| 2.1.1    | Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 9.5         | 2 ●       |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 33.0        | 17 ●      |
| 2.1.3    | School life expectancy, years <sup>Ⓐ</sup> .....                 | 12.5        | 85        |
| 2.1.4    | PISA scales in reading, maths, & science.....                    | n/a         | n/a       |
| 2.1.5    | Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 13.9        | 52        |
| 2.2      | Tertiary education.....                                          | 8.1         | 126 ○     |
| 2.2.1    | Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 17.9        | 94        |
| 2.2.2    | Graduates in science & engineering, %.....                       | n/a         | n/a       |
| 2.2.3    | Tertiary inbound mobility, % <sup>Ⓐ</sup> .....                  | 0.4         | 100       |
| 2.3      | Research & development (R&D).....                                | 6.2         | 76        |
| 2.3.1    | Researchers, FTE/mn pop. ....                                    | n/a         | n/a       |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.5         | 59        |
| 2.3.3    | QS university ranking, average score top 3*.....                 | 0.0         | 73 ○      |
| <b>3</b> | <b>Infrastructure.....</b>                                       | <b>34.8</b> | <b>86</b> |
| 3.1      | Information & communication technologies (ICTs).....             | 33.2        | 98        |
| 3.1.1    | ICT access*.....                                                 | 40.6        | 99        |
| 3.1.2    | ICT use*.....                                                    | 30.3        | 69        |
| 3.1.3    | Government's online service*.....                                | 30.7        | 101       |
| 3.1.4    | E-participation*.....                                            | 31.4        | 101       |
| 3.2      | General infrastructure.....                                      | 30.1        | 72        |
| 3.2.1    | Electricity output, kWh/cap.....                                 | 125.0       | 119 ○     |
| 3.2.2    | Logistics performance*.....                                      | 16.9        | 110       |
| 3.2.3    | Gross capital formation, % GDP.....                              | 31.9        | 16 ●      |
| 3.3      | Ecological sustainability .....                                  | 41.0        | 54        |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq.....                | 11.9        | 15 ●      |
| 3.3.2    | Environmental performance*.....                                  | 47.6        | 89        |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP.....           | 0.3         | 103       |
| <b>4</b> | <b>Market sophistication .....</b>                               | <b>43.9</b> | <b>91</b> |
| 4.1      | Credit.....                                                      | 32.1        | 62        |
| 4.1.1    | Ease of getting credit*.....                                     | 55.0        | 56        |
| 4.1.2    | Domestic credit to private sector, % GDP.....                    | 32.0        | 94        |
| 4.1.3    | Microfinance gross loans, % GDP .....                            | n/a         | n/a       |

|       |                                                   |      |     |
|-------|---------------------------------------------------|------|-----|
| 4.2   | Investment .....                                  | 29.6 | 98  |
| 4.2.1 | Ease of protecting investors*.....                | 49.2 | 93  |
| 4.2.2 | Market capitalization, % GDP.....                 | 31.6 | 55  |
| 4.2.3 | Total value of stocks traded, % GDP.....          | 0.8  | 72  |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a |
| 4.3   | Trade & competition .....                         | 70.0 | 96  |
| 4.3.1 | Applied tariff rate, weighted mean, %.....        | 6.4  | 93  |
| 4.3.2 | Intensity of local competition <sup>†</sup> ..... | 62.4 | 92  |

|          |                                                                         |             |            |
|----------|-------------------------------------------------------------------------|-------------|------------|
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>27.0</b> | <b>112</b> |
| 5.1      | Knowledge workers.....                                                  | 36.0        | 77         |
| 5.1.1    | Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                    | 17.9        | 81         |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 51.9        | 22 ●       |
| 5.1.3    | GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                 | 0.1         | 62         |
| 5.1.4    | GERD financed by business, %.....                                       | n/a         | n/a        |
| 5.1.5    | Females employed w/advanced degrees, % total <sup>Ⓐ</sup> .....         | 9.2         | 65         |
| 5.2      | Innovation linkages .....                                               | 27.1        | 91         |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 35.7        | 102        |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 38.7        | 101        |
| 5.2.3    | GERD financed by abroad, %.....                                         | n/a         | n/a        |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 37         |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                           | 0.0         | 108 ○      |
| 5.3      | Knowledge absorption.....                                               | 17.9        | 138 ○      |
| 5.3.1    | Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.2         | 91         |
| 5.3.2    | High-tech imports less re-imports, % total trade.....                   | 3.2         | 121 ○      |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.4         | 104        |
| 5.3.4    | FDI net inflows, % GDP .....                                            | 1.3         | 103        |
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>20.0</b> | <b>104</b> |
| 6.1      | Knowledge creation.....                                                 | 4.3         | 110        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                         | 0.3         | 87         |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a        |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP <sup>Ⓐ</sup> .....          | 0.1         | 52 ○       |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....                      | 7.7         | 76         |
| 6.1.5    | Citable documents H index.....                                          | 63.0        | 101        |
| 6.2      | Knowledge impact.....                                                   | 41.2        | 52         |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, %.....                                 | n/a         | n/a        |
| 6.2.2    | New businesses/th pop. 15–64.....                                       | 12.3        | 7 ●        |
| 6.2.3    | Computer software spending, % GDP.....                                  | n/a         | n/a        |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 0.4         | 133 ○      |
| 6.2.5    | High- & medium-high-tech manufactures, %.....                           | n/a         | n/a        |
| 6.3      | Knowledge diffusion.....                                                | 14.4        | 129 ○      |
| 6.3.1    | Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 106 ○      |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | 0.3         | 86         |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.1         | 118 ○      |
| 6.3.4    | FDI net outflows, % GDP .....                                           | (0.0)       | 108 ○      |
| <b>7</b> | <b>Creative outputs .....</b>                                           | <b>22.7</b> | <b>110</b> |
| 7.1      | Intangible assets .....                                                 | 41.5        | 89         |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                           | n/a         | n/a        |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....                        | n/a         | n/a        |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....                       | 44.2        | 114        |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....                 | 38.8        | 121 ○      |
| 7.2      | Creative goods & services.....                                          | 6.1         | 114        |
| 7.2.1    | Cultural & creative services exports, % total trade.....                | n/a         | n/a        |
| 7.2.2    | National feature films/mn pop. 15–69.....                               | n/a         | n/a        |
| 7.2.3    | Global ent. & media output/th pop. 15–69.....                           | n/a         | n/a        |
| 7.2.4    | Printing & publishing output manufactures, %.....                       | n/a         | n/a        |
| 7.2.5    | Creative goods exports, % total trade.....                              | 0.2         | 77         |
| 7.3      | Online creativity.....                                                  | 1.8         | 109        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69.....                     | 1.5         | 98         |
| 7.3.2    | Country-code TLDs/th pop. 15–69.....                                    | 2.2         | 70         |
| 7.3.3    | Wikipedia edits/pop. 15–69.....                                         | 240.5       | 105        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69.....                                | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 202.0                           |
| GDP (US\$ billions) .....   | 2,353.0                         |
| GDP per capita, PPP\$ ..... | 12,525.7                        |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>34.9</b>                         | <b>70</b> |
| Innovation Output Sub-Index .....                 | 27.5                                | 74        |
| Innovation Input Sub-Index .....                  | 42.4                                | 65        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 99        |
| Global Innovation Index 2014 (out of 143) .....   | 36.3                                | 61        |

|                                                        |             |           |
|--------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                            | <b>55.8</b> | <b>85</b> |
| 1.1 Political environment .....                        | 48.3        | 75        |
| 1.1.1 Political stability* .....                       | 57.3        | 83        |
| 1.1.2 Government effectiveness* .....                  | 39.3        | 75        |
| 1.2 Regulatory environment .....                       | 66.1        | 73        |
| 1.2.1 Regulatory quality* .....                        | 49.6        | 69        |
| 1.2.2 Rule of law* .....                               | 44.5        | 64        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 15.4        | 68        |
| 1.3 Business environment .....                         | 53.1        | 124 ○     |
| 1.3.1 Ease of starting a business* .....               | 63.4        | 131 ○     |
| 1.3.2 Ease of resolving insolvency* .....              | 54.5        | 53        |
| 1.3.3 Ease of paying taxes* .....                      | 41.3        | 134 ○     |

|                                                                        |             |           |
|------------------------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research .....</b>                            | <b>30.1</b> | <b>63</b> |
| 2.1 Education .....                                                    | 43.7        | 73        |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 5.8         | 33        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 21.6        | 49        |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 14.2        | 55        |
| 2.1.4 PISA scales in reading, maths, & science .....                   | 402.1       | 53 ○      |
| 2.1.5 Pupil-teacher ratio, secondary .....                             | 16.0        | 69        |
| 2.2 Tertiary education .....                                           | 16.0        | 111 ○     |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 25.5        | 83        |
| 2.2.2 Graduates in science & engineering, % .....                      | 12.0        | 94 ○      |
| 2.2.3 Tertiary inbound mobility, % .....                               | 0.2         | 104 ○     |
| 2.3 Research & development (R&D) .....                                 | 30.5        | 33 ●      |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                      | 710.3       | 55        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 1.2         | 30 ●      |
| 2.3.3 QS university ranking, average score top 3* .....                | 54.0        | 23 ●      |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure .....</b>                                 | <b>40.1</b> | <b>67</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 58.0        | 43        |
| 3.1.1 ICT access* .....                                       | 61.4        | 64        |
| 3.1.2 ICT use* .....                                          | 40.1        | 56        |
| 3.1.3 Government's online service* .....                      | 59.8        | 49        |
| 3.1.4 E-participation* .....                                  | 70.6        | 24 ●      |
| 3.2 General infrastructure .....                              | 23.2        | 109 ○     |
| 3.2.1 Electricity output, kWh/cap .....                       | 2,781.0     | 65        |
| 3.2.2 Logistics performance* .....                            | 39.9        | 63        |
| 3.2.3 Gross capital formation, % GDP .....                    | 17.0        | 116 ○     |
| 3.3 Ecological sustainability .....                           | 39.1        | 63        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 9.0         | 41        |
| 3.3.2 Environmental performance* .....                        | 53.0        | 69        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 1.2         | 61        |

|                                                      |             |           |
|------------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                 | <b>44.3</b> | <b>87</b> |
| 4.1 Credit .....                                     | 22.7        | 102       |
| 4.1.1 Ease of getting credit* .....                  | 45.0        | 80        |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 70.7        | 47        |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.1         | 69        |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 38.2 | 60   |
| 4.2.1 Ease of protecting investors* .....               | 62.5 | 34   |
| 4.2.2 Market capitalization, % GDP .....                | 54.7 | 35   |
| 4.2.3 Total value of stocks traded, % GDP .....         | 37.1 | 21 ● |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 52   |
| 4.3 Trade & competition .....                           | 72.0 | 89   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 7.7  | 106  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 71.2 | 50   |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                | <b>41.6</b> | <b>37</b> |
| 5.1 Knowledge workers .....                                           | 42.2        | 54        |
| 5.1.1 Knowledge-intensive employment, % .....                         | 21.0        | 69        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....      | 42.2        | 41        |
| 5.1.3 GERD performed by business, % of GDP .....                      | n/a         | n/a       |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                 | 43.1        | 33        |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> ..... | 8.3         | 67 ○      |
| 5.2 Innovation linkages .....                                         | 35.8        | 59        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 46.7        | 52        |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 60.4        | 22 ●      |
| 5.2.3 GERD financed by abroad, % .....                                | n/a         | n/a       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 75 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 0.0         | 63        |
| 5.3 Knowledge absorption .....                                        | 46.7        | 21 ●      |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 1.2         | 21 ●      |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 12.0        | 23 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 1.7         | 29 ●      |
| 5.3.4 FDI net inflows, % GDP .....                                    | 3.6         | 46        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>25.4</b> | <b>72</b> |
| 6.1 Knowledge creation .....                                     | 15.9        | 56        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 1.5         | 55        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.2         | 51        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 0.9         | 29        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 11.8        | 63        |
| 6.1.5 Citable documents H index .....                            | 342.0       | 22 ●      |
| 6.2 Knowledge impact .....                                       | 36.5        | 74        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 0.8         | 80        |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 2.2         | 45        |
| 6.2.3 Computer software spending, % GDP .....                    | 0.3         | 49        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 6.9         | 51        |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 39.8        | 22 ●      |
| 6.3 Knowledge diffusion .....                                    | 23.9        | 93        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.2         | 38        |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 3.0         | 44        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 0.3         | 109 ○     |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.6         | 64        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>29.6</b> | <b>82</b> |
| 7.1 Intangible assets .....                                     | 42.3        | 87        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 41.2        | 61        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 54.1        | 73        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 50.8        | 74        |
| 7.2 Creative goods & services .....                             | 9.8         | 96        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.3         | 45        |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 0.9         | 79        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 9.3         | 36        |
| 7.2.4 Printing & publishing output manufactures, % .....        | 0.9         | 77 ○      |
| 7.2.5 Creative goods exports, % total trade .....               | 0.2         | 76        |
| 7.3 Online creativity .....                                     | 23.9        | 55        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 1.9         | 90        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 10.3        | 43        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 971.2       | 76        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 76.2        | 43        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Bulgaria

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 7.2                 |
| GDP (US\$ billions) .....   | 55.8                |
| GDP per capita, PPP\$ ..... | 15,031.3            |
| Income group .....          | Upper-middle income |
| Region .....                | Europe              |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>42.2</b>                         | <b>39</b> |
| Innovation Output Sub-Index .....                 | 38.2                                | 35        |
| Innovation Input Sub-Index .....                  | 46.1                                | 49        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 21 ●      |
| Global Innovation Index 2014 (out of 143) .....   | 40.7                                | 44        |

## 1 Institutions ..... 69.7 45

|                                                        |      |      |
|--------------------------------------------------------|------|------|
| 1.1 Political environment .....                        | 57.0 | 54   |
| 1.1.1 Political stability* .....                       | 68.5 | 56   |
| 1.1.2 Government effectiveness* .....                  | 45.5 | 61   |
| 1.2 Regulatory environment .....                       | 75.8 | 39   |
| 1.2.1 Regulatory quality* .....                        | 61.6 | 49   |
| 1.2.2 Rule of law* .....                               | 44.0 | 66   |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 8.6  | 20 ● |
| 1.3 Business environment .....                         | 76.3 | 40   |
| 1.3.1 Ease of starting a business* .....               | 91.1 | 42   |
| 1.3.2 Ease of resolving insolvency* .....              | 64.8 | 36   |
| 1.3.3 Ease of paying taxes* .....                      | 73.2 | 71   |

## 2 Human capital & research ..... 32.2 58

|                                                           |         |      |
|-----------------------------------------------------------|---------|------|
| 2.1 Education .....                                       | 43.6    | 74   |
| 2.1.1 Expenditure on education, % GDP .....               | 3.8     | 89 ○ |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 22.2    | 48   |
| 2.1.3 School life expectancy, years .....                 | 14.4    | 52   |
| 2.1.4 PISA scales in reading, maths, & science .....      | 440.4   | 42   |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 12.3    | 43   |
| 2.2 Tertiary education .....                              | 38.7    | 50   |
| 2.2.1 Tertiary enrolment, % gross .....                   | 62.7    | 33   |
| 2.2.2 Graduates in science & engineering, % .....         | 21.5    | 43   |
| 2.2.3 Tertiary inbound mobility, % .....                  | 3.9     | 46   |
| 2.3 Research & development (R&D) .....                    | 14.4    | 57   |
| 2.3.1 Researchers, FTE/mn pop. ....                       | 1,699.3 | 39   |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | 0.7     | 52   |
| 2.3.3 QS university ranking, average score top 3* .....   | 7.3     | 65   |

## 3 Infrastructure ..... 43.3 53

|                                                               |         |       |
|---------------------------------------------------------------|---------|-------|
| 3.1 Information & communication technologies (ICTs) .....     | 41.1    | 81    |
| 3.1.1 ICT access* .....                                       | 67.7    | 50    |
| 3.1.2 ICT use* .....                                          | 47.7    | 41    |
| 3.1.3 Government's online service* .....                      | 23.6    | 117 ○ |
| 3.1.4 E-participation* .....                                  | 25.5    | 110 ○ |
| 3.2 General infrastructure .....                              | 37.5    | 50    |
| 3.2.1 Electricity output, kWh/cap .....                       | 6,372.0 | 30    |
| 3.2.2 Logistics performance* .....                            | 50.8    | 45    |
| 3.2.3 Gross capital formation, % GDP .....                    | 23.5    | 54    |
| 3.3 Ecological sustainability .....                           | 51.2    | 26 ●  |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 4.9     | 99 ○  |
| 3.3.2 Environmental performance* .....                        | 64.0    | 40    |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 11.0    | 5 ●   |

## 4 Market sophistication ..... 48.9 61

|                                                      |      |    |
|------------------------------------------------------|------|----|
| 4.1 Credit .....                                     | 36.1 | 52 |
| 4.1.1 Ease of getting credit* .....                  | 70.0 | 22 |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 69.6 | 50 |
| 4.1.3 Microfinance gross loans, % GDP .....          | 1.4  | 34 |

|                                                 |      |       |
|-------------------------------------------------|------|-------|
| 4.2 Investment .....                            | 29.1 | 101 ○ |
| 4.2.1 Ease of protecting investors* .....       | 68.3 | 14 ●  |
| 4.2.2 Market capitalization, % GDP .....        | 12.7 | 81 ○  |
| 4.2.3 Total value of stocks traded, % GDP ..... | 0.7  | 74    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....  | 0.0  | 63 ○  |

## 4.3 Trade & competition ..... 81.3 45

|                                                   |      |    |
|---------------------------------------------------|------|----|
| 4.3.1 Applied tariff rate, weighted mean, % ..... | 1.0  | 9  |
| 4.3.2 Intensity of local competition† .....       | 66.1 | 72 |

## 5 Business sophistication ..... 36.4 60

|                                                          |      |      |
|----------------------------------------------------------|------|------|
| 5.1 Knowledge workers .....                              | 42.8 | 50   |
| 5.1.1 Knowledge-intensive employment, % .....            | 31.0 | 45   |
| 5.1.2 Firms offering formal training, % firms .....      | 42.8 | 39   |
| 5.1.3 GERD performed by business, % of GDP .....         | 0.4  | 38   |
| 5.1.4 GERD financed by business, % .....                 | 19.4 | 62 ○ |
| 5.1.5 Females employed w/advanced degrees, % total ..... | 18.5 | 26   |

## 5.2 Innovation linkages ..... 38.6 48

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 5.2.1 University/industry research collaboration† ..... | 33.3 | 110 ○ |
| 5.2.2 State of cluster development† .....               | 32.6 | 123 ○ |
| 5.2.3 GERD financed by abroad, % .....                  | 48.3 | 8 ●   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....    | n/a  | n/a   |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....     | n/a  | 54    |

## 5.3 Knowledge absorption ..... 27.8 102 ○

|                                                                  |     |    |
|------------------------------------------------------------------|-----|----|
| 5.3.1 Royalty & license fees payments, % total trade .....       | 0.5 | 52 |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 6.3 | 75 |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 0.7 | 76 |
| 5.3.4 FDI net inflows, % GDP .....                               | 3.6 | 48 |

## 6 Knowledge & technology outputs ..... 35.4 37

|                                                          |       |      |
|----------------------------------------------------------|-------|------|
| 6.1 Knowledge creation .....                             | 25.6  | 37   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....    | 2.3   | 45   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....         | 0.4   | 43   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....  | 2.9   | 11 ● |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP ..... | 16.1  | 48   |
| 6.1.5 Citable documents H index .....                    | 154.0 | 45   |
| 6.2 Knowledge impact .....                               | 51.3  | 18 ● |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....           | 0.7   | 83 ○ |
| 6.2.2 New businesses/th pop. 15–64 .....                 | 9.0   | 12 ● |
| 6.2.3 Computer software spending, % GDP .....            | 0.3   | 40   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....   | 43.1  | 3 ●  |
| 6.2.5 High- & medium-high-tech manufactures, % .....     | 18.9  | 60   |

## 6.3 Knowledge diffusion ..... 29.2 62

|                                                                  |     |    |
|------------------------------------------------------------------|-----|----|
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.1 | 63 |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 3.1 | 42 |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.1 | 38 |
| 6.3.4 FDI net outflows, % GDP .....                              | 1.2 | 49 |

## 7 Creative outputs ..... 41.1 34

|                                                                 |         |      |
|-----------------------------------------------------------------|---------|------|
| 7.1 Intangible assets .....                                     | 53.5    | 33   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 111.5   | 9 ●  |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 2.2     | 11 ● |
| 7.1.3 ICTs & business model creation† .....                     | 51.0    | 89   |
| 7.1.4 ICTs & organizational model creation† .....               | 48.0    | 88   |
| 7.2 Creative goods & services .....                             | 22.3    | 59   |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.8     | 25   |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 2.8     | 53   |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a     | n/a  |
| 7.2.4 Printing & publishing output manufactures, % .....        | 1.2     | 64   |
| 7.2.5 Creative goods exports, % total trade .....               | 0.8     | 43   |
| 7.3 Online creativity .....                                     | 35.1    | 38   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 24.8    | 28 ● |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 2.8     | 65   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 4,772.6 | 28 ● |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 77.4    | 41   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓢ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 17.4               |
| GDP (US\$ billions) .....   | 12.5               |
| GDP per capita, PPP\$ ..... | 1,666.6            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>28.7</b>                         | <b>102</b> |
| Innovation Output Sub-Index .....                 | 23.2                                | 100        |
| Innovation Input Sub-Index .....                  | 34.2                                | 109        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 85         |
| Global Innovation Index 2014 (out of 143) .....   | 28.2                                | 109        |

|          |                                                         |             |            |
|----------|---------------------------------------------------------|-------------|------------|
| <b>1</b> | <b>Institutions .....</b>                               | <b>52.3</b> | <b>97</b>  |
| 1.1      | Political environment .....                             | 35.1        | 110        |
| 1.1.1    | Political stability* .....                              | 45.5        | 109        |
| 1.1.2    | Government effectiveness* .....                         | 24.7        | 107        |
| 1.2      | Regulatory environment .....                            | 66.8        | 69 ●       |
| 1.2.1    | Regulatory quality* .....                               | 43.4        | 83         |
| 1.2.2    | Rule of law* .....                                      | 33.6        | 92         |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....        | 10.4        | 38 ●       |
| 1.3      | Business environment .....                              | 55.1        | 116        |
| 1.3.1    | Ease of starting a business* .....                      | 69.1        | 121        |
| 1.3.2    | Ease of resolving insolvency* .....                     | 38.1        | 105        |
| 1.3.3    | Ease of paying taxes* .....                             | 58.1        | 117        |
| <b>2</b> | <b>Human capital &amp; research .....</b>               | <b>15.7</b> | <b>119</b> |
| 2.1      | Education .....                                         | 22.2        | 131 ○      |
| 2.1.1    | Expenditure on education, % GDP .....                   | 3.4         | 100        |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap .....     | 16.6        | 75         |
| 2.1.3    | School life expectancy, years .....                     | 7.8         | 129 ○      |
| 2.1.4    | PISA scales in reading, maths, & science .....          | n/a         | n/a        |
| 2.1.5    | Pupil-teacher ratio, secondary .....                    | 26.9        | 100        |
| 2.2      | Tertiary education .....                                | 23.3        | 94         |
| 2.2.1    | Tertiary enrolment, % gross .....                       | 4.8         | 125 ○      |
| 2.2.2    | Graduates in science & engineering, % .....             | 19.9        | 57         |
| 2.2.3    | Tertiary inbound mobility, % .....                      | 2.9         | 54 ●       |
| 2.3      | Research & development (R&D) .....                      | 1.7         | 109        |
| 2.3.1    | Researchers, FTE/mn pop. <sup>Ⓔ</sup> .....             | 47.8        | 91         |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓔ</sup> .....      | 0.2         | 89         |
| 2.3.3    | QS university ranking, average score top 3* .....       | 0.0         | 73 ○       |
| <b>3</b> | <b>Infrastructure .....</b>                             | <b>22.6</b> | <b>127</b> |
| 3.1      | Information & communication technologies (ICTs) .....   | 18.2        | 125        |
| 3.1.1    | ICT access* .....                                       | 24.6        | 127 ○      |
| 3.1.2    | ICT use* .....                                          | 4.5         | 124        |
| 3.1.3    | Government's online service* .....                      | 29.9        | 106        |
| 3.1.4    | E-participation* .....                                  | 13.7        | 129 ○      |
| 3.2      | General infrastructure .....                            | 22.4        | 111        |
| 3.2.1    | Electricity output, kWh/cap .....                       | n/a         | n/a        |
| 3.2.2    | Logistics performance* .....                            | 24.3        | 93         |
| 3.2.3    | Gross capital formation, % GDP .....                    | 18.0        | 109        |
| 3.3      | Ecological sustainability .....                         | 27.3        | 110        |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | n/a         | n/a        |
| 3.3.2    | Environmental performance* .....                        | 40.5        | 106        |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.1         | 126        |
| <b>4</b> | <b>Market sophistication .....</b>                      | <b>42.9</b> | <b>97</b>  |
| 4.1      | Credit .....                                            | 17.9        | 119        |
| 4.1.1    | Ease of getting credit* .....                           | 30.0        | 113        |
| 4.1.2    | Domestic credit to private sector, % GDP .....          | 26.1        | 106        |
| 4.1.3    | Microfinance gross loans, % GDP .....                   | 1.4         | 33 ●       |

|       |                                                   |      |     |
|-------|---------------------------------------------------|------|-----|
| 4.2   | Investment .....                                  | 45.8 | 37  |
| 4.2.1 | Ease of protecting investors* .....               | 45.8 | 107 |
| 4.2.2 | Market capitalization, % GDP .....                | n/a  | n/a |
| 4.2.3 | Total value of stocks traded, % GDP .....         | n/a  | n/a |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a |
| 4.3   | Trade & competition .....                         | 65.1 | 118 |
| 4.3.1 | Applied tariff rate, weighted mean, % .....       | 8.4  | 110 |
| 4.3.2 | Intensity of local competition <sup>†</sup> ..... | 59.4 | 106 |

|          |                                                                         |             |             |
|----------|-------------------------------------------------------------------------|-------------|-------------|
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>37.4</b> | <b>52 ●</b> |
| 5.1      | Knowledge workers .....                                                 | 24.0        | 108         |
| 5.1.1    | Knowledge-intensive employment, % .....                                 | n/a         | n/a         |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓔ</sup> .....              | 24.8        | 78          |
| 5.1.3    | GERD performed by business, % of GDP .....                              | n/a         | n/a         |
| 5.1.4    | GERD financed by business, % <sup>Ⓔ</sup> .....                         | 11.9        | 68          |
| 5.1.5    | Females employed w/advanced degrees, % total .....                      | n/a         | n/a         |
| 5.2      | Innovation linkages .....                                               | 50.4        | 14          |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 36.1        | 100         |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 31.6        | 126 ○       |
| 5.2.3    | GERD financed by abroad, % <sup>Ⓔ</sup> .....                           | 59.6        | 2 ●         |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a         |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a         | n/a         |
| 5.3      | Knowledge absorption .....                                              | 37.7        | 48 ●        |
| 5.3.1    | Royalty & license fees payments, % total trade <sup>Ⓔ</sup> .....       | 0.0         | 120 ○       |
| 5.3.2    | High-tech imports less re-imports, % total trade .....                  | 4.5         | 107         |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>Ⓔ</sup> ..... | 2.5         | 8 ●         |
| 5.3.4    | FDI net inflows, % GDP .....                                            | 3.2         | 57 ●        |

|          |                                                                         |             |           |
|----------|-------------------------------------------------------------------------|-------------|-----------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>21.4</b> | <b>99</b> |
| 6.1      | Knowledge creation .....                                                | 5.1         | 104       |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP <sup>Ⓔ</sup> .....            | 0.1         | 101       |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a       |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP <sup>Ⓔ</sup> .....          | 0.1         | 50        |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....                      | 10.0        | 68 ●      |
| 6.1.5    | Citable documents H index .....                                         | 71.0        | 94        |
| 6.2      | Knowledge impact .....                                                  | 36.6        | 71 ●      |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                                | 2.9         | 30 ●      |
| 6.2.2    | New businesses/th pop. 15–64 .....                                      | 0.1         | 98 ○      |
| 6.2.3    | Computer software spending, % GDP .....                                 | n/a         | n/a       |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.6         | 104       |
| 6.2.5    | High- & medium-high-tech manufactures, % .....                          | n/a         | n/a       |
| 6.3      | Knowledge diffusion .....                                               | 22.5        | 101       |
| 6.3.1    | Royalty & license fees receipts, % total trade <sup>Ⓔ</sup> .....       | 0.0         | 87        |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | 0.1         | 110       |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓔ</sup> ..... | 2.3         | 31 ●      |
| 6.3.4    | FDI net outflows, % GDP <sup>Ⓔ</sup> .....                              | 0.0         | 100       |

|          |                                                           |             |            |
|----------|-----------------------------------------------------------|-------------|------------|
| <b>7</b> | <b>Creative outputs .....</b>                             | <b>24.9</b> | <b>100</b> |
| 7.1      | Intangible assets .....                                   | 48.4        | 55 ●       |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....             | n/a         | n/a        |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a        |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....         | 55.0        | 71 ●       |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....   | 41.8        | 110        |
| 7.2      | Creative goods & services .....                           | 2.8         | 121        |
| 7.2.1    | Cultural & creative services exports, % total trade ..... | n/a         | n/a        |
| 7.2.2    | National feature films/mn pop. 15–69 .....                | 1.8         | 59         |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a        |
| 7.2.4    | Printing & publishing output manufactures, % .....        | n/a         | n/a        |
| 7.2.5    | Creative goods exports, % total trade <sup>Ⓔ</sup> .....  | 0.0         | 112        |
| 7.3      | Online creativity .....                                   | 0.1         | 139 ○      |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....      | 0.1         | 132 ○      |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                     | 0.0         | 129        |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                          | 8.7         | 138 ○      |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Burundi

## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 10.5               |
| GDP (US\$ billions) .....   | 3.1                |
| GDP per capita, PPP\$ ..... | 666.4              |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>21.0</b>                         | <b>136</b> |
| Innovation Output Sub-Index .....                | 11.1                                | 138 ○      |
| Innovation Input Sub-Index .....                 | 31.0                                | 122        |
| Innovation Efficiency Ratio .....                | 0.4                                 | 137 ○      |
| Global Innovation Index 2014 (out of 143) .....  | 22.4                                | 138        |

|                                                                |             |            |
|----------------------------------------------------------------|-------------|------------|
| <b>1 Institutions.....</b>                                     | <b>46.4</b> | <b>118</b> |
| 1.1 Political environment.....                                 | 22.2        | 132        |
| 1.1.1 Political stability*.....                                | 32.1        | 130        |
| 1.1.2 Government effectiveness*.....                           | 12.3        | 131        |
| 1.2 Regulatory environment .....                               | 53.2        | 106        |
| 1.2.1 Regulatory quality*.....                                 | 24.6        | 123        |
| 1.2.2 Rule of law*.....                                        | 19.4        | 127        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....          | 15.9        | 71 ●       |
| 1.3 Business environment.....                                  | 63.9        | 87 ●       |
| 1.3.1 Ease of starting a business*.....                        | 94.3        | 17 ●       |
| 1.3.2 Ease of resolving insolvency*.....                       | 30.6        | 122        |
| 1.3.3 Ease of paying taxes*.....                               | 66.8        | 98         |
| <b>2 Human capital &amp; research.....</b>                     | <b>17.3</b> | <b>115</b> |
| 2.1 Education .....                                            | 35.8        | 94         |
| 2.1.1 Expenditure on education, % GDP .....                    | 5.8         | 34 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....       | 33.0        | 16 ●       |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....         | 10.1        | 115        |
| 2.1.4 PISA scales in reading, maths, & science.....            | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 31.7        | 110        |
| 2.2 Tertiary education.....                                    | 14.9        | 113        |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....           | 3.2         | 130        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 9.6         | 97         |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....          | 6.2         | 29 ●       |
| 2.3 Research & development (R&D).....                          | 1.3         | 111        |
| 2.3.1 Researchers, FTE/mn pop. ....                            | n/a         | n/a        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.1         | 103        |
| 2.3.3 QS university ranking, average score top 3*.....         | 0.0         | 73 ○       |
| <b>3 Infrastructure.....</b>                                   | <b>17.7</b> | <b>136</b> |
| 3.1 Information & communication technologies (ICTs).....       | 3.7         | 141 ○      |
| 3.1.1 ICT access*.....                                         | n/a         | n/a        |
| 3.1.2 ICT use*.....                                            | n/a         | n/a        |
| 3.1.3 Government's online service*.....                        | 1.6         | 139 ○      |
| 3.1.4 E-participation*.....                                    | 5.9         | 139 ○      |
| 3.2 General infrastructure.....                                | 23.5        | 108        |
| 3.2.1 Electricity output, kWh/cap.....                         | n/a         | n/a        |
| 3.2.2 Logistics performance*.....                              | 20.6        | 100        |
| 3.2.3 Gross capital formation, % GDP.....                      | 19.6        | 91         |
| 3.3 Ecological sustainability .....                            | 25.8        | 118        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....        | n/a         | n/a        |
| 3.3.2 Environmental performance*.....                          | 25.8        | 135 ○      |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....   | n/a         | n/a        |
| <b>4 Market sophistication .....</b>                           | <b>42.7</b> | <b>99</b>  |
| 4.1 Credit.....                                                | 13.3        | 126        |
| 4.1.1 Ease of getting credit*.....                             | 10.0        | 133 ○      |
| 4.1.2 Domestic credit to private sector, % GDP.....            | 18.0        | 118        |
| 4.1.3 Microfinance gross loans, % GDP .....                    | 2.1         | 25 ●       |

|                                                                         |             |              |
|-------------------------------------------------------------------------|-------------|--------------|
| 4.2 Investment .....                                                    | 51.7        | 23           |
| 4.2.1 Ease of protecting investors*.....                                | 51.7        | 83 ●         |
| 4.2.2 Market capitalization, % GDP.....                                 | n/a         | n/a          |
| 4.2.3 Total value of stocks traded, % GDP.....                          | n/a         | n/a          |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                           | n/a         | n/a          |
| 4.3 Trade & competition .....                                           | 63.1        | 121          |
| 4.3.1 Applied tariff rate, weighted mean, %.....                        | 6.4         | 94           |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                 | 48.6        | 127          |
| <b>5 Business sophistication .....</b>                                  | <b>30.7</b> | <b>91</b>    |
| 5.1 Knowledge workers.....                                              | 24.7        | 105          |
| 5.1.1 Knowledge-intensive employment, %.....                            | n/a         | n/a          |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....        | 22.1        | 85           |
| 5.1.3 GERD performed by business, % of GDP.....                         | n/a         | n/a          |
| 5.1.4 GERD financed by business, %.....                                 | n/a         | n/a          |
| 5.1.5 Females employed w/advanced degrees, % total.....                 | n/a         | n/a          |
| 5.2 Innovation linkages .....                                           | 36.2        | 54 ●         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....     | 29.7        | 118          |
| 5.2.2 State of cluster development <sup>†</sup> .....                   | 28.9        | 129          |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                     | 39.9        | 12 ●         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                     | n/a         | n/a          |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....        | 0.2         | 31 ●         |
| 5.3 Knowledge absorption.....                                           | 31.2        | 85 ●         |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> ..... | 0.0         | 125 ○        |
| 5.3.2 High-tech imports less re-imports, % total trade.....             | 9.8         | 33 ●         |
| 5.3.3 Comm., computer & info. services imp., % total trade.....         | n/a         | n/a          |
| 5.3.4 FDI net inflows, % GDP .....                                      | 0.3         | 126          |
| <b>6 Knowledge &amp; technology outputs .....</b>                       | <b>7.2</b>  | <b>139 ○</b> |
| 6.1 Knowledge creation.....                                             | 2.6         | 133          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                   | n/a         | n/a          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                        | n/a         | n/a          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                  | n/a         | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                 | 2.7         | 118          |
| 6.1.5 Citable documents H index.....                                    | 26.0        | 136          |
| 6.2 Knowledge impact.....                                               | 1.3         | 140 ○        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                           | n/a         | n/a          |
| 6.2.2 New businesses/th pop. 15–64.....                                 | n/a         | n/a          |
| 6.2.3 Computer software spending, % GDP.....                            | n/a         | n/a          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                   | 0.0         | 141 ○        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....       | 1.8         | 97           |
| 6.3 Knowledge diffusion.....                                            | 17.7        | 120          |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> ..... | 0.0         | 108          |
| 6.3.2 High-tech exports less re-exports, % total trade .....            | 0.2         | 95           |
| 6.3.3 Comm., computer & info. services exp., % total trade.....         | n/a         | n/a          |
| 6.3.4 FDI net outflows, % GDP .....                                     | 0.0         | 101          |
| <b>7 Creative outputs .....</b>                                         | <b>15.1</b> | <b>133</b>   |
| 7.1 Intangible assets .....                                             | 26.4        | 132          |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                      | n/a         | n/a          |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                   | n/a         | n/a          |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                 | 29.0        | 132 ○        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....           | 23.9        | 133 ○        |
| 7.2 Creative goods & services.....                                      | 7.4         | 107          |
| 7.2.1 Cultural & creative services exports, % total trade.....          | n/a         | n/a          |
| 7.2.2 National feature films/mn pop. 15–69.....                         | n/a         | n/a          |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                     | n/a         | n/a          |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> .....   | 0.8         | 81           |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....          | 0.1         | 87           |
| 7.3 Online creativity.....                                              | 0.1         | 137 ○        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....               | 0.0         | 136          |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                              | 0.1         | 118          |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                   | 7.6         | 139 ○        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                          | n/a         | n/a          |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 0.5                 |
| GDP (US\$ billions) .....   | 1.9                 |
| GDP per capita, PPP\$ ..... | 4,482.6             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>28.6</b>                         | <b>103</b> |
| Innovation Output Sub-Index .....                 | 20.1                                | 114        |
| Innovation Input Sub-Index .....                  | 37.1                                | 92         |
| Innovation Efficiency Ratio .....                 | 0.5                                 | 119        |
| Global Innovation Index 2014 (out of 143) .....   | 30.1                                | 97         |

|                                                               |             |             |
|---------------------------------------------------------------|-------------|-------------|
| <b>1 Institutions .....</b>                                   | <b>57.6</b> | <b>79</b>   |
| 1.1 Political environment .....                               | 64.4        | 49 ●        |
| 1.1.1 Political stability* .....                              | 84.1        | 33 ●        |
| 1.1.2 Government effectiveness* .....                         | 44.8        | 62 ●        |
| 1.2 Regulatory environment .....                              | 55.0        | 102         |
| 1.2.1 Regulatory quality* .....                               | 44.6        | 81          |
| 1.2.2 Rule of law* .....                                      | 60.5        | 44 ●        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 29.5        | 125         |
| 1.3 Business environment .....                                | 53.4        | 122         |
| 1.3.1 Ease of starting a business* .....                      | 87.0        | 66 ●        |
| 1.3.2 Ease of resolving insolvency* .....                     | 0.0         | 139 ○       |
| 1.3.3 Ease of paying taxes* .....                             | 73.1        | 73          |
| <b>2 Human capital &amp; research .....</b>                   | <b>17.5</b> | <b>113</b>  |
| 2.1 Education .....                                           | 40.4        | 85          |
| 2.1.1 Expenditure on education, % GDP .....                   | 5.0         | 56 ●        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 14.8        | 87          |
| 2.1.3 School life expectancy, years .....                     | 13.5        | 72          |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 16.7        | 74          |
| 2.2 Tertiary education .....                                  | 11.5        | 122         |
| 2.2.1 Tertiary enrolment, % gross .....                       | 22.8        | 87          |
| 2.2.2 Graduates in science & engineering, % .....             | n/a         | n/a         |
| 2.2.3 Tertiary inbound mobility, % .....                      | 1.0         | 82          |
| 2.3 Research & development (R&D) .....                        | 0.7         | 117         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....             | 51.0        | 89          |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....      | 0.1         | 111 ○       |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0         | 73 ○        |
| <b>3 Infrastructure .....</b>                                 | <b>41.0</b> | <b>62 ●</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 25.2        | 113         |
| 3.1.1 ICT access* .....                                       | 45.5        | 88          |
| 3.1.2 ICT use* .....                                          | 29.0        | 73          |
| 3.1.3 Government's online service* .....                      | 16.5        | 125         |
| 3.1.4 E-participation* .....                                  | 9.8         | 133 ○       |
| 3.2 General infrastructure .....                              | 67.7        | 2           |
| 3.2.1 Electricity output, kWh/cap .....                       | n/a         | n/a         |
| 3.2.2 Logistics performance* .....                            | n/a         | n/a         |
| 3.2.3 Gross capital formation, % GDP .....                    | 39.4        | 7 ●         |
| 3.3 Ecological sustainability .....                           | 30.2        | 94          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | n/a         | n/a         |
| 3.3.2 Environmental performance* .....                        | 44.1        | 97          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.3         | 100         |
| <b>4 Market sophistication .....</b>                          | <b>41.9</b> | <b>102</b>  |
| 4.1 Credit .....                                              | 29.9        | 76          |
| 4.1.1 Ease of getting credit* .....                           | 40.0        | 93          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 63.2        | 53 ●        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a         | n/a         |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 35.0 | 68    |
| 4.2.1 Ease of protecting investors* .....                      | 35.0 | 133 ○ |
| 4.2.2 Market capitalization, % GDP .....                       | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP .....                | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a   |
| 4.3 Trade & competition .....                                  | 60.9 | 127   |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 10.2 | 122   |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 57.6 | 112   |

|                                                                     |             |            |
|---------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                              | <b>27.6</b> | <b>107</b> |
| 5.1 Knowledge workers .....                                         | 17.4        | 127        |
| 5.1.1 Knowledge-intensive employment, % .....                       | n/a         | n/a        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 16.6        | 96         |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a        |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a        |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a        |
| 5.2 Innovation linkages .....                                       | 38.6        | 49         |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 36.9        | 94         |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 39.4        | 98         |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a        |
| 5.3 Knowledge absorption .....                                      | 26.8        | 107        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.0         | 119 ○      |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 3.5         | 118        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 1.4         | 40 ●       |
| 5.3.4 FDI net inflows, % GDP .....                                  | 2.1         | 80         |

|                                                                         |             |            |
|-------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                       | <b>12.8</b> | <b>129</b> |
| 6.1 Knowledge creation .....                                            | 6.0         | 94         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                   | n/a         | n/a        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                        | n/a         | n/a        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                 | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                | 8.2         | 73         |
| 6.1.5 Citable documents H index .....                                   | 13.0        | 141 ○      |
| 6.2 Knowledge impact .....                                              | 7.0         | 129        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                          | n/a         | n/a        |
| 6.2.2 New businesses/th pop. 15–64 .....                                | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP .....                           | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                  | 3.4         | 73         |
| 6.2.5 High- & medium-high-tech manufactures, % .....                    | n/a         | n/a        |
| 6.3 Knowledge diffusion .....                                           | 25.3        | 85         |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> ..... | 0.0         | 115 ○      |
| 6.3.2 High-tech exports less re-exports, % total trade .....            | 0.0         | 125 ○      |
| 6.3.3 Comm., computer & info. services exp., % total trade .....        | 2.9         | 19 ●       |
| 6.3.4 FDI net outflows, % GDP .....                                     | 0.7         | 59 ●       |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>27.3</b> | <b>88</b> |
| 7.1 Intangible assets .....                                     | 53.1        | 35        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | n/a         | n/a       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 56.4        | 68        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 49.7        | 77        |
| 7.2 Creative goods & services .....                             | 1.1         | 130 ○     |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.0         | 66        |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 0.0         | 104 ○     |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a         | n/a       |
| 7.2.5 Creative goods exports, % total trade .....               | n/a         | n/a       |
| 7.3 Online creativity .....                                     | 2.0         | 108       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 2.6         | 78        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 1.0         | 85        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 299.8       | 100       |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



# Cambodia

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 15.4                        |
| GDP (US\$ billions) .....   | 16.6                        |
| GDP per capita, PPP\$ ..... | 2,777.2                     |
| Income group .....          | Low income                  |
| Region .....                | South East Asia and Oceania |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>30.4</b>                         | <b>91</b> |
| Innovation Output Sub-Index .....                | 24.7                                | 91        |
| Innovation Input Sub-Index .....                 | 36.0                                | 96        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 80        |
| Global Innovation Index 2014 (out of 143) .....  | 28.7                                | 106       |

|          |                                                          |             |              |
|----------|----------------------------------------------------------|-------------|--------------|
| <b>1</b> | <b>Institutions.....</b>                                 | <b>48.4</b> | <b>108</b>   |
| 1.1      | Political environment.....                               | 38.4        | 106          |
| 1.1.1    | Political stability*.....                                | 60.3        | 77           |
| 1.1.2    | Government effectiveness*.....                           | 16.5        | 124          |
| 1.2      | Regulatory environment.....                              | 53.7        | 105          |
| 1.2.1    | Regulatory quality*.....                                 | 38.5        | 98           |
| 1.2.2    | Rule of law*.....                                        | 21.3        | 124          |
| 1.2.3    | Cost of redundancy dismissal, salary weeks.....          | 19.3        | 88           |
| 1.3      | Business environment.....                                | 53.1        | 123          |
| 1.3.1    | Ease of starting a business*.....                        | 41.2        | 140 ○        |
| 1.3.2    | Ease of resolving insolvency*.....                       | 45.0        | 79           |
| 1.3.3    | Ease of paying taxes*.....                               | 73.1        | 72 ●         |
| <b>2</b> | <b>Human capital &amp; research.....</b>                 | <b>14.8</b> | <b>122</b>   |
| 2.1      | Education.....                                           | 30.2        | 120          |
| 2.1.1    | Expenditure on education, % GDP <sup>Ⓐ</sup> .....       | 2.6         | 116 ○        |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap.....       | n/a         | n/a          |
| 2.1.3    | School life expectancy, years <sup>Ⓐ</sup> .....         | 10.9        | 107          |
| 2.1.4    | PISA scales in reading, maths, & science.....            | n/a         | n/a          |
| 2.1.5    | Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....        | 28.9        | 104          |
| 2.2      | Tertiary education.....                                  | 14.3        | 114          |
| 2.2.1    | Tertiary enrolment, % gross <sup>Ⓐ</sup> .....           | 15.8        | 99           |
| 2.2.2    | Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 12.5        | 93 ○         |
| 2.2.3    | Tertiary inbound mobility, % <sup>Ⓐ</sup> .....          | 0.1         | 114 ○        |
| 2.3      | Research & development (R&D).....                        | 0.0         | 128 ○        |
| 2.3.1    | Researchers, FTE/mn pop. ....                            | n/a         | n/a          |
| 2.3.2    | Gross expenditure on R&D, % GDP.....                     | n/a         | n/a          |
| 2.3.3    | QS university ranking, average score top 3*.....         | 0.0         | 73 ○         |
| <b>3</b> | <b>Infrastructure.....</b>                               | <b>22.7</b> | <b>125</b> ○ |
| 3.1      | Information & communication technologies (ICTs).....     | 19.9        | 123          |
| 3.1.1    | ICT access*.....                                         | 37.3        | 106          |
| 3.1.2    | ICT use*.....                                            | 5.5         | 119          |
| 3.1.3    | Government's online service*.....                        | 17.3        | 122 ○        |
| 3.1.4    | E-participation*.....                                    | 19.6        | 121          |
| 3.2      | General infrastructure.....                              | 22.0        | 112          |
| 3.2.1    | Electricity output, kWh/cap.....                         | 96.4        | 121 ○        |
| 3.2.2    | Logistics performance*.....                              | 29.6        | 79           |
| 3.2.3    | Gross capital formation, % GDP.....                      | 21.5        | 71 ●         |
| 3.3      | Ecological sustainability.....                           | 26.3        | 116          |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq.....        | 6.8         | 74           |
| 3.3.2    | Environmental performance*.....                          | 35.4        | 121          |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP.....   | 0.2         | 119          |
| <b>4</b> | <b>Market sophistication.....</b>                        | <b>60.6</b> | <b>20</b> ●  |
| 4.1      | Credit.....                                              | 64.6        | 7 ●          |
| 4.1.1    | Ease of getting credit*.....                             | 80.0        | 11 ●         |
| 4.1.2    | Domestic credit to private sector, % GDP.....            | 45.3        | 74           |
| 4.1.3    | Microfinance gross loans, % GDP.....                     | 17.3        | 1 ●          |

|          |                                                               |             |             |
|----------|---------------------------------------------------------------|-------------|-------------|
| 4.2      | Investment .....                                              | 52.5        | 21          |
| 4.2.1    | Ease of protecting investors*.....                            | 52.5        | 82          |
| 4.2.2    | Market capitalization, % GDP.....                             | n/a         | n/a         |
| 4.2.3    | Total value of stocks traded, % GDP.....                      | n/a         | n/a         |
| 4.2.4    | Venture capital deals/tr PPP\$ GDP.....                       | n/a         | n/a         |
| 4.3      | Trade & competition .....                                     | 64.7        | 119         |
| 4.3.1    | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> .....      | 9.9         | 120         |
| 4.3.2    | Intensity of local competition <sup>†</sup> .....             | 64.3        | 83          |
| <b>5</b> | <b>Business sophistication .....</b>                          | <b>33.3</b> | <b>74</b>   |
| 5.1      | Knowledge workers.....                                        | 32.6        | 86          |
| 5.1.1    | Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 4.1         | 110 ○       |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 48.4        | 31 ●        |
| 5.1.3    | GERD performed by business, % of GDP.....                     | n/a         | n/a         |
| 5.1.4    | GERD financed by business, %.....                             | n/a         | n/a         |
| 5.1.5    | Females employed w/advanced degrees, % total.....             | n/a         | n/a         |
| 5.2      | Innovation linkages .....                                     | 42.8        | 30 ●        |
| 5.2.1    | University/industry research collaboration <sup>†</sup> ..... | 33.0        | 112         |
| 5.2.2    | State of cluster development <sup>†</sup> .....               | 47.7        | 61 ●        |
| 5.2.3    | GERD financed by abroad, %.....                               | n/a         | n/a         |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP.....                 | n/a         | n/a         |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP.....                  | n/a         | n/a         |
| 5.3      | Knowledge absorption.....                                     | 24.6        | 118         |
| 5.3.1    | Royalty & license fees payments, % total trade.....           | 0.1         | 97          |
| 5.3.2    | High-tech imports less re-imports, % total trade.....         | 4.4         | 108         |
| 5.3.3    | Comm., computer & info. services imp., % total trade.....     | 0.5         | 94          |
| 5.3.4    | FDI net inflows, % GDP.....                                   | 8.8         | 13 ●        |
| <b>6</b> | <b>Knowledge &amp; technology outputs.....</b>                | <b>26.6</b> | <b>68</b> ● |
| 6.1      | Knowledge creation.....                                       | 3.6         | 119         |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP.....                | 0.0         | 112 ○       |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP.....                     | n/a         | n/a         |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP.....              | n/a         | n/a         |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP.....             | 4.3         | 106         |
| 6.1.5    | Citable documents H index.....                                | 57.0        | 112         |
| 6.2      | Knowledge impact.....                                         | 57.4        | 6 ●         |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, %.....                       | 5.0         | 9 ●         |
| 6.2.2    | New businesses/th pop. 15–64.....                             | n/a         | n/a         |
| 6.2.3    | Computer software spending, % GDP.....                        | n/a         | n/a         |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP.....               | 0.4         | 131 ○       |
| 6.2.5    | High- & medium-high-tech manufactures, %.....                 | n/a         | n/a         |
| 6.3      | Knowledge diffusion.....                                      | 18.7        | 114         |
| 6.3.1    | Royalty & license fees receipts, % total trade.....           | 0.0         | 82          |
| 6.3.2    | High-tech exports less re-exports, % total trade.....         | 0.7         | 70          |
| 6.3.3    | Comm., computer & info. services exp., % total trade.....     | 0.7         | 85          |
| 6.3.4    | FDI net outflows, % GDP.....                                  | 0.3         | 76          |
| <b>7</b> | <b>Creative outputs .....</b>                                 | <b>22.8</b> | <b>108</b>  |
| 7.1      | Intangible assets .....                                       | 39.6        | 92          |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP.....                  | 21.0        | 81          |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP.....               | n/a         | n/a         |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....             | 53.2        | 77          |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....       | 55.2        | 58 ●        |
| 7.2      | Creative goods & services.....                                | 11.3        | 95          |
| 7.2.1    | Cultural & creative services exports, % total trade.....      | n/a         | n/a         |
| 7.2.2    | National feature films/mn pop. 15–69.....                     | 2.0         | 57          |
| 7.2.3    | Global ent. & media output/th pop. 15–69.....                 | n/a         | n/a         |
| 7.2.4    | Printing & publishing output manufactures, %.....             | n/a         | n/a         |
| 7.2.5    | Creative goods exports, % total trade.....                    | 0.4         | 61 ●        |
| 7.3      | Online creativity.....                                        | 0.8         | 115         |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69.....           | 0.9         | 105         |
| 7.3.2    | Country-code TLDs/th pop. 15–69.....                          | 0.1         | 124         |
| 7.3.3    | Wikipedia edits/pop. 15–69.....                               | 202.6       | 108         |
| 7.3.4    | Video uploads on YouTube/pop. 15–69.....                      | n/a         | n/a         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



**Key indicators**

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 22.8                |
| GDP (US\$ billions) .....   | 31.7                |
| GDP per capita, PPP\$ ..... | 2,514.2             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>27.8</b>                         | <b>110</b> |
| Innovation Output Sub-Index .....                 | 25.4                                | 90         |
| Innovation Input Sub-Index .....                  | 30.2                                | 126        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 19 ●       |
| Global Innovation Index 2014 (out of 143) .....   | 27.5                                | 114        |

|                                                        |             |            |
|--------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                            | <b>44.5</b> | <b>125</b> |
| 1.1 Political environment .....                        | 34.7        | 111        |
| 1.1.1 Political stability* .....                       | 51.4        | 98         |
| 1.1.2 Government effectiveness* .....                  | 18.0        | 121        |
| 1.2 Regulatory environment .....                       | 49.0        | 116        |
| 1.2.1 Regulatory quality* .....                        | 23.1        | 125        |
| 1.2.2 Rule of law* .....                               | 19.8        | 126        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 19.9        | 91         |
| 1.3 Business environment .....                         | 49.7        | 133 ○      |
| 1.3.1 Ease of starting a business* .....               | 76.4        | 108        |
| 1.3.2 Ease of resolving insolvency* .....              | 36.4        | 109        |
| 1.3.3 Ease of paying taxes* .....                      | 36.3        | 137 ○      |

|                                                                |             |            |
|----------------------------------------------------------------|-------------|------------|
| <b>2 Human capital &amp; research .....</b>                    | <b>18.0</b> | <b>111</b> |
| 2.1 Education .....                                            | 29.7        | 121        |
| 2.1.1 Expenditure on education, % GDP .....                    | 3.0         | 109        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 19.7        | 58 ●       |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....         | 10.4        | 111        |
| 2.1.4 PISA scales in reading, maths, & science .....           | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 21.4        | 89         |
| 2.2 Tertiary education .....                                   | 24.5        | 88         |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....           | 11.9        | 107        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 21.0        | 48 ●       |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....          | 1.4         | 76         |
| 2.3 Research & development (R&D) .....                         | 0.0         | 128 ○      |
| 2.3.1 Researchers, FTE/mn pop. ....                            | n/a         | n/a        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                    | n/a         | n/a        |
| 2.3.3 QS university ranking, average score top 3* .....        | 0.0         | 73 ○       |

|                                                               |             |              |
|---------------------------------------------------------------|-------------|--------------|
| <b>3 Infrastructure .....</b>                                 | <b>19.6</b> | <b>133</b> ○ |
| 3.1 Information & communication technologies (ICTs) .....     | 16.4        | 131 ○        |
| 3.1.1 ICT access* .....                                       | 27.5        | 120          |
| 3.1.2 ICT use* .....                                          | 2.8         | 127 ○        |
| 3.1.3 Government's online service* .....                      | 19.7        | 121          |
| 3.1.4 E-participation* .....                                  | 15.7        | 126          |
| 3.2 General infrastructure .....                              | 15.1        | 132 ○        |
| 3.2.1 Electricity output, kWh/cap .....                       | 290.4       | 110          |
| 3.2.2 Logistics performance* .....                            | 6.9         | 124 ○        |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.2        | 83           |
| 3.3 Ecological sustainability .....                           | 27.4        | 109          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 7.0         | 65 ●         |
| 3.3.2 Environmental performance* .....                        | 36.7        | 118          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.2         | 118          |

|                                                      |             |            |
|------------------------------------------------------|-------------|------------|
| <b>4 Market sophistication .....</b>                 | <b>40.6</b> | <b>110</b> |
| 4.1 Credit .....                                     | 17.5        | 121        |
| 4.1.1 Ease of getting credit* .....                  | 35.0        | 102        |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 14.8        | 130 ○      |
| 4.1.3 Microfinance gross loans, % GDP .....          | 1.2         | 35 ●       |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 46.7 | 33    |
| 4.2.1 Ease of protecting investors* .....               | 46.7 | 102   |
| 4.2.2 Market capitalization, % GDP .....                | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP .....         | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a   |
| 4.3 Trade & competition .....                           | 57.6 | 132 ○ |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 12.7 | 131 ○ |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 59.7 | 105   |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                                        | <b>28.2</b> | <b>103</b> |
| 5.1 Knowledge workers .....                                                   | 29.2        | 95         |
| 5.1.1 Knowledge-intensive employment, % .....                                 | n/a         | n/a        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 25.5        | 76         |
| 5.1.3 GERD performed by business, % of GDP .....                              | n/a         | n/a        |
| 5.1.4 GERD financed by business, % .....                                      | n/a         | n/a        |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | n/a         | n/a        |
| 5.2 Innovation linkages .....                                                 | 32.1        | 64 ●       |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 39.6        | 79         |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 41.9        | 84         |
| 5.2.3 GERD financed by abroad, % .....                                        | n/a         | n/a        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.0         | 73         |
| 5.3 Knowledge absorption .....                                                | 23.4        | 122        |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 103        |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | n/a         | n/a        |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.5         | 98         |
| 5.3.4 FDI net inflows, % GDP .....                                            | 2.0         | 87         |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>18.2</b> | <b>114</b> |
| 6.1 Knowledge creation .....                                                  | 8.0         | 85         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....                 | 0.0         | 93 ○       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 11.3        | 66 ●       |
| 6.1.5 Citable documents H index .....                                         | 78.0        | 90         |
| 6.2 Knowledge impact .....                                                    | 28.6        | 110        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 1.7         | 54 ●       |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP .....                                 | 0.2         | 73 ○       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 0.5         | 124        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 5.1         | 90         |
| 6.3 Knowledge diffusion .....                                                 | 18.0        | 119        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 102        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | n/a         | n/a        |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.2         | 71         |
| 6.3.4 FDI net outflows, % GDP .....                                           | (1.3)       | 121 ○      |

|                                                                       |             |             |
|-----------------------------------------------------------------------|-------------|-------------|
| <b>7 Creative outputs .....</b>                                       | <b>32.6</b> | <b>68</b> ● |
| 7.1 Intangible assets .....                                           | 51.1        | 41          |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | n/a         | n/a         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a         |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 53.1        | 78 ●        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 49.2        | 79          |
| 7.2 Creative goods & services .....                                   | 28.0        | 44 ●        |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 1.2         | 11 ●        |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....         | 1.8         | 58 ●        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a         | n/a         |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.3         | 58 ●        |
| 7.2.5 Creative goods exports, % total trade .....                     | n/a         | n/a         |
| 7.3 Online creativity .....                                           | 0.3         | 124         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 0.2         | 125         |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 0.4         | 104         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 27.5        | 130 ○       |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a         | n/a         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Canada

## Key indicators

|                             |                  |
|-----------------------------|------------------|
| Population (millions) ..... | 35.5             |
| GDP (US\$ billions) .....   | 1,788.7          |
| GDP per capita, PPP\$ ..... | 44,655.7         |
| Income group .....          | High income      |
| Region .....                | Northern America |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>55.7</b>                         | <b>16</b> |
| Innovation Output Sub-Index .....                | 46.4                                | 22        |
| Innovation Input Sub-Index .....                 | 65.1                                | 9         |
| Innovation Efficiency Ratio .....                | 0.7                                 | 70 ○      |
| Global Innovation Index 2014 (out of 143) .....  | 56.1                                | 12        |

**1 Institutions.....92.7 6 ●**

|                                                       |      |     |
|-------------------------------------------------------|------|-----|
| 1.1 Political environment.....                        | 89.5 | 11  |
| 1.1.1 Political stability*.....                       | 89.6 | 16  |
| 1.1.2 Government effectiveness*.....                  | 89.3 | 7   |
| 1.2 Regulatory environment.....                       | 94.9 | 10  |
| 1.2.1 Regulatory quality*.....                        | 93.5 | 11  |
| 1.2.2 Rule of law*.....                               | 93.9 | 12  |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 10.0 | 34  |
| 1.3 Business environment.....                         | 93.7 | 1 ● |
| 1.3.1 Ease of starting a business*.....               | 98.8 | 2 ● |
| 1.3.2 Ease of resolving insolvency*.....              | 89.2 | 6 ● |
| 1.3.3 Ease of paying taxes*.....                      | 93.0 | 9   |

**2 Human capital & research.....49.0 22**

|                                                          |         |      |
|----------------------------------------------------------|---------|------|
| 2.1 Education.....                                       | 37.5    | 92 ○ |
| 2.1.1 Expenditure on education, % GDP.....               | 5.3     | 45   |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | 18.3    | 65 ○ |
| 2.1.3 School life expectancy, years.....                 | n/a     | n/a  |
| 2.1.4 PISA scales in reading, maths, & science.....      | 522.2   | 8    |
| 2.1.5 Pupil-teacher ratio, secondary.....                | n/a     | n/a  |
| 2.2 Tertiary education.....                              | n/a     | n/a  |
| 2.2.1 Tertiary enrolment, % gross.....                   | n/a     | n/a  |
| 2.2.2 Graduates in science & engineering, %.....         | n/a     | n/a  |
| 2.2.3 Tertiary inbound mobility, %.....                  | n/a     | n/a  |
| 2.3 Research & development (R&D).....                    | 60.4    | 14   |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓔ</sup> .....        | 4,493.7 | 13   |
| 2.3.2 Gross expenditure on R&D, % GDP.....               | 1.6     | 24   |
| 2.3.3 QS university ranking, average score top 3*.....   | 88.8    | 4 ●  |

**3 Infrastructure.....60.9 11**

|                                                              |          |      |
|--------------------------------------------------------------|----------|------|
| 3.1 Information & communication technologies (ICTs).....     | 80.0     | 11   |
| 3.1.1 ICT access*.....                                       | 80.1     | 22   |
| 3.1.2 ICT use*.....                                          | 66.3     | 20   |
| 3.1.3 Government's online service*.....                      | 91.3     | 10   |
| 3.1.4 E-participation*.....                                  | 82.4     | 14   |
| 3.2 General infrastructure.....                              | 62.6     | 5 ●  |
| 3.2.1 Electricity output, kWh/cap.....                       | 18,511.8 | 5 ●  |
| 3.2.2 Logistics performance*.....                            | 86.4     | 12   |
| 3.2.3 Gross capital formation, % GDP.....                    | 23.8     | 51   |
| 3.3 Ecological sustainability.....                           | 40.1     | 58   |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 5.2      | 94 ○ |
| 3.3.2 Environmental performance*.....                        | 73.1     | 24   |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 1.2      | 60   |

**4 Market sophistication.....73.5 4 ●**

|                                                                   |       |     |
|-------------------------------------------------------------------|-------|-----|
| 4.1 Credit.....                                                   | 62.8  | 9   |
| 4.1.1 Ease of getting credit*.....                                | 85.0  | 7   |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓔ</sup> ..... | 124.9 | 21  |
| 4.1.3 Microfinance gross loans, % GDP.....                        | n/a   | n/a |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| 4.2 Investment.....                                     | 71.5  | 5 ● |
| 4.2.1 Ease of protecting investors*.....                | 72.5  | 7   |
| 4.2.2 Market capitalization, % GDP.....                 | 110.7 | 10  |
| 4.2.3 Total value of stocks traded, % GDP.....          | 66.3  | 12  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | 0.7   | 4 ● |
| 4.3 Trade & competition.....                            | 86.1  | 20  |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 0.8   | 5 ● |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 75.0  | 31  |

**5 Business sophistication.....49.3 18**

|                                                                     |      |      |
|---------------------------------------------------------------------|------|------|
| 5.1 Knowledge workers.....                                          | 56.0 | 28   |
| 5.1.1 Knowledge-intensive employment, %.....                        | 44.2 | 14   |
| 5.1.2 Firms offering formal training, % firms.....                  | n/a  | n/a  |
| 5.1.3 GERD performed by business, % of GDP.....                     | 0.8  | 25   |
| 5.1.4 GERD financed by business, %.....                             | 46.4 | 25   |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 15.6 | 35   |
| 5.2 Innovation linkages.....                                        | 50.1 | 15   |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 65.0 | 18   |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 62.9 | 18   |
| 5.2.3 GERD financed by abroad, %.....                               | 6.0  | 61 ○ |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | 0.1  | 4 ●  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                  | 1.0  | 16   |
| 5.3 Knowledge absorption.....                                       | 41.6 | 35   |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 1.9  | 9    |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 10.2 | 30   |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.0  | 58 ○ |
| 5.3.4 FDI net inflows, % GDP.....                                   | 3.7  | 44   |

**6 Knowledge & technology outputs.....41.9 21**

|                                                                 |       |      |
|-----------------------------------------------------------------|-------|------|
| 6.1 Knowledge creation.....                                     | 45.0  | 18   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....            | 3.0   | 32   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                 | 1.9   | 24   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....          | n/a   | n/a  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....         | 37.4  | 17   |
| 6.1.5 Citable documents H index.....                            | 725.0 | 5 ●  |
| 6.2 Knowledge impact.....                                       | 39.7  | 56   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                   | 0.1   | 97 ○ |
| 6.2.2 New businesses/th pop. 15–64.....                         | 1.1   | 66 ○ |
| 6.2.3 Computer software spending, % GDP.....                    | 0.8   | 3 ●  |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....           | 5.5   | 59   |
| 6.2.5 High- & medium-high-tech manufactures, %.....             | 28.5  | 39   |
| 6.3 Knowledge diffusion.....                                    | 41.0  | 33   |
| 6.3.1 Royalty & license fees receipts, % total trade.....       | 0.7   | 19   |
| 6.3.2 High-tech exports less re-exports, % total trade.....     | 5.7   | 29   |
| 6.3.3 Comm., computer & info. services exp., % total trade..... | 1.7   | 52 ○ |
| 6.3.4 FDI net outflows, % GDP.....                              | 2.5   | 26   |

**7 Creative outputs.....50.9 18**

|                                                                |         |      |
|----------------------------------------------------------------|---------|------|
| 7.1 Intangible assets.....                                     | 55.9    | 23   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | 51.4    | 47 ○ |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | n/a     | n/a  |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 68.9    | 20   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 70.8    | 12   |
| 7.2 Creative goods & services.....                             | 23.3    | 55   |
| 7.2.1 Cultural & creative services exports, % total trade..... | 0.7     | 28   |
| 7.2.2 National feature films/mn pop. 15–69.....                | 3.6     | 46 ○ |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | 49.5    | 13   |
| 7.2.4 Printing & publishing output manufactures, %.....        | 0.4     | 93 ○ |
| 7.2.5 Creative goods exports, % total trade.....               | 1.0     | 39   |
| 7.3 Online creativity.....                                     | 68.5    | 11   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 89.9    | 6 ●  |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 37.7    | 20   |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 7,167.2 | 16   |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | 93.5    | 6    |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓔ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 17.8                            |
| GDP (US\$ billions) .....   | 258.0                           |
| GDP per capita, PPP\$ ..... | 19,887.3                        |
| Income group .....          | High income                     |
| Region .....                | Latin America and the Caribbean |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>41.2</b>                         | <b>42</b> |
| Innovation Output Sub-Index .....                             | 33.4                                | 48        |
| Innovation Input Sub-Index .....                              | 49.0                                | 36        |
| Innovation Efficiency Ratio .....                             | 0.7                                 | 82        |
| Global Innovation Index 2014 (out of 143) .....               | 40.6                                | 46        |
| <b>1 Institutions .....</b>                                   | <b>73.8</b>                         | <b>37</b> |
| 1.1 Political environment .....                               | 74.2                                | 34        |
| 1.1.1 Political stability* .....                              | 73.4                                | 50        |
| 1.1.2 Government effectiveness* .....                         | 75.0                                | 25        |
| 1.2 Regulatory environment .....                              | 73.4                                | 44        |
| 1.2.1 Regulatory quality* .....                               | 87.2                                | 16 ●      |
| 1.2.2 Rule of law* .....                                      | 83.2                                | 22        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 27.4                                | 118 ○     |
| 1.3 Business environment .....                                | 73.9                                | 54        |
| 1.3.1 Ease of starting a business* .....                      | 89.8                                | 50        |
| 1.3.2 Ease of resolving insolvency* .....                     | 47.4                                | 68        |
| 1.3.3 Ease of paying taxes* .....                             | 84.5                                | 28        |
| <b>2 Human capital &amp; research .....</b>                   | <b>32.3</b>                         | <b>57</b> |
| 2.1 Education .....                                           | 42.2                                | 78        |
| 2.1.1 Expenditure on education, % GDP .....                   | 4.6                                 | 71        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 18.1                                | 68        |
| 2.1.3 School life expectancy, years .....                     | 15.2                                | 37        |
| 2.1.4 PISA scales in reading, maths, & science .....          | 436.3                               | 45 ○      |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 20.0                                | 85 ○      |
| 2.2 Tertiary education .....                                  | 34.7                                | 59        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 74.4                                | 18 ●      |
| 2.2.2 Graduates in science & engineering, % .....             | 19.2                                | 58        |
| 2.2.3 Tertiary inbound mobility, % .....                      | 0.3                                 | 101 ○     |
| 2.3 Research & development (R&D) .....                        | 19.9                                | 46        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓔ</sup> .....             | 389.2                               | 62        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓔ</sup> .....      | 0.4                                 | 72        |
| 2.3.3 QS university ranking, average score top 3* .....       | 46.8                                | 29        |
| <b>3 Infrastructure .....</b>                                 | <b>50.0</b>                         | <b>35</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 70.1                                | 26        |
| 3.1.1 ICT access* .....                                       | 63.5                                | 60        |
| 3.1.2 ICT use* .....                                          | 40.8                                | 55        |
| 3.1.3 Government's online service* .....                      | 81.9                                | 16 ●      |
| 3.1.4 E-participation* .....                                  | 94.1                                | 7 ●       |
| 3.2 General infrastructure .....                              | 34.7                                | 57        |
| 3.2.1 Electricity output, kWh/cap .....                       | 4,282.7                             | 49        |
| 3.2.2 Logistics performance* .....                            | 55.8                                | 40        |
| 3.2.3 Gross capital formation, % GDP .....                    | 22.2                                | 64        |
| 3.3 Ecological sustainability .....                           | 45.2                                | 44        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 7.5                                 | 56        |
| 3.3.2 Environmental performance* .....                        | 69.9                                | 29        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 2.5                                 | 41        |
| <b>4 Market sophistication .....</b>                          | <b>50.9</b>                         | <b>51</b> |
| 4.1 Credit .....                                              | 30.7                                | 71        |
| 4.1.1 Ease of getting credit* .....                           | 50.0                                | 65        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 105.9                               | 29        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 0.7                                 | 43        |

|                                                                |       |      |
|----------------------------------------------------------------|-------|------|
| 4.2 Investment .....                                           | 40.8  | 49   |
| 4.2.1 Ease of protecting investors* .....                      | 58.3  | 54   |
| 4.2.2 Market capitalization, % GDP .....                       | 117.7 | 7 ●  |
| 4.2.3 Total value of stocks traded, % GDP .....                | 17.6  | 30   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | 0.0   | 68 ○ |
| 4.3 Trade & competition .....                                  | 81.3  | 46   |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓔ</sup> ..... | 4.0   | 64   |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 76.5  | 25   |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                        | <b>37.7</b> | <b>51</b> |
| 5.1 Knowledge workers .....                                                   | 45.2        | 46        |
| 5.1.1 Knowledge-intensive employment, % .....                                 | 24.3        | 60        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓔ</sup> .....              | 57.5        | 13 ●      |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓔ</sup> .....                 | 0.1         | 56 ○      |
| 5.1.4 GERD financed by business, % <sup>Ⓔ</sup> .....                         | 34.9        | 44        |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | 14.5        | 39        |
| 5.2 Innovation linkages .....                                                 | 30.6        | 76        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 53.3        | 37        |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 48.4        | 58        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓔ</sup> .....                           | 17.5        | 24        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 45        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | 0.0         | 85 ○      |
| 5.3 Knowledge absorption .....                                                | 37.5        | 51        |
| 5.3.1 Royalty & license fees payments, % total trade .....                    | 1.0         | 27        |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 9.7         | 35        |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓔ</sup> ..... | 0.8         | 67        |
| 5.3.4 FDI net inflows, % GDP .....                                            | 7.3         | 18 ●      |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>28.3</b> | <b>57</b> |
| 6.1 Knowledge creation .....                                                  | 10.7        | 67        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | 0.9         | 67        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | 0.4         | 46        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | 0.2         | 44 ○      |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 16.6        | 46        |
| 6.1.5 Citable documents H index .....                                         | 214.0       | 37        |
| 6.2 Knowledge impact .....                                                    | 44.4        | 40        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 3.8         | 16 ●      |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 5.7         | 20        |
| 6.2.3 Computer software spending, % GDP .....                                 | 0.3         | 45        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 10.7        | 38        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓔ</sup> .....             | 21.7        | 52        |
| 6.3 Knowledge diffusion .....                                                 | 29.9        | 58        |
| 6.3.1 Royalty & license fees receipts, % total trade .....                    | 0.1         | 58        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.7         | 71        |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓔ</sup> ..... | 0.4         | 101 ○     |
| 6.3.4 FDI net outflows, % GDP .....                                           | 3.9         | 16 ●      |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>38.6</b> | <b>45</b> |
| 7.1 Intangible assets .....                                     | 55.7        | 25        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 73.6        | 24        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 66.4        | 28        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 59.9        | 40        |
| 7.2 Creative goods & services .....                             | 8.2         | 104 ○     |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 2.4         | 55        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 8.6         | 37 ○      |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a         | n/a       |
| 7.2.5 Creative goods exports, % total trade .....               | 0.2         | 75        |
| 7.3 Online creativity .....                                     | 34.7        | 40        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 2.5         | 81        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 15.6        | 38        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 5,520.3     | 21 ●      |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 80.2        | 34        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## China

## Key indicators

|                       |                             |
|-----------------------|-----------------------------|
| Population (millions) | 1,393.8                     |
| GDP (US\$ billions)   | 10,380.4                    |
| GDP per capita, PPP\$ | 10,694.7                    |
| Income group          | Upper-middle income         |
| Region                | South East Asia and Oceania |

|                                                         | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141)</b>             | <b>47.5</b>                         | <b>29</b> |
| Innovation Output Sub-Index                             | 46.6                                | 21        |
| Innovation Input Sub-Index                              | 48.4                                | 41        |
| Innovation Efficiency Ratio                             | 1.0                                 | 6 ●       |
| Global Innovation Index 2014 (out of 143)               | 46.6                                | 29        |
| <b>1 Institutions</b>                                   | <b>54.0</b>                         | <b>91</b> |
| 1.1 Political environment                               | 45.6                                | 79        |
| 1.1.1 Political stability*                              | 50.7                                | 99        |
| 1.1.2 Government effectiveness*                         | 40.6                                | 70        |
| 1.2 Regulatory environment                              | 49.6                                | 115       |
| 1.2.1 Regulatory quality*                               | 39.6                                | 92        |
| 1.2.2 Rule of law*                                      | 35.5                                | 88        |
| 1.2.3 Cost of redundancy dismissal, salary weeks        | 27.4                                | 118 ○     |
| 1.3 Business environment                                | 66.7                                | 78        |
| 1.3.1 Ease of starting a business*                      | 77.4                                | 105       |
| 1.3.2 Ease of resolving insolvency*                     | 55.3                                | 51        |
| 1.3.3 Ease of paying taxes*                             | 67.4                                | 94        |
| <b>2 Human capital &amp; research</b>                   | <b>43.1</b>                         | <b>31</b> |
| 2.1 Education                                           | 70.8                                | 2 ●       |
| 2.1.1 Expenditure on education, % GDP                   | n/a                                 | n/a       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap     | n/a                                 | n/a       |
| 2.1.3 School life expectancy, years                     | 13.1                                | 78        |
| 2.1.4 PISA scales in reading, maths, & science          | 587.5                               | 1 ●       |
| 2.1.5 Pupil-teacher ratio, secondary                    | 14.5                                | 59        |
| 2.2 Tertiary education                                  | 11.7                                | 121 ○     |
| 2.2.1 Tertiary enrolment, % gross                       | 26.7                                | 82        |
| 2.2.2 Graduates in science & engineering, %             | n/a                                 | n/a       |
| 2.2.3 Tertiary inbound mobility, %                      | 0.3                                 | 103 ○     |
| 2.3 Research & development (R&D)                        | 46.9                                | 21        |
| 2.3.1 Researchers, FTE/mn pop.                          | 1,071.1                             | 47        |
| 2.3.2 Gross expenditure on R&D, % GDP                   | 2.1                                 | 17        |
| 2.3.3 QS university ranking, average score top 3*       | 78.5                                | 11        |
| <b>3 Infrastructure</b>                                 | <b>50.5</b>                         | <b>32</b> |
| 3.1 Information & communication technologies (ICTs)     | 51.6                                | 54        |
| 3.1.1 ICT access*                                       | 51.0                                | 77        |
| 3.1.2 ICT use*                                          | 29.9                                | 71        |
| 3.1.3 Government's online service*                      | 60.6                                | 47        |
| 3.1.4 E-participation*                                  | 64.7                                | 33        |
| 3.2 General infrastructure                              | 65.1                                | 3 ●       |
| 3.2.1 Electricity output, kWh/cap                       | 3,690.5                             | 52        |
| 3.2.2 Logistics performance*                            | 69.9                                | 27        |
| 3.2.3 Gross capital formation, % GDP                    | 47.7                                | 4 ●       |
| 3.3 Ecological sustainability                           | 35.0                                | 82        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq      | 4.5                                 | 103 ○     |
| 3.3.2 Environmental performance*                        | 43.0                                | 102       |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP | 6.5                                 | 17        |
| <b>4 Market sophistication</b>                          | <b>49.2</b>                         | <b>59</b> |
| 4.1 Credit                                              | 31.9                                | 63        |
| 4.1.1 Ease of getting credit*                           | 50.0                                | 65        |
| 4.1.2 Domestic credit to private sector, % GDP          | 140.0                               | 16        |
| 4.1.3 Microfinance gross loans, % GDP                   | 0.0                                 | 86 ○      |

|                                                          |      |       |
|----------------------------------------------------------|------|-------|
| 4.2 Investment                                           | 36.6 | 62    |
| 4.2.1 Ease of protecting investors*                      | 45.0 | 114 ○ |
| 4.2.2 Market capitalization, % GDP                       | 44.9 | 44    |
| 4.2.3 Total value of stocks traded, % GDP                | 70.8 | 8     |
| 4.2.4 Venture capital deals/tr PPP\$ GDP                 | 0.1  | 34    |
| 4.3 Trade & competition                                  | 79.2 | 59    |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> | 4.1  | 66    |
| 4.3.2 Intensity of local competition <sup>†</sup>        | 72.6 | 42    |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication</b>                              | <b>44.9</b> | <b>31</b> |
| 5.1 Knowledge workers                                         | 61.2        | 20        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup>          | 7.4         | 104 ○     |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup>    | 79.2        | 1 ●       |
| 5.1.3 GERD performed by business, % of GDP                    | 1.6         | 13        |
| 5.1.4 GERD financed by business, %                            | 74.6        | 3 ●       |
| 5.1.5 Females employed w/advanced degrees, % total            | n/a         | n/a       |
| 5.2 Innovation linkages                                       | 31.1        | 71        |
| 5.2.1 University/industry research collaboration <sup>†</sup> | 56.7        | 31        |
| 5.2.2 State of cluster development <sup>†</sup>               | 59.3        | 23        |
| 5.2.3 GERD financed by abroad, %                              | 0.9         | 89 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP                | 0.0         | 57        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP                 | 0.3         | 29        |
| 5.3 Knowledge absorption                                      | 42.6        | 32        |
| 5.3.1 Royalty & license fees payments, % total trade          | 0.9         | 35        |
| 5.3.2 High-tech imports less re-imports, % total trade        | 18.8        | 8 ●       |
| 5.3.3 Comm., computer & info. services imp., % total trade    | 0.3         | 112 ○     |
| 5.3.4 FDI net inflows, % GDP                                  | 3.8         | 40        |

|                                                            |             |            |
|------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs</b>                | <b>58.0</b> | <b>3 ●</b> |
| 6.1 Knowledge creation                                     | 64.1        | 6 ●        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP            | 43.6        | 1 ●        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP                 | 1.4         | 27         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP          | 54.7        | 1 ●        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP         | 14.0        | 53         |
| 6.1.5 Citable documents H index                            | 436.0       | 16         |
| 6.2 Knowledge impact                                       | 67.2        | 1 ●        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %                   | 7.1         | 1 ●        |
| 6.2.2 New businesses/th pop. 15–64                         | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP                    | 0.4         | 23         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP           | 20.8        | 19         |
| 6.2.5 High- & medium-high-tech manufactures, %             | 43.1        | 15         |
| 6.3 Knowledge diffusion                                    | 42.8        | 28         |
| 6.3.1 Royalty & license fees receipts, % total trade       | 0.0         | 76         |
| 6.3.2 High-tech exports less re-exports, % total trade     | 28.4        | 1 ●        |
| 6.3.3 Comm., computer & info. services exp., % total trade | 0.7         | 86         |
| 6.3.4 FDI net outflows, % GDP                              | 1.8         | 36         |

|                                                           |             |           |
|-----------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs</b>                                 | <b>35.1</b> | <b>54</b> |
| 7.1 Intangible assets                                     | 52.4        | 39        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP             | 107.2       | 11        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP          | 0.1         | 54        |
| 7.1.3 ICTs & business model creation <sup>†</sup>         | 60.6        | 47        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup>   | 61.4        | 32        |
| 7.2 Creative goods & services                             | 33.0        | 35        |
| 7.2.1 Cultural & creative services exports, % total trade | 0.2         | 49        |
| 7.2.2 National feature films/mn pop. 15–69                | 0.6         | 89 ○      |
| 7.2.3 Global ent. & media output/th pop. 15–69            | 3.0         | 47        |
| 7.2.4 Printing & publishing output manufactures, %        | 0.5         | 91 ○      |
| 7.2.5 Creative goods exports, % total trade               | 14.0        | 1 ●       |
| 7.3 Online creativity                                     | 24.6        | 104       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69      | 2.3         | 84        |
| 7.3.2 Country-code TLDs/th pop. 15–69                     | 4.5         | 54        |
| 7.3.3 Wikipedia edits/pop. 15–69                          | 149.8       | 110       |
| 7.3.4 Video uploads on YouTube/pop. 15–69                 | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 48.9                            |
| GDP (US\$ billions) .....   | 384.9                           |
| GDP per capita, PPP\$ ..... | 11,730.3                        |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>36.4</b>                         | <b>67</b> |
| Innovation Output Sub-Index .....                 | 27.4                                | 75        |
| Innovation Input Sub-Index .....                  | 45.4                                | 51        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 114 ○     |
| Global Innovation Index 2014 (out of 143) .....   | 35.5                                | 68        |

|                                                        |             |           |
|--------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                            | <b>58.2</b> | <b>77</b> |
| 1.1 Political environment .....                        | 37.7        | 107       |
| 1.1.1 Political stability* .....                       | 32.8        | 127 ○     |
| 1.1.2 Government effectiveness* .....                  | 42.5        | 66        |
| 1.2 Regulatory environment .....                       | 64.9        | 76        |
| 1.2.1 Regulatory quality* .....                        | 58.1        | 57        |
| 1.2.2 Rule of law* .....                               | 35.7        | 87        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 16.7        | 76        |
| 1.3 Business environment .....                         | 71.9        | 58        |
| 1.3.1 Ease of starting a business* .....               | 86.1        | 70        |
| 1.3.2 Ease of resolving insolvency* .....              | 70.0        | 28        |
| 1.3.3 Ease of paying taxes* .....                      | 59.7        | 112 ○     |

|                                                           |             |           |
|-----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research .....</b>               | <b>31.2</b> | <b>59</b> |
| 2.1 Education .....                                       | 35.7        | 95        |
| 2.1.1 Expenditure on education, % GDP .....               | 4.9         | 63        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 17.0        | 73        |
| 2.1.3 School life expectancy, years <sup>a</sup> .....    | 13.5        | 68        |
| 2.1.4 PISA scales in reading, maths, & science .....      | 392.9       | 58 ○      |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 25.2        | 96 ○      |
| 2.2 Tertiary education .....                              | 41.8        | 37        |
| 2.2.1 Tertiary enrolment, % gross .....                   | 48.3        | 52        |
| 2.2.2 Graduates in science & engineering, % .....         | 21.5        | 45        |
| 2.2.3 Tertiary inbound mobility, % .....                  | n/a         | n/a       |
| 2.3 Research & development (R&D) .....                    | 16.1        | 51        |
| 2.3.1 Researchers, FTE/mn pop. <sup>a</sup> .....         | 161.5       | 74        |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | 0.2         | 84        |
| 2.3.3 QS university ranking, average score top 3* .....   | 41.4        | 34        |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure .....</b>                                 | <b>48.4</b> | <b>39</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 63.0        | 38        |
| 3.1.1 ICT access* .....                                       | 54.4        | 74        |
| 3.1.2 ICT use* .....                                          | 30.7        | 68        |
| 3.1.3 Government's online service* .....                      | 78.7        | 17 ●      |
| 3.1.4 E-participation* .....                                  | 88.2        | 11 ●      |
| 3.2 General infrastructure .....                              | 26.0        | 95        |
| 3.2.1 Electricity output, kWh/cap .....                       | 1,306.9     | 91        |
| 3.2.2 Logistics performance* .....                            | 24.4        | 92        |
| 3.2.3 Gross capital formation, % GDP .....                    | 25.0        | 44        |
| 3.3 Ecological sustainability .....                           | 56.1        | 14 ●      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 15.6        | 2 ●       |
| 3.3.2 Environmental performance* .....                        | 50.8        | 76        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 4.6         | 23 ●      |

|                                                      |             |           |
|------------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                 | <b>53.7</b> | <b>38</b> |
| 4.1 Credit .....                                     | 44.8        | 34        |
| 4.1.1 Ease of getting credit* .....                  | 95.0        | 2 ●       |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 50.2        | 67        |
| 4.1.3 Microfinance gross loans, % GDP .....          | 2.0         | 27        |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 38.7 | 58   |
| 4.2.1 Ease of protecting investors* .....               | 71.7 | 10 ● |
| 4.2.2 Market capitalization, % GDP .....                | 70.8 | 22   |
| 4.2.3 Total value of stocks traded, % GDP .....         | 7.0  | 45   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 61 ○ |
| 4.3 Trade & competition .....                           | 77.5 | 65   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 4.4  | 75   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 70.3 | 54   |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>35.8</b> | <b>63</b> |
| 5.1 Knowledge workers .....                                         | 42.4        | 53        |
| 5.1.1 Knowledge-intensive employment, % <sup>a</sup> .....          | 16.8        | 86        |
| 5.1.2 Firms offering formal training, % firms <sup>a</sup> .....    | 65.2        | 5 ●       |
| 5.1.3 GERD performed by business, % of GDP .....                    | 0.1         | 70        |
| 5.1.4 GERD financed by business, % .....                            | 29.0        | 50        |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 13.2        | 47        |
| 5.2 Innovation linkages .....                                       | 22.1        | 116 ○     |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 48.8        | 47        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 45.2        | 75        |
| 5.2.3 GERD financed by abroad, % .....                              | 2.4         | 79 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 58        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 94 ○      |
| 5.3 Knowledge absorption .....                                      | 42.8        | 31        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.8         | 39        |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 15.6        | 13 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.8         | 66        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 4.4         | 35        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>23.7</b> | <b>86</b> |
| 6.1 Knowledge creation .....                                     | 6.4         | 93        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.4         | 78        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.2         | 55        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 0.4         | 39        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 5.1         | 97        |
| 6.1.5 Citable documents H index .....                            | 151.0       | 47        |
| 6.2 Knowledge impact .....                                       | 39.7        | 57        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 2.2         | 41        |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 2.0         | 47        |
| 6.2.3 Computer software spending, % GDP .....                    | 0.2         | 64 ○      |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 22.2        | 17 ●      |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 22.1        | 50        |
| 6.3 Knowledge diffusion .....                                    | 25.1        | 87        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.1         | 53        |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 1.2         | 60        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 0.4         | 100 ○     |
| 6.3.4 FDI net outflows, % GDP .....                              | 2.0         | 33        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>31.0</b> | <b>77</b> |
| 7.1 Intangible assets .....                                     | 38.7        | 95        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 32.0        | 68        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 0.1         | 56 ○      |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 60.2        | 49        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 57.6        | 52        |
| 7.2 Creative goods & services .....                             | 18.2        | 71        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.4         | 40        |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 0.8         | 83        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 5.7         | 44        |
| 7.2.4 Printing & publishing output manufactures, % .....        | 2.6         | 17 ●      |
| 7.2.5 Creative goods exports, % total trade .....               | 0.3         | 72        |
| 7.3 Online creativity .....                                     | 28.4        | 45        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 3.4         | 68        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 21.3        | 33        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 2,259.6     | 49        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 72.2        | 55        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>a</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Costa Rica

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 4.9                             |
| GDP (US\$ billions) .....   | 48.1                            |
| GDP per capita, PPP\$ ..... | 13,341.1                        |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>38.6</b>                         | <b>51</b> |
| Innovation Output Sub-Index .....                 | 34.0                                | 45        |
| Innovation Input Sub-Index .....                  | 43.2                                | 61        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 32        |
| Global Innovation Index 2014 (out of 143) .....   | 37.3                                | 57        |

|          |                                                          |             |              |
|----------|----------------------------------------------------------|-------------|--------------|
| <b>1</b> | <b>Institutions .....</b>                                | <b>67.3</b> | <b>56</b>    |
| 1.1      | Political environment .....                              | 67.4        | 45           |
| 1.1.1    | Political stability* .....                               | 80.6        | 38           |
| 1.1.2    | Government effectiveness* .....                          | 54.1        | 45           |
| 1.2      | Regulatory environment .....                             | 70.4        | 52           |
| 1.2.1    | Regulatory quality* .....                                | 63.2        | 47           |
| 1.2.2    | Rule of law* .....                                       | 60.8        | 43           |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....         | 18.7        | 84           |
| 1.3      | Business environment .....                               | 64.0        | 86           |
| 1.3.1    | Ease of starting a business* .....                       | 80.9        | 96           |
| 1.3.2    | Ease of resolving insolvency* .....                      | 44.0        | 83           |
| 1.3.3    | Ease of paying taxes* .....                              | 67.3        | 95           |
| <b>2</b> | <b>Human capital &amp; research .....</b>                | <b>26.3</b> | <b>80</b>    |
| 2.1      | Education .....                                          | 48.2        | 57           |
| 2.1.1    | Expenditure on education, % GDP .....                    | 6.9         | 14 ●         |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap .....      | 24.8        | 40           |
| 2.1.3    | School life expectancy, years .....                      | 13.9        | 60           |
| 2.1.4    | PISA scales in reading, maths, & science .....           | 425.6       | 46 ○         |
| 2.1.5    | Pupil-teacher ratio, secondary .....                     | 13.8        | 50           |
| 2.2      | Tertiary education .....                                 | 22.0        | 98           |
| 2.2.1    | Tertiary enrolment, % gross .....                        | 47.6        | 55           |
| 2.2.2    | Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 11.9        | 95 ○         |
| 2.2.3    | Tertiary inbound mobility, % <sup>Ⓐ</sup> .....          | 1.4         | 74           |
| 2.3      | Research & development (R&D) .....                       | 8.8         | 72           |
| 2.3.1    | Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 1,289.0     | 42           |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.5         | 64           |
| 2.3.3    | QS university ranking, average score top 3* .....        | 0.0         | 73 ○         |
| <b>3</b> | <b>Infrastructure .....</b>                              | <b>44.7</b> | <b>49</b>    |
| 3.1      | Information & communication technologies (ICTs) .....    | 62.8        | 40           |
| 3.1.1    | ICT access* .....                                        | 62.7        | 62           |
| 3.1.2    | ICT use* .....                                           | 44.8        | 48           |
| 3.1.3    | Government's online service* .....                       | 61.4        | 43           |
| 3.1.4    | E-participation* .....                                   | 82.4        | 14 ●         |
| 3.2      | General infrastructure .....                             | 24.5        | 102          |
| 3.2.1    | Electricity output, kWh/cap .....                        | 2,115.4     | 77           |
| 3.2.2    | Logistics performance* .....                             | 27.5        | 82           |
| 3.2.3    | Gross capital formation, % GDP .....                     | 21.9        | 68           |
| 3.3      | Ecological sustainability .....                          | 46.8        | 38           |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 11.9        | 15 ●         |
| 3.3.2    | Environmental performance* .....                         | 58.5        | 51           |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 1.2         | 58           |
| <b>4</b> | <b>Market sophistication .....</b>                       | <b>38.4</b> | <b>120 ○</b> |
| 4.1      | Credit .....                                             | 20.7        | 112 ○        |
| 4.1.1    | Ease of getting credit* .....                            | 45.0        | 80           |
| 4.1.2    | Domestic credit to private sector, % GDP .....           | 50.4        | 66           |
| 4.1.3    | Microfinance gross loans, % GDP .....                    | 0.1         | 62           |

|       |                                                          |      |       |
|-------|----------------------------------------------------------|------|-------|
| 4.2   | Investment .....                                         | 14.8 | 141 ○ |
| 4.2.1 | Ease of protecting investors* .....                      | 28.3 | 141 ○ |
| 4.2.2 | Market capitalization, % GDP .....                       | 4.4  | 102 ○ |
| 4.2.3 | Total value of stocks traded, % GDP .....                | 0.1  | 101 ○ |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a   |
| 4.3   | Trade & competition .....                                | 79.5 | 55    |
| 4.3.1 | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 3.1  | 58    |
| 4.3.2 | Intensity of local competition <sup>†</sup> .....        | 69.7 | 57    |

|          |                                                               |             |           |
|----------|---------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                          | <b>39.4</b> | <b>42</b> |
| 5.1      | Knowledge workers .....                                       | 40.6        | 61        |
| 5.1.1    | Knowledge-intensive employment, % .....                       | 25.0        | 56        |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 54.7        | 20 ●      |
| 5.1.3    | GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.1         | 65        |
| 5.1.4    | GERD financed by business, % <sup>Ⓐ</sup> .....               | 18.8        | 64        |
| 5.1.5    | Females employed w/advanced degrees, % total .....            | 13.2        | 48        |
| 5.2      | Innovation linkages .....                                     | 30.6        | 75        |
| 5.2.1    | University/industry research collaboration <sup>†</sup> ..... | 56.0        | 32        |
| 5.2.2    | State of cluster development <sup>†</sup> .....               | 53.9        | 36        |
| 5.2.3    | GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 6.5         | 58        |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a       |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 83        |
| 5.3      | Knowledge absorption .....                                    | 46.9        | 20 ●      |
| 5.3.1    | Royalty & license fees payments, % total trade .....          | 0.3         | 72        |
| 5.3.2    | High-tech imports less re-imports, % total trade .....        | 20.9        | 5 ●       |
| 5.3.3    | Comm., computer & info. services imp., % total trade .....    | 0.6         | 84        |
| 5.3.4    | FDI net inflows, % GDP .....                                  | 6.5         | 23 ●      |

|          |                                                            |             |           |
|----------|------------------------------------------------------------|-------------|-----------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>            | <b>30.3</b> | <b>47</b> |
| 6.1      | Knowledge creation .....                                   | 4.4         | 109 ○     |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....            | 0.3         | 84 ○      |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                 | 0.1         | 61        |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....          | 0.0         | 58 ○      |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....         | 7.2         | 80        |
| 6.1.5    | Citable documents H index .....                            | 115.0       | 62        |
| 6.2      | Knowledge impact .....                                     | 32.8        | 95        |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                   | 2.0         | 47        |
| 6.2.2    | New businesses/th pop. 15–64 .....                         | 3.5         | 34        |
| 6.2.3    | Computer software spending, % GDP .....                    | 0.3         | 48        |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....           | 3.2         | 78        |
| 6.2.5    | High- & medium-high-tech manufactures, % .....             | 11.9        | 72        |
| 6.3      | Knowledge diffusion .....                                  | 53.8        | 11 ●      |
| 6.3.1    | Royalty & license fees receipts, % total trade .....       | 0.0         | 85        |
| 6.3.2    | High-tech exports less re-exports, % total trade .....     | 16.8        | 8 ●       |
| 6.3.3    | Comm., computer & info. services exp., % total trade ..... | 11.1        | 1 ●       |
| 6.3.4    | FDI net outflows, % GDP .....                              | 1.6         | 39        |

|          |                                                            |             |           |
|----------|------------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs .....</b>                              | <b>37.6</b> | <b>48</b> |
| 7.1      | Intangible assets .....                                    | 59.8        | 13 ●      |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 101.0       | 12 ●      |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....           | n/a         | n/a       |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....          | 62.2        | 41        |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....    | 60.8        | 36        |
| 7.2      | Creative goods & services .....                            | 20.3        | 67        |
| 7.2.1    | Cultural & creative services exports, % total trade .....  | 0.0         | 75 ○      |
| 7.2.2    | National feature films/mn pop. 15–69 .....                 | 0.6         | 92 ○      |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....             | n/a         | n/a       |
| 7.2.4    | Printing & publishing output manufactures, % .....         | 2.7         | 14 ●      |
| 7.2.5    | Creative goods exports, % total trade .....                | 0.6         | 52        |
| 7.3      | Online creativity .....                                    | 10.4        | 77        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....       | 12.8        | 39        |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                      | 1.9         | 73        |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                           | 2,245.2     | 50        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                  | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 20.8                |
| GDP (US\$ billions) .....   | 34.0                |
| GDP per capita, PPP\$ ..... | 1,938.2             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>27.2</b>                         | <b>116</b> |
| Innovation Output Sub-Index .....                 | 25.7                                | 87         |
| Innovation Input Sub-Index .....                  | 28.6                                | 131 ○      |
| Innovation Efficiency Ratio .....                 | 0.9                                 | 10 ●       |
| Global Innovation Index 2014 (out of 143) .....   | 27.0                                | 116        |

**1 Institutions .....** 47.7 113

|                                                        |      |       |
|--------------------------------------------------------|------|-------|
| 1.1 Political environment .....                        | 25.8 | 129 ○ |
| 1.1.1 Political stability* .....                       | 38.2 | 115   |
| 1.1.2 Government effectiveness* .....                  | 13.4 | 130 ○ |
| 1.2 Regulatory environment .....                       | 57.8 | 93    |
| 1.2.1 Regulatory quality* .....                        | 28.4 | 119   |
| 1.2.2 Rule of law* .....                               | 22.8 | 121   |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 13.1 | 54 ●  |
| 1.3 Business environment .....                         | 59.6 | 104   |
| 1.3.1 Ease of starting a business* .....               | 91.2 | 38 ●  |
| 1.3.2 Ease of resolving insolvency* .....              | 45.0 | 80 ●  |
| 1.3.3 Ease of paying taxes* .....                      | 42.7 | 132 ○ |

**2 Human capital & research .....** 16.0 118

|                                                           |      |       |
|-----------------------------------------------------------|------|-------|
| 2.1 Education .....                                       | 34.7 | 103   |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....  | 4.6  | 69 ●  |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | n/a  | n/a   |
| 2.1.3 School life expectancy, years .....                 | 8.9  | 122 ○ |
| 2.1.4 PISA scales in reading, maths, & science .....      | n/a  | n/a   |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 22.7 | 91    |
| 2.2 Tertiary education .....                              | 12.9 | 118   |
| 2.2.1 Tertiary enrolment, % gross .....                   | 9.1  | 116   |
| 2.2.2 Graduates in science & engineering, % .....         | n/a  | n/a   |
| 2.2.3 Tertiary inbound mobility, % .....                  | 4.4  | 39 ●  |
| 2.3 Research & development (R&D) .....                    | 0.4  | 120   |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....         | 73.0 | 86    |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | n/a  | n/a   |
| 2.3.3 QS university ranking, average score top 3* .....   | 0.0  | 73 ○  |

**3 Infrastructure .....** 19.8 131 ○

|                                                               |       |       |
|---------------------------------------------------------------|-------|-------|
| 3.1 Information & communication technologies (ICTs) .....     | 17.1  | 127 ○ |
| 3.1.1 ICT access* .....                                       | 31.9  | 112   |
| 3.1.2 ICT use* .....                                          | 1.6   | 132 ○ |
| 3.1.3 Government's online service* .....                      | 17.3  | 122   |
| 3.1.4 E-participation* .....                                  | 17.6  | 124 ○ |
| 3.2 General infrastructure .....                              | 19.6  | 120   |
| 3.2.1 Electricity output, kWh/cap .....                       | 353.6 | 108   |
| 3.2.2 Logistics performance* .....                            | 30.6  | 76 ●  |
| 3.2.3 Gross capital formation, % GDP .....                    | 18.8  | 104   |
| 3.3 Ecological sustainability .....                           | 22.7  | 126 ○ |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 3.8   | 111 ○ |
| 3.3.2 Environmental performance* .....                        | 39.7  | 108   |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.2   | 112   |

**4 Market sophistication .....** 35.3 132 ○

|                                                      |      |       |
|------------------------------------------------------|------|-------|
| 4.1 Credit .....                                     | 12.3 | 128 ○ |
| 4.1.1 Ease of getting credit* .....                  | 30.0 | 113   |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 18.4 | 117   |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.2  | 59    |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 25.8 | 119  |
| 4.2.1 Ease of protecting investors* .....               | 42.5 | 120  |
| 4.2.2 Market capitalization, % GDP .....                | 28.9 | 58 ● |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.6  | 76   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a  |
| 4.3 Trade & competition .....                           | 67.7 | 103  |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 6.8  | 100  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 59.2 | 108  |

**5 Business sophistication .....** 24.0 127 ○

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                                   | 20.7 | 120   |
| 5.1.1 Knowledge-intensive employment, % .....                                 | n/a  | n/a   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 19.1 | 92    |
| 5.1.3 GERD performed by business, % of GDP .....                              | n/a  | n/a   |
| 5.1.4 GERD financed by business, % .....                                      | n/a  | n/a   |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | n/a  | n/a   |
| 5.2 Innovation linkages .....                                                 | 28.5 | 86    |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 39.0 | 83    |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 37.6 | 106   |
| 5.2.3 GERD financed by abroad, % .....                                        | n/a  | n/a   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a  | n/a   |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | 0.0  | 108 ○ |
| 5.3 Knowledge absorption .....                                                | 22.8 | 128 ○ |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.2  | 95    |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 4.6  | 104   |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.8  | 70 ●  |
| 5.3.4 FDI net inflows, % GDP .....                                            | 1.2  | 106   |

**6 Knowledge & technology outputs .....** 26.8 65

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation .....                                                  | 3.7  | 117   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....            | 0.4  | 76    |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | 0.0  | 81    |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a  | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 3.2  | 114   |
| 6.1.5 Citable documents H index .....                                         | 76.0 | 91    |
| 6.2 Knowledge impact .....                                                    | 58.4 | 3 ●   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 5.2  | 8     |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | n/a  | n/a   |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a  | n/a   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.0  | 113   |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | n/a  | n/a   |
| 6.3 Knowledge diffusion .....                                                 | 18.1 | 118   |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0  | 107 ○ |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.9  | 68 ●  |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.9  | 80    |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 0.2  | 86    |

**7 Creative outputs .....** 24.7 102

|                                                                 |      |       |
|-----------------------------------------------------------------|------|-------|
| 7.1 Intangible assets .....                                     | 48.9 | 51    |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | n/a  | n/a   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a  | n/a   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 49.2 | 97    |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 48.6 | 83    |
| 7.2 Creative goods & services .....                             | 0.8  | 134 ○ |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a  | n/a   |
| 7.2.2 National feature films/mn pop. 15–69 .....                | n/a  | n/a   |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a  | n/a   |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a  | n/a   |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....  | 0.0  | 114   |
| 7.3 Online creativity .....                                     | 0.3  | 122   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 0.6  | 114   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 0.2  | 114   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 23.7 | 132 ○ |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a  | n/a   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Croatia

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 4.3         |
| GDP (US\$ billions) .....   | 57.2        |
| GDP per capita, PPP\$ ..... | 18,354.7    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>41.7</b>                         | <b>40</b> |
| Innovation Output Sub-Index .....                 | 35.7                                | 41        |
| Innovation Input Sub-Index .....                  | 47.7                                | 43        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 50        |
| Global Innovation Index 2014 (out of 143) .....   | 40.7                                | 42        |

**1 Institutions .....** **71.8** **41**

|                                                        |      |      |
|--------------------------------------------------------|------|------|
| 1.1 Political environment .....                        | 69.7 | 39   |
| 1.1.1 Political stability* .....                       | 79.3 | 39   |
| 1.1.2 Government effectiveness* .....                  | 60.0 | 41   |
| 1.2 Regulatory environment .....                       | 71.5 | 47   |
| 1.2.1 Regulatory quality* .....                        | 59.5 | 53   |
| 1.2.2 Rule of law* .....                               | 54.7 | 53   |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 15.1 | 66   |
| 1.3 Business environment .....                         | 74.1 | 52   |
| 1.3.1 Ease of starting a business* .....               | 85.4 | 73   |
| 1.3.2 Ease of resolving insolvency* .....              | 53.9 | 54   |
| 1.3.3 Ease of paying taxes* .....                      | 82.9 | 32 ● |

**2 Human capital & research .....** **36.9** **47**

|                                                           |         |      |
|-----------------------------------------------------------|---------|------|
| 2.1 Education .....                                       | 58.1    | 15 ● |
| 2.1.1 Expenditure on education, % GDP .....               | 4.2     | 79 ○ |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | n/a     | n/a  |
| 2.1.3 School life expectancy, years .....                 | 14.8    | 44   |
| 2.1.4 PISA scales in reading, maths, & science .....      | 482.4   | 33   |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 7.8     | 3 ●  |
| 2.2 Tertiary education .....                              | 37.5    | 51   |
| 2.2.1 Tertiary enrolment, % gross .....                   | 61.6    | 38   |
| 2.2.2 Graduates in science & engineering, % .....         | 23.8    | 30   |
| 2.2.3 Tertiary inbound mobility, % .....                  | 0.5     | 92 ○ |
| 2.3 Research & development (R&D) .....                    | 15.1    | 54   |
| 2.3.1 Researchers, FTE/mn pop. ....                       | 1,522.0 | 40   |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | 0.8     | 41   |
| 2.3.3 QS university ranking, average score top 3* .....   | 7.9     | 64   |

**3 Infrastructure .....** **44.6** **50**

|                                                               |         |       |
|---------------------------------------------------------------|---------|-------|
| 3.1 Information & communication technologies (ICTs) .....     | 52.3    | 53    |
| 3.1.1 ICT access* .....                                       | 73.1    | 37    |
| 3.1.2 ICT use* .....                                          | 56.2    | 29 ●  |
| 3.1.3 Government's online service* .....                      | 46.5    | 70    |
| 3.1.4 E-participation* .....                                  | 33.3    | 92 ○  |
| 3.2 General infrastructure .....                              | 26.4    | 92 ○  |
| 3.2.1 Electricity output, kWh/cap .....                       | 2,434.4 | 72    |
| 3.2.2 Logistics performance* .....                            | 45.5    | 53    |
| 3.2.3 Gross capital formation, % GDP .....                    | 19.1    | 100 ○ |
| 3.3 Ecological sustainability .....                           | 55.1    | 16 ●  |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 8.6     | 45    |
| 3.3.2 Environmental performance* .....                        | 62.2    | 44    |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 9.5     | 8 ●   |

**4 Market sophistication .....** **47.1** **68**

|                                                          |      |      |
|----------------------------------------------------------|------|------|
| 4.1 Credit .....                                         | 26.5 | 84   |
| 4.1.1 Ease of getting credit* .....                      | 55.0 | 56   |
| 4.1.2 Domestic credit to private sector, % GDP .....     | 76.7 | 40   |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> ..... | 0.0  | 80 ○ |

|                                                 |      |      |
|-------------------------------------------------|------|------|
| 4.2 Investment .....                            | 34.8 | 69   |
| 4.2.1 Ease of protecting investors* .....       | 57.5 | 60   |
| 4.2.2 Market capitalization, % GDP .....        | 38.2 | 51   |
| 4.2.3 Total value of stocks traded, % GDP ..... | 0.9  | 68 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....  | n/a  | n/a  |

**4.3 Trade & competition .....** **80.1** **53**

|                                                         |      |    |
|---------------------------------------------------------|------|----|
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 1.4  | 38 |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 64.7 | 80 |

**5 Business sophistication .....** **37.9** **50**

|                                                          |      |    |
|----------------------------------------------------------|------|----|
| 5.1 Knowledge workers .....                              | 49.7 | 36 |
| 5.1.1 Knowledge-intensive employment, % .....            | 35.4 | 35 |
| 5.1.2 Firms offering formal training, % firms .....      | 48.9 | 29 |
| 5.1.3 GERD performed by business, % of GDP .....         | 0.4  | 37 |
| 5.1.4 GERD financed by business, % .....                 | 42.8 | 34 |
| 5.1.5 Females employed w/advanced degrees, % total ..... | 13.8 | 45 |

**5.2 Innovation linkages .....** **26.5** **94 ○**

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 39.9 | 78    |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 36.1 | 113 ○ |
| 5.2.3 GERD financed by abroad, % .....                              | 15.5 | 30    |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0  | 35    |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0  | 55    |

**5.3 Knowledge absorption .....** **37.6** **49**

|                                                                  |     |       |
|------------------------------------------------------------------|-----|-------|
| 5.3.1 Royalty & license fees payments, % total trade .....       | 1.0 | 31    |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 7.6 | 58    |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 1.7 | 33    |
| 5.3.4 FDI net inflows, % GDP .....                               | 1.0 | 113 ○ |

**6 Knowledge & technology outputs .....** **31.0** **44**

|                                                          |       |      |
|----------------------------------------------------------|-------|------|
| 6.1 Knowledge creation .....                             | 20.7  | 48   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....    | 2.6   | 38   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....         | 0.6   | 34   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....  | 0.9   | 30   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP ..... | 35.0  | 20 ● |
| 6.1.5 Citable documents H index .....                    | 161.0 | 42   |
| 6.2 Knowledge impact .....                               | 46.1  | 34 ● |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....           | 0.1   | 96 ○ |
| 6.2.2 New businesses/th pop. 15–64 .....                 | 2.8   | 39   |
| 6.2.3 Computer software spending, % GDP .....            | n/a   | n/a  |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....   | 30.1  | 9 ●  |
| 6.2.5 High- & medium-high-tech manufactures, % .....     | n/a   | n/a  |

**6.3 Knowledge diffusion .....** **26.2** **78**

|                                                                  |       |       |
|------------------------------------------------------------------|-------|-------|
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.1   | 52    |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 4.1   | 37    |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.0   | 41    |
| 6.3.4 FDI net outflows, % GDP .....                              | (0.3) | 116 ○ |

**7 Creative outputs .....** **40.5** **39**

|                                                               |      |      |
|---------------------------------------------------------------|------|------|
| 7.1 Intangible assets .....                                   | 47.4 | 61   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....           | 53.1 | 42   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....        | 1.8  | 13 ● |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....       | 57.9 | 62   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> ..... | 57.8 | 50   |

**7.2 Creative goods & services .....** **34.6** **29 ●**

|                                                                 |     |      |
|-----------------------------------------------------------------|-----|------|
| 7.2.1 Cultural & creative services exports, % total trade ..... | 1.4 | 6 ●  |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 8.4 | 21 ● |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a | n/a  |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a | n/a  |
| 7.2.5 Creative goods exports, % total trade .....               | 0.5 | 60   |

**7.3 Online creativity .....** **32.7** **43**

|                                                            |         |      |
|------------------------------------------------------------|---------|------|
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 ..... | 15.9    | 34 ● |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                | 11.9    | 40   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                     | 3,562.7 | 37   |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....            | 76.7    | 42   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 1.2                              |
| GDP (US\$ billions) .....   | 23.3                             |
| GDP per capita, PPP\$ ..... | 24,170.5                         |
| Income group .....          | High income                      |
| Region .....                | Northern Africa and Western Asia |

|                                                               | Score 0–100<br>or value (hard data) | Rank        |
|---------------------------------------------------------------|-------------------------------------|-------------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>43.5</b>                         | <b>34</b>   |
| Innovation Output Sub-Index .....                             | 34.7                                | 43          |
| Innovation Input Sub-Index .....                              | 52.4                                | 32          |
| Innovation Efficiency Ratio .....                             | 0.7                                 | 90          |
| Global Innovation Index 2014 (out of 143) .....               | 45.8                                | 30          |
| <b>1 Institutions .....</b>                                   | <b>79.8</b>                         | <b>28</b>   |
| 1.1 Political environment .....                               | 77.4                                | 28          |
| 1.1.1 Political stability* .....                              | 77.0                                | 42          |
| 1.1.2 Government effectiveness* .....                         | 77.9                                | 22          |
| 1.2 Regulatory environment .....                              | 86.6                                | 20          |
| 1.2.1 Regulatory quality* .....                               | 72.1                                | 34          |
| 1.2.2 Rule of law* .....                                      | 74.2                                | 29          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 8.0                                 | 1 ●         |
| 1.3 Business environment .....                                | 75.5                                | 45          |
| 1.3.1 Ease of starting a business* .....                      | 89.2                                | 54          |
| 1.3.2 Ease of resolving insolvency* .....                     | 56.7                                | 49          |
| 1.3.3 Ease of paying taxes* .....                             | 80.5                                | 44          |
| <b>2 Human capital &amp; research .....</b>                   | <b>40.6</b>                         | <b>35</b>   |
| 2.1 Education .....                                           | 58.7                                | 11 ●        |
| 2.1.1 Expenditure on education, % GDP .....                   | 7.2                                 | 12 ●        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 41.7                                | 6 ●         |
| 2.1.3 School life expectancy, years .....                     | 14.0                                | 57          |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a                                 | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 9.7                                 | 25          |
| 2.2 Tertiary education .....                                  | 55.8                                | 9 ●         |
| 2.2.1 Tertiary enrolment, % gross .....                       | 45.9                                | 59          |
| 2.2.2 Graduates in science & engineering, % .....             | 21.5                                | 44          |
| 2.2.3 Tertiary inbound mobility, % .....                      | 23.5                                | 1 ●         |
| 2.3 Research & development (R&D) .....                        | 7.1                                 | 75          |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 775.5                               | 50          |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 0.5                                 | 60          |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0                                 | 73 ○        |
| <b>3 Infrastructure .....</b>                                 | <b>37.8</b>                         | <b>75</b>   |
| 3.1 Information & communication technologies (ICTs) .....     | 47.8                                | 68          |
| 3.1.1 ICT access* .....                                       | 69.3                                | 48          |
| 3.1.2 ICT use* .....                                          | 43.4                                | 50          |
| 3.1.3 Government's online service* .....                      | 47.2                                | 68          |
| 3.1.4 E-participation* .....                                  | 31.4                                | 101 ○       |
| 3.2 General infrastructure .....                              | 19.5                                | 121 ○       |
| 3.2.1 Electricity output, kWh/cap .....                       | 5,484.9                             | 36          |
| 3.2.2 Logistics performance* .....                            | 42.8                                | 56          |
| 3.2.3 Gross capital formation, % GDP .....                    | 9.7                                 | 138 ○       |
| 3.3 Ecological sustainability .....                           | 46.2                                | 39          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 9.2                                 | 36          |
| 3.3.2 Environmental performance* .....                        | 66.2                                | 37          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 2.1                                 | 45          |
| <b>4 Market sophistication .....</b>                          | <b>64.3</b>                         | <b>11 ●</b> |
| 4.1 Credit .....                                              | 77.5                                | 2 ●         |
| 4.1.1 Ease of getting credit* .....                           | 55.0                                | 56          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 300.6                               | 1 ●         |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a         |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                             | 30.3        | 95        |
| 4.2.1 Ease of protecting investors* .....                        | 68.3        | 14 ●      |
| 4.2.2 Market capitalization, % GDP .....                         | 8.8         | 92 ○      |
| 4.2.3 Total value of stocks traded, % GDP .....                  | 1.3         | 62        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                   | 0.1         | 31        |
| 4.3 Trade & competition .....                                    | 85.2        | 26        |
| 4.3.1 Applied tariff rate, weighted mean, % .....                | 1.0         | 9         |
| 4.3.2 Intensity of local competition† .....                      | 73.8        | 35        |
| <b>5 Business sophistication .....</b>                           | <b>39.2</b> | <b>43</b> |
| 5.1 Knowledge workers .....                                      | 40.2        | 62        |
| 5.1.1 Knowledge-intensive employment, % .....                    | 35.1        | 37        |
| 5.1.2 Firms offering formal training, % firms .....              | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP .....                 | 0.1         | 63        |
| 5.1.4 GERD financed by business, % <sup>Ⓓ</sup> .....            | 10.9        | 69 ○      |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 22.6        | 16        |
| 5.2 Innovation linkages .....                                    | 41.4        | 35        |
| 5.2.1 University/industry research collaboration† .....          | 53.2        | 38        |
| 5.2.2 State of cluster development† .....                        | 50.7        | 47        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓓ</sup> .....              | 17.5        | 25        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 15        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 0.3         | 26        |
| 5.3 Knowledge absorption .....                                   | 36.0        | 57        |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 0.3         | 74        |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 4.6         | 105 ○     |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 2.1         | 11 ●      |
| 5.3.4 FDI net inflows, % GDP .....                               | 2.8         | 67        |
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>24.7</b> | <b>78</b> |
| 6.1 Knowledge creation .....                                     | 19.9        | 50        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.1         | 104 ○     |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 1.4         | 29        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 35.2        | 19        |
| 6.1.5 Citable documents H index .....                            | 100.0       | 71        |
| 6.2 Knowledge impact .....                                       | 30.2        | 103       |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | (7.4)       | 116 ○     |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 22.5        | 1 ●       |
| 6.2.3 Computer software spending, % GDP .....                    | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 15.4        | 24        |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 13.4        | 70        |
| 6.3 Knowledge diffusion .....                                    | 24.1        | 92        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.0         | 90 ○      |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.6         | 72        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 1.2         | 74        |
| 6.3.4 FDI net outflows, % GDP .....                              | 1.8         | 35        |
| <b>7 Creative outputs .....</b>                                  | <b>44.6</b> | <b>27</b> |
| 7.1 Intangible assets .....                                      | 55.4        | 26        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....              | 62.7        | 36        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....           | 7.6         | 1 ●       |
| 7.1.3 ICTs & business model creation† .....                      | 56.8        | 66        |
| 7.1.4 ICTs & organizational model creation† .....                | 52.8        | 64        |
| 7.2 Creative goods & services .....                              | 25.5        | 50        |
| 7.2.1 Cultural & creative services exports, % total trade .....  | 0.8         | 22        |
| 7.2.2 National feature films/mn pop. 15–69 .....                 | 1.2         | 71        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....             | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % .....         | 3.1         | 11 ●      |
| 7.2.5 Creative goods exports, % total trade .....                | 0.0         | 118 ○     |
| 7.3 Online creativity .....                                      | 42.0        | 28        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....       | 79.6        | 8 ●       |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                      | 6.4         | 49        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                           | 5,408.8     | 22        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                  | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Czech Republic

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 10.7        |
| GDP (US\$ billions) .....   | 205.7       |
| GDP per capita, PPP\$ ..... | 28,086.5    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>51.3</b>                         | <b>24</b> |
| Innovation Output Sub-Index .....                 | 48.5                                | 17        |
| Innovation Input Sub-Index .....                  | 54.2                                | 27        |
| Innovation Efficiency Ratio .....                 | 0.9                                 | 11 ●      |
| Global Innovation Index 2014 (out of 143) .....   | 50.2                                | 26        |

|                                                        |             |           |
|--------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                            | <b>76.4</b> | <b>32</b> |
| 1.1 Political environment .....                        | 77.6        | 27        |
| 1.1.1 Political stability* .....                       | 90.2        | 15 ●      |
| 1.1.2 Government effectiveness* .....                  | 65.1        | 37        |
| 1.2 Regulatory environment .....                       | 75.6        | 40        |
| 1.2.1 Regulatory quality* .....                        | 76.8        | 27        |
| 1.2.2 Rule of law* .....                               | 74.3        | 27        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 20.3        | 93 ○      |
| 1.3 Business environment .....                         | 75.9        | 43        |
| 1.3.1 Ease of starting a business* .....               | 82.6        | 90 ○      |
| 1.3.2 Ease of resolving insolvency* .....              | 77.5        | 18        |
| 1.3.3 Ease of paying taxes* .....                      | 67.7        | 93 ○      |

|                                                           |             |           |
|-----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research .....</b>               | <b>45.8</b> | <b>29</b> |
| 2.1 Education .....                                       | 52.5        | 39        |
| 2.1.1 Expenditure on education, % GDP .....               | 4.5         | 72        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 25.2        | 38        |
| 2.1.3 School life expectancy, years .....                 | 16.3        | 19        |
| 2.1.4 PISA scales in reading, maths, & science .....      | 500.0       | 19        |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 11.2        | 34        |
| 2.2 Tertiary education .....                              | 44.5        | 33        |
| 2.2.1 Tertiary enrolment, % gross .....                   | 64.2        | 31        |
| 2.2.2 Graduates in science & engineering, % .....         | 21.6        | 41        |
| 2.2.3 Tertiary inbound mobility, % .....                  | 9.0         | 19        |
| 2.3 Research & development (R&D) .....                    | 40.5        | 26        |
| 2.3.1 Researchers, FTE/mn pop. ....                       | 3,202.2     | 26        |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | 2.0         | 19        |
| 2.3.3 QS university ranking, average score top 3* .....   | 35.5        | 37        |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure .....</b>                                 | <b>51.0</b> | <b>30</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 46.8        | 71        |
| 3.1.1 ICT access* .....                                       | 72.6        | 39        |
| 3.1.2 ICT use* .....                                          | 52.2        | 35        |
| 3.1.3 Government's online service* .....                      | 37.0        | 87 ○      |
| 3.1.4 E-participation* .....                                  | 25.5        | 110 ○     |
| 3.2 General infrastructure .....                              | 43.0        | 32        |
| 3.2.1 Electricity output, kWh/cap .....                       | 8,199.3     | 21        |
| 3.2.2 Logistics performance* .....                            | 67.9        | 31        |
| 3.2.3 Gross capital formation, % GDP .....                    | 22.4        | 60        |
| 3.3 Ecological sustainability .....                           | 63.0        | 6 ●       |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 6.0         | 91 ○      |
| 3.3.2 Environmental performance* .....                        | 81.5        | 5 ●       |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 15.8        | 1 ●       |

|                                                      |             |           |
|------------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                 | <b>52.4</b> | <b>45</b> |
| 4.1 Credit .....                                     | 43.6        | 37        |
| 4.1.1 Ease of getting credit* .....                  | 70.0        | 22        |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 55.4        | 59        |
| 4.1.3 Microfinance gross loans, % GDP .....          | n/a         | n/a       |

|                                                   |      |       |
|---------------------------------------------------|------|-------|
| 4.2 Investment .....                              | 25.8 | 118 ○ |
| 4.2.1 Ease of protecting investors* .....         | 54.2 | 75    |
| 4.2.2 Market capitalization, % GDP .....          | 18.0 | 74 ○  |
| 4.2.3 Total value of stocks traded, % GDP .....   | 4.9  | 49    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....    | 0.0  | 40    |
| 4.3 Trade & competition .....                     | 87.8 | 13 ●  |
| 4.3.1 Applied tariff rate, weighted mean, % ..... | 1.0  | 9     |
| 4.3.2 Intensity of local competition† .....       | 78.9 | 15    |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                           | <b>45.3</b> | <b>28</b> |
| 5.1 Knowledge workers .....                                      | 53.7        | 32        |
| 5.1.1 Knowledge-intensive employment, % .....                    | 37.8        | 27        |
| 5.1.2 Firms offering formal training, % firms .....              | 55.2        | 18        |
| 5.1.3 GERD performed by business, % of GDP .....                 | 1.1         | 21        |
| 5.1.4 GERD financed by business, % .....                         | 37.6        | 41        |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 10.6        | 59 ○      |
| 5.2 Innovation linkages .....                                    | 36.4        | 53        |
| 5.2.1 University/industry research collaboration† .....          | 50.0        | 40        |
| 5.2.2 State of cluster development† .....                        | 51.0        | 44        |
| 5.2.3 GERD financed by abroad, % .....                           | 27.2        | 16        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 65 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 0.2         | 32        |
| 5.3 Knowledge absorption .....                                   | 45.9        | 24        |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 0.6         | 49        |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 15.7        | 12 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 1.4         | 39        |
| 5.3.4 FDI net inflows, % GDP .....                               | 2.5         | 70        |

|                                                                   |             |             |
|-------------------------------------------------------------------|-------------|-------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>46.7</b> | <b>15 ●</b> |
| 6.1 Knowledge creation .....                                      | 48.0        | 16          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 3.2         | 30          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | 0.6         | 36          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | 5.5         | 7           |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 35.4        | 18          |
| 6.1.5 Citable documents H index .....                             | 268.0       | 32          |
| 6.2 Knowledge impact .....                                        | 49.6        | 21          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | (0.4)       | 105 ○       |
| 6.2.2 New businesses/th pop. 15–64 .....                          | 3.0         | 36          |
| 6.2.3 Computer software spending, % GDP .....                     | 0.3         | 34          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 41.7        | 4 ●         |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 50.2        | 7 ●         |
| 6.3 Knowledge diffusion .....                                     | 42.4        | 29          |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | 0.2         | 41          |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 16.3        | 9 ●         |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | 1.7         | 51          |
| 6.3.4 FDI net outflows, % GDP .....                               | 1.6         | 42          |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>50.2</b> | <b>21</b> |
| 7.1 Intangible assets .....                                           | 55.4        | 28        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 109.5       | 10 ●      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 1.0         | 31        |
| 7.1.3 ICTs & business model creation† .....                           | 60.9        | 45        |
| 7.1.4 ICTs & organizational model creation† .....                     | 59.7        | 42        |
| 7.2 Creative goods & services .....                                   | 41.6        | 12 ●      |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.6         | 31        |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 5.6         | 35        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 17.0        | 27        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.3         | 57        |
| 7.2.5 Creative goods exports, % total trade .....                     | 10.1        | 4 ●       |
| 7.3 Online creativity .....                                           | 48.6        | 24        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 18.9        | 32        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 62.5        | 15 ●      |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 3,275.3     | 41        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 89.0        | 16        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 5.6         |
| GDP (US\$ billions) .....   | 340.8       |
| GDP per capita, PPP\$ ..... | 38,916.8    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                              | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>57.7</b>                         | <b>10</b>  |
| Innovation Output Sub-Index .....                            | 49.5                                | 12         |
| Innovation Input Sub-Index .....                             | 65.9                                | 8          |
| Innovation Efficiency Ratio .....                            | 0.8                                 | 49         |
| Global Innovation Index 2014 (out of 143) .....              | 57.5                                | 8          |
| <b>1 Institutions.....</b>                                   | <b>93.1</b>                         | <b>4 ●</b> |
| 1.1 Political environment.....                               | 91.1                                | 7          |
| 1.1.1 Political stability*.....                              | 87.6                                | 21         |
| 1.1.2 Government effectiveness*.....                         | 94.7                                | 3 ●        |
| 1.2 Regulatory environment .....                             | 98.3                                | 2 ●        |
| 1.2.1 Regulatory quality*.....                               | 95.8                                | 6 ●        |
| 1.2.2 Rule of law*.....                                      | 97.5                                | 4 ●        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 8.0                                 | 1 ●        |
| 1.3 Business environment.....                                | 90.0                                | 7          |
| 1.3.1 Ease of starting a business*.....                      | 93.4                                | 22         |
| 1.3.2 Ease of resolving insolvency*.....                     | 84.6                                | 8          |
| 1.3.3 Ease of paying taxes*.....                             | 91.9                                | 12         |
| <b>2 Human capital &amp; research.....</b>                   | <b>62.4</b>                         | <b>3 ●</b> |
| 2.1 Education .....                                          | 62.9                                | 9          |
| 2.1.1 Expenditure on education, % GDP .....                  | 8.7                                 | 3 ●        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 30.1                                | 24         |
| 2.1.3 School life expectancy, years.....                     | 18.7                                | 4 ●        |
| 2.1.4 PISA scales in reading, maths, & science.....          | 498.2                               | 22         |
| 2.1.5 Pupil-teacher ratio, secondary .....                   | n/a                                 | n/a        |
| 2.2 Tertiary education.....                                  | 46.5                                | 27         |
| 2.2.1 Tertiary enrolment, % gross.....                       | 79.6                                | 12         |
| 2.2.2 Graduates in science & engineering, % .....            | 21.2                                | 46 ○       |
| 2.2.3 Tertiary inbound mobility, %.....                      | 8.1                                 | 22         |
| 2.3 Research & development (R&D).....                        | 77.9                                | 3 ●        |
| 2.3.1 Researchers, FTE/mn pop. ....                          | 7,271.3                             | 2 ●        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                  | 3.1                                 | 7          |
| 2.3.3 QS university ranking, average score top 3*.....       | 72.7                                | 14         |
| <b>3 Infrastructure.....</b>                                 | <b>55.7</b>                         | <b>21</b>  |
| 3.1 Information & communication technologies (ICTs).....     | 74.0                                | 21         |
| 3.1.1 ICT access*.....                                       | 88.0                                | 11         |
| 3.1.2 ICT use*.....                                          | 87.1                                | 1 ●        |
| 3.1.3 Government's online service*.....                      | 66.1                                | 35         |
| 3.1.4 E-participation*.....                                  | 54.9                                | 54 ○       |
| 3.2 General infrastructure.....                              | 38.6                                | 44         |
| 3.2.1 Electricity output, kWh/cap.....                       | 6,164.2                             | 31         |
| 3.2.2 Logistics performance*.....                            | 82.7                                | 17         |
| 3.2.3 Gross capital formation, % GDP.....                    | 17.3                                | 115 ○      |
| 3.3 Ecological sustainability .....                          | 54.5                                | 17         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 10.3                                | 22         |
| 3.3.2 Environmental performance*.....                        | 76.9                                | 13         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 3.3                                 | 27         |
| <b>4 Market sophistication .....</b>                         | <b>68.4</b>                         | <b>7</b>   |
| 4.1 Credit.....                                              | 67.9                                | 5 ●        |
| 4.1.1 Ease of getting credit*.....                           | 70.0                                | 22         |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 199.6                               | 3 ●        |
| 4.1.3 Microfinance gross loans, % GDP .....                  | n/a                                 | n/a        |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                                | 52.5        | 22        |
| 4.2.1 Ease of protecting investors*.....                            | 67.5        | 17        |
| 4.2.2 Market capitalization, % GDP.....                             | 69.8        | 23        |
| 4.2.3 Total value of stocks traded, % GDP.....                      | 32.7        | 26        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                       | 0.5         | 8         |
| 4.3 Trade & competition .....                                       | 84.6        | 30        |
| 4.3.1 Applied tariff rate, weighted mean, %.....                    | 1.0         | 9         |
| 4.3.2 Intensity of local competition <sup>†</sup> .....             | 72.6        | 43        |
| <b>5 Business sophistication .....</b>                              | <b>49.7</b> | <b>17</b> |
| 5.1 Knowledge workers.....                                          | 70.3        | 6 ●       |
| 5.1.1 Knowledge-intensive employment, %.....                        | 45.5        | 10        |
| 5.1.2 Firms offering formal training, % firms.....                  | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP.....                     | 2.0         | 8         |
| 5.1.4 GERD financed by business, %.....                             | 59.8        | 13        |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 20.6        | 21        |
| 5.2 Innovation linkages .....                                       | 40.3        | 42        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 65.0        | 19        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 55.2        | 32        |
| 5.2.3 GERD financed by abroad, %.....                               | 7.2         | 55 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 31        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 1.1         | 15        |
| 5.3 Knowledge absorption.....                                       | 38.5        | 46        |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 1.0         | 30        |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 6.2         | 79 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 2.0         | 16        |
| 5.3.4 FDI net inflows, % GDP.....                                   | 0.5         | 123 ○     |
| <b>6 Knowledge &amp; technology outputs .....</b>                   | <b>46.1</b> | <b>16</b> |
| 6.1 Knowledge creation.....                                         | 45.3        | 17        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....               | 5.5         | 17        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                    | 5.2         | 10        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....             | 0.6         | 34 ○      |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....            | 63.4        | 2 ●       |
| 6.1.5 Citable documents H index.....                                | 476.0       | 14        |
| 6.2 Knowledge impact.....                                           | 46.2        | 33        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                       | 0.9         | 76 ○      |
| 6.2.2 New businesses/th pop. 15–64.....                             | 4.4         | 28        |
| 6.2.3 Computer software spending, % GDP.....                        | 0.6         | 12        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....              | 6.3         | 55        |
| 6.2.5 High- & medium-high-tech manufactures, % .....                | 44.3        | 10        |
| 6.3 Knowledge diffusion.....                                        | 46.7        | 24        |
| 6.3.1 Royalty & license fees receipts, % total trade.....           | 1.4         | 13        |
| 6.3.2 High-tech exports less re-exports, % total trade .....        | 5.9         | 27        |
| 6.3.3 Comm., computer & info. services exp., % total trade.....     | 1.8         | 46        |
| 6.3.4 FDI net outflows, % GDP .....                                 | 3.2         | 20        |
| <b>7 Creative outputs .....</b>                                     | <b>53.0</b> | <b>13</b> |
| 7.1 Intangible assets .....                                         | 50.1        | 48        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                 | 47.4        | 55 ○      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....              | 2.2         | 10        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....             | 61.7        | 43        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....       | 61.5        | 31        |
| 7.2 Creative goods & services.....                                  | 40.2        | 16        |
| 7.2.1 Cultural & creative services exports, % total trade.....      | 0.7         | 29        |
| 7.2.2 National feature films/mn pop. 15–69.....                     | 17.4        | 10        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                 | 61.5        | 7         |
| 7.2.4 Printing & publishing output manufactures, %.....             | 1.4         | 53 ○      |
| 7.2.5 Creative goods exports, % total trade.....                    | 1.6         | 30        |
| 7.3 Online creativity.....                                          | 71.7        | 8         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....           | 55.1        | 17        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                          | 100.0       | 1 ●       |
| 7.3.3 Wikipedia edits/pop. 15–69.....                               | 5,288.9     | 23        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                      | 92.5        | 8         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓢ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



# Dominican Republic

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 10.5                            |
| GDP (US\$ billions) .....   | 64.1                            |
| GDP per capita, PPP\$ ..... | 10,325.5                        |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>30.6</b>                         | <b>89</b> |
| Innovation Output Sub-Index .....                 | 23.3                                | 98        |
| Innovation Input Sub-Index .....                  | 37.9                                | 88        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 108       |
| Global Innovation Index 2014 (out of 143) .....   | 32.3                                | 83        |

|                                                               |             |             |
|---------------------------------------------------------------|-------------|-------------|
| <b>1 Institutions .....</b>                                   | <b>53.3</b> | <b>93</b>   |
| 1.1 Political environment .....                               | 48.4        | 74          |
| 1.1.1 Political stability* .....                              | 68.8        | 54 ●        |
| 1.1.2 Government effectiveness* .....                         | 28.1        | 100         |
| 1.2 Regulatory environment .....                              | 51.6        | 109         |
| 1.2.1 Regulatory quality* .....                               | 45.0        | 80          |
| 1.2.2 Rule of law* .....                                      | 33.5        | 93          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 26.2        | 114         |
| 1.3 Business environment .....                                | 59.9        | 102         |
| 1.3.1 Ease of starting a business* .....                      | 81.6        | 92          |
| 1.3.2 Ease of resolving insolvency* .....                     | 23.8        | 133 ○       |
| 1.3.3 Ease of paying taxes* .....                             | 74.2        | 62          |
| <b>2 Human capital &amp; research .....</b>                   | <b>18.8</b> | <b>107</b>  |
| 2.1 Education .....                                           | 29.4        | 122         |
| 2.1.1 Expenditure on education, % GDP .....                   | 3.8         | 91          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 8.5         | 105 ○       |
| 2.1.3 School life expectancy, years .....                     | 13.1        | 77          |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 29.2        | 105         |
| 2.2 Tertiary education .....                                  | 27.1        | 82          |
| 2.2.1 Tertiary enrolment, % gross .....                       | 46.4        | 57 ●        |
| 2.2.2 Graduates in science & engineering, % .....             | n/a         | n/a         |
| 2.2.3 Tertiary inbound mobility, % .....                      | 3.5         | 50 ●        |
| 2.3 Research & development (R&D) .....                        | 0.0         | 128 ○       |
| 2.3.1 Researchers, FTE/mn pop. ....                           | n/a         | n/a         |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | n/a         | n/a         |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0         | 73 ○        |
| <b>3 Infrastructure .....</b>                                 | <b>35.8</b> | <b>84</b>   |
| 3.1 Information & communication technologies (ICTs) .....     | 35.0        | 95          |
| 3.1.1 ICT access* .....                                       | 41.5        | 97          |
| 3.1.2 ICT use* .....                                          | 26.5        | 78          |
| 3.1.3 Government's online service* .....                      | 38.6        | 85          |
| 3.1.4 E-participation* .....                                  | 33.3        | 92          |
| 3.2 General infrastructure .....                              | 26.4        | 91          |
| 3.2.1 Electricity output, kWh/cap .....                       | 1,650.4     | 82          |
| 3.2.2 Logistics performance* .....                            | 35.7        | 66          |
| 3.2.3 Gross capital formation, % GDP .....                    | 22.4        | 61 ●        |
| 3.3 Ecological sustainability .....                           | 45.9        | 41 ●        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 13.3        | 9 ●         |
| 3.3.2 Environmental performance* .....                        | 53.2        | 67          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.3         | 109         |
| <b>4 Market sophistication .....</b>                          | <b>49.6</b> | <b>57 ●</b> |
| 4.1 Credit .....                                              | 21.8        | 106         |
| 4.1.1 Ease of getting credit* .....                           | 45.0        | 80          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 24.0        | 111         |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 1.2         | 36 ●        |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| 4.2 Investment .....                                                          | 54.2        | 17         |
| 4.2.1 Ease of protecting investors* .....                                     | 54.2        | 75         |
| 4.2.2 Market capitalization, % GDP .....                                      | n/a         | n/a        |
| 4.2.3 Total value of stocks traded, % GDP .....                               | n/a         | n/a        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                                | n/a         | n/a        |
| 4.3 Trade & competition .....                                                 | 72.7        | 87         |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> .....                | 6.1         | 91         |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                       | 66.6        | 69         |
| <b>5 Business sophistication .....</b>                                        | <b>32.1</b> | <b>79</b>  |
| 5.1 Knowledge workers .....                                                   | 46.9        | 42         |
| 5.1.1 Knowledge-intensive employment, % .....                                 | 17.2        | 84         |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 57.0        | 15 ●       |
| 5.1.3 GERD performed by business, % of GDP .....                              | n/a         | n/a        |
| 5.1.4 GERD financed by business, % .....                                      | n/a         | n/a        |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | 12.5        | 50         |
| 5.2 Innovation linkages .....                                                 | 26.9        | 92         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 37.6        | 91         |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 44.7        | 77         |
| 5.2.3 GERD financed by abroad, % .....                                        | n/a         | n/a        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 74         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.0         | 86         |
| 5.3 Knowledge absorption .....                                                | 22.6        | 129 ○      |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.4         | 60         |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 5.5         | 89         |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.4         | 111 ○      |
| 5.3.4 FDI net inflows, % GDP .....                                            | 2.6         | 69         |
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>17.1</b> | <b>119</b> |
| 6.1 Knowledge creation .....                                                  | 0.8         | 140 ○      |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | 0.1         | 103 ○      |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | 0.0         | 90 ○       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | 0.0         | 59 ○       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 0.4         | 138 ○      |
| 6.1.5 Citable documents H index .....                                         | 43.0        | 122 ○      |
| 6.2 Knowledge impact .....                                                    | 28.8        | 108        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 0.2         | 93         |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 1.0         | 67         |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.6         | 103        |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | n/a         | n/a        |
| 6.3 Knowledge diffusion .....                                                 | 21.8        | 105        |
| 6.3.1 Royalty & license fees receipts, % total trade .....                    | n/a         | n/a        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 1.1         | 61         |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.3         | 65         |
| 6.3.4 FDI net outflows, % GDP .....                                           | (0.6)       | 118 ○      |
| <b>7 Creative outputs .....</b>                                               | <b>29.4</b> | <b>83</b>  |
| 7.1 Intangible assets .....                                                   | 46.5        | 63         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                           | 41.4        | 59         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                        | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                       | 59.2        | 53 ●       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....                 | 58.0        | 48 ●       |
| 7.2 Creative goods & services .....                                           | 20.5        | 64         |
| 7.2.1 Cultural & creative services exports, % total trade .....               | n/a         | n/a        |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....                 | 0.9         | 78         |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                          | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % .....                      | n/a         | n/a        |
| 7.2.5 Creative goods exports, % total trade .....                             | 1.2         | 36 ●       |
| 7.3 Online creativity .....                                                   | 4.3         | 94         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....                    | 2.8         | 76         |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                                   | 1.5         | 81         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                        | 1,155.1     | 72         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                               | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 16.0                            |
| GDP (US\$ billions) .....   | 100.8                           |
| GDP per capita, PPP\$ ..... | 10,492.3                        |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>26.9</b>                         | <b>119</b> |
| Innovation Output Sub-Index .....                 | 18.1                                | 124        |
| Innovation Input Sub-Index .....                  | 35.6                                | 99         |
| Innovation Efficiency Ratio .....                 | 0.5                                 | 127 ○      |
| Global Innovation Index 2014 (out of 143) .....   | 27.5                                | 115        |

|                                                        |             |            |
|--------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                            | <b>44.5</b> | <b>124</b> |
| 1.1 Political environment .....                        | 43.8        | 84         |
| 1.1.1 Political stability* .....                       | 59.3        | 78         |
| 1.1.2 Government effectiveness* .....                  | 28.3        | 98         |
| 1.2 Regulatory environment .....                       | 37.7        | 131 ○      |
| 1.2.1 Regulatory quality* .....                        | 22.7        | 126 ○      |
| 1.2.2 Rule of law* .....                               | 22.3        | 122        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 31.8        | 131 ○      |
| 1.3 Business environment .....                         | 52.2        | 131 ○      |
| 1.3.1 Ease of starting a business* .....               | 65.3        | 129 ○      |
| 1.3.2 Ease of resolving insolvency* .....              | 28.4        | 128 ○      |
| 1.3.3 Ease of paying taxes* .....                      | 62.8        | 105        |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research .....</b>                    | <b>22.3</b> | <b>98</b> |
| 2.1 Education .....                                            | 42.9        | 76        |
| 2.1.1 Expenditure on education, % GDP .....                    | 4.4         | 76        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 19.0        | 62        |
| 2.1.3 School life expectancy, years .....                      | 14.2        | 56        |
| 2.1.4 PISA scales in reading, maths, & science .....           | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 14.1        | 54        |
| 2.2 Tertiary education .....                                   | 20.6        | 101       |
| 2.2.1 Tertiary enrolment, % gross .....                        | 40.5        | 66        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 12.8        | 91 ○      |
| 2.2.3 Tertiary inbound mobility, % .....                       | 0.6         | 90        |
| 2.3 Research & development (R&D) .....                         | 3.4         | 91        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 179.5       | 69        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.4         | 74        |
| 2.3.3 QS university ranking, average score top 3* .....        | 0.0         | 73 ○      |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure .....</b>                                 | <b>39.0</b> | <b>72</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 43.6        | 77        |
| 3.1.1 ICT access* .....                                       | 51.6        | 76        |
| 3.1.2 ICT use* .....                                          | 25.8        | 81        |
| 3.1.3 Government's online service* .....                      | 48.0        | 66        |
| 3.1.4 E-participation* .....                                  | 49.0        | 64        |
| 3.2 General infrastructure .....                              | 30.9        | 67        |
| 3.2.1 Electricity output, kWh/cap .....                       | 1,475.0     | 88        |
| 3.2.2 Logistics performance* .....                            | 28.0        | 81        |
| 3.2.3 Gross capital formation, % GDP .....                    | 28.5        | 29 ●      |
| 3.3 Ecological sustainability .....                           | 42.3        | 50 ●      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 9.5         | 29 ●      |
| 3.3.2 Environmental performance* .....                        | 58.5        | 50 ●      |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 1.2         | 59        |

|                                                      |             |           |
|------------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                 | <b>47.7</b> | <b>66</b> |
| 4.1 Credit .....                                     | 33.6        | 57 ●      |
| 4.1.1 Ease of getting credit* .....                  | 45.0        | 80        |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 26.7        | 105       |
| 4.1.3 Microfinance gross loans, % GDP .....          | 4.0         | 14 ●      |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 24.4 | 129 ○ |
| 4.2.1 Ease of protecting investors* .....               | 46.7 | 102   |
| 4.2.2 Market capitalization, % GDP .....                | 6.7  | 94    |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.2  | 96 ○  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a   |
| 4.3 Trade & competition .....                           | 85.2 | 27 ●  |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 4.3  | 71    |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | n/a  | n/a   |

|                                                                     |             |            |
|---------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                              | <b>24.7</b> | <b>123</b> |
| 5.1 Knowledge workers .....                                         | 35.5        | 79         |
| 5.1.1 Knowledge-intensive employment, % .....                       | 14.4        | 96         |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 65.9        | 4 ●        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.2         | 48         |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....               | 0.4         | 87 ○       |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 10.4        | 61         |
| 5.2 Innovation linkages .....                                       | 5.1         | 139 ○      |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | n/a         | n/a        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | n/a         | n/a        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 4.5         | 67         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 79         |
| 5.3 Knowledge absorption .....                                      | 33.4        | 68         |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.4         | 61         |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 9.4         | 43 ●       |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a         | n/a        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 0.8         | 119        |

|                                                                      |             |              |
|----------------------------------------------------------------------|-------------|--------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                    | <b>13.4</b> | <b>127</b> ○ |
| 6.1 Knowledge creation .....                                         | 2.8         | 129 ○        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....   | 0.0         | 111 ○        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                     | 0.0         | 82           |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 0.1         | 51           |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....             | 3.0         | 115          |
| 6.1.5 Citable documents H index .....                                | 92.0        | 76           |
| 6.2 Knowledge impact .....                                           | 36.2        | 78           |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                       | 1.9         | 48 ●         |
| 6.2.2 New businesses/th pop. 15–64 .....                             | n/a         | n/a          |
| 6.2.3 Computer software spending, % GDP .....                        | 0.2         | 66 ○         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....               | 8.0         | 47 ●         |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....    | 14.0        | 69           |
| 6.3 Knowledge diffusion .....                                        | 1.2         | 136 ○        |
| 6.3.1 Royalty & license fees receipts, % total trade .....           | n/a         | n/a          |
| 6.3.2 High-tech exports less re-exports, % total trade .....         | 0.3         | 91           |
| 6.3.3 Comm., computer & info. services exp., % total trade .....     | n/a         | n/a          |
| 6.3.4 FDI net outflows, % GDP .....                                  | n/a         | n/a          |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                       | <b>22.8</b> | <b>109</b> |
| 7.1 Intangible assets .....                                           | 35.2        | 115        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP <sup>Ⓐ</sup> .....      | 63.9        | 34 ●       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | n/a         | n/a        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | n/a         | n/a        |
| 7.2 Creative goods & services .....                                   | 15.1        | 82         |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.4         | 37         |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | n/a         | n/a        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.6         | 44         |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.1         | 104        |
| 7.3 Online creativity .....                                           | 5.8         | 89         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 2.5         | 79         |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 1.5         | 80         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 1,804.1     | 58 ●       |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Egypt

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 83.4                             |
| GDP (US\$ billions) .....   | 286.4                            |
| GDP per capita, PPP\$ ..... | 6,695.8                          |
| Income group .....          | Lower-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>28.9</b>                         | <b>100</b> |
| Innovation Output Sub-Index .....                | 23.4                                | 96         |
| Innovation Input Sub-Index .....                 | 34.4                                | 108        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 83         |
| Global Innovation Index 2014 (out of 143) .....  | 30.0                                | 99         |

|          |                                                  |             |            |   |
|----------|--------------------------------------------------|-------------|------------|---|
| <b>1</b> | <b>Institutions.....</b>                         | <b>39.5</b> | <b>131</b> | ○ |
| 1.1      | Political environment.....                       | 20.7        | 134        | ○ |
| 1.1.1    | Political stability*.....                        | 24.1        | 135        | ○ |
| 1.1.2    | Government effectiveness*.....                   | 17.3        | 123        |   |
| 1.2      | Regulatory environment .....                     | 36.6        | 132        | ○ |
| 1.2.1    | Regulatory quality*.....                         | 29.3        | 116        |   |
| 1.2.2    | Rule of law*.....                                | 31.6        | 98         |   |
| 1.2.3    | Cost of redundancy dismissal, salary weeks ..... | 36.9        | 133        | ○ |
| 1.3      | Business environment.....                        | 61.1        | 99         |   |
| 1.3.1    | Ease of starting a business*.....                | 88.1        | 61         |   |
| 1.3.2    | Ease of resolving insolvency*.....               | 36.2        | 110        |   |
| 1.3.3    | Ease of paying taxes*.....                       | 58.8        | 115        |   |

|          |                                                    |             |           |   |
|----------|----------------------------------------------------|-------------|-----------|---|
| <b>2</b> | <b>Human capital &amp; research.....</b>           | <b>27.9</b> | <b>72</b> |   |
| 2.1      | Education .....                                    | 50.7        | 50        | ● |
| 2.1.1    | Expenditure on education, % GDP <sup>Ⓐ</sup> ..... | 3.8         | 92        |   |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap..... | n/a         | n/a       |   |
| 2.1.3    | School life expectancy, years.....                 | 13.5        | 69        |   |
| 2.1.4    | PISA scales in reading, maths, & science.....      | n/a         | n/a       |   |
| 2.1.5    | Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....  | 12.1        | 41        | ● |
| 2.2      | Tertiary education.....                            | 16.5        | 110       |   |
| 2.2.1    | Tertiary enrolment, % gross.....                   | 30.1        | 76        |   |
| 2.2.2    | Graduates in science & engineering, % .....        | n/a         | n/a       |   |
| 2.2.3    | Tertiary inbound mobility, % <sup>Ⓐ</sup> .....    | 1.9         | 68        |   |
| 2.3      | Research & development (R&D).....                  | 16.4        | 50        | ● |
| 2.3.1    | Researchers, FTE/mn pop. ....                      | 466.0       | 60        |   |
| 2.3.2    | Gross expenditure on R&D, % GDP.....               | 0.7         | 51        |   |
| 2.3.3    | QS university ranking, average score top 3*.....   | 27.9        | 47        | ● |

|          |                                                        |             |           |   |
|----------|--------------------------------------------------------|-------------|-----------|---|
| <b>3</b> | <b>Infrastructure.....</b>                             | <b>37.2</b> | <b>77</b> |   |
| 3.1      | Information & communication technologies (ICTs).....   | 48.4        | 65        |   |
| 3.1.1    | ICT access*.....                                       | 50.9        | 78        |   |
| 3.1.2    | ICT use*.....                                          | 28.7        | 74        |   |
| 3.1.3    | Government's online service*.....                      | 59.1        | 51        | ● |
| 3.1.4    | E-participation*.....                                  | 54.9        | 54        |   |
| 3.2      | General infrastructure.....                            | 19.7        | 119       |   |
| 3.2.1    | Electricity output, kWh/cap.....                       | 2,036.2     | 78        |   |
| 3.2.2    | Logistics performance*.....                            | 41.0        | 60        |   |
| 3.2.3    | Gross capital formation, % GDP.....                    | 14.5        | 126       | ○ |
| 3.3      | Ecological sustainability .....                        | 43.5        | 49        | ● |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 9.8         | 26        | ● |
| 3.3.2    | Environmental performance*.....                        | 61.1        | 47        | ● |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.9         | 69        |   |

|          |                                               |             |            |   |
|----------|-----------------------------------------------|-------------|------------|---|
| <b>4</b> | <b>Market sophistication .....</b>            | <b>35.9</b> | <b>128</b> | ○ |
| 4.1      | Credit.....                                   | 19.5        | 116        |   |
| 4.1.1    | Ease of getting credit*.....                  | 50.0        | 65         |   |
| 4.1.2    | Domestic credit to private sector, % GDP..... | 27.8        | 103        |   |
| 4.1.3    | Microfinance gross loans, % GDP .....         | 0.1         | 72         |   |

|       |                                                          |      |     |   |
|-------|----------------------------------------------------------|------|-----|---|
| 4.2   | Investment .....                                         | 27.0 | 107 |   |
| 4.2.1 | Ease of protecting investors*.....                       | 44.2 | 117 |   |
| 4.2.2 | Market capitalization, % GDP.....                        | 22.1 | 65  |   |
| 4.2.3 | Total value of stocks traded, % GDP.....                 | 7.7  | 44  |   |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP.....                  | n/a  | n/a |   |
| 4.3   | Trade & competition .....                                | 61.3 | 123 |   |
| 4.3.1 | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 8.1  | 108 |   |
| 4.3.2 | Intensity of local competition <sup>†</sup> .....        | 50.8 | 126 | ○ |

|          |                                                                         |             |           |   |
|----------|-------------------------------------------------------------------------|-------------|-----------|---|
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>31.6</b> | <b>84</b> |   |
| 5.1      | Knowledge workers.....                                                  | 37.2        | 71        |   |
| 5.1.1    | Knowledge-intensive employment, %.....                                  | 36.3        | 30        | ● |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 21.7        | 88        |   |
| 5.1.3    | GERD performed by business, % of GDP.....                               | n/a         | n/a       |   |
| 5.1.4    | GERD financed by business, % .....                                      | n/a         | n/a       |   |
| 5.1.5    | Females employed w/advanced degrees, % total.....                       | 5.5         | 75        |   |
| 5.2      | Innovation linkages .....                                               | 30.2        | 78        |   |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 23.8        | 127       | ○ |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 54.5        | 35        | ● |
| 5.2.3    | GERD financed by abroad, % .....                                        | n/a         | n/a       |   |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 42        |   |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                           | 0.0         | 106       | ○ |
| 5.3      | Knowledge absorption.....                                               | 27.5        | 105       |   |
| 5.3.1    | Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.6         | 50        |   |
| 5.3.2    | High-tech imports less re-imports, % total trade.....                   | 6.5         | 72        |   |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.8         | 72        |   |
| 5.3.4    | FDI net inflows, % GDP .....                                            | 2.0         | 81        |   |

|          |                                                                         |             |           |   |
|----------|-------------------------------------------------------------------------|-------------|-----------|---|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>21.7</b> | <b>97</b> |   |
| 6.1      | Knowledge creation.....                                                 | 8.5         | 81        |   |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                         | 0.7         | 69        |   |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | 0.1         | 78        |   |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP.....                        | n/a         | n/a       |   |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP.....                       | 9.2         | 69        |   |
| 6.1.5    | Citable documents H index.....                                          | 148.0       | 49        | ● |
| 6.2      | Knowledge impact.....                                                   | 30.4        | 102       |   |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, %.....                                 | (0.1)       | 101       |   |
| 6.2.2    | New businesses/th pop. 15–64.....                                       | n/a         | n/a       |   |
| 6.2.3    | Computer software spending, % GDP.....                                  | 0.2         | 65        | ○ |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 2.3         | 88        |   |
| 6.2.5    | High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 21.5        | 53        |   |
| 6.3      | Knowledge diffusion.....                                                | 26.3        | 77        |   |
| 6.3.1    | Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.3         | 29        | ● |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | 0.1         | 103       |   |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.9         | 45        | ● |
| 6.3.4    | FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 0.1         | 93        |   |

|          |                                                                 |             |           |   |
|----------|-----------------------------------------------------------------|-------------|-----------|---|
| <b>7</b> | <b>Creative outputs .....</b>                                   | <b>25.1</b> | <b>98</b> |   |
| 7.1      | Intangible assets .....                                         | 37.4        | 105       |   |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                   | n/a         | n/a       |   |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.0         | 63        | ○ |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....               | 46.1        | 104       |   |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....         | 47.1        | 93        |   |
| 7.2      | Creative goods & services.....                                  | 8.7         | 101       |   |
| 7.2.1    | Cultural & creative services exports, % total trade.....        | n/a         | n/a       |   |
| 7.2.2    | National feature films/mn pop. 15–69.....                       | 0.6         | 88        |   |
| 7.2.3    | Global ent. & media output/th pop. 15–69.....                   | 0.8         | 54        | ○ |
| 7.2.4    | Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 0.6         | 86        | ○ |
| 7.2.5    | Creative goods exports, % total trade.....                      | 0.6         | 54        |   |
| 7.3      | Online creativity.....                                          | 16.8        | 69        |   |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69.....             | 1.5         | 96        |   |
| 7.3.2    | Country-code TLDs/th pop. 15–69.....                            | 0.0         | 130       | ○ |
| 7.3.3    | Wikipedia edits/pop. 15–69.....                                 | 439.1       | 94        |   |
| 7.3.4    | Video uploads on YouTube/pop. 15–69.....                        | 62.6        | 61        |   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 6.4                             |
| GDP (US\$ billions) .....   | 25.3                            |
| GDP per capita, PPP\$ ..... | 7,719.9                         |
| Income group .....          | Lower-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>29.3</b>                         | <b>99</b> |
| Innovation Output Sub-Index .....                 | 22.4                                | 104       |
| Innovation Input Sub-Index .....                  | 36.2                                | 95        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 106       |
| Global Innovation Index 2014 (out of 143) .....   | 29.1                                | 103       |

|          |                                                                  |             |            |
|----------|------------------------------------------------------------------|-------------|------------|
| <b>1</b> | <b>Institutions .....</b>                                        | <b>55.5</b> | <b>86</b>  |
| 1.1      | Political environment .....                                      | 50.5        | 69         |
| 1.1.1    | Political stability* .....                                       | 63.1        | 69         |
| 1.1.2    | Government effectiveness* .....                                  | 37.9        | 79         |
| 1.2      | Regulatory environment .....                                     | 56.7        | 97         |
| 1.2.1    | Regulatory quality* .....                                        | 56.0        | 60         |
| 1.2.2    | Rule of law* .....                                               | 29.7        | 104        |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....                 | 22.9        | 105        |
| 1.3      | Business environment .....                                       | 59.4        | 107        |
| 1.3.1    | Ease of starting a business* .....                               | 79.9        | 99         |
| 1.3.2    | Ease of resolving insolvency* .....                              | 46.0        | 74         |
| 1.3.3    | Ease of paying taxes* .....                                      | 52.3        | 123        |
| <b>2</b> | <b>Human capital &amp; research .....</b>                        | <b>17.2</b> | <b>116</b> |
| 2.1      | Education .....                                                  | 24.4        | 129 ○      |
| 2.1.1    | Expenditure on education, % GDP .....                            | 3.4         | 101        |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓓ</sup> ..... | 11.3        | 94         |
| 2.1.3    | School life expectancy, years .....                              | 12.3        | 90         |
| 2.1.4    | PISA scales in reading, maths, & science .....                   | n/a         | n/a        |
| 2.1.5    | Pupil-teacher ratio, secondary .....                             | 38.0        | 117 ○      |
| 2.2      | Tertiary education .....                                         | 26.9        | 83         |
| 2.2.1    | Tertiary enrolment, % gross .....                                | 25.5        | 84         |
| 2.2.2    | Graduates in science & engineering, % .....                      | 21.5        | 42         |
| 2.2.3    | Tertiary inbound mobility, % .....                               | 0.4         | 97         |
| 2.3      | Research & development (R&D) .....                               | 0.2         | 125 ○      |
| 2.3.1    | Researchers, FTE/mn pop. .....                                   | n/a         | n/a        |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓓ</sup> .....               | 0.0         | 117 ○      |
| 2.3.3    | QS university ranking, average score top 3* .....                | 0.0         | 73 ○       |
| <b>3</b> | <b>Infrastructure .....</b>                                      | <b>32.4</b> | <b>92</b>  |
| 3.1      | Information & communication technologies (ICTs) .....            | 43.7        | 76         |
| 3.1.1    | ICT access* .....                                                | 47.6        | 83         |
| 3.1.2    | ICT use* .....                                                   | 12.7        | 106        |
| 3.1.3    | Government's online service* .....                               | 53.5        | 59         |
| 3.1.4    | E-participation* .....                                           | 60.8        | 45 ●       |
| 3.2      | General infrastructure .....                                     | 18.6        | 125 ○      |
| 3.2.1    | Electricity output, kWh/cap .....                                | 931.1       | 93         |
| 3.2.2    | Logistics performance* .....                                     | 40.8        | 62         |
| 3.2.3    | Gross capital formation, % GDP .....                             | 14.8        | 124 ○      |
| 3.3      | Ecological sustainability .....                                  | 35.0        | 80         |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | 9.5         | 29 ●       |
| 3.3.2    | Environmental performance* .....                                 | 43.8        | 99         |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP .....          | 0.3         | 106        |
| <b>4</b> | <b>Market sophistication .....</b>                               | <b>44.1</b> | <b>88</b>  |
| 4.1      | Credit .....                                                     | 27.0        | 82         |
| 4.1.1    | Ease of getting credit* .....                                    | 50.0        | 65         |
| 4.1.2    | Domestic credit to private sector, % GDP .....                   | 42.7        | 79         |
| 4.1.3    | Microfinance gross loans, % GDP .....                            | 1.5         | 32 ●       |

|       |                                                   |      |       |
|-------|---------------------------------------------------|------|-------|
| 4.2   | Investment .....                                  | 27.8 | 106   |
| 4.2.1 | Ease of protecting investors* .....               | 41.7 | 123 ○ |
| 4.2.2 | Market capitalization, % GDP .....                | 45.1 | 43    |
| 4.2.3 | Total value of stocks traded, % GDP .....         | 0.2  | 89    |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a   |
| 4.3   | Trade & competition .....                         | 77.5 | 64    |
| 4.3.1 | Applied tariff rate, weighted mean, % .....       | 2.4  | 50    |
| 4.3.2 | Intensity of local competition <sup>†</sup> ..... | 63.4 | 86    |

|          |                                                               |             |           |
|----------|---------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                          | <b>31.7</b> | <b>82</b> |
| 5.1      | Knowledge workers .....                                       | 32.4        | 87        |
| 5.1.1    | Knowledge-intensive employment, % .....                       | 12.1        | 99        |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓓ</sup> .....    | 61.0        | 10 ●      |
| 5.1.3    | GERD performed by business, % of GDP .....                    | n/a         | n/a       |
| 5.1.4    | GERD financed by business, % <sup>Ⓓ</sup> .....               | 2.8         | 81 ○      |
| 5.1.5    | Females employed w/advanced degrees, % total .....            | 0.0         | 87 ○      |
| 5.2      | Innovation linkages .....                                     | 31.8        | 65        |
| 5.2.1    | University/industry research collaboration <sup>†</sup> ..... | 46.8        | 51        |
| 5.2.2    | State of cluster development <sup>†</sup> .....               | 58.1        | 28 ●      |
| 5.2.3    | GERD financed by abroad, % <sup>Ⓓ</sup> .....                 | 9.2         | 45        |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a       |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓓ</sup> .....    | 0.0         | 72        |
| 5.3      | Knowledge absorption .....                                    | 30.9        | 87        |
| 5.3.1    | Royalty & license fees payments, % total trade .....          | 0.8         | 41 ●      |
| 5.3.2    | High-tech imports less re-imports, % total trade .....        | 9.7         | 34 ●      |
| 5.3.3    | Comm., computer & info. services imp., % total trade .....    | 0.6         | 82        |
| 5.3.4    | FDI net inflows, % GDP .....                                  | 0.8         | 117       |

|          |                                                            |             |              |
|----------|------------------------------------------------------------|-------------|--------------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>            | <b>12.2</b> | <b>133 ○</b> |
| 6.1      | Knowledge creation .....                                   | 1.4         | 139 ○        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....            | n/a         | n/a          |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                 | 0.1         | 73           |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....          | n/a         | n/a          |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....         | 0.9         | 136 ○        |
| 6.1.5    | Citable documents H index .....                            | 36.0        | 130 ○        |
| 6.2      | Knowledge impact .....                                     | 5.7         | 130 ○        |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                   | n/a         | n/a          |
| 6.2.2    | New businesses/th pop. 15–64 .....                         | 0.5         | 90           |
| 6.2.3    | Computer software spending, % GDP .....                    | n/a         | n/a          |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....           | 4.0         | 69           |
| 6.2.5    | High- & medium-high-tech manufactures, % .....             | n/a         | n/a          |
| 6.3      | Knowledge diffusion .....                                  | 29.4        | 61           |
| 6.3.1    | Royalty & license fees receipts, % total trade .....       | 0.3         | 27 ●         |
| 6.3.2    | High-tech exports less re-exports, % total trade .....     | 2.6         | 46 ●         |
| 6.3.3    | Comm., computer & info. services exp., % total trade ..... | 1.7         | 49           |
| 6.3.4    | FDI net outflows, % GDP .....                              | 0.2         | 79           |

|          |                                                           |             |           |
|----------|-----------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs .....</b>                             | <b>32.7</b> | <b>67</b> |
| 7.1      | Intangible assets .....                                   | 56.3        | 21 ●      |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....             | n/a         | n/a       |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a       |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....         | 57.6        | 63        |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....   | 55.0        | 59        |
| 7.2      | Creative goods & services .....                           | 14.7        | 83        |
| 7.2.1    | Cultural & creative services exports, % total trade ..... | n/a         | n/a       |
| 7.2.2    | National feature films/mn pop. 15–69 <sup>Ⓓ</sup> .....   | 0.3         | 101 ○     |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a       |
| 7.2.4    | Printing & publishing output manufactures, % .....        | n/a         | n/a       |
| 7.2.5    | Creative goods exports, % total trade .....               | 0.8         | 42 ●      |
| 7.3      | Online creativity .....                                   | 3.5         | 99        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....      | 2.8         | 77        |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                     | 0.8         | 91        |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                          | 921.3       | 79        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Estonia

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 1.3         |
| GDP (US\$ billions) .....   | 26.0        |
| GDP per capita, PPP\$ ..... | 23,213.4    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>52.8</b>                         | <b>23</b> |
| Innovation Output Sub-Index .....                 | 48.8                                | 14        |
| Innovation Input Sub-Index .....                  | 56.8                                | 26        |
| Innovation Efficiency Ratio .....                 | 0.9                                 | 17        |
| Global Innovation Index 2014 (out of 143) .....   | 51.5                                | 24        |

|          |                                                         |             |             |
|----------|---------------------------------------------------------|-------------|-------------|
| <b>1</b> | <b>Institutions .....</b>                               | <b>80.8</b> | <b>22</b>   |
| 1.1      | Political environment .....                             | 75.0        | 33          |
| 1.1.1    | Political stability* .....                              | 82.1        | 37          |
| 1.1.2    | Government effectiveness* .....                         | 68.0        | 34          |
| 1.2      | Regulatory environment .....                            | 86.3        | 21          |
| 1.2.1    | Regulatory quality* .....                               | 85.9        | 18          |
| 1.2.2    | Rule of law* .....                                      | 78.6        | 24          |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....        | 12.9        | 49          |
| 1.3      | Business environment .....                              | 81.0        | 23          |
| 1.3.1    | Ease of starting a business* .....                      | 93.3        | 23          |
| 1.3.2    | Ease of resolving insolvency* .....                     | 64.9        | 35          |
| 1.3.3    | Ease of paying taxes* .....                             | 84.9        | 27          |
| <b>2</b> | <b>Human capital &amp; research .....</b>               | <b>44.2</b> | <b>30</b>   |
| 2.1      | Education .....                                         | 57.1        | 17          |
| 2.1.1    | Expenditure on education, % GDP .....                   | 5.2         | 49          |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap .....     | 27.5        | 30          |
| 2.1.3    | School life expectancy, years .....                     | 16.5        | 14          |
| 2.1.4    | PISA scales in reading, maths, & science .....          | 526.1       | 7           |
| 2.1.5    | Pupil-teacher ratio, secondary .....                    | 8.4         | 11 ●        |
| 2.2      | Tertiary education .....                                | 40.7        | 43          |
| 2.2.1    | Tertiary enrolment, % gross .....                       | 76.7        | 16          |
| 2.2.2    | Graduates in science & engineering, % .....             | 22.1        | 37          |
| 2.2.3    | Tertiary inbound mobility, % .....                      | 2.3         | 61 ○        |
| 2.3      | Research & development (R&D) .....                      | 34.8        | 30          |
| 2.3.1    | Researchers, FTE/mn pop. ....                           | 3,423.6     | 25          |
| 2.3.2    | Gross expenditure on R&D, % GDP .....                   | 1.8         | 20          |
| 2.3.3    | QS university ranking, average score top 3* .....       | 21.5        | 52          |
| <b>3</b> | <b>Infrastructure .....</b>                             | <b>60.9</b> | <b>10 ●</b> |
| 3.1      | Information & communication technologies (ICTs) .....   | 74.9        | 19          |
| 3.1.1    | ICT access* .....                                       | 78.2        | 25          |
| 3.1.2    | ICT use* .....                                          | 67.7        | 17          |
| 3.1.3    | Government's online service* .....                      | 77.2        | 18          |
| 3.1.4    | E-participation* .....                                  | 76.5        | 22          |
| 3.2      | General infrastructure .....                            | 50.6        | 16          |
| 3.2.1    | Electricity output, kWh/cap .....                       | 9,918.7     | 13          |
| 3.2.2    | Logistics performance* .....                            | 60.4        | 38          |
| 3.2.3    | Gross capital formation, % GDP .....                    | 29.1        | 25          |
| 3.3      | Ecological sustainability .....                         | 57.2        | 11 ●        |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 4.3         | 104 ○       |
| 3.3.2    | Environmental performance* .....                        | 74.7        | 20          |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 12.8        | 1 ●         |
| <b>4</b> | <b>Market sophistication .....</b>                      | <b>54.6</b> | <b>37</b>   |
| 4.1      | Credit .....                                            | 46.7        | 30          |
| 4.1.1    | Ease of getting credit* .....                           | 70.0        | 22          |
| 4.1.2    | Domestic credit to private sector, % GDP .....          | 73.7        | 43          |
| 4.1.3    | Microfinance gross loans, % GDP .....                   | n/a         | n/a         |

|       |                                             |      |      |
|-------|---------------------------------------------|------|------|
| 4.2   | Investment .....                            | 30.9 | 94 ○ |
| 4.2.1 | Ease of protecting investors* .....         | 58.3 | 54   |
| 4.2.2 | Market capitalization, % GDP .....          | 10.3 | 88 ○ |
| 4.2.3 | Total value of stocks traded, % GDP .....   | 0.8  | 70 ○ |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....    | 0.3  | 14   |
| 4.3   | Trade & competition .....                   | 86.2 | 19   |
| 4.3.1 | Applied tariff rate, weighted mean, % ..... | 1.0  | 9    |
| 4.3.2 | Intensity of local competition† .....       | 75.8 | 27   |

|          |                                                            |             |           |
|----------|------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                       | <b>43.4</b> | <b>33</b> |
| 5.1      | Knowledge workers .....                                    | 54.0        | 31        |
| 5.1.1    | Knowledge-intensive employment, % .....                    | 41.8        | 21        |
| 5.1.2    | Firms offering formal training, % firms .....              | 35.0        | 52        |
| 5.1.3    | GERD performed by business, % of GDP .....                 | 0.8         | 24        |
| 5.1.4    | GERD financed by business, % .....                         | 41.3        | 35        |
| 5.1.5    | Females employed w/advanced degrees, % total .....         | 25.5        | 7 ●       |
| 5.2      | Innovation linkages .....                                  | 31.3        | 70        |
| 5.2.1    | University/industry research collaboration† .....          | 55.9        | 33        |
| 5.2.2    | State of cluster development† .....                        | 45.6        | 73 ○      |
| 5.2.3    | GERD financed by abroad, % .....                           | 10.3        | 42        |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 48 ○      |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....              | 0.3         | 28        |
| 5.3      | Knowledge absorption .....                                 | 45.0        | 25        |
| 5.3.1    | Royalty & license fees payments, % total trade .....       | 0.3         | 80 ○      |
| 5.3.2    | High-tech imports less re-imports, % total trade .....     | 11.8        | 24        |
| 5.3.3    | Comm., computer & info. services imp., % total trade ..... | 2.0         | 14        |
| 5.3.4    | FDI net inflows, % GDP .....                               | 3.7         | 42        |

|          |                                                            |             |           |
|----------|------------------------------------------------------------|-------------|-----------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>            | <b>42.1</b> | <b>19</b> |
| 6.1      | Knowledge creation .....                                   | 31.9        | 32        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....            | 0.7         | 68 ○      |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                 | 0.8         | 31        |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....          | 2.8         | 12        |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....         | 48.5        | 9 ●       |
| 6.1.5    | Citable documents H index .....                            | 148.0       | 49        |
| 6.2      | Knowledge impact .....                                     | 55.7        | 9 ●       |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                   | 1.0         | 71 ○      |
| 6.2.2    | New businesses/th pop. 15–64 <sup>Ⓔ</sup> .....            | 7.9         | 15        |
| 6.2.3    | Computer software spending, % GDP .....                    | n/a         | n/a       |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....           | 27.2        | 11 ●      |
| 6.2.5    | High- & medium-high-tech manufactures, % .....             | 38.2        | 23        |
| 6.3      | Knowledge diffusion .....                                  | 38.6        | 37        |
| 6.3.1    | Royalty & license fees receipts, % total trade .....       | 0.1         | 70 ○      |
| 6.3.2    | High-tech exports less re-exports, % total trade .....     | 11.6        | 19        |
| 6.3.3    | Comm., computer & info. services exp., % total trade ..... | 2.6         | 25        |
| 6.3.4    | FDI net outflows, % GDP .....                              | 1.5         | 44        |

|          |                                                           |             |            |
|----------|-----------------------------------------------------------|-------------|------------|
| <b>7</b> | <b>Creative outputs .....</b>                             | <b>55.6</b> | <b>9 ●</b> |
| 7.1      | Intangible assets .....                                   | 65.5        | 7 ●        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....             | 81.0        | 20         |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....          | 2.3         | 9          |
| 7.1.3    | ICTs & business model creation† .....                     | 78.6        | 3 ●        |
| 7.1.4    | ICTs & organizational model creation† .....               | 78.4        | 2 ●        |
| 7.2      | Creative goods & services .....                           | 41.9        | 11 ●       |
| 7.2.1    | Cultural & creative services exports, % total trade ..... | 0.8         | 20         |
| 7.2.2    | National feature films/mn pop. 15–69 .....                | 19.6        | 8 ●        |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a        |
| 7.2.4    | Printing & publishing output manufactures, % .....        | 2.2         | 26         |
| 7.2.5    | Creative goods exports, % total trade .....               | 1.3         | 35         |
| 7.3      | Online creativity .....                                   | 49.5        | 22         |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....      | 10.8        | 43         |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                     | 36.9        | 22         |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                          | 7,671.3     | 11 ●       |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                 | 93.4        | 7 ●        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓔ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



**Key indicators**

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 96.5               |
| GDP (US\$ billions) .....   | 52.3               |
| GDP per capita, PPP\$ ..... | 1,455.4            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>24.2</b>                         | <b>127</b> |
| Innovation Output Sub-Index .....                | 20.3                                | 111        |
| Innovation Input Sub-Index .....                 | 28.0                                | 132        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 66 ●       |
| Global Innovation Index 2014 (out of 143) .....  | 25.4                                | 126        |

**1 Institutions.....46.5 117**

|                                                       |      |      |
|-------------------------------------------------------|------|------|
| 1.1 Political environment.....                        | 28.5 | 124  |
| 1.1.1 Political stability*.....                       | 29.7 | 133  |
| 1.1.2 Government effectiveness*.....                  | 27.4 | 101  |
| 1.2 Regulatory environment .....                      | 51.1 | 111  |
| 1.2.1 Regulatory quality*.....                        | 17.6 | 134  |
| 1.2.2 Rule of law*.....                               | 31.1 | 100  |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 19.1 | 87   |
| 1.3 Business environment.....                         | 59.8 | 103  |
| 1.3.1 Ease of starting a business*.....               | 63.2 | 132  |
| 1.3.2 Ease of resolving insolvency*.....              | 47.2 | 69 ● |
| 1.3.3 Ease of paying taxes*.....                      | 69.1 | 88   |

**2 Human capital & research.....13.4 132**

|                                                                        |      |       |
|------------------------------------------------------------------------|------|-------|
| 2.1 Education .....                                                    | 15.7 | 139 ○ |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 4.7  | 66 ●  |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 10.4 | 97    |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 6.6  | 131 ○ |
| 2.1.4 PISA scales in reading, maths, & science.....                    | n/a  | n/a   |
| 2.1.5 Pupil-teacher ratio, secondary .....                             | 38.8 | 118 ○ |
| 2.2 Tertiary education.....                                            | 19.4 | 103   |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 2.8  | 131 ○ |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> .....         | 15.2 | 82    |
| 2.2.3 Tertiary inbound mobility, %.....                                | n/a  | n/a   |
| 2.3 Research & development (R&D).....                                  | 4.9  | 83    |
| 2.3.1 Researchers, FTE/mn pop. ....                                    | 46.1 | 92    |
| 2.3.2 Gross expenditure on R&D, % GDP.....                             | 0.6  | 54 ●  |
| 2.3.3 QS university ranking, average score top 3*.....                 | 0.0  | 73 ○  |

**3 Infrastructure.....23.9 119**

|                                                              |      |       |
|--------------------------------------------------------------|------|-------|
| 3.1 Information & communication technologies (ICTs).....     | 23.1 | 116   |
| 3.1.1 ICT access*.....                                       | 18.7 | 135 ○ |
| 3.1.2 ICT use*.....                                          | 2.4  | 129   |
| 3.1.3 Government's online service*.....                      | 45.7 | 71 ●  |
| 3.1.4 E-participation*.....                                  | 25.5 | 110   |
| 3.2 General infrastructure.....                              | 29.4 | 75    |
| 3.2.1 Electricity output, kWh/cap.....                       | 73.0 | 122 ○ |
| 3.2.2 Logistics performance*.....                            | 22.1 | 98    |
| 3.2.3 Gross capital formation, % GDP.....                    | 30.1 | 21 ●  |
| 3.3 Ecological sustainability .....                          | 19.2 | 136   |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 2.2  | 119 ○ |
| 3.3.2 Environmental performance*.....                        | 39.4 | 109   |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.0  | 135 ○ |

**4 Market sophistication.....31.9 137 ○**

|                                                                   |      |     |
|-------------------------------------------------------------------|------|-----|
| 4.1 Credit.....                                                   | 6.6  | 136 |
| 4.1.1 Ease of getting credit*.....                                | 15.0 | 129 |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 17.7 | 120 |
| 4.1.3 Microfinance gross loans, % GDP.....                        | 0.0  | 74  |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 28.0 | 104 |
| 4.2.1 Ease of protecting investors*.....                | 41.7 | 123 |
| 4.2.2 Market capitalization, % GDP.....                 | n/a  | n/a |
| 4.2.3 Total value of stocks traded, % GDP.....          | n/a  | n/a |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | 0.0  | 64  |
| 4.3 Trade & competition .....                           | 61.2 | 124 |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 10.3 | 123 |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 58.8 | 109 |

**5 Business sophistication.....24.6 125**

|                                                                               |      |      |
|-------------------------------------------------------------------------------|------|------|
| 5.1 Knowledge workers.....                                                    | 14.2 | 131  |
| 5.1.1 Knowledge-intensive employment, %.....                                  | 3.8  | 112  |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 30.0 | 66   |
| 5.1.3 GERD performed by business, % of GDP.....                               | 0.0  | 82   |
| 5.1.4 GERD financed by business, %.....                                       | 0.7  | 86   |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> .....         | 6.0  | 74   |
| 5.2 Innovation linkages .....                                                 | 22.5 | 114  |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 41.0 | 75   |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 33.3 | 121  |
| 5.2.3 GERD financed by abroad, %.....                                         | 2.1  | 80   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                           | n/a  | n/a  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                            | n/a  | n/a  |
| 5.3 Knowledge absorption.....                                                 | 37.0 | 53 ● |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.0  | 114  |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 9.7  | 36 ● |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 1.6  | 34 ● |
| 5.3.4 FDI net inflows, % GDP.....                                             | 2.0  | 82   |

**6 Knowledge & technology outputs.....17.3 118**

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation.....                                                   | 8.8  | 79    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                          | n/a  | n/a   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                               | n/a  | n/a   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                        | n/a  | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                       | 6.9  | 81    |
| 6.1.5 Citable documents H index.....                                          | 82.0 | 86    |
| 6.2 Knowledge impact.....                                                     | 33.6 | 92    |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | 3.6  | 20 ●  |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓐ</sup> .....                         | 0.0  | 105 ○ |
| 6.2.3 Computer software spending, % GDP.....                                  | n/a  | n/a   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                         | 0.4  | 132   |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 10.9 | 76    |
| 6.3 Knowledge diffusion.....                                                  | 9.4  | 131   |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0  | 99    |
| 6.3.2 High-tech exports less re-exports, % total trade.....                   | 0.1  | 112   |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.7  | 55 ●  |
| 6.3.4 FDI net outflows, % GDP.....                                            | n/a  | n/a   |

**7 Creative outputs.....23.3 106**

|                                                                       |      |       |
|-----------------------------------------------------------------------|------|-------|
| 7.1 Intangible assets .....                                           | 37.6 | 103   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                    | n/a  | n/a   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                 | n/a  | n/a   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 39.1 | 121   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 36.1 | 124   |
| 7.2 Creative goods & services.....                                    | 18.1 | 73    |
| 7.2.1 Cultural & creative services exports, % total trade.....        | 0.0  | 82    |
| 7.2.2 National feature films/mn pop. 15–69.....                       | n/a  | n/a   |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | n/a  | n/a   |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 2.7  | 13 ●  |
| 7.2.5 Creative goods exports, % total trade.....                      | 0.1  | 106   |
| 7.3 Online creativity.....                                            | 0.0  | 140 ○ |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 0.0  | 139 ○ |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 0.0  | 134   |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 23.9 | 131   |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | n/a  | n/a   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 0.9                         |
| GDP (US\$ billions) .....   | 4.2                         |
| GDP per capita, PPP\$ ..... | 5,253.6                     |
| Income group .....          | Upper-middle income         |
| Region .....                | South East Asia and Oceania |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>27.3</b>                         | <b>115</b> |
| Innovation Output Sub-Index .....                | 12.0                                | 137 ○      |
| Innovation Input Sub-Index .....                 | 42.6                                | 64         |
| Innovation Efficiency Ratio .....                | 0.3                                 | 140 ○      |
| Global Innovation Index 2014 (out of 143) .....  | 30.4                                | 95         |

|                                                       |             |           |
|-------------------------------------------------------|-------------|-----------|
| <b>1 Institutions.....</b>                            | <b>54.4</b> | <b>88</b> |
| 1.1 Political environment.....                        | 39.5        | 102       |
| 1.1.1 Political stability*.....                       | 63.5        | 67        |
| 1.1.2 Government effectiveness*.....                  | 15.5        | 128 ○     |
| 1.2 Regulatory environment .....                      | 62.8        | 80        |
| 1.2.1 Regulatory quality*.....                        | 32.6        | 109       |
| 1.2.2 Rule of law*.....                               | 25.2        | 116       |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 9.6         | 32 ●      |
| 1.3 Business environment.....                         | 60.7        | 100       |
| 1.3.1 Ease of starting a business*.....               | 67.8        | 127 ○     |
| 1.3.2 Ease of resolving insolvency*.....              | 43.6        | 85        |
| 1.3.3 Ease of paying taxes*.....                      | 70.7        | 84        |

|                                                          |             |           |
|----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research.....</b>               | <b>30.6</b> | <b>61</b> |
| 2.1 Education .....                                      | 35.1        | 100       |
| 2.1.1 Expenditure on education, % GDP .....              | 4.2         | 81        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | 5.8         | 110 ○     |
| 2.1.3 School life expectancy, years <sup>a</sup> .....   | 13.9        | 59        |
| 2.1.4 PISA scales in reading, maths, & science.....      | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary .....               | 19.3        | 82        |
| 2.2 Tertiary education.....                              | 56.6        | 8 ●       |
| 2.2.1 Tertiary enrolment, % gross <sup>a</sup> .....     | 16.1        | 98        |
| 2.2.2 Graduates in science & engineering, % .....        | n/a         | n/a       |
| 2.2.3 Tertiary inbound mobility, % <sup>a</sup> .....    | 32.9        | 1 ●       |
| 2.3 Research & development (R&D).....                    | 0.0         | 128 ○     |
| 2.3.1 Researchers, FTE/mn pop. ....                      | n/a         | n/a       |
| 2.3.2 Gross expenditure on R&D, % GDP .....              | n/a         | n/a       |
| 2.3.3 QS university ranking, average score top 3*.....   | 0.0         | 73 ○      |

|                                                              |             |           |
|--------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure.....</b>                                 | <b>32.9</b> | <b>90</b> |
| 3.1 Information & communication technologies (ICTs).....     | 38.8        | 85        |
| 3.1.1 ICT access*.....                                       | 46.0        | 85        |
| 3.1.2 ICT use*.....                                          | 30.8        | 67        |
| 3.1.3 Government's online service*.....                      | 39.4        | 82        |
| 3.1.4 E-participation*.....                                  | 39.2        | 82        |
| 3.2 General infrastructure.....                              | 23.0        | 110       |
| 3.2.1 Electricity output, kWh/cap.....                       | n/a         | n/a       |
| 3.2.2 Logistics performance*.....                            | 19.6        | 103       |
| 3.2.3 Gross capital formation, % GDP.....                    | 19.6        | 94        |
| 3.3 Ecological sustainability .....                          | 36.9        | 75        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | n/a         | n/a       |
| 3.3.2 Environmental performance*.....                        | 53.1        | 68        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.6         | 76        |

|                                                     |             |              |
|-----------------------------------------------------|-------------|--------------|
| <b>4 Market sophistication .....</b>                | <b>38.7</b> | <b>119 ○</b> |
| 4.1 Credit.....                                     | 25.4        | 86           |
| 4.1.1 Ease of getting credit*.....                  | 50.0        | 65           |
| 4.1.2 Domestic credit to private sector, % GDP..... | 81.4        | 38 ●         |
| 4.1.3 Microfinance gross loans, % GDP .....         | 0.0         | 76 ○         |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 25.5 | 120 ○ |
| 4.2.1 Ease of protecting investors*.....                       | 47.5 | 97    |
| 4.2.2 Market capitalization, % GDP.....                        | 11.8 | 85    |
| 4.2.3 Total value of stocks traded, % GDP.....                 | 0.2  | 94 ○  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                  | n/a  | n/a   |
| 4.3 Trade & competition .....                                  | 65.2 | 117   |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>a</sup> ..... | 9.9  | 119 ○ |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | n/a  | n/a   |

|                                                                               |             |          |
|-------------------------------------------------------------------------------|-------------|----------|
| <b>5 Business sophistication .....</b>                                        | <b>56.5</b> | <b>8</b> |
| 5.1 Knowledge workers.....                                                    | 51.6        | 34       |
| 5.1.1 Knowledge-intensive employment, % <sup>a</sup> .....                    | 16.7        | 87       |
| 5.1.2 Firms offering formal training, % firms <sup>a</sup> .....              | 61.0        | 10 ●     |
| 5.1.3 GERD performed by business, % of GDP.....                               | n/a         | n/a      |
| 5.1.4 GERD financed by business, % .....                                      | n/a         | n/a      |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a         | n/a      |
| 5.2 Innovation linkages .....                                                 | n/a         | n/a      |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | n/a         | n/a      |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | n/a         | n/a      |
| 5.2.3 GERD financed by abroad, % .....                                        | n/a         | n/a      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a         | n/a      |
| 5.3 Knowledge absorption.....                                                 | 61.3        | 5 ●      |
| 5.3.1 Royalty & license fees payments, % total trade.....                     | 0.1         | 105      |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 23.1        | 3 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>a</sup> ..... | 2.0         | 12 ●     |
| 5.3.4 FDI net inflows, % GDP .....                                            | 6.8         | 20 ●     |

|                                                                               |             |              |
|-------------------------------------------------------------------------------|-------------|--------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>13.4</b> | <b>128 ○</b> |
| 6.1 Knowledge creation.....                                                   | 14.7        | 61           |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                        | n/a         | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                       | 17.3        | 43 ●         |
| 6.1.5 Citable documents H index.....                                          | 46.0        | 119 ○        |
| 6.2 Knowledge impact.....                                                     | 8.0         | 127 ○        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | n/a         | n/a          |
| 6.2.2 New businesses/th pop. 15–64.....                                       | n/a         | n/a          |
| 6.2.3 Computer software spending, % GDP.....                                  | n/a         | n/a          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 2.9         | 84           |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>a</sup> .....             | 7.1         | 86 ○         |
| 6.3 Knowledge diffusion.....                                                  | 17.3        | 123 ○        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>a</sup> .....       | 0.0         | 103 ○        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.1         | 109 ○        |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>a</sup> ..... | 0.9         | 81           |
| 6.3.4 FDI net outflows, % GDP .....                                           | 0.1         | 89           |

|                                                                       |             |              |
|-----------------------------------------------------------------------|-------------|--------------|
| <b>7 Creative outputs .....</b>                                       | <b>10.6</b> | <b>137 ○</b> |
| 7.1 Intangible assets .....                                           | n/a         | n/a          |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | n/a         | n/a          |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                 | n/a         | n/a          |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | n/a         | n/a          |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | n/a         | n/a          |
| 7.2 Creative goods & services.....                                    | 14.6        | 84           |
| 7.2.1 Cultural & creative services exports, % total trade.....        | 0.0         | 68           |
| 7.2.2 National feature films/mn pop. 15–69 <sup>a</sup> .....         | 1.7         | 61           |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | n/a         | n/a          |
| 7.2.4 Printing & publishing output manufactures, % <sup>a</sup> ..... | 2.2         | 24 ●         |
| 7.2.5 Creative goods exports, % total trade.....                      | 0.1         | 86           |
| 7.3 Online creativity.....                                            | 6.7         | 87           |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 3.3         | 69           |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 2.7         | 67           |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 1,885.4     | 56 ●         |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | n/a         | n/a          |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>a</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 5.4         |
| GDP (US\$ billions) .....   | 271.2       |
| GDP per capita, PPP\$ ..... | 36,122.1    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>60.0</b>                         | <b>6</b>   |
| Innovation Output Sub-Index .....                             | 52.0                                | 10         |
| Innovation Input Sub-Index .....                              | 67.9                                | 3 ●        |
| Innovation Efficiency Ratio .....                             | 0.8                                 | 41         |
| Global Innovation Index 2014 (out of 143) .....               | 60.7                                | 4          |
| <b>1 Institutions .....</b>                                   | <b>95.8</b>                         | <b>1 ●</b> |
| 1.1 Political environment .....                               | 98.9                                | 1 ●        |
| 1.1.1 Political stability* .....                              | 97.8                                | 3 ●        |
| 1.1.2 Government effectiveness* .....                         | 100.0                               | 1 ●        |
| 1.2 Regulatory environment .....                              | 96.9                                | 7          |
| 1.2.1 Regulatory quality* .....                               | 97.0                                | 4          |
| 1.2.2 Rule of law* .....                                      | 98.9                                | 3 ●        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 10.1                                | 35         |
| 1.3 Business environment .....                                | 91.8                                | 2 ●        |
| 1.3.1 Ease of starting a business* .....                      | 93.1                                | 24         |
| 1.3.2 Ease of resolving insolvency* .....                     | 93.9                                | 1 ●        |
| 1.3.3 Ease of paying taxes* .....                             | 88.4                                | 20         |
| <b>2 Human capital &amp; research .....</b>                   | <b>64.9</b>                         | <b>1 ●</b> |
| 2.1 Education .....                                           | 63.7                                | 6          |
| 2.1.1 Expenditure on education, % GDP .....                   | 6.8                                 | 17         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 36.2                                | 12         |
| 2.1.3 School life expectancy, years .....                     | 17.1                                | 11         |
| 2.1.4 PISA scales in reading, maths, & science .....          | 529.4                               | 6          |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 9.3                                 | 19         |
| 2.2 Tertiary education .....                                  | 54.1                                | 11         |
| 2.2.1 Tertiary enrolment, % gross .....                       | 93.7                                | 4          |
| 2.2.2 Graduates in science & engineering, % .....             | 27.6                                | 14         |
| 2.2.3 Tertiary inbound mobility, % .....                      | 5.7                                 | 32         |
| 2.3 Research & development (R&D) .....                        | 76.9                                | 5          |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 7223.3                              | 3 ●        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 3.5                                 | 4          |
| 2.3.3 QS university ranking, average score top 3* .....       | 61.8                                | 17         |
| <b>3 Infrastructure .....</b>                                 | <b>58.5</b>                         | <b>16</b>  |
| 3.1 Information & communication technologies (ICTs) .....     | 76.7                                | 17         |
| 3.1.1 ICT access* .....                                       | 78.0                                | 26         |
| 3.1.2 ICT use* .....                                          | 80.9                                | 4          |
| 3.1.3 Government's online service* .....                      | 77.2                                | 18         |
| 3.1.4 E-participation* .....                                  | 70.6                                | 24         |
| 3.2 General infrastructure .....                              | 49.3                                | 18         |
| 3.2.1 Electricity output, kWh/cap .....                       | 13035.8                             | 9          |
| 3.2.2 Logistics performance* .....                            | 74.6                                | 23         |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.9                                | 75 ○       |
| 3.3 Ecological sustainability .....                           | 49.5                                | 29         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 5.2                                 | 94 ○       |
| 3.3.2 Environmental performance* .....                        | 75.7                                | 18         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 6.5                                 | 16         |
| <b>4 Market sophistication .....</b>                          | <b>61.5</b>                         | <b>19</b>  |
| 4.1 Credit .....                                              | 48.3                                | 27         |
| 4.1.1 Ease of getting credit* .....                           | 65.0                                | 34         |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 98.1                                | 31         |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a        |

|                                                   |      |       |
|---------------------------------------------------|------|-------|
| 4.2 Investment .....                              | 57.9 | 14    |
| 4.2.1 Ease of protecting investors* .....         | 55.8 | 70 ○  |
| 4.2.2 Market capitalization, % GDP .....          | 62.0 | 28    |
| 4.2.3 Total value of stocks traded, % GDP .....   | 49.3 | 17    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....    | 1.2  | 1 ●   |
| 4.3 Trade & competition .....                     | 78.3 | 60    |
| 4.3.1 Applied tariff rate, weighted mean, % ..... | 1.0  | 9     |
| 4.3.2 Intensity of local competition† .....       | 60.0 | 104 ○ |

|                                                                  |             |          |
|------------------------------------------------------------------|-------------|----------|
| <b>5 Business sophistication .....</b>                           | <b>58.8</b> | <b>4</b> |
| 5.1 Knowledge workers .....                                      | 74.8        | 3 ●      |
| 5.1.1 Knowledge-intensive employment, % .....                    | 44.7        | 11       |
| 5.1.2 Firms offering formal training, % firms .....              | n/a         | n/a      |
| 5.1.3 GERD performed by business, % of GDP .....                 | 2.4         | 4        |
| 5.1.4 GERD financed by business, % .....                         | 60.8        | 9        |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 25.3        | 8        |
| 5.2 Innovation linkages .....                                    | 48.7        | 17       |
| 5.2.1 University/industry research collaboration† .....          | 82.8        | 1 ●      |
| 5.2.2 State of cluster development† .....                        | 67.7        | 12       |
| 5.2.3 GERD financed by abroad, % .....                           | 11.5        | 40       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 44       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 2.5         | 6        |
| 5.3 Knowledge absorption .....                                   | 52.7        | 9        |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 1.6         | 13       |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 7.1         | 64 ○     |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 3.4         | 1 ●      |
| 5.3.4 FDI net inflows, % GDP .....                               | -2.1        | 138 ○    |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>51.9</b> | <b>11</b> |
| 6.1 Knowledge creation .....                                     | 57.5        | 8         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 7.3         | 11        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 8.2         | 1 ●       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 2.0         | 15        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 54.0        | 5         |
| 6.1.5 Citable documents H index .....                            | 407.0       | 18        |
| 6.2 Knowledge impact .....                                       | 44.0        | 42        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 0.6         | 84 ○      |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 2.3         | 43        |
| 6.2.3 Computer software spending, % GDP .....                    | 0.6         | 19        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 13.0        | 29        |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 41.0        | 21        |
| 6.3 Knowledge diffusion .....                                    | 54.2        | 10        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 3.5         | 4         |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 4.5         | 35        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 6.0         | 5         |
| 6.3.4 FDI net outflows, % GDP .....                              | -0.1        | 111 ○     |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>52.2</b> | <b>15</b> |
| 7.1 Intangible assets .....                                     | 61.5        | 10        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 64.3        | 32        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 1.6         | 17        |
| 7.1.3 ICTs & business model creation† .....                     | 80.8        | 1 ●       |
| 7.1.4 ICTs & organizational model creation† .....               | 79.7        | 1 ●       |
| 7.2 Creative goods & services .....                             | 28.0        | 45        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.3         | 43 ○      |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 12.7        | 13        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 54.5        | 10        |
| 7.2.4 Printing & publishing output manufactures, % .....        | 1.2         | 60 ○      |
| 7.2.5 Creative goods exports, % total trade .....               | 0.7         | 46        |
| 7.3 Online creativity .....                                     | 57.8        | 19        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 34.4        | 22        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 39.4        | 16        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 8836.0      | 7         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 92.0        | 11        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

⌚ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## France

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 64.6        |
| GDP (US\$ billions) .....   | 2,846.9     |
| GDP per capita, PPP\$ ..... | 36,537.5    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                              | Score 0–100<br>or value (hard data) | Rank        |
|--------------------------------------------------------------|-------------------------------------|-------------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>53.6</b>                         | <b>21</b>   |
| Innovation Output Sub-Index .....                            | 45.9                                | 23          |
| Innovation Input Sub-Index .....                             | 61.3                                | 17          |
| Innovation Efficiency Ratio .....                            | 0.7                                 | 51          |
| Global Innovation Index 2014 (out of 143) .....              | 52.2                                | 22          |
| <b>1 Institutions.....</b>                                   | <b>81.7</b>                         | <b>21</b>   |
| 1.1 Political environment.....                               | 77.9                                | 26          |
| 1.1.1 Political stability*.....                              | 74.6                                | 48          |
| 1.1.2 Government effectiveness*.....                         | 81.1                                | 20          |
| 1.2 Regulatory environment .....                             | 87.0                                | 19          |
| 1.2.1 Regulatory quality*.....                               | 78.4                                | 23          |
| 1.2.2 Rule of law*.....                                      | 84.8                                | 21          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....       | 11.9                                | 45          |
| 1.3 Business environment.....                                | 80.4                                | 26          |
| 1.3.1 Ease of starting a business*.....                      | 93.0                                | 25          |
| 1.3.2 Ease of resolving insolvency*.....                     | 75.9                                | 20          |
| 1.3.3 Ease of paying taxes*.....                             | 72.1                                | 75 ○        |
| <b>2 Human capital &amp; research.....</b>                   | <b>55.5</b>                         | <b>12 ●</b> |
| 2.1 Education .....                                          | 54.5                                | 31          |
| 2.1.1 Expenditure on education, % GDP .....                  | 5.7                                 | 37          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 28.0                                | 28          |
| 2.1.3 School life expectancy, years.....                     | 16.0                                | 24          |
| 2.1.4 PISA scales in reading, maths, & science.....          | 499.8                               | 20          |
| 2.1.5 Pupil-teacher ratio, secondary .....                   | 12.8                                | 46          |
| 2.2 Tertiary education.....                                  | 50.5                                | 17          |
| 2.2.1 Tertiary enrolment, % gross.....                       | 58.3                                | 42          |
| 2.2.2 Graduates in science & engineering, % .....            | 25.4                                | 23          |
| 2.2.3 Tertiary inbound mobility, %.....                      | 11.8                                | 14          |
| 2.3 Research & development (R&D).....                        | 61.4                                | 12 ●        |
| 2.3.1 Researchers, FTE/mn pop. ....                          | 4124.6                              | 18          |
| 2.3.2 Gross expenditure on R&D, % GDP .....                  | 2.3                                 | 14          |
| 2.3.3 QS university ranking, average score top 3*.....       | 80.5                                | 8 ●         |
| <b>3 Infrastructure.....</b>                                 | <b>60.8</b>                         | <b>12 ●</b> |
| 3.1 Information & communication technologies (ICTs).....     | 87.5                                | 5 ●         |
| 3.1.1 ICT access*.....                                       | 86.5                                | 12 ●        |
| 3.1.2 ICT use*.....                                          | 67.4                                | 19          |
| 3.1.3 Government's online service*.....                      | 100.0                               | 1 ●         |
| 3.1.4 E-participation*.....                                  | 96.1                                | 4 ●         |
| 3.2 General infrastructure.....                              | 47.8                                | 20          |
| 3.2.1 Electricity output, kWh/cap.....                       | 8672.9                              | 18          |
| 3.2.2 Logistics performance*.....                            | 86.0                                | 13 ●        |
| 3.2.3 Gross capital formation, % GDP.....                    | 22.1                                | 67 ○        |
| 3.3 Ecological sustainability .....                          | 47.1                                | 37          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 7.8                                 | 53          |
| 3.3.2 Environmental performance*.....                        | 71.1                                | 27          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 3.1                                 | 33          |
| <b>4 Market sophistication .....</b>                         | <b>59.0</b>                         | <b>25</b>   |
| 4.1 Credit.....                                              | 43.0                                | 38          |
| 4.1.1 Ease of getting credit*.....                           | 50.0                                | 65 ○        |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 111.3                               | 27          |
| 4.1.3 Microfinance gross loans, % GDP .....                  | n/a                                 | n/a         |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                                | 48.1        | 32        |
| 4.2.1 Ease of protecting investors*.....                            | 67.5        | 17        |
| 4.2.2 Market capitalization, % GDP.....                             | 67.9        | 25        |
| 4.2.3 Total value of stocks traded, % GDP.....                      | 41.9        | 19        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                       | 0.2         | 15        |
| 4.3 Trade & competition .....                                       | 85.9        | 21        |
| 4.3.1 Applied tariff rate, weighted mean, %.....                    | 1.0         | 9         |
| 4.3.2 Intensity of local competition <sup>†</sup> .....             | 75.1        | 29        |
| <b>5 Business sophistication .....</b>                              | <b>49.3</b> | <b>19</b> |
| 5.1 Knowledge workers.....                                          | 64.7        | 12 ●      |
| 5.1.1 Knowledge-intensive employment, %.....                        | 44.4        | 13 ●      |
| 5.1.2 Firms offering formal training, % firms.....                  | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP.....                     | 1.5         | 14        |
| 5.1.4 GERD financed by business, % <sup>Ⓓ</sup> .....               | 55.4        | 15        |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 19.6        | 23        |
| 5.2 Innovation linkages .....                                       | 38.4        | 50        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 59.7        | 28        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 55.6        | 30        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓓ</sup> .....                 | 7.6         | 53 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 43 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 1.2         | 14        |
| 5.3 Knowledge absorption.....                                       | 44.7        | 29        |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 1.3         | 19        |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 11.6        | 25        |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.8         | 24        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 0.2         | 127 ○     |
| <b>6 Knowledge &amp; technology outputs .....</b>                   | <b>41.1</b> | <b>23</b> |
| 6.1 Knowledge creation.....                                         | 33.9        | 29        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....               | 5.8         | 15        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                    | 3.2         | 15        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....              | 0.1         | 56 ○      |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....             | 25.7        | 32        |
| 6.1.5 Citable documents H index.....                                | 742.0       | 4 ●       |
| 6.2 Knowledge impact.....                                           | 44.4        | 39        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                       | 0.2         | 95 ○      |
| 6.2.2 New businesses/th pop. 15–64.....                             | 2.9         | 38        |
| 6.2.3 Computer software spending, % GDP.....                        | 0.6         | 14        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....              | 11.7        | 35        |
| 6.2.5 High- & medium-high-tech manufactures, % .....                | 43.1        | 16        |
| 6.3 Knowledge diffusion.....                                        | 44.9        | 25        |
| 6.3.1 Royalty & license fees receipts, % total trade.....           | 1.4         | 12 ●      |
| 6.3.2 High-tech exports less re-exports, % total trade .....        | 14.3        | 12 ●      |
| 6.3.3 Comm., computer & info. services exp., % total trade.....     | 1.9         | 44        |
| 6.3.4 FDI net outflows, % GDP .....                                 | 0.0         | 109 ○     |
| <b>7 Creative outputs .....</b>                                     | <b>50.8</b> | <b>19</b> |
| 7.1 Intangible assets .....                                         | 59.8        | 14 ●      |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                  | 121.0       | 7 ●       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....               | 1.5         | 21        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....             | 65.5        | 30        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....       | 58.5        | 46        |
| 7.2 Creative goods & services.....                                  | 34.6        | 28        |
| 7.2.1 Cultural & creative services exports, % total trade.....      | 1.1         | 12        |
| 7.2.2 National feature films/mn pop. 15–69.....                     | 6.1         | 32        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                 | 47.2        | 14        |
| 7.2.4 Printing & publishing output manufactures, %.....             | 1.3         | 56 ○      |
| 7.2.5 Creative goods exports, % total trade.....                    | 1.7         | 27        |
| 7.3 Online creativity.....                                          | 49.0        | 23        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....           | 46.8        | 19        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                          | 27.0        | 29        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                               | 4814.5      | 27        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                      | 86.5        | 21        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 1.9                |
| GDP (US\$ billions) .....   | 0.8                |
| GDP per capita, PPP\$ ..... | 2,081.5            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                                        | Score 0–100<br>or value (hard data) | Rank         |
|------------------------------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141).....</b>                       | <b>27.5</b>                         | <b>112</b>   |
| Innovation Output Sub-Index .....                                      | 24.0                                | 94           |
| Innovation Input Sub-Index .....                                       | 31.0                                | 121          |
| Innovation Efficiency Ratio .....                                      | 0.8                                 | 39 ●         |
| Global Innovation Index 2014 (out of 143) .....                        | 29.0                                | 104          |
| <b>1 Institutions.....</b>                                             | <b>47.2</b>                         | <b>114</b>   |
| 1.1 Political environment.....                                         | 42.5                                | 89           |
| 1.1.1 Political stability*.....                                        | 63.0                                | 70 ●         |
| 1.1.2 Government effectiveness*.....                                   | 22.0                                | 115          |
| 1.2 Regulatory environment .....                                       | 49.7                                | 114          |
| 1.2.1 Regulatory quality*.....                                         | 38.0                                | 101          |
| 1.2.2 Rule of law*.....                                                | 32.0                                | 97           |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....                  | 26.0                                | 112          |
| 1.3 Business environment.....                                          | 49.4                                | 134 ○        |
| 1.3.1 Ease of starting a business*.....                                | 68.4                                | 126          |
| 1.3.2 Ease of resolving insolvency*.....                               | 41.5                                | 95           |
| 1.3.3 Ease of paying taxes*.....                                       | 38.4                                | 136 ○        |
| <b>2 Human capital &amp; research.....</b>                             | <b>11.1</b>                         | <b>138</b> ○ |
| 2.1 Education .....                                                    | 21.2                                | 133 ○        |
| 2.1.1 Expenditure on education, % GDP .....                            | 4.1                                 | 84           |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓓ</sup> ..... | 13.1                                | 90           |
| 2.1.3 School life expectancy, years <sup>Ⓓ</sup> .....                 | 8.8                                 | 123 ○        |
| 2.1.4 PISA scales in reading, maths, & science.....                    | n/a                                 | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary .....                             | n/a                                 | n/a          |
| 2.2 Tertiary education.....                                            | n/a                                 | n/a          |
| 2.2.1 Tertiary enrolment, % gross.....                                 | n/a                                 | n/a          |
| 2.2.2 Graduates in science & engineering, % .....                      | n/a                                 | n/a          |
| 2.2.3 Tertiary inbound mobility, %.....                                | n/a                                 | n/a          |
| 2.3 Research & development (R&D).....                                  | 1.1                                 | 114          |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓓ</sup> .....                      | 33.8                                | 100 ○        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓓ</sup> .....               | 0.1                                 | 101          |
| 2.3.3 QS university ranking, average score top 3*.....                 | 0.0                                 | 73 ○         |
| <b>3 Infrastructure.....</b>                                           | <b>23.4</b>                         | <b>122</b>   |
| 3.1 Information & communication technologies (ICTs).....               | 20.3                                | 122          |
| 3.1.1 ICT access*.....                                                 | 33.9                                | 109          |
| 3.1.2 ICT use*.....                                                    | 5.1                                 | 122          |
| 3.1.3 Government's online service*.....                                | 20.5                                | 120          |
| 3.1.4 E-participation*.....                                            | 21.6                                | 119          |
| 3.2 General infrastructure.....                                        | 20.6                                | 116          |
| 3.2.1 Electricity output, kWh/cap.....                                 | n/a                                 | n/a          |
| 3.2.2 Logistics performance*.....                                      | 4.5                                 | 127 ○        |
| 3.2.3 Gross capital formation, % GDP.....                              | 21.4                                | 72 ●         |
| 3.3 Ecological sustainability .....                                    | 29.3                                | 97           |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....                | n/a                                 | n/a          |
| 3.3.2 Environmental performance*.....                                  | 29.3                                | 129          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....           | n/a                                 | n/a          |
| <b>4 Market sophistication .....</b>                                   | <b>36.0</b>                         | <b>126</b>   |
| 4.1 Credit.....                                                        | 8.8                                 | 133 ○        |
| 4.1.1 Ease of getting credit*.....                                     | 20.0                                | 128          |
| 4.1.2 Domestic credit to private sector, % GDP.....                    | 15.4                                | 128          |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓓ</sup> .....               | 0.2                                 | 52 ●         |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 39.2 | 52    |
| 4.2.1 Ease of protecting investors*.....                | 39.2 | 129 ○ |
| 4.2.2 Market capitalization, % GDP.....                 | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP.....          | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a   |
| 4.3 Trade & competition .....                           | 60.1 | 128   |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 12.5 | 130 ○ |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 64.2 | 84    |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                                        | <b>37.4</b> | <b>53</b>  |
| 5.1 Knowledge workers.....                                                    | 29.3        | 94         |
| 5.1.1 Knowledge-intensive employment, %.....                                  | n/a         | n/a        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓓ</sup> .....              | 25.6        | 74         |
| 5.1.3 GERD performed by business, % of GDP.....                               | n/a         | n/a        |
| 5.1.4 GERD financed by business, %.....                                       | n/a         | n/a        |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a         | n/a        |
| 5.2 Innovation linkages .....                                                 | 34.3        | 62         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 38.9        | 84         |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 46.1        | 70 ●       |
| 5.2.3 GERD financed by abroad, % <sup>Ⓓ</sup> .....                           | 15.9        | 28 ●       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a         | n/a        |
| 5.3 Knowledge absorption.....                                                 | 48.5        | 17 ●       |
| 5.3.1 Royalty & license fees payments, % total trade.....                     | n/a         | n/a        |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 2.7         | 127 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓓ</sup> ..... | 3.2         | 3 ●        |
| 5.3.4 FDI net inflows, % GDP.....                                             | 2.8         | 68 ●       |
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>29.3</b> | <b>51</b>  |
| 6.1 Knowledge creation.....                                                   | 24.7        | 39 ●       |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | 1.0         | 28 ●       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 39.6        | 16 ●       |
| 6.1.5 Citable documents H index.....                                          | 85.0        | 84         |
| 6.2 Knowledge impact.....                                                     | 13.1        | 125        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | n/a         | n/a        |
| 6.2.2 New businesses/th pop. 15–64.....                                       | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP.....                                  | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.0         | 115        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓓ</sup> .....             | 16.8        | 61         |
| 6.3 Knowledge diffusion.....                                                  | 50.0        | 15         |
| 6.3.1 Royalty & license fees receipts, % total trade.....                     | n/a         | n/a        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.0         | 122 ○      |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓓ</sup> ..... | 6.0         | 1 ●        |
| 6.3.4 FDI net outflows, % GDP .....                                           | n/a         | n/a        |
| <b>7 Creative outputs .....</b>                                               | <b>18.6</b> | <b>122</b> |
| 7.1 Intangible assets .....                                                   | 36.9        | 109        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                           | 18.4        | 85         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                        | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                       | 52.7        | 79         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....                 | 49.0        | 80         |
| 7.2 Creative goods & services.....                                            | 0.3         | 137 ○      |
| 7.2.1 Cultural & creative services exports, % total trade.....                | n/a         | n/a        |
| 7.2.2 National feature films/mn pop. 15–69.....                               | n/a         | n/a        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                           | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓓ</sup> .....         | 0.1         | 98 ○       |
| 7.2.5 Creative goods exports, % total trade.....                              | 0.0         | 116        |
| 7.3 Online creativity.....                                                    | 0.4         | 121        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....                     | 0.1         | 131 ○      |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                                    | 0.6         | 99         |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                         | 49.7        | 121        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                                | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Georgia

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 4.3                              |
| GDP (US\$ billions) .....   | 16.5                             |
| GDP per capita, PPP\$ ..... | 6,569.9                          |
| Income group .....          | Lower-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>33.8</b>                         | <b>73</b> |
| Innovation Output Sub-Index .....                 | 25.8                                | 86        |
| Innovation Input Sub-Index .....                  | 41.8                                | 67        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 107       |
| Global Innovation Index 2014 (out of 143) .....   | 34.5                                | 74        |

|          |                                                                  |             |           |
|----------|------------------------------------------------------------------|-------------|-----------|
| <b>1</b> | <b>Institutions .....</b>                                        | <b>68.2</b> | <b>51</b> |
| 1.1      | Political environment .....                                      | 54.2        | 60        |
| 1.1.1    | Political stability* .....                                       | 52.7        | 94        |
| 1.1.2    | Government effectiveness* .....                                  | 55.8        | 44        |
| 1.2      | Regulatory environment .....                                     | 78.0        | 34        |
| 1.2.1    | Regulatory quality* .....                                        | 67.4        | 40        |
| 1.2.2    | Rule of law* .....                                               | 47.0        | 62        |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....                 | 8.6         | 20 ●      |
| 1.3      | Business environment .....                                       | 72.3        | 57        |
| 1.3.1    | Ease of starting a business* .....                               | 97.7        | 5 ●       |
| 1.3.2    | Ease of resolving insolvency* .....                              | 36.5        | 108       |
| 1.3.3    | Ease of paying taxes* .....                                      | 82.8        | 33        |
| <b>2</b> | <b>Human capital &amp; research .....</b>                        | <b>23.6</b> | <b>91</b> |
| 2.1      | Education .....                                                  | 38.4        | 89        |
| 2.1.1    | Expenditure on education, % GDP .....                            | 2.0         | 125 ○     |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 15.5        | 83        |
| 2.1.3    | School life expectancy, years .....                              | 13.8        | 62        |
| 2.1.4    | PISA scales in reading, maths, & science .....                   | n/a         | n/a       |
| 2.1.5    | Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 7.6         | 1 ●       |
| 2.2      | Tertiary education .....                                         | 30.5        | 74        |
| 2.2.1    | Tertiary enrolment, % gross .....                                | 33.1        | 73        |
| 2.2.2    | Graduates in science & engineering, % .....                      | 20.7        | 51        |
| 2.2.3    | Tertiary inbound mobility, % .....                               | 3.0         | 52        |
| 2.3      | Research & development (R&D) .....                               | 2.0         | 102       |
| 2.3.1    | Researchers, FTE/mn pop. ....                                    | n/a         | n/a       |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.2         | 94        |
| 2.3.3    | QS university ranking, average score top 3* .....                | 0.0         | 73 ○      |
| <b>3</b> | <b>Infrastructure .....</b>                                      | <b>36.6</b> | <b>79</b> |
| 3.1      | Information & communication technologies (ICTs) .....            | 51.1        | 55        |
| 3.1.1    | ICT access* .....                                                | 59.9        | 66        |
| 3.1.2    | ICT use* .....                                                   | 25.8        | 81        |
| 3.1.3    | Government's online service* .....                               | 59.8        | 49        |
| 3.1.4    | E-participation* .....                                           | 58.8        | 49        |
| 3.2      | General infrastructure .....                                     | 26.5        | 90        |
| 3.2.1    | Electricity output, kWh/cap .....                                | 2159.2      | 75        |
| 3.2.2    | Logistics performance* .....                                     | 17.7        | 107 ○     |
| 3.2.3    | Gross capital formation, % GDP .....                             | 25.9        | 40        |
| 3.3      | Ecological sustainability .....                                  | 32.1        | 90        |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | 7.2         | 61        |
| 3.3.2    | Environmental performance* .....                                 | 47.2        | 90        |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP .....          | 0.2         | 110       |
| <b>4</b> | <b>Market sophistication .....</b>                               | <b>52.8</b> | <b>42</b> |
| 4.1      | Credit .....                                                     | 20          | 20 ●      |
| 4.1.1    | Ease of getting credit* .....                                    | 85.0        | 7 ●       |
| 4.1.2    | Domestic credit to private sector, % GDP .....                   | 39.8        | 84        |
| 4.1.3    | Microfinance gross loans, % GDP .....                            | 5.2         | 7 ●       |

|       |                                                   |      |       |
|-------|---------------------------------------------------|------|-------|
| 4.2   | Investment .....                                  | 26.4 | 111   |
| 4.2.1 | Ease of protecting investors* .....               | 60.8 | 41    |
| 4.2.2 | Market capitalization, % GDP .....                | 6.0  | 98 ○  |
| 4.2.3 | Total value of stocks traded, % GDP .....         | 0.0  | 105 ○ |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....          | 0.1  | 37    |
| 4.3   | Trade & competition .....                         | 79.3 | 56    |
| 4.3.1 | Applied tariff rate, weighted mean, % .....       | 0.7  | 3 ●   |
| 4.3.2 | Intensity of local competition <sup>†</sup> ..... | 60.7 | 101   |

|          |                                                               |             |            |
|----------|---------------------------------------------------------------|-------------|------------|
| <b>5</b> | <b>Business sophistication .....</b>                          | <b>28.0</b> | <b>105</b> |
| 5.1      | Knowledge workers .....                                       | 27.1        | 100        |
| 5.1.1    | Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 22.2        | 66         |
| 5.1.2    | Firms offering formal training, % firms .....                 | 10.5        | 106 ○      |
| 5.1.3    | GERD performed by business, % of GDP .....                    | n/a         | n/a        |
| 5.1.4    | GERD financed by business, % .....                            | n/a         | n/a        |
| 5.1.5    | Females employed w/advanced degrees, % total .....            | 14.5        | 40         |
| 5.2      | Innovation linkages .....                                     | 31.7        | 67         |
| 5.2.1    | University/industry research collaboration <sup>†</sup> ..... | 27.3        | 124 ○      |
| 5.2.2    | State of cluster development <sup>†</sup> .....               | 37.1        | 109 ○      |
| 5.2.3    | GERD financed by abroad, % .....                              | n/a         | n/a        |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 19 ●       |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.1         | 46         |
| 5.3      | Knowledge absorption .....                                    | 25.2        | 113        |
| 5.3.1    | Royalty & license fees payments, % total trade .....          | 0.2         | 94         |
| 5.3.2    | High-tech imports less re-imports, % total trade .....        | 6.0         | 82         |
| 5.3.3    | Comm., computer & info. services imp., % total trade .....    | 0.5         | 96         |
| 5.3.4    | FDI net inflows, % GDP .....                                  | 6.3         | 25 ●       |
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>               | <b>26.6</b> | <b>67</b>  |
| 6.1      | Knowledge creation .....                                      | 20.2        | 49         |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....               | 3.5         | 27         |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                    | 0.0         | 87 ○       |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....             | 1.9         | 16         |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....            | 16.3        | 47         |
| 6.1.5    | Citable documents H index .....                               | 90.0        | 80         |
| 6.2      | Knowledge impact .....                                        | 39.6        | 58         |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                      | 2.8         | 33         |
| 6.2.2    | New businesses/th pop. 15–64 .....                            | 4.9         | 22 ●       |
| 6.2.3    | Computer software spending, % GDP .....                       | n/a         | n/a        |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....              | 3.0         | 82         |
| 6.2.5    | High- & medium-high-tech manufactures, % .....                | 12.9        | 71         |
| 6.3      | Knowledge diffusion .....                                     | 20.1        | 112        |
| 6.3.1    | Royalty & license fees receipts, % total trade .....          | 0.0         | 75         |
| 6.3.2    | High-tech exports less re-exports, % total trade .....        | 0.3         | 90         |
| 6.3.3    | Comm., computer & info. services exp., % total trade .....    | 0.7         | 87         |
| 6.3.4    | FDI net outflows, % GDP .....                                 | 0.7         | 57         |
| <b>7</b> | <b>Creative outputs .....</b>                                 | <b>25.0</b> | <b>99</b>  |
| 7.1      | Intangible assets .....                                       | 36.2        | 110        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                 | 51.3        | 48         |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....              | 0.6         | 39         |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....             | 48.9        | 98         |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....       | 43.1        | 104        |
| 7.2      | Creative goods & services .....                               | 22.1        | 60         |
| 7.2.1    | Cultural & creative services exports, % total trade .....     | 0.1         | 58         |
| 7.2.2    | National feature films/mn pop. 15–69 .....                    | 2.9         | 52         |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....                | n/a         | n/a        |
| 7.2.4    | Printing & publishing output manufactures, % .....            | 3.5         | 8 ●        |
| 7.2.5    | Creative goods exports, % total trade .....                   | 0.0         | 108 ○      |
| 7.3      | Online creativity .....                                       | 5.4         | 91         |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....          | 1.8         | 93         |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                         | 2.8         | 66         |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                              | 1586.9      | 62         |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                     | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 82.7        |
| GDP (US\$ billions) .....   | 3,859.5     |
| GDP per capita, PPP\$ ..... | 41,248.1    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>57.1</b>                         | <b>12</b> |
| Innovation Output Sub-Index .....                             | 53.1                                | 8         |
| Innovation Input Sub-Index .....                              | 61.0                                | 18        |
| Innovation Efficiency Ratio .....                             | 0.9                                 | 13        |
| Global Innovation Index 2014 (out of 143) .....               | 56.0                                | 13        |
| <b>1 Institutions .....</b>                                   | <b>83.2</b>                         | <b>20</b> |
| 1.1 Political environment .....                               | 84.8                                | 18        |
| 1.1.1 Political stability* .....                              | 87.1                                | 24        |
| 1.1.2 Government effectiveness* .....                         | 82.4                                | 16        |
| 1.2 Regulatory environment .....                              | 81.5                                | 26        |
| 1.2.1 Regulatory quality* .....                               | 89.1                                | 15        |
| 1.2.2 Rule of law* .....                                      | 90.6                                | 16        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 21.6                                | 98 ○      |
| 1.3 Business environment .....                                | 83.4                                | 19        |
| 1.3.1 Ease of starting a business* .....                      | 81.4                                | 93 ○      |
| 1.3.2 Ease of resolving insolvency* .....                     | 91.8                                | 3 ●       |
| 1.3.3 Ease of paying taxes* .....                             | 77.0                                | 56        |
| <b>2 Human capital &amp; research .....</b>                   | <b>56.6</b>                         | <b>10</b> |
| 2.1 Education .....                                           | 53.5                                | 37        |
| 2.1.1 Expenditure on education, % GDP .....                   | 5.0                                 | 58        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 24.1                                | 43        |
| 2.1.3 School life expectancy, years .....                     | 16.5                                | 15        |
| 2.1.4 PISA scales in reading, maths, & science .....          | 515.1                               | 13        |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 12.7                                | 44        |
| 2.2 Tertiary education .....                                  | 48.2                                | 22        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 61.7                                | 37        |
| 2.2.2 Graduates in science & engineering, % .....             | 27.2                                | 15        |
| 2.2.3 Tertiary inbound mobility, % .....                      | 7.0                                 | 25        |
| 2.3 Research & development (R&D) .....                        | 68.0                                | 9         |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 4362.6                              | 14        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 3.0                                 | 8         |
| 2.3.3 QS university ranking, average score top 3* .....       | 80.2                                | 9         |
| <b>3 Infrastructure .....</b>                                 | <b>56.7</b>                         | <b>18</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 72.9                                | 22        |
| 3.1.1 ICT access* .....                                       | 91.9                                | 5 ●       |
| 3.1.2 ICT use* .....                                          | 62.1                                | 24        |
| 3.1.3 Government's online service* .....                      | 66.9                                | 34        |
| 3.1.4 E-participation* .....                                  | 70.6                                | 24        |
| 3.2 General infrastructure .....                              | 45.3                                | 28        |
| 3.2.1 Electricity output, kWh/cap .....                       | 7660.9                              | 24        |
| 3.2.2 Logistics performance* .....                            | 100.0                               | 1 ●       |
| 3.2.3 Gross capital formation, % GDP .....                    | 17.7                                | 112 ○     |
| 3.3 Ecological sustainability .....                           | 52.1                                | 23        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 9.2                                 | 36        |
| 3.3.2 Environmental performance* .....                        | 80.5                                | 6 ●       |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 2.2                                 | 44        |
| <b>4 Market sophistication .....</b>                          | <b>59.2</b>                         | <b>22</b> |
| 4.1 Credit .....                                              | 49.9                                | 23        |
| 4.1.1 Ease of getting credit* .....                           | 70.0                                | 22        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 93.1                                | 33        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a       |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                             | 38.5        | 59        |
| 4.2.1 Ease of protecting investors* .....                        | 59.2        | 49        |
| 4.2.2 Market capitalization, % GDP .....                         | 42.1        | 48        |
| 4.2.3 Total value of stocks traded, % GDP .....                  | 34.7        | 24        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                   | 0.2         | 16        |
| 4.3 Trade & competition .....                                    | 89.2        | 7         |
| 4.3.1 Applied tariff rate, weighted mean, % .....                | 1.0         | 9         |
| 4.3.2 Intensity of local competition† .....                      | 81.8        | 10        |
| <b>5 Business sophistication .....</b>                           | <b>49.2</b> | <b>20</b> |
| 5.1 Knowledge workers .....                                      | 59.4        | 24        |
| 5.1.1 Knowledge-intensive employment, % .....                    | 42.9        | 18        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> ..... | 35.4        | 51        |
| 5.1.3 GERD performed by business, % of GDP .....                 | 2.0         | 7         |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....            | 66.1        | 4 ●       |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 13.9        | 43 ○      |
| 5.2 Innovation linkages .....                                    | 46.0        | 22        |
| 5.2.1 University/industry research collaboration† .....          | 72.3        | 10        |
| 5.2.2 State of cluster development† .....                        | 74.9        | 2 ●       |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....              | 4.3         | 69 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 49 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 2.4         | 7         |
| 5.3 Knowledge absorption .....                                   | 42.2        | 33        |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 0.8         | 37        |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 9.6         | 39        |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 2.0         | 17        |
| 5.3.4 FDI net inflows, % GDP .....                               | 0.9         | 115 ○     |
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>53.4</b> | <b>10</b> |
| 6.1 Knowledge creation .....                                     | 64.7        | 5 ●       |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 13.1        | 1 ●       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 4.8         | 11        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 3.2         | 9         |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 26.0        | 31        |
| 6.1.5 Citable documents H index .....                            | 815.0       | 3 ●       |
| 6.2 Knowledge impact .....                                       | 46.6        | 31        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 0.3         | 91 ○      |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 1.3         | 59 ○      |
| 6.2.3 Computer software spending, % GDP .....                    | 0.6         | 18        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 15.6        | 23        |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 55.5        | 5 ●       |
| 6.3 Knowledge diffusion .....                                    | 49.0        | 20        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 1.1         | 15        |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 12.0        | 17        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.2         | 35        |
| 6.3.4 FDI net outflows, % GDP .....                              | 2.2         | 32        |
| <b>7 Creative outputs .....</b>                                  | <b>52.8</b> | <b>14</b> |
| 7.1 Intangible assets .....                                      | 55.2        | 29        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....              | 66.3        | 30        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....           | 1.7         | 16        |
| 7.1.3 ICTs & business model creation† .....                      | 69.3        | 19        |
| 7.1.4 ICTs & organizational model creation† .....                | 66.6        | 21        |
| 7.2 Creative goods & services .....                              | 28.1        | 43        |
| 7.2.1 Cultural & creative services exports, % total trade .....  | 0.4         | 39        |
| 7.2.2 National feature films/mn pop. 15–69 .....                 | 3.8         | 45        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....             | 50.1        | 11        |
| 7.2.4 Printing & publishing output manufactures, % .....         | 1.2         | 61 ○      |
| 7.2.5 Creative goods exports, % total trade .....                | 1.8         | 25        |
| 7.3 Online creativity .....                                      | 72.8        | 7         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....       | 63.7        | 14        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                      | 100.0       | 1 ●       |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                           | 5952.1      | 19        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                  | 83.6        | 27        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Ghana

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 26.4                |
| GDP (US\$ billions) .....   | 38.6                |
| GDP per capita, PPP\$ ..... | 3,589.7             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>28.0</b>                         | <b>108</b> |
| Innovation Output Sub-Index .....                 | 22.9                                | 102        |
| Innovation Input Sub-Index .....                  | 33.2                                | 116        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 79         |
| Global Innovation Index 2014 (out of 143) .....   | 30.3                                | 96         |

**1 Institutions .....** 48.3 109

|                                                        |      |       |
|--------------------------------------------------------|------|-------|
| 1.1 Political environment .....                        | 51.9 | 63    |
| 1.1.1 Political stability* .....                       | 64.7 | 64    |
| 1.1.2 Government effectiveness* .....                  | 39.1 | 76    |
| 1.2 Regulatory environment .....                       | 33.7 | 135 ○ |
| 1.2.1 Regulatory quality* .....                        | 49.9 | 67    |
| 1.2.2 Rule of law* .....                               | 50.5 | 57 ●  |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 49.8 | 135 ○ |
| 1.3 Business environment .....                         | 59.2 | 108   |
| 1.3.1 Ease of starting a business* .....               | 83.7 | 78    |
| 1.3.2 Ease of resolving insolvency* .....              | 22.5 | 135 ○ |
| 1.3.3 Ease of paying taxes* .....                      | 71.5 | 79    |

**2 Human capital & research .....** 23.2 94

|                                                           |      |      |
|-----------------------------------------------------------|------|------|
| 2.1 Education .....                                       | 47.0 | 59 ● |
| 2.1.1 Expenditure on education, % GDP .....               | 8.1  | 6 ●  |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 25.7 | 36 ● |
| 2.1.3 School life expectancy, years .....                 | 11.5 | 98   |
| 2.1.4 PISA scales in reading, maths, & science .....      | n/a  | n/a  |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 17.5 | 76   |
| 2.2 Tertiary education .....                              | 18.7 | 105  |
| 2.2.1 Tertiary enrolment, % gross .....                   | 12.2 | 105  |
| 2.2.2 Graduates in science & engineering, % .....         | 14.2 | 86   |
| 2.2.3 Tertiary inbound mobility, % .....                  | 3.1  | 51   |
| 2.3 Research & development (R&D) .....                    | 3.8  | 86   |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....         | 38.8 | 94   |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....  | 0.4  | 71   |
| 2.3.3 QS university ranking, average score top 3* .....   | 2.3  | 72   |

**3 Infrastructure .....** 28.4 107

|                                                               |       |      |
|---------------------------------------------------------------|-------|------|
| 3.1 Information & communication technologies (ICTs) .....     | 33.3  | 97   |
| 3.1.1 ICT access* .....                                       | 44.7  | 92   |
| 3.1.2 ICT use* .....                                          | 17.6  | 94   |
| 3.1.3 Government's online service* .....                      | 31.5  | 98   |
| 3.1.4 E-participation* .....                                  | 39.2  | 82   |
| 3.2 General infrastructure .....                              | 24.3  | 103  |
| 3.2.1 Electricity output, kWh/cap .....                       | 473.9 | 107  |
| 3.2.2 Logistics performance* .....                            | 23.8  | 95   |
| 3.2.3 Gross capital formation, % GDP .....                    | 24.6  | 48 ● |
| 3.3 Ecological sustainability .....                           | 27.6  | 108  |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 8.1   | 51 ● |
| 3.3.2 Environmental performance* .....                        | 32.1  | 124  |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.2   | 117  |

**4 Market sophistication .....** 37.5 123

|                                                      |      |      |
|------------------------------------------------------|------|------|
| 4.1 Credit .....                                     | 23.9 | 93   |
| 4.1.1 Ease of getting credit* .....                  | 65.0 | 34 ● |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 17.0 | 122  |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.2  | 55   |

|                                                 |      |      |
|-------------------------------------------------|------|------|
| 4.2 Investment .....                            | 25.0 | 125  |
| 4.2.1 Ease of protecting investors* .....       | 58.3 | 54 ● |
| 4.2.2 Market capitalization, % GDP .....        | 8.3  | 93   |
| 4.2.3 Total value of stocks traded, % GDP ..... | 0.1  | 97   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....  | 0.0  | 47   |

**4.3 Trade & competition .....** 63.7 120

|                                                                |      |     |
|----------------------------------------------------------------|------|-----|
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 8.6  | 112 |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 57.4 | 113 |

**5 Business sophistication .....** 28.7 100

|                                                               |      |      |
|---------------------------------------------------------------|------|------|
| 5.1 Knowledge workers .....                                   | 20.6 | 121  |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....    | 8.6  | 103  |
| 5.1.2 Firms offering formal training, % firms .....           | 40.1 | 46   |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> ..... | 0.0  | 87 ○ |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....         | 0.1  | 90 ○ |
| 5.1.5 Females employed w/advanced degrees, % total .....      | n/a  | n/a  |

**5.2 Innovation linkages .....** 30.8 73

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 41.0 | 74    |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 45.5 | 74    |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 31.2 | 14 ●  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0  | 77    |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0  | 108 ○ |

**5.3 Knowledge absorption .....** 34.8 62

|                                                                  |     |      |
|------------------------------------------------------------------|-----|------|
| 5.3.1 Royalty & license fees payments, % total trade .....       | n/a | n/a  |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 5.1 | 99   |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | n/a | n/a  |
| 5.3.4 FDI net inflows, % GDP .....                               | 6.7 | 21 ● |

**6 Knowledge & technology outputs .....** 25.0 76

|                                                               |      |      |
|---------------------------------------------------------------|------|------|
| 6.1 Knowledge creation .....                                  | 5.7  | 98   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....         | n/a  | n/a  |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 0.0  | 91 ○ |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....       | n/a  | n/a  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....      | 6.5  | 88   |
| 6.1.5 Citable documents H index .....                         | 82.0 | 86   |

**6.2 Knowledge impact .....** 45.5 37 ●

|                                                        |     |       |
|--------------------------------------------------------|-----|-------|
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....         | 5.3 | 5 ●   |
| 6.2.2 New businesses/th pop. 15–64 .....               | 0.9 | 72    |
| 6.2.3 Computer software spending, % GDP .....          | n/a | n/a   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP ..... | 0.5 | 127 ○ |
| 6.2.5 High- & medium-high-tech manufactures, % .....   | n/a | n/a   |

**6.3 Knowledge diffusion .....** 23.7 95

|                                                                  |     |     |
|------------------------------------------------------------------|-----|-----|
| 6.3.1 Royalty & license fees receipts, % total trade .....       | n/a | n/a |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.3 | 87  |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | n/a | n/a |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.0 | 104 |

**7 Creative outputs .....** 20.8 119

|                                                               |      |      |
|---------------------------------------------------------------|------|------|
| 7.1 Intangible assets .....                                   | 37.0 | 107  |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....           | n/a  | n/a  |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....        | 0.0  | 66 ○ |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....       | 50.1 | 93   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> ..... | 42.2 | 109  |

**7.2 Creative goods & services .....** 2.4 124 ○

|                                                                 |     |     |
|-----------------------------------------------------------------|-----|-----|
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a | n/a |
| 7.2.2 National feature films/mn pop. 15–69 .....                | n/a | n/a |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a | n/a |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a | n/a |
| 7.2.5 Creative goods exports, % total trade .....               | 0.1 | 96  |

**7.3 Online creativity .....** 6.7 86

|                                                            |       |       |
|------------------------------------------------------------|-------|-------|
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 ..... | 0.8   | 108   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                | 0.0   | 139 ○ |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                     | 101.7 | 114   |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....            | 25.3  | 72 ○  |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 11.1        |
| GDP (US\$ billions) .....   | 238.0       |
| GDP per capita, PPP\$ ..... | 24,574.1    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>40.3</b>                         | <b>45</b> |
| Innovation Output Sub-Index .....                 | 31.8                                | 57        |
| Innovation Input Sub-Index .....                  | 48.8                                | 38        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 98        |
| Global Innovation Index 2014 (out of 143) .....   | 38.9                                | 50        |

**1 Institutions ..... 68.2 52**

|                                                        |      |    |
|--------------------------------------------------------|------|----|
| 1.1 Political environment .....                        | 56.4 | 55 |
| 1.1.1 Political stability* .....                       | 59.3 | 79 |
| 1.1.2 Government effectiveness* .....                  | 53.5 | 47 |
| 1.2 Regulatory environment .....                       | 73.1 | 45 |
| 1.2.1 Regulatory quality* .....                        | 64.2 | 42 |
| 1.2.2 Rule of law* .....                               | 59.3 | 47 |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 15.9 | 71 |
| 1.3 Business environment .....                         | 75.0 | 47 |
| 1.3.1 Ease of starting a business* .....               | 90.7 | 43 |
| 1.3.2 Ease of resolving insolvency* .....              | 56.0 | 50 |
| 1.3.3 Ease of paying taxes* .....                      | 78.3 | 49 |

**2 Human capital & research ..... 45.9 28**

|                                                                        |        |      |
|------------------------------------------------------------------------|--------|------|
| 2.1 Education .....                                                    | 52.3   | 41   |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 4.1    | 83   |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 21.5   | 51   |
| 2.1.3 School life expectancy, years .....                              | 17.6   | 8 ●  |
| 2.1.4 PISA scales in reading, maths, & science .....                   | 465.6  | 39   |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 7.9    | 5 ●  |
| 2.2 Tertiary education .....                                           | 58.8   | 6 ●  |
| 2.2.1 Tertiary enrolment, % gross .....                                | 116.6  | 1 ●  |
| 2.2.2 Graduates in science & engineering, % .....                      | 28.7   | 12 ● |
| 2.2.3 Tertiary inbound mobility, % .....                               | 4.4    | 40   |
| 2.3 Research & development (R&D) .....                                 | 26.5   | 36   |
| 2.3.1 Researchers, FTE/mn pop. ....                                    | 2486.3 | 33   |
| 2.3.2 Gross expenditure on R&D, % GDP .....                            | 0.8    | 43   |
| 2.3.3 QS university ranking, average score top 3* .....                | 31.4   | 44   |

**3 Infrastructure ..... 47.9 42**

|                                                               |        |       |
|---------------------------------------------------------------|--------|-------|
| 3.1 Information & communication technologies (ICTs) .....     | 65.7   | 34    |
| 3.1.1 ICT access* .....                                       | 75.3   | 34    |
| 3.1.2 ICT use* .....                                          | 46.5   | 44    |
| 3.1.3 Government's online service* .....                      | 60.6   | 47    |
| 3.1.4 E-participation* .....                                  | 80.4   | 17 ●  |
| 3.2 General infrastructure .....                              | 26.1   | 94    |
| 3.2.1 Electricity output, kWh/cap .....                       | 5194.2 | 41    |
| 3.2.2 Logistics performance* .....                            | 53.1   | 42    |
| 3.2.3 Gross capital formation, % GDP .....                    | 13.8   | 133 ○ |
| 3.3 Ecological sustainability .....                           | 52.0   | 24    |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 9.4    | 33    |
| 3.3.2 Environmental performance* .....                        | 73.3   | 23 ●  |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 3.7    | 26    |

**4 Market sophistication ..... 51.2 49**

|                                                      |       |      |
|------------------------------------------------------|-------|------|
| 4.1 Credit .....                                     | 44.9  | 33   |
| 4.1.1 Ease of getting credit* .....                  | 50.0  | 65   |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 122.6 | 23 ● |
| 4.1.3 Microfinance gross loans, % GDP .....          | n/a   | n/a  |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 26.7 | 110 |
| 4.2.1 Ease of protecting investors* .....               | 57.5 | 60  |
| 4.2.2 Market capitalization, % GDP .....                | 17.9 | 75  |
| 4.2.3 Total value of stocks traded, % GDP .....         | 5.9  | 46  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 49  |
| 4.3 Trade & competition .....                           | 82.1 | 41  |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 1.0  | 9   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 67.6 | 68  |

**5 Business sophistication ..... 30.8 90**

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                         | 35.5 | 78    |
| 5.1.1 Knowledge-intensive employment, % .....                       | 32.3 | 42    |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 20.0 | 91 ○  |
| 5.1.3 GERD performed by business, % of GDP .....                    | 0.3  | 44    |
| 5.1.4 GERD financed by business, % .....                            | 32.1 | 45    |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 15.8 | 34    |
| 5.2 Innovation linkages .....                                       | 27.6 | 90    |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 34.4 | 108 ○ |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 33.4 | 119 ○ |
| 5.2.3 GERD financed by abroad, % .....                              | 13.3 | 33    |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0  | 17    |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0  | 67    |
| 5.3 Knowledge absorption .....                                      | 29.3 | 95    |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.5  | 55    |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 5.8  | 86    |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 1.2  | 52    |
| 5.3.4 FDI net inflows, % GDP .....                                  | 1.1  | 111 ○ |

**6 Knowledge & technology outputs ..... 26.0 71**

|                                                                   |       |       |
|-------------------------------------------------------------------|-------|-------|
| 6.1 Knowledge creation .....                                      | 18.2  | 51    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 2.5   | 40    |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | 0.5   | 39    |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | 0.1   | 55 ○  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 34.0  | 22 ●  |
| 6.1.5 Citable documents H index .....                             | 295.0 | 29    |
| 6.2 Knowledge impact .....                                        | 37.7  | 66    |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | -0.7  | 108 ○ |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓐ</sup> .....             | 0.8   | 79    |
| 6.2.3 Computer software spending, % GDP .....                     | 0.6   | 16    |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 26.2  | 14 ●  |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 14.1  | 68    |
| 6.3 Knowledge diffusion .....                                     | 22.1  | 103   |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | 0.1   | 60    |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 1.4   | 56    |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | 1.6   | 57    |
| 6.3.4 FDI net outflows, % GDP .....                               | -0.3  | 115 ○ |

**7 Creative outputs ..... 37.5 49**

|                                                                       |        |       |
|-----------------------------------------------------------------------|--------|-------|
| 7.1 Intangible assets .....                                           | 35.4   | 114 ○ |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | n/a    | n/a   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.4    | 45    |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 43.5   | 117 ○ |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 40.4   | 116 ○ |
| 7.2 Creative goods & services .....                                   | 40.6   | 15 ●  |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.1    | 63    |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 8.8    | 20    |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 15.7   | 28    |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 7.1    | 1 ●   |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.6    | 56    |
| 7.3 Online creativity .....                                           | 38.6   | 35    |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 13.8   | 38    |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 22.4   | 31    |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 4568.8 | 31    |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 84.7   | 26    |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Guatemala

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 15.9                            |
| GDP (US\$ billions) .....   | 60.4                            |
| GDP per capita, PPP\$ ..... | 5,415.4                         |
| Income group .....          | Lower-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>28.8</b>                         | <b>101</b> |
| Innovation Output Sub-Index .....                | 23.1                                | 101        |
| Innovation Input Sub-Index .....                 | 34.6                                | 107        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 89         |
| Global Innovation Index 2014 (out of 143) .....  | 30.8                                | 93         |

|          |                                                          |             |            |
|----------|----------------------------------------------------------|-------------|------------|
| <b>1</b> | <b>Institutions.....</b>                                 | <b>48.2</b> | <b>110</b> |
| 1.1      | Political environment.....                               | 34.6        | 113        |
| 1.1.1    | Political stability*.....                                | 47.0        | 105        |
| 1.1.2    | Government effectiveness*.....                           | 22.1        | 114        |
| 1.2      | Regulatory environment.....                              | 46.2        | 120        |
| 1.2.1    | Regulatory quality*.....                                 | 42.2        | 87         |
| 1.2.2    | Rule of law*.....                                        | 18.1        | 129        |
| 1.2.3    | Cost of redundancy dismissal, salary weeks.....          | 27.0        | 115        |
| 1.3      | Business environment.....                                | 63.7        | 88         |
| 1.3.1    | Ease of starting a business*.....                        | 83.7        | 79         |
| 1.3.2    | Ease of resolving insolvency*.....                       | 27.4        | 130 ○      |
| 1.3.3    | Ease of paying taxes*.....                               | 80.0        | 46 ●       |
| <b>2</b> | <b>Human capital &amp; research.....</b>                 | <b>18.2</b> | <b>110</b> |
| 2.1      | Education.....                                           | 27.9        | 123        |
| 2.1.1    | Expenditure on education, % GDP.....                     | 2.8         | 112        |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap.....       | 5.1         | 111 ○      |
| 2.1.3    | School life expectancy, years <sup>Ⓐ</sup> .....         | 10.6        | 110        |
| 2.1.4    | PISA scales in reading, maths, & science.....            | n/a         | n/a        |
| 2.1.5    | Pupil-teacher ratio, secondary.....                      | 13.7        | 49         |
| 2.2      | Tertiary education.....                                  | 26.3        | 84         |
| 2.2.1    | Tertiary enrolment, % gross.....                         | 18.7        | 93         |
| 2.2.2    | Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 16.8        | 69         |
| 2.2.3    | Tertiary inbound mobility, %.....                        | n/a         | n/a        |
| 2.3      | Research & development (R&D).....                        | 0.3         | 122        |
| 2.3.1    | Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 27.2        | 102 ○      |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.0         | 114 ○      |
| 2.3.3    | QS university ranking, average score top 3*.....         | 0.0         | 73 ○       |
| <b>3</b> | <b>Infrastructure.....</b>                               | <b>24.0</b> | <b>117</b> |
| 3.1      | Information & communication technologies (ICTs).....     | 21.9        | 120        |
| 3.1.1    | ICT access*.....                                         | 43.5        | 94         |
| 3.1.2    | ICT use*.....                                            | 9.6         | 112        |
| 3.1.3    | Government's online service*.....                        | 15.0        | 128        |
| 3.1.4    | E-participation*.....                                    | 19.6        | 121        |
| 3.2      | General infrastructure.....                              | 15.5        | 130 ○      |
| 3.2.1    | Electricity output, kWh/cap.....                         | 624.1       | 103        |
| 3.2.2    | Logistics performance*.....                              | 32.5        | 74         |
| 3.2.3    | Gross capital formation, % GDP.....                      | 14.3        | 129        |
| 3.3      | Ecological sustainability.....                           | 34.6        | 83         |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq.....        | 8.5         | 47         |
| 3.3.2    | Environmental performance*.....                          | 48.1        | 87         |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP.....   | 0.1         | 122        |
| <b>4</b> | <b>Market sophistication.....</b>                        | <b>48.3</b> | <b>62</b>  |
| 4.1      | Credit.....                                              | 31.2        | 66         |
| 4.1.1    | Ease of getting credit*.....                             | 80.0        | 11 ●       |
| 4.1.2    | Domestic credit to private sector, % GDP.....            | 32.6        | 92         |
| 4.1.3    | Microfinance gross loans, % GDP.....                     | 0.4         | 49         |

|       |                                                   |      |       |
|-------|---------------------------------------------------|------|-------|
| 4.2   | Investment.....                                   | 31.7 | 88    |
| 4.2.1 | Ease of protecting investors*.....                | 31.7 | 135 ○ |
| 4.2.2 | Market capitalization, % GDP.....                 | n/a  | n/a   |
| 4.2.3 | Total value of stocks traded, % GDP.....          | n/a  | n/a   |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a   |
| 4.3   | Trade & competition.....                          | 82.0 | 43 ●  |
| 4.3.1 | Applied tariff rate, weighted mean, %.....        | 2.7  | 55    |
| 4.3.2 | Intensity of local competition <sup>†</sup> ..... | 73.4 | 40 ●  |

|          |                                                               |             |           |
|----------|---------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication.....</b>                           | <b>34.5</b> | <b>68</b> |
| 5.1      | Knowledge workers.....                                        | 28.8        | 96        |
| 5.1.1    | Knowledge-intensive employment, %.....                        | 10.8        | 100       |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 51.9        | 22 ●      |
| 5.1.3    | GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.0         | 89 ○      |
| 5.1.4    | GERD financed by business, %.....                             | n/a         | n/a       |
| 5.1.5    | Females employed w/advanced degrees, % total.....             | 3.5         | 80        |
| 5.2      | Innovation linkages.....                                      | 44.9        | 25 ●      |
| 5.2.1    | University/industry research collaboration <sup>†</sup> ..... | 43.6        | 66        |
| 5.2.2    | State of cluster development <sup>†</sup> .....               | 49.1        | 54        |
| 5.2.3    | GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 49.0        | 5 ●       |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP.....                 | n/a         | n/a       |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.0         | 87        |
| 5.3      | Knowledge absorption.....                                     | 29.7        | 93        |
| 5.3.1    | Royalty & license fees payments, % total trade.....           | 0.7         | 47 ●      |
| 5.3.2    | High-tech imports less re-imports, % total trade.....         | 9.3         | 44 ●      |
| 5.3.3    | Comm., computer & info. services imp., % total trade.....     | 0.5         | 93        |
| 5.3.4    | FDI net inflows, % GDP.....                                   | 2.5         | 71        |

|          |                                                           |             |            |
|----------|-----------------------------------------------------------|-------------|------------|
| <b>6</b> | <b>Knowledge &amp; technology outputs.....</b>            | <b>18.9</b> | <b>109</b> |
| 6.1      | Knowledge creation.....                                   | 1.9         | 136 ○      |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP.....            | 0.0         | 108 ○      |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP.....                 | 0.0         | 97 ○       |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP.....          | 0.2         | 46         |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP.....         | 1.0         | 134 ○      |
| 6.1.5    | Citable documents H index.....                            | 58.0        | 109        |
| 6.2      | Knowledge impact.....                                     | 28.7        | 109        |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, %.....                   | 0.4         | 88         |
| 6.2.2    | New businesses/th pop. 15–64.....                         | 0.5         | 87         |
| 6.2.3    | Computer software spending, % GDP.....                    | n/a         | n/a        |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP.....           | 1.8         | 94         |
| 6.2.5    | High- & medium-high-tech manufactures, %.....             | n/a         | n/a        |
| 6.3      | Knowledge diffusion.....                                  | 26.1        | 79         |
| 6.3.1    | Royalty & license fees receipts, % total trade.....       | 0.1         | 54         |
| 6.3.2    | High-tech exports less re-exports, % total trade.....     | 1.4         | 58         |
| 6.3.3    | Comm., computer & info. services exp., % total trade..... | 2.3         | 33 ●       |
| 6.3.4    | FDI net outflows, % GDP.....                              | 0.1         | 87         |

|          |                                                            |             |           |
|----------|------------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs.....</b>                               | <b>27.2</b> | <b>89</b> |
| 7.1      | Intangible assets.....                                     | 48.9        | 53        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 39.3        | 64        |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP.....            | n/a         | n/a       |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....          | 63.4        | 38 ●      |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....    | 62.2        | 28 ●      |
| 7.2      | Creative goods & services.....                             | 7.3         | 108       |
| 7.2.1    | Cultural & creative services exports, % total trade.....   | 0.0         | 76        |
| 7.2.2    | National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....    | 1.3         | 69        |
| 7.2.3    | Global ent. & media output/th pop. 15–69.....              | n/a         | n/a       |
| 7.2.4    | Printing & publishing output manufactures, %.....          | n/a         | n/a       |
| 7.2.5    | Creative goods exports, % total trade.....                 | 0.4         | 63        |
| 7.3      | Online creativity.....                                     | 3.9         | 96        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69.....        | 5.4         | 57        |
| 7.3.2    | Country-code TLDs/th pop. 15–69.....                       | 0.7         | 94        |
| 7.3.3    | Wikipedia edits/pop. 15–69.....                            | 774.9       | 87        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69.....                   | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 12.0               |
| GDP (US\$ billions) .....   | 6.5                |
| GDP per capita, PPP\$ ..... | 1,164.3            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                   | Score 0–100<br>or value (hard data) | Rank         |
|---------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>18.5</b>                         | <b>139</b> ○ |
| Innovation Output Sub-Index .....                 | 14.1                                | 134          |
| Innovation Input Sub-Index .....                  | 22.9                                | 140 ○        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 109 ●        |
| Global Innovation Index 2014 (out of 143) .....   | 20.2                                | 139          |

|                                                                   |             |              |
|-------------------------------------------------------------------|-------------|--------------|
| <b>1 Institutions .....</b>                                       | <b>39.3</b> | <b>132</b>   |
| 1.1 Political environment .....                                   | 19.8        | 136          |
| 1.1.1 Political stability* .....                                  | 33.8        | 126          |
| 1.1.2 Government effectiveness* .....                             | 5.7         | 138          |
| 1.2 Regulatory environment .....                                  | 57.7        | 95 ●         |
| 1.2.1 Regulatory quality* .....                                   | 21.0        | 129          |
| 1.2.2 Rule of law* .....                                          | 9.8         | 139 ○        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....            | 8.0         | 1 ●          |
| 1.3 Business environment .....                                    | 40.4        | 137          |
| 1.3.1 Ease of starting a business* .....                          | 55.4        | 136          |
| 1.3.2 Ease of resolving insolvency* .....                         | 37.6        | 106 ●        |
| 1.3.3 Ease of paying taxes* .....                                 | 28.3        | 139 ○        |
| <b>2 Human capital &amp; research .....</b>                       | <b>7.6</b>  | <b>140</b> ○ |
| 2.1 Education .....                                               | 16.9        | 138          |
| 2.1.1 Expenditure on education, % GDP .....                       | 2.5         | 119          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....         | 9.9         | 101          |
| 2.1.3 School life expectancy, years .....                         | 8.7         | 124          |
| 2.1.4 PISA scales in reading, maths, & science .....              | n/a         | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓓ</sup> .....           | 33.1        | 113          |
| 2.2 Tertiary education .....                                      | 5.9         | 132          |
| 2.2.1 Tertiary enrolment, % gross .....                           | 9.9         | 112          |
| 2.2.2 Graduates in science & engineering, % .....                 | n/a         | n/a          |
| 2.2.3 Tertiary inbound mobility, % .....                          | 0.9         | 83 ●         |
| 2.3 Research & development (R&D) .....                            | 0.0         | 128 ○        |
| 2.3.1 Researchers, FTE/mn pop. .....                              | n/a         | n/a          |
| 2.3.2 Gross expenditure on R&D, % GDP .....                       | n/a         | n/a          |
| 2.3.3 QS university ranking, average score top 3* .....           | 0.0         | 73 ○         |
| <b>3 Infrastructure .....</b>                                     | <b>12.5</b> | <b>141</b> ○ |
| 3.1 Information & communication technologies (ICTs) .....         | 6.3         | 140 ○        |
| 3.1.1 ICT access* .....                                           | 22.8        | 130          |
| 3.1.2 ICT use* .....                                              | 0.5         | 137 ○        |
| 3.1.3 Government's online service* .....                          | 0.0         | 140 ○        |
| 3.1.4 E-participation* .....                                      | 2.0         | 140 ○        |
| 3.2 General infrastructure .....                                  | 12.0        | 137          |
| 3.2.1 Electricity output, kWh/cap .....                           | n/a         | n/a          |
| 3.2.2 Logistics performance* .....                                | 15.5        | 112          |
| 3.2.3 Gross capital formation, % GDP .....                        | 12.9        | 135          |
| 3.3 Ecological sustainability .....                               | 19.2        | 135          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....          | n/a         | n/a          |
| 3.3.2 Environmental performance* .....                            | 28.0        | 131          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....     | 0.2         | 114          |
| <b>4 Market sophistication .....</b>                              | <b>35.4</b> | <b>130</b>   |
| 4.1 Credit .....                                                  | 11.5        | 130          |
| 4.1.1 Ease of getting credit* .....                               | 30.0        | 113          |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓓ</sup> ..... | 9.1         | 137 ○        |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓓ</sup> .....          | 0.2         | 51 ●         |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 39.2 | 52  |
| 4.2.1 Ease of protecting investors* .....               | 39.2 | 129 |
| 4.2.2 Market capitalization, % GDP .....                | n/a  | n/a |
| 4.2.3 Total value of stocks traded, % GDP .....         | n/a  | n/a |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a |
| 4.3 Trade & competition .....                           | 55.7 | 134 |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 11.9 | 129 |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 53.3 | 123 |

**5 Business sophistication .....** **19.7** **139** ○

|                                                                  |      |       |
|------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                      | 11.7 | 134   |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓓ</sup> .....       | 0.7  | 116 ○ |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓓ</sup> ..... | 21.1 | 89    |
| 5.1.3 GERD performed by business, % of GDP .....                 | n/a  | n/a   |
| 5.1.4 GERD financed by business, % .....                         | n/a  | n/a   |
| 5.1.5 Females employed w/advanced degrees, % total .....         | n/a  | n/a   |

**5.2 Innovation linkages .....** **25.3** **98** ●

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 19.7 | 131 ○ |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 33.7 | 118   |
| 5.2.3 GERD financed by abroad, % .....                              | n/a  | n/a   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a  | n/a   |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓓ</sup> .....    | 0.1  | ●     |

**5.3 Knowledge absorption .....** **22.2** **131**

|                                                                               |     |      |
|-------------------------------------------------------------------------------|-----|------|
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓓ</sup> .....       | 0.0 | 115  |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | n/a | n/a  |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓓ</sup> ..... | 0.5 | 95 ● |
| 5.3.4 FDI net inflows, % GDP .....                                            | 0.4 | 124  |

**6 Knowledge & technology outputs .....** **10.2** **135**

|                                                          |      |       |
|----------------------------------------------------------|------|-------|
| 6.1 Knowledge creation .....                             | 3.7  | 118   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....    | n/a  | n/a   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....         | n/a  | n/a   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....  | n/a  | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP ..... | 3.5  | 112 ● |
| 6.1.5 Citable documents H index .....                    | 37.0 | 129   |

**6.2 Knowledge impact .....** **1.2** **141** ○

|                                                        |     |     |
|--------------------------------------------------------|-----|-----|
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....         | n/a | n/a |
| 6.2.2 New businesses/th pop. 15–64 .....               | 0.2 | 96  |
| 6.2.3 Computer software spending, % GDP .....          | n/a | n/a |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP ..... | 0.4 | 128 |
| 6.2.5 High- & medium-high-tech manufactures, % .....   | n/a | n/a |

**6.3 Knowledge diffusion .....** **25.8** **81** ●

|                                                                               |     |      |
|-------------------------------------------------------------------------------|-----|------|
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓓ</sup> .....       | 0.0 | 94   |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | n/a | n/a  |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓓ</sup> ..... | 2.0 | 42 ● |
| 6.3.4 FDI net outflows, % GDP .....                                           | 0.0 | 107  |

**7 Creative outputs .....** **17.9** **125**

|                                                               |      |       |
|---------------------------------------------------------------|------|-------|
| 7.1 Intangible assets .....                                   | 32.2 | 125   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....           | n/a  | n/a   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....        | n/a  | n/a   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....       | 35.9 | 129   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> ..... | 28.6 | 131 ○ |

**7.2 Creative goods & services .....** **7.1** **110**

|                                                                 |     |      |
|-----------------------------------------------------------------|-----|------|
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.2 | 53 ● |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓓ</sup> .....   | 0.8 | 82 ● |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a | n/a  |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a | n/a  |
| 7.2.5 Creative goods exports, % total trade .....               | n/a | n/a  |

**7.3 Online creativity .....** **0.0** **141** ○

|                                                            |     |       |
|------------------------------------------------------------|-----|-------|
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 ..... | 0.1 | 134   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                | 0.1 | 122   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                     | 5.6 | 140 ○ |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....            | n/a | n/a   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Guyana

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 0.8                             |
| GDP (US\$ billions) .....   | 3.0                             |
| GDP per capita, PPP\$ ..... | 8,735.1                         |
| Income group .....          | Lower-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                              | Score 0–100<br>or value (hard data) | Rank         |
|--------------------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>30.7</b>                         | <b>86</b>    |
| Innovation Output Sub-Index .....                            | 24.3                                | 93           |
| Innovation Input Sub-Index .....                             | 37.2                                | 90           |
| Innovation Efficiency Ratio .....                            | 0.7                                 | 95           |
| Global Innovation Index 2014 (out of 143) .....              | 32.5                                | 80           |
| <b>1 Institutions.....</b>                                   | <b>54.4</b>                         | <b>87</b>    |
| 1.1 Political environment.....                               | 45.1                                | 82           |
| 1.1.1 Political stability*.....                              | 53.2                                | 93           |
| 1.1.2 Government effectiveness*.....                         | 37.0                                | 81           |
| 1.2 Regulatory environment .....                             | 57.7                                | 94           |
| 1.2.1 Regulatory quality*.....                               | 31.4                                | 111          |
| 1.2.2 Rule of law*.....                                      | 33.7                                | 91           |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....       | 16.6                                | 74           |
| 1.3 Business environment.....                                | 60.3                                | 101          |
| 1.3.1 Ease of starting a business*.....                      | 83.6                                | 80           |
| 1.3.2 Ease of resolving insolvency*.....                     | 28.5                                | 127 ○        |
| 1.3.3 Ease of paying taxes*.....                             | 68.7                                | 90           |
| <b>2 Human capital &amp; research.....</b>                   | <b>14.0</b>                         | <b>129 ○</b> |
| 2.1 Education .....                                          | 27.0                                | 125          |
| 2.1.1 Expenditure on education, % GDP .....                  | 3.2                                 | 106          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 9.8                                 | 102 ○        |
| 2.1.3 School life expectancy, years.....                     | 10.3                                | 113          |
| 2.1.4 PISA scales in reading, maths, & science .....         | n/a                                 | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary .....                   | 20.3                                | 86           |
| 2.2 Tertiary education.....                                  | 15.1                                | 112          |
| 2.2.1 Tertiary enrolment, % gross.....                       | 12.9                                | 104          |
| 2.2.2 Graduates in science & engineering, % .....            | 13.4                                | 90 ○         |
| 2.2.3 Tertiary inbound mobility, %.....                      | 0.4                                 | 98           |
| 2.3 Research & development (R&D).....                        | 0.0                                 | 128 ○        |
| 2.3.1 Researchers, FTE/mn pop. ....                          | n/a                                 | n/a          |
| 2.3.2 Gross expenditure on R&D, % GDP .....                  | n/a                                 | n/a          |
| 2.3.3 QS university ranking, average score top 3* .....      | 0.0                                 | 73 ○         |
| <b>3 Infrastructure.....</b>                                 | <b>25.0</b>                         | <b>115</b>   |
| 3.1 Information & communication technologies (ICTs).....     | 27.9                                | 106          |
| 3.1.1 ICT access*.....                                       | 40.4                                | 101          |
| 3.1.2 ICT use*.....                                          | 13.6                                | 105          |
| 3.1.3 Government's online service*.....                      | 24.4                                | 113          |
| 3.1.4 E-participation*.....                                  | 33.3                                | 92           |
| 3.2 General infrastructure.....                              | 21.7                                | 114          |
| 3.2.1 Electricity output, kWh/cap.....                       | n/a                                 | n/a          |
| 3.2.2 Logistics performance*.....                            | 15.2                                | 114          |
| 3.2.3 Gross capital formation, % GDP.....                    | 19.7                                | 90           |
| 3.3 Ecological sustainability .....                          | 25.4                                | 119          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | n/a                                 | n/a          |
| 3.3.2 Environmental performance*.....                        | 38.1                                | 114          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.0                                 | 138 ○        |
| <b>4 Market sophistication .....</b>                         | <b>35.1</b>                         | <b>134 ○</b> |
| 4.1 Credit.....                                              | 10.9                                | 131 ○        |
| 4.1.1 Ease of getting credit*.....                           | 15.0                                | 129 ○        |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 43.3                                | 78           |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> .....     | 0.4                                 | 46           |

|                                                              |      |       |
|--------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                         | 25.4 | 121   |
| 4.2.1 Ease of protecting investors*.....                     | 44.2 | 117   |
| 4.2.2 Market capitalization, % GDP.....                      | 21.4 | 67    |
| 4.2.3 Total value of stocks traded, % GDP <sup>Ⓐ</sup> ..... | 0.0  | 104 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                | n/a  | n/a   |
| 4.3 Trade & competition .....                                | 69.2 | 98    |
| 4.3.1 Applied tariff rate, weighted mean, %.....             | 6.5  | 97    |
| 4.3.2 Intensity of local competition <sup>†</sup> .....      | 61.1 | 98    |

|                                                                     |             |          |
|---------------------------------------------------------------------|-------------|----------|
| <b>5 Business sophistication .....</b>                              | <b>57.5</b> | <b>6</b> |
| 5.1 Knowledge workers.....                                          | 78.6        | 1        |
| 5.1.1 Knowledge-intensive employment, %.....                        | n/a         | n/a      |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 63.0        | 8 ●      |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a      |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a      |
| 5.1.5 Females employed w/advanced degrees, % total.....             | n/a         | n/a      |
| 5.2 Innovation linkages .....                                       | 47.5        | 18       |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 45.9        | 56 ●     |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 48.3        | 59 ●     |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a      |
| 5.3 Knowledge absorption.....                                       | 46.4        | 22 ●     |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 3.4         | 1 ●      |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 3.6         | 117 ○    |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.7         | 27 ●     |
| 5.3.4 FDI net inflows, % GDP .....                                  | 6.5         | 22 ●     |

|                                                                 |            |              |
|-----------------------------------------------------------------|------------|--------------|
| <b>6 Knowledge &amp; technology outputs .....</b>               | <b>9.7</b> | <b>137 ○</b> |
| 6.1 Knowledge creation.....                                     | 4.2        | 111          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....           | n/a        | n/a          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                | n/a        | n/a          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....         | n/a        | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....         | 4.7        | 100          |
| 6.1.5 Citable documents H index.....                            | 28.0       | 134 ○        |
| 6.2 Knowledge impact.....                                       | 10.9       | 126 ○        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                  | n/a        | n/a          |
| 6.2.2 New businesses/th pop. 15–64.....                         | n/a        | n/a          |
| 6.2.3 Computer software spending, % GDP.....                    | n/a        | n/a          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....          | 5.3        | 60 ●         |
| 6.2.5 High- & medium-high-tech manufactures, % .....            | n/a        | n/a          |
| 6.3 Knowledge diffusion.....                                    | 13.9       | 130 ○        |
| 6.3.1 Royalty & license fees receipts, % total trade.....       | 0.3        | 28 ●         |
| 6.3.2 High-tech exports less re-exports, % total trade .....    | 0.0        | 127 ○        |
| 6.3.3 Comm., computer & info. services exp., % total trade..... | 0.7        | 89           |
| 6.3.4 FDI net outflows, % GDP .....                             | n/a        | n/a          |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                | <b>38.9</b> | <b>44</b> |
| 7.1 Intangible assets .....                                    | 50.2        | 47        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....            | n/a         | n/a       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....         | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 49.8        | 94        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 50.7        | 75        |
| 7.2 Creative goods & services.....                             | 53.0        | 2         |
| 7.2.1 Cultural & creative services exports, % total trade..... | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....  | 22.9        | 7 ●       |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, %.....        | n/a         | n/a       |
| 7.2.5 Creative goods exports, % total trade.....               | 1.7         | 26 ●      |
| 7.3 Online creativity.....                                     | 2.2         | 107       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 1.5         | 97        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 2.4         | 69        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 373.4       | 97        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 8.3                             |
| GDP (US\$ billions) .....   | 19.5                            |
| GDP per capita, PPP\$ ..... | 4,959.2                         |
| Income group .....          | Lower-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>27.5</b>                         | <b>113</b> |
| Innovation Output Sub-Index .....                 | 20.0                                | 116        |
| Innovation Input Sub-Index .....                  | 34.9                                | 105        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 117        |
| Global Innovation Index 2014 (out of 143) .....   | 26.7                                | 118        |

|                                                               |             |            |   |
|---------------------------------------------------------------|-------------|------------|---|
| <b>1 Institutions .....</b>                                   | <b>44.7</b> | <b>123</b> | ○ |
| 1.1 Political environment .....                               | 37.0        | 108        |   |
| 1.1.1 Political stability* .....                              | 52.6        | 95         |   |
| 1.1.2 Government effectiveness* .....                         | 21.3        | 116        |   |
| 1.2 Regulatory environment .....                              | 42.2        | 126        | ○ |
| 1.2.1 Regulatory quality* .....                               | 42.5        | 86         |   |
| 1.2.2 Rule of law* .....                                      | 14.9        | 135        | ○ |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 30.3        | 127        | ○ |
| 1.3 Business environment .....                                | 54.9        | 117        |   |
| 1.3.1 Ease of starting a business* .....                      | 74.8        | 111        |   |
| 1.3.2 Ease of resolving insolvency* .....                     | 31.8        | 120        | ○ |
| 1.3.3 Ease of paying taxes* .....                             | 57.9        | 118        |   |
| <b>2 Human capital &amp; research .....</b>                   | <b>19.0</b> | <b>106</b> |   |
| 2.1 Education .....                                           | 38.4        | 90         |   |
| 2.1.1 Expenditure on education, % GDP .....                   | n/a         | n/a        |   |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | n/a         | n/a        |   |
| 2.1.3 School life expectancy, years .....                     | 11.1        | 105        |   |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a        |   |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | n/a         | n/a        |   |
| 2.2 Tertiary education .....                                  | 18.2        | 106        |   |
| 2.2.1 Tertiary enrolment, % gross .....                       | 21.1        | 89         |   |
| 2.2.2 Graduates in science & engineering, % .....             | 14.1        | 87         | ○ |
| 2.2.3 Tertiary inbound mobility, % .....                      | 0.9         | 84         |   |
| 2.3 Research & development (R&D) .....                        | 0.3         | 121        | ○ |
| 2.3.1 Researchers, FTE/mn pop. ....                           | n/a         | n/a        |   |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....      | 0.0         | 116        | ○ |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0         | 73         | ○ |
| <b>3 Infrastructure .....</b>                                 | <b>28.9</b> | <b>102</b> |   |
| 3.1 Information & communication technologies (ICTs) .....     | 30.8        | 103        |   |
| 3.1.1 ICT access* .....                                       | 39.4        | 103        |   |
| 3.1.2 ICT use* .....                                          | 10.3        | 110        |   |
| 3.1.3 Government's online service* .....                      | 40.2        | 80         |   |
| 3.1.4 E-participation* .....                                  | 33.3        | 92         |   |
| 3.2 General infrastructure .....                              | 24.9        | 99         |   |
| 3.2.1 Electricity output, kWh/cap .....                       | 956.3       | 92         |   |
| 3.2.2 Logistics performance* .....                            | 22.8        | 97         |   |
| 3.2.3 Gross capital formation, % GDP .....                    | 24.8        | 46         | ● |
| 3.3 Ecological sustainability .....                           | 30.9        | 93         |   |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 6.2         | 87         |   |
| 3.3.2 Environmental performance* .....                        | 48.9        | 86         |   |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.4         | 93         |   |
| <b>4 Market sophistication .....</b>                          | <b>48.1</b> | <b>64</b>  |   |
| 4.1 Credit .....                                              | 42.4        | 39         | ● |
| 4.1.1 Ease of getting credit* .....                           | 85.0        | 7          | ● |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 55.2        | 60         |   |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 2.1         | 26         | ● |

|                                                                |      |     |   |
|----------------------------------------------------------------|------|-----|---|
| 4.2 Investment .....                                           | 31.7 | 88  |   |
| 4.2.1 Ease of protecting investors* .....                      | 31.7 | 135 | ○ |
| 4.2.2 Market capitalization, % GDP .....                       | n/a  | n/a |   |
| 4.2.3 Total value of stocks traded, % GDP .....                | n/a  | n/a |   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a |   |
| 4.3 Trade & competition .....                                  | 70.4 | 93  |   |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 6.5  | 96  |   |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 63.4 | 85  |   |

|                                                                     |             |           |   |
|---------------------------------------------------------------------|-------------|-----------|---|
| <b>5 Business sophistication .....</b>                              | <b>34.0</b> | <b>72</b> |   |
| 5.1 Knowledge workers .....                                         | 31.7        | 88        |   |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 12.8        | 98        |   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 35.8        | 49        |   |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a       |   |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a       |   |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a       |   |
| 5.2 Innovation linkages .....                                       | 42.5        | 31        | ● |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 49.0        | 46        | ● |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 50.9        | 45        | ● |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a       |   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 39        | ● |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a       |   |
| 5.3 Knowledge absorption .....                                      | 27.8        | 104       |   |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.4         | 67        |   |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 6.2         | 78        |   |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.7         | 80        |   |
| 5.3.4 FDI net inflows, % GDP .....                                  | 5.8         | 26        | ● |

|                                                                  |             |            |   |
|------------------------------------------------------------------|-------------|------------|---|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>14.7</b> | <b>123</b> | ○ |
| 6.1 Knowledge creation .....                                     | 2.2         | 135        | ○ |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.2         | 92         |   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | n/a         | n/a        |   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 0.2         | 45         |   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 0.9         | 135        | ○ |
| 6.1.5 Citable documents H index .....                            | 45.0        | 120        | ○ |
| 6.2 Knowledge impact .....                                       | 13.8        | 124        | ○ |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | n/a         | n/a        |   |
| 6.2.2 New businesses/th pop. 15–64 .....                         | n/a         | n/a        |   |
| 6.2.3 Computer software spending, % GDP .....                    | 0.3         | 52         |   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 3.9         | 71         |   |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | n/a         | n/a        |   |
| 6.3 Knowledge diffusion .....                                    | 28.0        | 66         |   |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | n/a         | n/a        |   |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.4         | 84         |   |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.3         | 30         | ● |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.2         | 83         |   |

|                                                                 |             |           |   |
|-----------------------------------------------------------------|-------------|-----------|---|
| <b>7 Creative outputs .....</b>                                 | <b>25.4</b> | <b>97</b> |   |
| 7.1 Intangible assets .....                                     | 48.2        | 57        | ● |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 55.5        | 39        | ● |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a       |   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 56.7        | 67        |   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 57.7        | 51        | ● |
| 7.2 Creative goods & services .....                             | 2.6         | 123       | ○ |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a         | n/a       |   |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....   | 0.4         | 96        | ○ |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a       |   |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a         | n/a       |   |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....  | 0.1         | 91        |   |
| 7.3 Online creativity .....                                     | 2.3         | 106       |   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 0.7         | 110       |   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 0.6         | 100       |   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 777.8       | 86        |   |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a       |   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Hong Kong (China)

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 7.3                         |
| GDP (US\$ billions) .....   | 289.6                       |
| GDP per capita, PPP\$ ..... | 55,026.0                    |
| Income group .....          | High income                 |
| Region .....                | South East Asia and Oceania |

|                                                                | Score 0–100<br>or value (hard data) | Rank       |
|----------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b>              | <b>57.2</b>                         | <b>11</b>  |
| Innovation Output Sub-Index .....                              | 46.9                                | 19         |
| Innovation Input Sub-Index .....                               | 67.6                                | 4          |
| Innovation Efficiency Ratio .....                              | 0.7                                 | 76         |
| Global Innovation Index 2014 (out of 143) .....                | 56.8                                | 10         |
| <b>1 Institutions .....</b>                                    | <b>91.4</b>                         | <b>8</b>   |
| 1.1 Political environment .....                                | 87.1                                | 14         |
| 1.1.1 Political stability* .....                               | 86.0                                | 28         |
| 1.1.2 Government effectiveness* .....                          | 88.3                                | 10         |
| 1.2 Regulatory environment .....                               | 96.9                                | 6          |
| 1.2.1 Regulatory quality* .....                                | 99.1                                | 2 ●        |
| 1.2.2 Rule of law* .....                                       | 88.7                                | 17         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 8.0                                 | 1 ●        |
| 1.3 Business environment .....                                 | 90.0                                | 6          |
| 1.3.1 Ease of starting a business* .....                       | 96.4                                | 8          |
| 1.3.2 Ease of resolving insolvency* .....                      | 75.1                                | 23         |
| 1.3.3 Ease of paying taxes* .....                              | 98.5                                | 4          |
| <b>2 Human capital &amp; research .....</b>                    | <b>50.2</b>                         | <b>19</b>  |
| 2.1 Education .....                                            | 45.1                                | 68         |
| 2.1.1 Expenditure on education, % GDP .....                    | 3.8                                 | 93 ○       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 19.0                                | 63         |
| 2.1.3 School life expectancy, years .....                      | 15.6                                | 30         |
| 2.1.4 PISA scales in reading, maths, & science .....           | 553.6                               | 3          |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | n/a                                 | n/a        |
| 2.2 Tertiary education .....                                   | 59.6                                | 5          |
| 2.2.1 Tertiary enrolment, % gross .....                        | 66.8                                | 29         |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 34.7                                | 6          |
| 2.2.3 Tertiary inbound mobility, % .....                       | 8.9                                 | 20         |
| 2.3 Research & development (R&D) .....                         | 45.8                                | 22         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 2970.7                              | 28         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.7                                 | 48         |
| 2.3.3 QS university ranking, average score top 3* .....        | 84.7                                | 6          |
| <b>3 Infrastructure .....</b>                                  | <b>66.5</b>                         | <b>2 ●</b> |
| 3.1 Information & communication technologies (ICTs) .....      | 83.0                                | 9          |
| 3.1.1 ICT access* .....                                        | 92.4                                | 4          |
| 3.1.2 ICT use* .....                                           | 73.6                                | 13         |
| 3.1.3 Government's online service* .....                       | n/a                                 | n/a        |
| 3.1.4 E-participation* .....                                   | n/a                                 | n/a        |
| 3.2 General infrastructure .....                               | 45.1                                | 29         |
| 3.2.1 Electricity output, kWh/cap .....                        | 5423.9                              | 39         |
| 3.2.2 Logistics performance* .....                             | 84.9                                | 15         |
| 3.2.3 Gross capital formation, % GDP .....                     | 23.7                                | 52         |
| 3.3 Ecological sustainability .....                            | 71.3                                | 1 ●        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 21.7                                | 1 ●        |
| 3.3.2 Environmental performance* .....                         | n/a                                 | n/a        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 1.8                                 | 51         |
| <b>4 Market sophistication .....</b>                           | <b>79.0</b>                         | <b>2 ●</b> |
| 4.1 Credit .....                                               | 71.3                                | 4          |
| 4.1.1 Ease of getting credit* .....                            | 70.0                                | 22         |
| 4.1.2 Domestic credit to private sector, % GDP .....           | 219.5                               | 2 ●        |
| 4.1.3 Microfinance gross loans, % GDP .....                    | n/a                                 | n/a        |

|                                                         |       |     |
|---------------------------------------------------------|-------|-----|
| 4.2 Investment .....                                    | 81.5  | 1 ● |
| 4.2.1 Ease of protecting investors* .....               | 80.8  | 2   |
| 4.2.2 Market capitalization, % GDP .....                | 421.9 | 1 ● |
| 4.2.3 Total value of stocks traded, % GDP .....         | 468.1 | 1 ● |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.4   | 10  |
| 4.3 Trade & competition .....                           | 84.3  | 32  |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | n/a   | n/a |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 84.3  | 3 ● |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                        | <b>51.0</b> | <b>15</b> |
| 5.1 Knowledge workers .....                                                   | 47.3        | 40        |
| 5.1.1 Knowledge-intensive employment, % .....                                 | 37.3        | 28        |
| 5.1.2 Firms offering formal training, % firms .....                           | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                 | 0.3         | 42        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                         | 49.7        | 20        |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | 12.2        | 54 ○      |
| 5.2 Innovation linkages .....                                                 | 42.9        | 28        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 59.8        | 27        |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 66.7        | 14        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 4.7         | 65 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 9         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | 0.3         | 30        |
| 5.3 Knowledge absorption .....                                                | 62.7        | 3 ●       |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.4         | 66        |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 41.5        | 1 ●       |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.5         | 90 ○      |
| 5.3.4 FDI net inflows, % GDP .....                                            | 28.0        | 1 ●       |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>37.9</b> | <b>31</b> |
| 6.1 Knowledge creation .....                                                  | 16.0        | 55        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | 0.6         | 72 ○      |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | 0.8         | 31        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | n/a         | n/a       |
| 6.1.5 Citable documents H index .....                                         | 325.0       | 25        |
| 6.2 Knowledge impact .....                                                    | 53.2        | 15        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 3.3         | 26        |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 28.1        | 1 ●       |
| 6.2.3 Computer software spending, % GDP .....                                 | 0.4         | 24        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 6.4         | 54        |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | 19.4        | 59 ○      |
| 6.3 Knowledge diffusion .....                                                 | 44.6        | 26        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 56        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.1         | 106 ○     |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.5         | 93 ○      |
| 6.3.4 FDI net outflows, % GDP .....                                           | 33.4        | 1 ●       |

|                                                                       |             |          |
|-----------------------------------------------------------------------|-------------|----------|
| <b>7 Creative outputs .....</b>                                       | <b>55.8</b> | <b>8</b> |
| 7.1 Intangible assets .....                                           | 57.3        | 18       |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 67.1        | 28       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a      |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 67.3        | 24       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 67.6        | 20       |
| 7.2 Creative goods & services .....                                   | 42.1        | 10       |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.2         | 54 ○     |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 7.4         | 26       |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 41.6        | 18       |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 18.3        | 1 ●      |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.2         | 74 ○     |
| 7.3 Online creativity .....                                           | 66.5        | 12       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 79.1        | 9        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 10.9        | 42       |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 11073.5     | 2 ●      |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 94.1        | 5        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 9.9                 |
| GDP (US\$ billions) .....   | 137.1               |
| GDP per capita, PPP\$ ..... | 20,817.4            |
| Income group .....          | Upper-middle income |
| Region .....                | Europe              |

|                                                              | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>43.0</b>                         | <b>35</b> |
| Innovation Output Sub-Index .....                            | 37.7                                | 37        |
| Innovation Input Sub-Index .....                             | 48.2                                | 42        |
| Innovation Efficiency Ratio .....                            | 0.8                                 | 35        |
| Global Innovation Index 2014 (out of 143) .....              | 44.6                                | 35        |
| <b>1 Institutions.....</b>                                   | <b>73.4</b>                         | <b>40</b> |
| 1.1 Political environment.....                               | 71.1                                | 37        |
| 1.1.1 Political stability*.....                              | 83.4                                | 35        |
| 1.1.2 Government effectiveness*.....                         | 58.8                                | 42        |
| 1.2 Regulatory environment .....                             | 78.1                                | 33        |
| 1.2.1 Regulatory quality*.....                               | 71.4                                | 35        |
| 1.2.2 Rule of law*.....                                      | 62.6                                | 40        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....       | 13.4                                | 56        |
| 1.3 Business environment.....                                | 71.0                                | 60        |
| 1.3.1 Ease of starting a business*.....                      | 90.0                                | 48        |
| 1.3.2 Ease of resolving insolvency*.....                     | 49.8                                | 61        |
| 1.3.3 Ease of paying taxes*.....                             | 73.3                                | 70        |
| <b>2 Human capital &amp; research.....</b>                   | <b>37.7</b>                         | <b>43</b> |
| 2.1 Education .....                                          | 49.8                                | 53        |
| 2.1.1 Expenditure on education, % GDP .....                  | 4.7                                 | 68        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 20.9                                | 54        |
| 2.1.3 School life expectancy, years.....                     | 15.4                                | 35        |
| 2.1.4 PISA scales in reading, maths, & science.....          | 486.6                               | 30        |
| 2.1.5 Pupil-teacher ratio, secondary .....                   | 10.0                                | 29        |
| 2.2 Tertiary education.....                                  | 33.5                                | 63        |
| 2.2.1 Tertiary enrolment, % gross.....                       | 59.6                                | 41        |
| 2.2.2 Graduates in science & engineering, % .....            | 16.8                                | 67        |
| 2.2.3 Tertiary inbound mobility, %.....                      | 4.6                                 | 37        |
| 2.3 Research & development (R&D).....                        | 29.9                                | 34        |
| 2.3.1 Researchers, FTE/mn pop. ....                          | 2515.1                              | 32        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                  | 1.4                                 | 25        |
| 2.3.3 QS university ranking, average score top 3*.....       | 25.3                                | 49        |
| <b>3 Infrastructure.....</b>                                 | <b>47.2</b>                         | <b>43</b> |
| 3.1 Information & communication technologies (ICTs).....     | 55.2                                | 47        |
| 3.1.1 ICT access*.....                                       | 73.2                                | 36        |
| 3.1.2 ICT use*.....                                          | 46.7                                | 43        |
| 3.1.3 Government's online service*.....                      | 55.9                                | 53        |
| 3.1.4 E-participation*.....                                  | 45.1                                | 74        |
| 3.2 General infrastructure.....                              | 32.1                                | 64        |
| 3.2.1 Electricity output, kWh/cap.....                       | 3065.2                              | 61        |
| 3.2.2 Logistics performance*.....                            | 66.5                                | 32        |
| 3.2.3 Gross capital formation, % GDP.....                    | 18.8                                | 103 ○     |
| 3.3 Ecological sustainability .....                          | 54.4                                | 18 ●      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 7.5                                 | 57        |
| 3.3.2 Environmental performance*.....                        | 70.3                                | 28        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 8.3                                 | 11 ●      |
| <b>4 Market sophistication .....</b>                         | <b>46.0</b>                         | <b>77</b> |
| 4.1 Credit.....                                              | 30.2                                | 73        |
| 4.1.1 Ease of getting credit*.....                           | 75.0                                | 16 ●      |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 50.8                                | 65        |
| 4.1.3 Microfinance gross loans, % GDP <sup>d)</sup> .....    | 0.0                                 | 89 ○      |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 23.3 | 132 ○ |
| 4.2.1 Ease of protecting investors*.....                | 47.5 | 97 ○  |
| 4.2.2 Market capitalization, % GDP.....                 | 16.6 | 77 ○  |
| 4.2.3 Total value of stocks traded, % GDP.....          | 8.6  | 42    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | 0.0  | 42    |
| 4.3 Trade & competition .....                           | 84.6 | 31    |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 1.0  | 9     |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 72.5 | 45    |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>36.8</b> | <b>57</b> |
| 5.1 Knowledge workers.....                                          | 40.9        | 60        |
| 5.1.1 Knowledge-intensive employment, %.....                        | 35.6        | 34        |
| 5.1.2 Firms offering formal training, % firms.....                  | 15.7        | 99 ○      |
| 5.1.3 GERD performed by business, % of GDP.....                     | 1.0         | 22        |
| 5.1.4 GERD financed by business, %.....                             | 46.8        | 23        |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 14.8        | 38        |
| 5.2 Innovation linkages .....                                       | 29.3        | 83        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 54.6        | 34        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 41.5        | 88        |
| 5.2.3 GERD financed by abroad, %.....                               | 16.6        | 26        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 69 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.1         | 38        |
| 5.3 Knowledge absorption.....                                       | 40.3        | 40        |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 1.1         | 24        |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 13.8        | 18 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.0         | 59        |
| 5.3.4 FDI net inflows, % GDP.....                                   | -0.6        | 132 ○     |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>               | <b>34.7</b> | <b>40</b> |
| 6.1 Knowledge creation.....                                     | 21.4        | 45        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....           | 2.7         | 35        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                | 0.6         | 32        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....          | 1.0         | 27        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....        | 26.4        | 29        |
| 6.1.5 Citable documents H index.....                            | 277.0       | 30        |
| 6.2 Knowledge impact.....                                       | 48.4        | 24        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                   | 0.2         | 94 ○      |
| 6.2.2 New businesses/th pop. 15–64.....                         | 4.8         | 23        |
| 6.2.3 Computer software spending, % GDP.....                    | 0.3         | 41        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....          | 30.7        | 8 ●       |
| 6.2.5 High- & medium-high-tech manufactures, % .....            | 48.7        | 8 ●       |
| 6.3 Knowledge diffusion.....                                    | 34.4        | 41        |
| 6.3.1 Royalty & license fees receipts, % total trade.....       | 1.0         | 16 ●      |
| 6.3.2 High-tech exports less re-exports, % total trade .....    | 14.3        | 11 ●      |
| 6.3.3 Comm., computer & info. services exp., % total trade..... | 1.4         | 64        |
| 6.3.4 FDI net outflows, % GDP .....                             | -2.6        | 122 ○     |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                | <b>40.7</b> | <b>36</b> |
| 7.1 Intangible assets .....                                    | 41.3        | 90        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....            | 39.7        | 63        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....         | 1.2         | 25        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 58.4        | 60        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 51.0        | 73        |
| 7.2 Creative goods & services.....                             | 40.7        | 14 ●      |
| 7.2.1 Cultural & creative services exports, % total trade..... | 1.5         | 4 ●       |
| 7.2.2 National feature films/mn pop. 15–69.....                | 4.4         | 40        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | 12.0        | 31        |
| 7.2.4 Printing & publishing output manufactures, %.....        | 0.8         | 79 ○      |
| 7.2.5 Creative goods exports, % total trade.....               | 6.2         | 7 ●       |
| 7.3 Online creativity.....                                     | 39.6        | 32        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 11.8        | 41        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 38.2        | 19 ●      |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 2890.9      | 45        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | 87.1        | 20        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>d)</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Iceland

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 0.3         |
| GDP (US\$ billions) .....   | 16.7        |
| GDP per capita, PPP\$ ..... | 42,585.0    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>57.0</b>                         | <b>13</b> |
| Innovation Output Sub-Index .....                             | 56.6                                | 6 ●       |
| Innovation Input Sub-Index .....                              | 57.5                                | 23        |
| Innovation Efficiency Ratio .....                             | 1.0                                 | 4 ●       |
| Global Innovation Index 2014 (out of 143) .....               | 54.1                                | 19        |
| <b>1 Institutions .....</b>                                   | <b>87.8</b>                         | <b>13</b> |
| 1.1 Political environment .....                               | 88.4                                | 12        |
| 1.1.1 Political stability* .....                              | 95.3                                | 9         |
| 1.1.2 Government effectiveness* .....                         | 81.5                                | 18        |
| 1.2 Regulatory environment .....                              | 90.0                                | 17        |
| 1.2.1 Regulatory quality* .....                               | 76.9                                | 26        |
| 1.2.2 Rule of law* .....                                      | 91.4                                | 15        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 10.1                                | 35        |
| 1.3 Business environment .....                                | 84.9                                | 16        |
| 1.3.1 Ease of starting a business* .....                      | 92.4                                | 27        |
| 1.3.2 Ease of resolving insolvency* .....                     | 81.5                                | 14        |
| 1.3.3 Ease of paying taxes* .....                             | 80.9                                | 41        |
| <b>2 Human capital &amp; research .....</b>                   | <b>48.7</b>                         | <b>23</b> |
| 2.1 Education .....                                           | 56.4                                | 21        |
| 2.1.1 Expenditure on education, % GDP .....                   | 7.4                                 | 10        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 21.2                                | 53        |
| 2.1.3 School life expectancy, years .....                     | 19.0                                | 3 ●       |
| 2.1.4 PISA scales in reading, maths, & science .....          | 484.5                               | 31        |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | n/a                                 | n/a       |
| 2.2 Tertiary education .....                                  | 41.2                                | 41        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 81.4                                | 9         |
| 2.2.2 Graduates in science & engineering, % .....             | 18.0                                | 63 ○      |
| 2.2.3 Tertiary inbound mobility, % .....                      | 6.2                                 | 28        |
| 2.3 Research & development (R&D) .....                        | 48.7                                | 19        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....             | 7012.2                              | 4 ●       |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....      | 2.6                                 | 12        |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0                                 | 73 ○      |
| <b>3 Infrastructure .....</b>                                 | <b>51.8</b>                         | <b>29</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 69.9                                | 27        |
| 3.1.1 ICT access* .....                                       | 92.8                                | 3 ●       |
| 3.1.2 ICT use* .....                                          | 76.5                                | 9         |
| 3.1.3 Government's online service* .....                      | 61.4                                | 43        |
| 3.1.4 E-participation* .....                                  | 49.0                                | 64        |
| 3.2 General infrastructure .....                              | 47.4                                | 22        |
| 3.2.1 Electricity output, kWh/cap .....                       | 56612.5                             | 1 ●       |
| 3.2.2 Logistics performance* .....                            | 62.8                                | 36        |
| 3.2.3 Gross capital formation, % GDP .....                    | 14.4                                | 128 ○     |
| 3.3 Ecological sustainability .....                           | 38.0                                | 69        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 2.1                                 | 121 ○     |
| 3.3.2 Environmental performance* .....                        | 76.5                                | 14        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 2.8                                 | 37        |
| <b>4 Market sophistication .....</b>                          | <b>52.7</b>                         | <b>43</b> |
| 4.1 Credit .....                                              | 44.7                                | 35        |
| 4.1.1 Ease of getting credit* .....                           | 60.0                                | 48        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 91.5                                | 34        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a       |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| 4.2 Investment .....                                                          | 32.6        | 80         |
| 4.2.1 Ease of protecting investors* .....                                     | 65.0        | 28         |
| 4.2.2 Market capitalization, % GDP .....                                      | 19.9        | 69 ○       |
| 4.2.3 Total value of stocks traded, % GDP .....                               | 4.8         | 50         |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                                | 0.1         | 20         |
| 4.3 Trade & competition .....                                                 | 80.8        | 49         |
| 4.3.1 Applied tariff rate, weighted mean, % .....                             | 1.0         | 8          |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                       | 64.9        | 77         |
| <b>5 Business sophistication .....</b>                                        | <b>46.4</b> | <b>25</b>  |
| 5.1 Knowledge workers .....                                                   | 67.0        | 9          |
| 5.1.1 Knowledge-intensive employment, % .....                                 | 49.3        | 5 ●        |
| 5.1.2 Firms offering formal training, % firms .....                           | n/a         | n/a        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                 | 1.4         | 15         |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                         | 49.8        | 19         |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | 21.3        | 19         |
| 5.2 Innovation linkages .....                                                 | 35.3        | 60         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 60.3        | 24         |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 48.7        | 57         |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 8.2         | 48         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | 0.3         | 27         |
| 5.3 Knowledge absorption .....                                                | 36.9        | 54         |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 1.4         | 18         |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 4.9         | 100 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 1.7         | 32         |
| 5.3.4 FDI net inflows, % GDP .....                                            | 2.4         | 73         |
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>40.7</b> | <b>24</b>  |
| 6.1 Knowledge creation .....                                                  | 43.3        | 19         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | 2.4         | 42         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | 3.0         | 16         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 65.9        | 1 ●        |
| 6.1.5 Citable documents H index .....                                         | 181.0       | 39         |
| 6.2 Knowledge impact .....                                                    | 34.7        | 85         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | -0.2        | 103 ○      |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 8.2         | 13         |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 4.6         | 67         |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 7.1         | 85 ○       |
| 6.3 Knowledge diffusion .....                                                 | 44.2        | 27         |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 1.7         | 10         |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 1.2         | 59         |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.2         | 72 ○       |
| 6.3.4 FDI net outflows, % GDP .....                                           | 4.1         | 14         |
| <b>7 Creative outputs .....</b>                                               | <b>72.4</b> | <b>1 ●</b> |
| 7.1 Intangible assets .....                                                   | 69.4        | 2 ●        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                           | 98.5        | 13         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                        | 8.6         | 1 ●        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                       | 68.1        | 22         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....                 | 69.6        | 14         |
| 7.2 Creative goods & services .....                                           | 53.5        | 1 ●        |
| 7.2.1 Cultural & creative services exports, % total trade .....               | 0.3         | 46         |
| 7.2.2 National feature films/mn pop. 15–69 .....                              | 30.1        | 1 ●        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                          | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> .....         | 6.4         | 1 ●        |
| 7.2.5 Creative goods exports, % total trade .....                             | 0.1         | 92 ○       |
| 7.3 Online creativity .....                                                   | 97.4        | 1 ●        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....                    | 100.0       | 1 ●        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                                   | 92.2        | 7 ●        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                        | 13529.2     | 1 ●        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                               | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 1,267.4                   |
| GDP (US\$ billions) .....   | 2,049.5                   |
| GDP per capita, PPP\$ ..... | 4,306.9                   |
| Income group .....          | Lower-middle income       |
| Region .....                | Central and Southern Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>31.7</b>                         | <b>81</b> |
| Innovation Output Sub-Index .....                 | 28.0                                | 69        |
| Innovation Input Sub-Index .....                  | 35.5                                | 100       |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 31 ●      |
| Global Innovation Index 2014 (out of 143) .....   | 33.7                                | 76        |

|                                                        |             |            |
|--------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                            | <b>50.0</b> | <b>104</b> |
| 1.1 Political environment .....                        | 35.5        | 109        |
| 1.1.1 Political stability* .....                       | 34.8        | 124 ○      |
| 1.1.2 Government effectiveness* .....                  | 36.3        | 82         |
| 1.2 Regulatory environment .....                       | 62.4        | 81         |
| 1.2.1 Regulatory quality* .....                        | 35.2        | 107        |
| 1.2.2 Rule of law* .....                               | 45.0        | 63         |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 15.7        | 70         |
| 1.3 Business environment .....                         | 52.2        | 130 ○      |
| 1.3.1 Ease of starting a business* .....               | 68.4        | 125 ○      |
| 1.3.2 Ease of resolving insolvency* .....              | 32.6        | 118        |
| 1.3.3 Ease of paying taxes* .....                      | 55.5        | 120        |

|                                                                   |             |            |
|-------------------------------------------------------------------|-------------|------------|
| <b>2 Human capital &amp; research .....</b>                       | <b>20.0</b> | <b>103</b> |
| 2.1 Education .....                                               | 26.8        | 126 ○      |
| 2.1.1 Expenditure on education, % GDP .....                       | 3.8         | 90         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....         | 15.5        | 82         |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....            | 11.7        | 95         |
| 2.1.4 PISA scales in reading, maths, & science <sup>Ⓐ</sup> ..... | 336.0       | 62 ○       |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....           | 25.9        | 97         |
| 2.2 Tertiary education .....                                      | 10.5        | 123 ○      |
| 2.2.1 Tertiary enrolment, % gross .....                           | 24.8        | 85         |
| 2.2.2 Graduates in science & engineering, % .....                 | n/a         | n/a        |
| 2.2.3 Tertiary inbound mobility, % .....                          | 0.1         | 112 ○      |
| 2.3 Research & development (R&D) .....                            | 22.6        | 44         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                 | 159.9       | 75         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....          | 0.8         | 42         |
| 2.3.3 QS university ranking, average score top 3* .....           | 47.0        | 28 ●       |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure .....</b>                                 | <b>34.6</b> | <b>87</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 38.6        | 86        |
| 3.1.1 ICT access* .....                                       | 30.5        | 115       |
| 3.1.2 ICT use* .....                                          | 6.8         | 117       |
| 3.1.3 Government's online service* .....                      | 54.3        | 57        |
| 3.1.4 E-participation* .....                                  | 62.7        | 40        |
| 3.2 General infrastructure .....                              | 38.9        | 43        |
| 3.2.1 Electricity output, kWh/cap .....                       | 911.8       | 94        |
| 3.2.2 Logistics performance* .....                            | 46.9        | 52        |
| 3.2.3 Gross capital formation, % GDP .....                    | 32.2        | 14 ●      |
| 3.3 Ecological sustainability .....                           | 26.3        | 117       |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 7.0         | 65        |
| 3.3.2 Environmental performance* .....                        | 31.2        | 126 ○     |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.9         | 70        |

|                                                      |             |           |
|------------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                 | <b>46.5</b> | <b>72</b> |
| 4.1 Credit .....                                     | 28.1        | 80        |
| 4.1.1 Ease of getting credit* .....                  | 65.0        | 34        |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 51.8        | 64        |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.3         | 50        |

|                                                                |      |      |
|----------------------------------------------------------------|------|------|
| 4.2 Investment .....                                           | 44.3 | 42 ● |
| 4.2.1 Ease of protecting investors* .....                      | 72.5 | 7 ●  |
| 4.2.2 Market capitalization, % GDP .....                       | 68.0 | 24 ● |
| 4.2.3 Total value of stocks traded, % GDP .....                | 33.5 | 25 ● |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | 0.1  | 35   |
| 4.3 Trade & competition .....                                  | 67.2 | 104  |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 8.2  | 109  |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 63.1 | 88   |

**5 Business sophistication .....** 26.4 116

|                                                                  |      |       |
|------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                      | 13.7 | 132 ○ |
| 5.1.1 Knowledge-intensive employment, % .....                    | n/a  | n/a   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> ..... | 15.9 | 98 ○  |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....    | 0.3  | 43    |
| 5.1.4 GERD financed by business, % .....                         | n/a  | n/a   |
| 5.1.5 Females employed w/advanced degrees, % total .....         | n/a  | n/a   |

|                                                                     |      |      |
|---------------------------------------------------------------------|------|------|
| 5.2 Innovation linkages .....                                       | 37.3 | 52   |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 47.8 | 48   |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 58.4 | 25 ● |
| 5.2.3 GERD financed by abroad, % .....                              | n/a  | n/a  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0  | 51   |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.1  | 52   |

|                                                                  |      |    |
|------------------------------------------------------------------|------|----|
| 5.3 Knowledge absorption .....                                   | 28.1 | 99 |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 0.8  | 42 |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 6.7  | 70 |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 0.7  | 74 |
| 5.3.4 FDI net inflows, % GDP .....                               | 1.5  | 98 |

**6 Knowledge & technology outputs .....** 30.1 49

|                                                          |       |      |
|----------------------------------------------------------|-------|------|
| 6.1 Knowledge creation .....                             | 15.2  | 59   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....    | 1.6   | 53   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....         | 0.2   | 49   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....  | n/a   | n/a  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP ..... | 7.5   | 77   |
| 6.1.5 Citable documents H index .....                    | 341.0 | 23 ● |

|                                                                   |      |      |
|-------------------------------------------------------------------|------|------|
| 6.2 Knowledge impact .....                                        | 35.0 | 84   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | 2.4  | 38   |
| 6.2.2 New businesses/th pop. 15–64 .....                          | 0.1  | 99 ○ |
| 6.2.3 Computer software spending, % GDP .....                     | 0.2  | 68 ○ |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 6.0  | 57   |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 32.5 | 32   |

|                                                                  |      |      |
|------------------------------------------------------------------|------|------|
| 6.3 Knowledge diffusion .....                                    | 40.1 | 34 ● |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.1  | 57   |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 3.5  | 39 ● |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 10.1 | 1 ●  |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.1  | 92   |

**7 Creative outputs .....** 25.9 95

|                                                               |      |     |
|---------------------------------------------------------------|------|-----|
| 7.1 Intangible assets .....                                   | 37.9 | 101 |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....           | 27.0 | 75  |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....        | n/a  | n/a |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....       | 51.7 | 84  |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> ..... | 48.1 | 86  |

|                                                                       |      |      |
|-----------------------------------------------------------------------|------|------|
| 7.2 Creative goods & services .....                                   | 17.3 | 77   |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.1  | 59   |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....         | 1.5  | 65   |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 0.2  | 58 ○ |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 0.7  | 84   |
| 7.2.5 Creative goods exports, % total trade .....                     | 2.5  | 18 ● |

|                                                            |       |      |
|------------------------------------------------------------|-------|------|
| 7.3 Online creativity .....                                | 10.3  | 78   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 ..... | 1.2   | 104  |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                | 0.7   | 92   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                     | 264.6 | 102  |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....            | 37.3  | 68 ○ |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Indonesia

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 252.8                       |
| GDP (US\$ billions) .....   | 888.6                       |
| GDP per capita, PPP\$ ..... | 5,499.0                     |
| Income group .....          | Lower-middle income         |
| Region .....                | South East Asia and Oceania |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>29.8</b>                         | <b>97</b> |
| Innovation Output Sub-Index .....                 | 25.8                                | 85        |
| Innovation Input Sub-Index .....                  | 33.7                                | 114       |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 42 ●      |
| Global Innovation Index 2014 (out of 143) .....   | 31.8                                | 87        |

**1 Institutions .....** 39.8 130 ○

|                                                        |      |       |
|--------------------------------------------------------|------|-------|
| 1.1 Political environment .....                        | 43.4 | 86    |
| 1.1.1 Political stability* .....                       | 51.8 | 97    |
| 1.1.2 Government effectiveness* .....                  | 35.0 | 84    |
| 1.2 Regulatory environment .....                       | 19.6 | 138 ○ |
| 1.2.1 Regulatory quality* .....                        | 42.6 | 85    |
| 1.2.2 Rule of law* .....                               | 32.9 | 94    |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 57.8 | 137 ○ |
| 1.3 Business environment .....                         | 56.4 | 114   |
| 1.3.1 Ease of starting a business* .....               | 68.8 | 122   |
| 1.3.2 Ease of resolving insolvency* .....              | 46.8 | 70    |
| 1.3.3 Ease of paying taxes* .....                      | 53.7 | 122   |

**2 Human capital & research .....** 24.3 87

|                                                                |       |       |
|----------------------------------------------------------------|-------|-------|
| 2.1 Education .....                                            | 32.9  | 106   |
| 2.1.1 Expenditure on education, % GDP .....                    | 3.6   | 98    |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 10.7  | 95    |
| 2.1.3 School life expectancy, years .....                      | 13.0  | 81    |
| 2.1.4 PISA scales in reading, maths, & science .....           | 384.4 | 59 ○  |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 16.6  | 73    |
| 2.2 Tertiary education .....                                   | 28.1  | 79    |
| 2.2.1 Tertiary enrolment, % gross .....                        | 31.5  | 74    |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 21.7  | 40    |
| 2.2.3 Tertiary inbound mobility, % .....                       | 0.1   | 108 ○ |
| 2.3 Research & development (R&D) .....                         | 11.9  | 64    |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 89.9  | 84    |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.1   | 109 ○ |
| 2.3.3 QS university ranking, average score top 3* .....        | 32.9  | 41 ●  |

**3 Infrastructure .....** 35.6 85

|                                                               |       |      |
|---------------------------------------------------------------|-------|------|
| 3.1 Information & communication technologies (ICTs) .....     | 31.7  | 100  |
| 3.1.1 ICT access* .....                                       | 43.2  | 95   |
| 3.1.2 ICT use* .....                                          | 18.0  | 93   |
| 3.1.3 Government's online service* .....                      | 36.2  | 90   |
| 3.1.4 E-participation* .....                                  | 29.4  | 104  |
| 3.2 General infrastructure .....                              | 40.1  | 39 ● |
| 3.2.1 Electricity output, kWh/cap .....                       | 793.5 | 97   |
| 3.2.2 Logistics performance* .....                            | 47.0  | 51   |
| 3.2.3 Gross capital formation, % GDP .....                    | 33.4  | 13 ● |
| 3.3 Ecological sustainability .....                           | 35.0  | 81   |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 9.1   | 38 ● |
| 3.3.2 Environmental performance* .....                        | 44.4  | 96   |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.6   | 75   |

**4 Market sophistication .....** 44.4 86

|                                                      |      |      |
|------------------------------------------------------|------|------|
| 4.1 Credit .....                                     | 20.4 | 115  |
| 4.1.1 Ease of getting credit* .....                  | 50.0 | 65   |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 37.9 | 87   |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.0  | 85 ○ |

|                                                                |      |    |
|----------------------------------------------------------------|------|----|
| 4.2 Investment .....                                           | 31.7 | 86 |
| 4.2.1 Ease of protecting investors* .....                      | 60.8 | 41 |
| 4.2.2 Market capitalization, % GDP .....                       | 45.3 | 42 |
| 4.2.3 Total value of stocks traded, % GDP .....                | 10.5 | 38 |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | 0.0  | 65 |
| 4.3 Trade & competition .....                                  | 81.1 | 48 |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 2.6  | 52 |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 71.0 | 51 |

**5 Business sophistication .....** 24.6 124

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                         | 7.2  | 138 ○ |
| 5.1.1 Knowledge-intensive employment, % .....                       | 8.9  | 102   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 4.7  | 108 ○ |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.0  | 79    |
| 5.1.4 GERD financed by business, % .....                            | n/a  | n/a   |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 3.9  | 79    |
| 5.2 Innovation linkages .....                                       | 35.8 | 58    |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 59.1 | 29 ●  |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 58.8 | 24 ●  |
| 5.2.3 GERD financed by abroad, % .....                              | n/a  | n/a   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0  | 84 ○  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.0  | 105 ○ |
| 5.3 Knowledge absorption .....                                      | 30.9 | 86    |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.8  | 40 ●  |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 8.4  | 52    |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.7  | 73    |
| 5.3.4 FDI net inflows, % GDP .....                                  | 2.1  | 79    |

**6 Knowledge & technology outputs .....** 20.9 100

|                                                                  |       |       |
|------------------------------------------------------------------|-------|-------|
| 6.1 Knowledge creation .....                                     | 2.9   | 127   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.3   | 86    |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.0   | 98 ○  |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 0.1   | 54    |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 0.6   | 137 ○ |
| 6.1.5 Citable documents H index .....                            | 126.0 | 56    |
| 6.2 Knowledge impact .....                                       | 37.6  | 67    |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 3.6   | 21 ●  |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 0.3   | 92    |
| 6.2.3 Computer software spending, % GDP .....                    | 0.3   | 44    |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 3.1   | 79    |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 30.9  | 36    |
| 6.3 Knowledge diffusion .....                                    | 22.3  | 102   |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.0   | 80    |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 3.1   | 43    |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 0.5   | 92    |
| 6.3.4 FDI net outflows, % GDP .....                              | 1.1   | 52    |

**7 Creative outputs .....** 30.8 78

|                                                                 |       |      |
|-----------------------------------------------------------------|-------|------|
| 7.1 Intangible assets .....                                     | 45.2  | 68   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 18.1  | 87   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a   | n/a  |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 65.3  | 32 ● |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 61.3  | 33 ● |
| 7.2 Creative goods & services .....                             | 17.8  | 75   |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a   | n/a  |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....   | 0.5   | 95   |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 1.8   | 50   |
| 7.2.4 Printing & publishing output manufactures, % .....        | 0.9   | 75   |
| 7.2.5 Creative goods exports, % total trade .....               | 1.9   | 22 ● |
| 7.3 Online creativity .....                                     | 14.9  | 73   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 1.9   | 91   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 0.3   | 108  |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 260.6 | 103  |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 55.5  | 65   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 78.5                      |
| GDP (US\$ billions) .....   | 404.1                     |
| GDP per capita, PPP\$ ..... | 12,478.2                  |
| Income group .....          | Upper-middle income       |
| Region .....                | Central and Southern Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>28.4</b>                         | <b>106</b> |
| Innovation Output Sub-Index .....                 | 22.0                                | 105        |
| Innovation Input Sub-Index .....                  | 34.8                                | 106        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 103        |
| Global Innovation Index 2014 (out of 143) .....   | 26.1                                | 120        |

|                                                               |             |              |
|---------------------------------------------------------------|-------------|--------------|
| <b>1 Institutions .....</b>                                   | <b>44.3</b> | <b>126</b>   |
| 1.1 Political environment .....                               | 27.7        | 125          |
| 1.1.1 Political stability* .....                              | 32.8        | 128          |
| 1.1.2 Government effectiveness* .....                         | 22.6        | 112          |
| 1.2 Regulatory environment .....                              | 42.4        | 125          |
| 1.2.1 Regulatory quality* .....                               | 7.9         | 137 ○        |
| 1.2.2 Rule of law* .....                                      | 21.5        | 123          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 23.1        | 106          |
| 1.3 Business environment .....                                | 62.8        | 93           |
| 1.3.1 Ease of starting a business* .....                      | 89.4        | 53 ●         |
| 1.3.2 Ease of resolving insolvency* .....                     | 32.4        | 119          |
| 1.3.3 Ease of paying taxes* .....                             | 66.8        | 98           |
| <b>2 Human capital &amp; research .....</b>                   | <b>37.1</b> | <b>46 ●</b>  |
| 2.1 Education .....                                           | 35.6        | 97           |
| 2.1.1 Expenditure on education, % GDP .....                   | 3.7         | 95           |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 15.9        | 80           |
| 2.1.3 School life expectancy, years .....                     | 15.1        | 41 ●         |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | n/a         | n/a          |
| 2.2 Tertiary education .....                                  | 61.8        | 4 ●          |
| 2.2.1 Tertiary enrolment, % gross .....                       | 55.2        | 48 ●         |
| 2.2.2 Graduates in science & engineering, % .....             | 47.2        | 1 ●          |
| 2.2.3 Tertiary inbound mobility, % .....                      | 0.1         | 109 ○        |
| 2.3 Research & development (R&D) .....                        | 14.0        | 59           |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓔ</sup> .....             | 736.1       | 54           |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓔ</sup> .....      | 0.7         | 46           |
| 2.3.3 QS university ranking, average score top 3* .....       | 15.6        | 56           |
| <b>3 Infrastructure .....</b>                                 | <b>39.9</b> | <b>68</b>    |
| 3.1 Information & communication technologies (ICTs) .....     | 34.0        | 96           |
| 3.1.1 ICT access* .....                                       | 55.3        | 71           |
| 3.1.2 ICT use* .....                                          | 14.4        | 103          |
| 3.1.3 Government's online service* .....                      | 37.0        | 87           |
| 3.1.4 E-participation* .....                                  | 29.4        | 104          |
| 3.2 General infrastructure .....                              | 56.1        | 10 ●         |
| 3.2.1 Electricity output, kWh/cap .....                       | 3327.3      | 55           |
| 3.2.2 Logistics performance* .....                            | n/a         | n/a          |
| 3.2.3 Gross capital formation, % GDP .....                    | 43.0        | 6 ●          |
| 3.3 Ecological sustainability .....                           | 29.5        | 96           |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 4.8         | 101          |
| 3.3.2 Environmental performance* .....                        | 51.1        | 74           |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.5         | 78           |
| <b>4 Market sophistication .....</b>                          | <b>29.9</b> | <b>139 ○</b> |
| 4.1 Credit .....                                              | 23.8        | 95           |
| 4.1.1 Ease of getting credit* .....                           | 45.0        | 80           |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 12.2        | 133 ○        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a         | n/a          |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 26.0 | 116   |
| 4.2.1 Ease of protecting investors* .....                      | 41.7 | 123   |
| 4.2.2 Market capitalization, % GDP .....                       | 28.0 | 60    |
| 4.2.3 Total value of stocks traded, % GDP .....                | 4.4  | 52    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a   |
| 4.3 Trade & competition .....                                  | 39.9 | 140 ○ |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓔ</sup> ..... | 21.8 | 138 ○ |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 56.6 | 114   |

**5 Business sophistication .....** **22.6** **130**

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                                   | 23.8 | 109   |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓔ</sup> .....                    | 16.0 | 90    |
| 5.1.2 Firms offering formal training, % firms .....                           | n/a  | n/a   |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓔ</sup> .....                 | 0.1  | 64    |
| 5.1.4 GERD financed by business, % <sup>Ⓔ</sup> .....                         | 30.9 | 48    |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | n/a  | n/a   |
| 5.2 Innovation linkages .....                                                 | 23.5 | 107   |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 36.3 | 99    |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 40.4 | 94    |
| 5.2.3 GERD financed by abroad, % .....                                        | n/a  | n/a   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0  | 89 ○  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓔ</sup> .....              | 0.0  | 107 ○ |
| 5.3 Knowledge absorption .....                                                | 20.3 | 137 ○ |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓔ</sup> .....       | 0.2  | 90    |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 4.0  | 111   |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓔ</sup> ..... | 0.6  | 86    |
| 5.3.4 FDI net inflows, % GDP .....                                            | 0.8  | 116   |

**6 Knowledge & technology outputs .....** **22.5** **90**

|                                                                               |       |       |
|-------------------------------------------------------------------------------|-------|-------|
| 6.1 Knowledge creation .....                                                  | 37.7  | 24    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | 8.9   | 8 ●   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a   | n/a   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a   | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 20.0  | 40 ●  |
| 6.1.5 Citable documents H index .....                                         | 158.0 | 44 ●  |
| 6.2 Knowledge impact .....                                                    | 27.5  | 114   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | -2.8  | 114 ○ |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | n/a   | n/a   |
| 6.2.3 Computer software spending, % GDP .....                                 | 0.3   | 55    |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 2.0   | 93    |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓔ</sup> .....             | 35.5  | 28 ●  |
| 6.3 Knowledge diffusion .....                                                 | 2.2   | 135 ○ |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓔ</sup> .....       | 0.0   | 92    |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.5   | 75    |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓔ</sup> ..... | 0.2   | 114 ○ |
| 6.3.4 FDI net outflows, % GDP .....                                           | n/a   | n/a   |

**7 Creative outputs .....** **21.5** **116**

|                                                                       |        |      |
|-----------------------------------------------------------------------|--------|------|
| 7.1 Intangible assets .....                                           | 35.5   | 113  |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | n/a    | n/a  |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.0    | 65 ○ |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 46.0   | 105  |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 42.5   | 108  |
| 7.2 Creative goods & services .....                                   | 7.7    | 106  |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a    | n/a  |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 1.5    | 67   |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a    | n/a  |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓔ</sup> ..... | 0.2    | 97 ○ |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓔ</sup> .....        | 0.5    | 57   |
| 7.3 Online creativity .....                                           | 7.3    | 85   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 2.1    | 86   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 4.4    | 56   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 2091.4 | 52 ● |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a    | n/a  |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Ireland

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 4.7         |
| GDP (US\$ billions) .....   | 246.4       |
| GDP per capita, PPP\$ ..... | 40,586.5    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>59.1</b>                         | <b>8</b>  |
| Innovation Output Sub-Index .....                             | 55.4                                | 7         |
| Innovation Input Sub-Index .....                              | 62.9                                | 14        |
| Innovation Efficiency Ratio .....                             | 0.9                                 | 12        |
| Global Innovation Index 2014 (out of 143) .....               | 56.7                                | 11        |
| <b>1 Institutions .....</b>                                   | <b>87.2</b>                         | <b>15</b> |
| 1.1 Political environment .....                               | 83.4                                | 19        |
| 1.1.1 Political stability* .....                              | 85.9                                | 29        |
| 1.1.2 Government effectiveness* .....                         | 81.0                                | 21        |
| 1.2 Regulatory environment .....                              | 89.5                                | 18        |
| 1.2.1 Regulatory quality* .....                               | 89.9                                | 14        |
| 1.2.2 Rule of law* .....                                      | 93.4                                | 13        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 14.3                                | 60 ○      |
| 1.3 Business environment .....                                | 88.7                                | 8         |
| 1.3.1 Ease of starting a business* .....                      | 94.2                                | 18        |
| 1.3.2 Ease of resolving insolvency* .....                     | 76.9                                | 19        |
| 1.3.3 Ease of paying taxes* .....                             | 95.1                                | 6 ●       |
| <b>2 Human capital &amp; research .....</b>                   | <b>50.1</b>                         | <b>20</b> |
| 2.1 Education .....                                           | 57.5                                | 16        |
| 2.1.1 Expenditure on education, % GDP .....                   | 6.2                                 | 29        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 28.9                                | 27        |
| 2.1.3 School life expectancy, years .....                     | 18.6                                | 5 ●       |
| 2.1.4 PISA scales in reading, maths, & science .....          | 515.6                               | 12        |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | n/a                                 | n/a       |
| 2.2 Tertiary education .....                                  | 45.0                                | 30        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 71.2                                | 23        |
| 2.2.2 Graduates in science & engineering, % .....             | 23.8                                | 31        |
| 2.2.3 Tertiary inbound mobility, % .....                      | 5.8                                 | 31        |
| 2.3 Research & development (R&D) .....                        | 47.7                                | 20        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....             | 3438.0                              | 24        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....      | 1.7                                 | 23        |
| 2.3.3 QS university ranking, average score top 3* .....       | 62.5                                | 16        |
| <b>3 Infrastructure .....</b>                                 | <b>54.9</b>                         | <b>24</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 69.3                                | 28        |
| 3.1.1 ICT access* .....                                       | 82.4                                | 19        |
| 3.1.2 ICT use* .....                                          | 62.4                                | 23        |
| 3.1.3 Government's online service* .....                      | 67.7                                | 31        |
| 3.1.4 E-participation* .....                                  | 64.7                                | 33        |
| 3.2 General infrastructure .....                              | 37.9                                | 49        |
| 3.2.1 Electricity output, kWh/cap .....                       | 5561.9                              | 34        |
| 3.2.2 Logistics performance* .....                            | 87.0                                | 11        |
| 3.2.3 Gross capital formation, % GDP .....                    | 16.4                                | 118 ○     |
| 3.3 Ecological sustainability .....                           | 57.4                                | 9         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 12.3                                | 10        |
| 3.3.2 Environmental performance* .....                        | 74.7                                | 19        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 3.3                                 | 28        |
| <b>4 Market sophistication .....</b>                          | <b>64.0</b>                         | <b>13</b> |
| 4.1 Credit .....                                              | 62.6                                | 10        |
| 4.1.1 Ease of getting credit* .....                           | 70.0                                | 22        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 168.0                               | 10        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a       |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| 4.2 Investment .....                                                  | 46.2        | 35         |
| 4.2.1 Ease of protecting investors* .....                             | 73.3        | 6 ●        |
| 4.2.2 Market capitalization, % GDP .....                              | 49.1        | 40         |
| 4.2.3 Total value of stocks traded, % GDP .....                       | 5.5         | 47 ○       |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                        | 0.4         | 9          |
| 4.3 Trade & competition .....                                         | 83.1        | 37         |
| 4.3.1 Applied tariff rate, weighted mean, % .....                     | 1.0         | 9          |
| 4.3.2 Intensity of local competition <sup>†</sup> .....               | 69.6        | 58 ○       |
| <b>5 Business sophistication .....</b>                                | <b>58.4</b> | <b>5 ●</b> |
| 5.1 Knowledge workers .....                                           | 70.6        | 5 ●        |
| 5.1.1 Knowledge-intensive employment, % .....                         | 40.5        | 23         |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....      | 73.2        | 3 ●        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....         | 1.2         | 19         |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                 | 50.3        | 18         |
| 5.1.5 Females employed w/advanced degrees, % total .....              | 24.7        | 9          |
| 5.2 Innovation linkages .....                                         | 52.7        | 11         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 70.7        | 13         |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 63.3        | 17         |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                   | 21.4        | 18         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 6          |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 0.6         | 22         |
| 5.3 Knowledge absorption .....                                        | 51.8        | 11         |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 22.2        | 1 ●        |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 5.1         | 95 ○       |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 1.0         | 61 ○       |
| 5.3.4 FDI net inflows, % GDP .....                                    | 22.9        | 4 ●        |
| <b>6 Knowledge &amp; technology outputs .....</b>                     | <b>55.7</b> | <b>7</b>   |
| 6.1 Knowledge creation .....                                          | 28.5        | 35         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                 | 1.6         | 54 ○       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                      | 1.9         | 25         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....               | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....              | 31.4        | 25         |
| 6.1.5 Citable documents H index .....                                 | 299.0       | 28         |
| 6.2 Knowledge impact .....                                            | 53.9        | 12         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                        | 1.0         | 72 ○       |
| 6.2.2 New businesses/th pop. 15–64 .....                              | 4.5         | 25         |
| 6.2.3 Computer software spending, % GDP .....                         | 0.7         | 4          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                | 11.2        | 37         |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....     | 57.4        | 3 ●        |
| 6.3 Knowledge diffusion .....                                         | 84.8        | 2 ●        |
| 6.3.1 Royalty & license fees receipts, % total trade .....            | 2.5         | 8          |
| 6.3.2 High-tech exports less re-exports, % total trade .....          | 11.3        | 20         |
| 6.3.3 Comm., computer & info. services exp., % total trade .....      | 25.1        | 1 ●        |
| 6.3.4 FDI net outflows, % GDP .....                                   | 16.2        | 1 ●        |
| <b>7 Creative outputs .....</b>                                       | <b>55.0</b> | <b>12</b>  |
| 7.1 Intangible assets .....                                           | 61.0        | 11         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | n/a         | n/a        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.8         | 35 ○       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 72.4        | 16         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 70.4        | 13         |
| 7.2 Creative goods & services .....                                   | 33.4        | 33         |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.2         | 51 ○       |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 10.4        | 17         |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 43.0        | 17         |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.6         | 40         |
| 7.2.5 Creative goods exports, % total trade .....                     | 2.4         | 19         |
| 7.3 Online creativity .....                                           | 64.7        | 14         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 71.7        | 13         |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 25.5        | 30         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 9744.5      | 3 ●        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 89.8        | 14         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



**Key indicators**

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 7.8                              |
| GDP (US\$ billions) .....   | 303.8                            |
| GDP per capita, PPP\$ ..... | 35,658.7                         |
| Income group .....          | High income                      |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>53.5</b>                         | <b>22</b> |
| Innovation Output Sub-Index .....                 | 48.6                                | 16        |
| Innovation Input Sub-Index .....                  | 58.5                                | 22        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 20        |
| Global Innovation Index 2014 (out of 143) .....   | 55.5                                | 15        |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                                       | <b>67.9</b> | <b>54</b> |
| 1.1 Political environment .....                                   | 55.7        | 56        |
| 1.1.1 Political stability* .....                                  | 37.1        | 118 ○     |
| 1.1.2 Government effectiveness* .....                             | 74.3        | 27        |
| 1.2 Regulatory environment .....                                  | 68.7        | 59        |
| 1.2.1 Regulatory quality* .....                                   | 78.6        | 22        |
| 1.2.2 Rule of law* .....                                          | 73.0        | 32        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....            | 27.4        | 118 ○     |
| 1.3 Business environment .....                                    | 79.2        | 32        |
| 1.3.1 Ease of starting a business* .....                          | 90.5        | 44        |
| 1.3.2 Ease of resolving insolvency* .....                         | 75.2        | 22        |
| 1.3.3 Ease of paying taxes* .....                                 | 71.9        | 76 ○      |
| <b>2 Human capital &amp; research .....</b>                       | <b>55.9</b> | <b>11</b> |
| 2.1 Education .....                                               | 50.3        | 51        |
| 2.1.1 Expenditure on education, % GDP .....                       | 5.6         | 38        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....         | 15.5        | 84 ○      |
| 2.1.3 School life expectancy, years .....                         | 16.0        | 25        |
| 2.1.4 PISA scales in reading, maths, & science .....              | 474.1       | 36 ○      |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....           | 9.8         | 27        |
| 2.2 Tertiary education .....                                      | 31.5        | 72        |
| 2.2.1 Tertiary enrolment, % gross .....                           | 67.9        | 28        |
| 2.2.2 Graduates in science & engineering, % .....                 | n/a         | n/a       |
| 2.2.3 Tertiary inbound mobility, % .....                          | 1.2         | 79 ○      |
| 2.3 Research & development (R&D) .....                            | 85.8        | 1 ●       |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                 | 8337.1      | 1 ●       |
| 2.3.2 Gross expenditure on R&D, % GDP .....                       | 4.2         | 1 ●       |
| 2.3.3 QS university ranking, average score top 3* .....           | 57.5        | 22        |
| <b>3 Infrastructure .....</b>                                     | <b>54.1</b> | <b>26</b> |
| 3.1 Information & communication technologies (ICTs) .....         | 78.0        | 13        |
| 3.1.1 ICT access* .....                                           | 83.1        | 16        |
| 3.1.2 ICT use* .....                                              | 55.3        | 30        |
| 3.1.3 Government's online service* .....                          | 87.4        | 13        |
| 3.1.4 E-participation* .....                                      | 86.3        | 12        |
| 3.2 General infrastructure .....                                  | 36.4        | 52        |
| 3.2.1 Electricity output, kWh/cap .....                           | 7758.1      | 22        |
| 3.2.2 Logistics performance* .....                                | 56.1        | 39        |
| 3.2.3 Gross capital formation, % GDP .....                        | 19.5        | 96 ○      |
| 3.3 Ecological sustainability .....                               | 47.9        | 35        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....          | 9.5         | 29        |
| 3.3.2 Environmental performance* .....                            | 65.8        | 38        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....     | 2.9         | 35        |
| <b>4 Market sophistication .....</b>                              | <b>60.5</b> | <b>21</b> |
| 4.1 Credit .....                                                  | 46.8        | 29        |
| 4.1.1 Ease of getting credit* .....                               | 65.0        | 34        |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 89.5        | 35        |
| 4.1.3 Microfinance gross loans, % GDP .....                       | n/a         | n/a       |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 58.9 | 11    |
| 4.2.1 Ease of protecting investors* .....               | 70.8 | 11    |
| 4.2.2 Market capitalization, % GDP .....                | 57.7 | 32    |
| 4.2.3 Total value of stocks traded, % GDP .....         | 26.2 | 28    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.8  | 3 ●   |
| 4.3 Trade & competition .....                           | 75.9 | 75    |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 0.7  | 4 ●   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 54.0 | 120 ○ |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                        | <b>54.1</b> | <b>11</b> |
| 5.1 Knowledge workers .....                                                   | 61.1        | 21        |
| 5.1.1 Knowledge-intensive employment, % .....                                 | 46.5        | 8         |
| 5.1.2 Firms offering formal training, % firms .....                           | 18.6        | 93 ○      |
| 5.1.3 GERD performed by business, % of GDP .....                              | 3.5         | 1 ●       |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                         | 35.6        | 43        |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | 28.4        | 3 ●       |
| 5.2 Innovation linkages .....                                                 | 64.9        | 1 ●       |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 75.1        | 7         |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 58.3        | 26        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 48.8        | 6         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 14        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | 3.0         | 5 ●       |
| 5.3 Knowledge absorption .....                                                | 36.5        | 56        |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.5         | 53        |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 9.4         | 42        |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 1.2         | 48        |
| 5.3.4 FDI net inflows, % GDP .....                                            | 4.1         | 37        |

|                                                                               |             |          |
|-------------------------------------------------------------------------------|-------------|----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>53.6</b> | <b>9</b> |
| 6.1 Knowledge creation .....                                                  | 56.5        | 9        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | 4.7         | 22       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | 5.9         | 8        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a      |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 46.4        | 11       |
| 6.1.5 Citable documents H index .....                                         | 456.0       | 15       |
| 6.2 Knowledge impact .....                                                    | 47.1        | 30       |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 1.7         | 53       |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 3.0         | 37       |
| 6.2.3 Computer software spending, % GDP .....                                 | 0.3         | 39       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 34.8        | 5 ●      |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 30.8        | 37       |
| 6.3 Knowledge diffusion .....                                                 | 57.2        | 9        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 1.1         | 14       |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 12.6        | 15       |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 4.9         | 6 ●      |
| 6.3.4 FDI net outflows, % GDP .....                                           | 1.6         | 40       |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>43.6</b> | <b>29</b> |
| 7.1 Intangible assets .....                                           | 42.4        | 86 ○      |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 12.8        | 93 ○      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 1.0         | 30        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 68.1        | 21        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 62.4        | 27        |
| 7.2 Creative goods & services .....                                   | 39.1        | 20        |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.9         | 16        |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 11.0        | 15        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 27.8        | 23        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 2.5         | 18        |
| 7.2.5 Creative goods exports, % total trade .....                     | 1.7         | 28        |
| 7.3 Online creativity .....                                           | 50.3        | 21        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 28.0        | 25        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 19.1        | 36        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 7906.3      | 8         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 95.5        | 2 ●       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Italy

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 61.1        |
| GDP (US\$ billions) .....   | 2,148.0     |
| GDP per capita, PPP\$ ..... | 30,803.0    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank        |
|---------------------------------------------------------------|-------------------------------------|-------------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>46.4</b>                         | <b>31</b>   |
| Innovation Output Sub-Index .....                             | 39.4                                | 32          |
| Innovation Input Sub-Index .....                              | 53.4                                | 29          |
| Innovation Efficiency Ratio .....                             | 0.7                                 | 57          |
| Global Innovation Index 2014 (out of 143) .....               | 45.7                                | 31          |
| <b>1 Institutions .....</b>                                   | <b>73.8</b>                         | <b>38</b>   |
| 1.1 Political environment .....                               | 65.2                                | 48          |
| 1.1.1 Political stability* .....                              | 76.8                                | 43          |
| 1.1.2 Government effectiveness* .....                         | 53.6                                | 46          |
| 1.2 Regulatory environment .....                              | 81.4                                | 27          |
| 1.2.1 Regulatory quality* .....                               | 68.3                                | 38          |
| 1.2.2 Rule of law* .....                                      | 57.1                                | 50          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 8.0                                 | 1 ●         |
| 1.3 Business environment .....                                | 74.9                                | 49          |
| 1.3.1 Ease of starting a business* .....                      | 91.2                                | 40          |
| 1.3.2 Ease of resolving insolvency* .....                     | 71.3                                | 27          |
| 1.3.3 Ease of paying taxes* .....                             | 62.1                                | 108 ○       |
| <b>2 Human capital &amp; research .....</b>                   | <b>41.3</b>                         | <b>33</b>   |
| 2.1 Education .....                                           | 51.0                                | 48          |
| 2.1.1 Expenditure on education, % GDP .....                   | 4.3                                 | 78 ○        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 23.4                                | 46          |
| 2.1.3 School life expectancy, years .....                     | 16.0                                | 23          |
| 2.1.4 PISA scales in reading, maths, & science .....          | 489.5                               | 28          |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....       | 10.1                                | 30          |
| 2.2 Tertiary education .....                                  | 37.3                                | 54          |
| 2.2.1 Tertiary enrolment, % gross .....                       | 62.5                                | 34          |
| 2.2.2 Graduates in science & engineering, % .....             | 20.2                                | 56          |
| 2.2.3 Tertiary inbound mobility, % .....                      | 4.0                                 | 44          |
| 2.3 Research & development (R&D) .....                        | 35.6                                | 29          |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 1934.3                              | 35          |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 1.3                                 | 27          |
| 2.3.3 QS university ranking, average score top 3* .....       | 53.2                                | 24          |
| <b>3 Infrastructure .....</b>                                 | <b>57.6</b>                         | <b>17 ●</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 70.8                                | 24          |
| 3.1.1 ICT access* .....                                       | 76.2                                | 33          |
| 3.1.2 ICT use* .....                                          | 53.8                                | 32          |
| 3.1.3 Government's online service* .....                      | 74.8                                | 23          |
| 3.1.4 E-participation* .....                                  | 78.4                                | 19 ●        |
| 3.2 General infrastructure .....                              | 35.6                                | 55          |
| 3.2.1 Electricity output, kWh/cap .....                       | 4685.4                              | 45          |
| 3.2.2 Logistics performance* .....                            | 78.0                                | 19 ●        |
| 3.2.3 Gross capital formation, % GDP .....                    | 17.4                                | 114 ○       |
| 3.3 Ecological sustainability .....                           | 66.4                                | 4 ●         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 10.2                                | 24          |
| 3.3.2 Environmental performance* .....                        | 74.4                                | 22 ●        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 11.7                                | 4 ●         |
| <b>4 Market sophistication .....</b>                          | <b>53.6</b>                         | <b>39</b>   |
| 4.1 Credit .....                                              | 41.5                                | 42          |
| 4.1.1 Ease of getting credit* .....                           | 45.0                                | 80 ○        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 117.0                               | 25          |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a         |

|                                                                       |             |             |
|-----------------------------------------------------------------------|-------------|-------------|
| 4.2 Investment .....                                                  | 36.2        | 63          |
| 4.2.1 Ease of protecting investors* .....                             | 66.7        | 21          |
| 4.2.2 Market capitalization, % GDP .....                              | 23.0        | 64          |
| 4.2.3 Total value of stocks traded, % GDP .....                       | 36.3        | 22          |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                        | 0.0         | 43          |
| 4.3 Trade & competition .....                                         | 83.2        | 36          |
| 4.3.1 Applied tariff rate, weighted mean, % .....                     | 1.0         | 9           |
| 4.3.2 Intensity of local competition <sup>†</sup> .....               | 69.8        | 56          |
| <b>5 Business sophistication .....</b>                                | <b>40.6</b> | <b>39</b>   |
| 5.1 Knowledge workers .....                                           | 45.6        | 44          |
| 5.1.1 Knowledge-intensive employment, % .....                         | 35.1        | 36          |
| 5.1.2 Firms offering formal training, % firms .....                   | n/a         | n/a         |
| 5.1.3 GERD performed by business, % of GDP .....                      | 0.7         | 28          |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                 | 44.3        | 30          |
| 5.1.5 Females employed w/advanced degrees, % total .....              | 10.6        | 58 ○        |
| 5.2 Innovation linkages .....                                         | 38.7        | 47          |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 45.5        | 57          |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 76.6        | 1 ●         |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                   | 9.5         | 43          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 62 ○        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 0.5         | 24          |
| 5.3 Knowledge absorption .....                                        | 37.5        | 50          |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 1.0         | 32          |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 7.2         | 62          |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 1.7         | 28          |
| 5.3.4 FDI net inflows, % GDP .....                                    | 0.6         | 120 ○       |
| <b>6 Knowledge &amp; technology outputs .....</b>                     | <b>41.2</b> | <b>22 ●</b> |
| 6.1 Knowledge creation .....                                          | 32.6        | 31          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                 | 3.9         | 26          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                      | 1.4         | 28          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....               | 1.2         | 22          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....              | 27.3        | 28          |
| 6.1.5 Citable documents H index .....                                 | 654.0       | 7 ●         |
| 6.2 Knowledge impact .....                                            | 54.4        | 10 ●        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                        | 0.0         | 99 ○        |
| 6.2.2 New businesses/th pop. 15–64 .....                              | 1.9         | 48          |
| 6.2.3 Computer software spending, % GDP .....                         | 0.6         | 11 ●        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                | 76.4        | 1 ●         |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....     | 37.6        | 25          |
| 6.3 Knowledge diffusion .....                                         | 36.6        | 39          |
| 6.3.1 Royalty & license fees receipts, % total trade .....            | 0.6         | 20          |
| 6.3.2 High-tech exports less re-exports, % total trade .....          | 5.3         | 31          |
| 6.3.3 Comm., computer & info. services exp., % total trade .....      | 1.5         | 58          |
| 6.3.4 FDI net outflows, % GDP .....                                   | 1.3         | 47          |
| <b>7 Creative outputs .....</b>                                       | <b>37.6</b> | <b>47</b>   |
| 7.1 Intangible assets .....                                           | 37.8        | 102 ○       |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 50.3        | 49          |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 1.3         | 24          |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 49.2        | 96 ○        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 40.5        | 115 ○       |
| 7.2 Creative goods & services .....                                   | 27.4        | 46          |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.3         | 42          |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 3.9         | 44          |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 29.8        | 22          |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.5         | 50          |
| 7.2.5 Creative goods exports, % total trade .....                     | 2.2         | 21          |
| 7.3 Online creativity .....                                           | 47.4        | 25          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 25.8        | 27          |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 27.1        | 28          |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 7569.6      | 13 ●        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 80.9        | 33          |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 2.8                             |
| GDP (US\$ billions) .....   | 13.8                            |
| GDP per capita, PPP\$ ..... | 9,255.5                         |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>29.9</b>                         | <b>96</b> |
| Innovation Output Sub-Index .....                 | 21.0                                | 110 ○     |
| Innovation Input Sub-Index .....                  | 38.9                                | 85        |
| Innovation Efficiency Ratio .....                 | 0.5                                 | 121 ○     |
| Global Innovation Index 2014 (out of 143) .....   | 32.4                                | 82        |

|                                                        |             |           |
|--------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                            | <b>63.5</b> | <b>59</b> |
| 1.1 Political environment .....                        | 54.7        | 58        |
| 1.1.1 Political stability* .....                       | 68.5        | 55        |
| 1.1.2 Government effectiveness* .....                  | 41.0        | 69        |
| 1.2 Regulatory environment .....                       | 66.8        | 68        |
| 1.2.1 Regulatory quality* .....                        | 53.8        | 63        |
| 1.2.2 Rule of law* .....                               | 37.3        | 83        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 14.0        | 58        |
| 1.3 Business environment .....                         | 68.8        | 69        |
| 1.3.1 Ease of starting a business* .....               | 94.1        | 19 ●      |
| 1.3.2 Ease of resolving insolvency* .....              | 53.3        | 57        |
| 1.3.3 Ease of paying taxes* .....                      | 59.0        | 113 ○     |

|                                                           |             |           |
|-----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research .....</b>               | <b>23.5</b> | <b>92</b> |
| 2.1 Education .....                                       | 46.4        | 62        |
| 2.1.1 Expenditure on education, % GDP .....               | 6.3         | 25 ●      |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 29.4        | 25 ●      |
| 2.1.3 School life expectancy, years .....                 | 12.4        | 86        |
| 2.1.4 PISA scales in reading, maths, & science .....      | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 16.2        | 71        |
| 2.2 Tertiary education .....                              | 24.1        | 90        |
| 2.2.1 Tertiary enrolment, % gross .....                   | 28.7        | 78        |
| 2.2.2 Graduates in science & engineering, % .....         | n/a         | n/a       |
| 2.2.3 Tertiary inbound mobility, % .....                  | n/a         | n/a       |
| 2.3 Research & development (R&D) .....                    | 0.0         | 128 ○     |
| 2.3.1 Researchers, FTE/mn pop. ....                       | n/a         | n/a       |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | n/a         | n/a       |
| 2.3.3 QS university ranking, average score top 3* .....   | 0.0         | 73 ○      |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure .....</b>                                 | <b>29.6</b> | <b>99</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 30.8        | 104       |
| 3.1.1 ICT access* .....                                       | 45.8        | 86        |
| 3.1.2 ICT use* .....                                          | 26.2        | 79        |
| 3.1.3 Government's online service* .....                      | 31.5        | 98        |
| 3.1.4 E-participation* .....                                  | 19.6        | 121 ○     |
| 3.2 General infrastructure .....                              | 21.9        | 113 ○     |
| 3.2.1 Electricity output, kWh/cap .....                       | 1578.2      | 84        |
| 3.2.2 Logistics performance* .....                            | 34.8        | 67        |
| 3.2.3 Gross capital formation, % GDP .....                    | 18.5        | 107 ○     |
| 3.3 Ecological sustainability .....                           | 36.0        | 78        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 6.8         | 73        |
| 3.3.2 Environmental performance* .....                        | 58.3        | 52 ●      |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.5         | 86        |

|                                                      |             |           |
|------------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                 | <b>46.3</b> | <b>74</b> |
| 4.1 Credit .....                                     | 30.1        | 74        |
| 4.1.1 Ease of getting credit* .....                  | 80.0        | 11 ●      |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 29.6        | 100       |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.2         | 60        |

|                                                                |      |      |
|----------------------------------------------------------------|------|------|
| 4.2 Investment .....                                           | 35.2 | 67   |
| 4.2.1 Ease of protecting investors* .....                      | 56.7 | 67   |
| 4.2.2 Market capitalization, % GDP .....                       | 43.2 | 47   |
| 4.2.3 Total value of stocks traded, % GDP .....                | 1.4  | 61   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a  |
| 4.3 Trade & competition .....                                  | 73.7 | 82   |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 7.5  | 104  |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 73.5 | 37 ● |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>31.8</b> | <b>80</b> |
| 5.1 Knowledge workers .....                                         | 31.4        | 89        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 20.1        | 72        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 25.9        | 72        |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a       |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a       |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a       |
| 5.2 Innovation linkages .....                                       | 36.0        | 56        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 46.6        | 54        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 44.4        | 79        |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 57        |
| 5.3 Knowledge absorption .....                                      | 28.0        | 101       |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 1.0         | 29 ●      |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 3.6         | 115 ○     |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.9         | 62        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 4.0         | 38 ●      |

|                                                                  |             |              |
|------------------------------------------------------------------|-------------|--------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>16.4</b> | <b>120 ○</b> |
| 6.1 Knowledge creation .....                                     | 6.9         | 88           |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.9         | 66           |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | n/a         | n/a          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a         | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 5.6         | 93           |
| 6.1.5 Citable documents H index .....                            | 64.0        | 100          |
| 6.2 Knowledge impact .....                                       | 24.7        | 120 ○        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | -1.1        | 112 ○        |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 1.1         | 64           |
| 6.2.3 Computer software spending, % GDP .....                    | 0.3         | 28 ●         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 1.1         | 112 ○        |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | n/a         | n/a          |
| 6.3 Knowledge diffusion .....                                    | 17.5        | 121 ○        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.1         | 59           |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.1         | 115 ○        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 0.8         | 83           |
| 6.3.4 FDI net outflows, % GDP .....                              | -0.6        | 117 ○        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>25.6</b> | <b>96</b> |
| 7.1 Intangible assets .....                                     | 48.7        | 54        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 76.2        | 23 ●      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 51.2        | 86        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 52.8        | 65        |
| 7.2 Creative goods & services .....                             | 1.6         | 128 ○     |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 .....                | n/a         | n/a       |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a         | n/a       |
| 7.2.5 Creative goods exports, % total trade .....               | 0.0         | 107 ○     |
| 7.3 Online creativity .....                                     | 3.1         | 102       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 2.3         | 85        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 1.4         | 83        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 779.8       | 85        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Japan

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 127.0                       |
| GDP (US\$ billions) .....   | 4,616.3                     |
| GDP per capita, PPP\$ ..... | 38,052.7                    |
| Income group .....          | High income                 |
| Region .....                | South East Asia and Oceania |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>54.0</b>                         | <b>19</b> |
| Innovation Output Sub-Index .....                 | 44.1                                | 26        |
| Innovation Input Sub-Index .....                  | 63.8                                | 12        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 78        |
| Global Innovation Index 2014 (out of 143) .....   | 52.4                                | 21        |

|          |                                                         |             |            |
|----------|---------------------------------------------------------|-------------|------------|
| <b>1</b> | <b>Institutions .....</b>                               | <b>86.5</b> | <b>17</b>  |
| 1.1      | Political environment .....                             | 86.5        | 16         |
| 1.1.1    | Political stability* .....                              | 88.4        | 19         |
| 1.1.2    | Government effectiveness* .....                         | 84.5        | 13         |
| 1.2      | Regulatory environment .....                            | 90.6        | 16         |
| 1.2.1    | Regulatory quality* .....                               | 77.2        | 25         |
| 1.2.2    | Rule of law* .....                                      | 85.1        | 19         |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....        | 8.0         | 1 ●        |
| 1.3      | Business environment .....                              | 82.4        | 21         |
| 1.3.1    | Ease of starting a business* .....                      | 86.2        | 69         |
| 1.3.2    | Ease of resolving insolvency* .....                     | 93.7        | 2 ●        |
| 1.3.3    | Ease of paying taxes* .....                             | 67.2        | 96 ○       |
| <b>2</b> | <b>Human capital &amp; research .....</b>               | <b>55.0</b> | <b>13</b>  |
| 2.1      | Education .....                                         | 51.6        | 43         |
| 2.1.1    | Expenditure on education, % GDP .....                   | 3.8         | 88 ○       |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap .....     | 25.8        | 35         |
| 2.1.3    | School life expectancy, years .....                     | 15.3        | 36         |
| 2.1.4    | PISA scales in reading, maths, & science .....          | 540.4       | 5          |
| 2.1.5    | Pupil-teacher ratio, secondary .....                    | 11.7        | 40         |
| 2.2      | Tertiary education .....                                | 37.0        | 55         |
| 2.2.1    | Tertiary enrolment, % gross .....                       | 61.5        | 39         |
| 2.2.2    | Graduates in science & engineering, % .....             | 20.3        | 54         |
| 2.2.3    | Tertiary inbound mobility, % .....                      | 3.9         | 47         |
| 2.3      | Research & development (R&D) .....                      | 76.3        | 6 ●        |
| 2.3.1    | Researchers, FTE/mn pop. ....                           | 5194.8      | 9          |
| 2.3.2    | Gross expenditure on R&D, % GDP .....                   | 3.5         | 3 ●        |
| 2.3.3    | QS university ranking, average score top 3* .....       | 83.7        | 7          |
| <b>3</b> | <b>Infrastructure .....</b>                             | <b>63.1</b> | <b>5 ●</b> |
| 3.1      | Information & communication technologies (ICTs) .....   | 88.1        | 4 ●        |
| 3.1.1    | ICT access* .....                                       | 84.0        | 14         |
| 3.1.2    | ICT use* .....                                          | 78.0        | 7          |
| 3.1.3    | Government's online service* .....                      | 94.5        | 4 ●        |
| 3.1.4    | E-participation* .....                                  | 96.1        | 4 ●        |
| 3.2      | General infrastructure .....                            | 48.2        | 19         |
| 3.2.1    | Electricity output, kWh/cap .....                       | 8257.7      | 20         |
| 3.2.2    | Logistics performance* .....                            | 89.4        | 10         |
| 3.2.3    | Gross capital formation, % GDP .....                    | 22.2        | 65         |
| 3.3      | Ecological sustainability .....                         | 52.8        | 19         |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 8.9         | 42         |
| 3.3.2    | Environmental performance* .....                        | 72.4        | 26         |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 5.1         | 19         |
| <b>4</b> | <b>Market sophistication .....</b>                      | <b>64.3</b> | <b>12</b>  |
| 4.1      | Credit .....                                            | 56.0        | 16         |
| 4.1.1    | Ease of getting credit* .....                           | 50.0        | 65         |
| 4.1.2    | Domestic credit to private sector, % GDP .....          | 188.3       | 5 ●        |
| 4.1.3    | Microfinance gross loans, % GDP .....                   | n/a         | n/a        |

|       |                                             |      |     |
|-------|---------------------------------------------|------|-----|
| 4.2   | Investment .....                            | 44.1 | 43  |
| 4.2.1 | Ease of protecting investors* .....         | 62.5 | 34  |
| 4.2.2 | Market capitalization, % GDP .....          | 61.8 | 30  |
| 4.2.3 | Total value of stocks traded, % GDP .....   | 60.5 | 14  |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....    | 0.1  | 33  |
| 4.3   | Trade & competition .....                   | 92.7 | 3 ● |
| 4.3.1 | Applied tariff rate, weighted mean, % ..... | 1.2  | 37  |
| 4.3.2 | Intensity of local competition† .....       | 89.5 | 1 ● |

|          |                                                            |             |           |
|----------|------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                       | <b>50.4</b> | <b>16</b> |
| 5.1      | Knowledge workers .....                                    | 62.8        | 16        |
| 5.1.1    | Knowledge-intensive employment, % .....                    | 24.3        | 62        |
| 5.1.2    | Firms offering formal training, % firms .....              | n/a         | n/a       |
| 5.1.3    | GERD performed by business, % of GDP .....                 | 2.7         | 3 ●       |
| 5.1.4    | GERD financed by business, % .....                         | 75.5        | 2 ●       |
| 5.1.5    | Females employed w/advanced degrees, % total .....         | 19.3        | 24        |
| 5.2      | Innovation linkages .....                                  | 46.6        | 21        |
| 5.2.1    | University/industry research collaboration† .....          | 66.7        | 15        |
| 5.2.2    | State of cluster development† .....                        | 71.4        | 7         |
| 5.2.3    | GERD financed by abroad, % .....                           | 0.5         | 95 ○      |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 38        |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....              | 5.2         | 2 ●       |
| 5.3      | Knowledge absorption .....                                 | 41.8        | 34        |
| 5.3.1    | Royalty & license fees payments, % total trade .....       | 2.0         | 8         |
| 5.3.2    | High-tech imports less re-imports, % total trade .....     | 14.0        | 17        |
| 5.3.3    | Comm., computer & info. services imp., % total trade ..... | 0.7         | 77 ○      |
| 5.3.4    | FDI net inflows, % GDP .....                               | 0.1         | 128 ○     |

|          |                                                             |             |           |
|----------|-------------------------------------------------------------|-------------|-----------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>             | <b>48.6</b> | <b>14</b> |
| 6.1      | Knowledge creation .....                                    | 56.3        | 10        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....             | 58.0        | 1 ●       |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                  | 8.9         | 1 ●       |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....           | 1.3         | 21        |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....          | 15.6        | 49        |
| 6.1.5    | Citable documents H index .....                             | 694.0       | 6 ●       |
| 6.2      | Knowledge impact .....                                      | 39.4        | 59        |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                    | 1.5         | 60        |
| 6.2.2    | New businesses/th pop. 15–64 .....                          | 1.2         | 62 ○      |
| 6.2.3    | Computer software spending, % GDP .....                     | 0.3         | 38        |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....            | 9.8         | 42        |
| 6.2.5    | High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 43.6        | 13        |
| 6.3      | Knowledge diffusion .....                                   | 50.0        | 14        |
| 6.3.1    | Royalty & license fees receipts, % total trade .....        | 3.5         | 5 ●       |
| 6.3.2    | High-tech exports less re-exports, % total trade .....      | 12.4        | 16        |
| 6.3.3    | Comm., computer & info. services exp., % total trade .....  | 0.3         | 105 ○     |
| 6.3.4    | FDI net outflows, % GDP .....                               | 2.8         | 23        |

|          |                                                                 |             |           |
|----------|-----------------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs .....</b>                                   | <b>39.6</b> | <b>43</b> |
| 7.1      | Intangible assets .....                                         | 44.8        | 73        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                   | 33.8        | 67 ○      |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.4         | 42 ○      |
| 7.1.3    | ICTs & business model creation† .....                           | 73.1        | 14        |
| 7.1.4    | ICTs & organizational model creation† .....                     | 60.6        | 37        |
| 7.2      | Creative goods & services .....                                 | 35.9        | 24        |
| 7.2.1    | Cultural & creative services exports, % total trade .....       | 0.0         | 71 ○      |
| 7.2.2    | National feature films/mn pop. 15–69 .....                      | 6.7         | 30        |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....                  | 65.5        | 6         |
| 7.2.4    | Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 2.3         | 23        |
| 7.2.5    | Creative goods exports, % total trade .....                     | 2.4         | 20        |
| 7.3      | Online creativity .....                                         | 33.1        | 42        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....            | 18.5        | 33        |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                           | 6.7         | 48        |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                                | 3292.1      | 40        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                       | 82.7        | 28        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 7.5                              |
| GDP (US\$ billions) .....   | 35.8                             |
| GDP per capita, PPP\$ ..... | 6,281.5                          |
| Income group .....          | Upper-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>33.8</b>                         | <b>75</b> |
| Innovation Output Sub-Index .....                 | 28.3                                | 67        |
| Innovation Input Sub-Index .....                  | 39.3                                | 80        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 68        |
| Global Innovation Index 2014 (out of 143) .....   | 36.2                                | 64        |

**1 Institutions .....** **62.2** **65**

|                                                        |      |       |
|--------------------------------------------------------|------|-------|
| 1.1 Political environment .....                        | 43.6 | 85    |
| 1.1.1 Political stability* .....                       | 48.9 | 102   |
| 1.1.2 Government effectiveness* .....                  | 38.4 | 78    |
| 1.2 Regulatory environment .....                       | 77.2 | 36 ●  |
| 1.2.1 Regulatory quality* .....                        | 50.9 | 66    |
| 1.2.2 Rule of law* .....                               | 57.9 | 49    |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 8.0  | 1 ●   |
| 1.3 Business environment .....                         | 65.7 | 80    |
| 1.3.1 Ease of starting a business* .....               | 85.6 | 72    |
| 1.3.2 Ease of resolving insolvency* .....              | 30.2 | 123 ○ |
| 1.3.3 Ease of paying taxes* .....                      | 81.2 | 40 ●  |

**2 Human capital & research .....** **26.3** **81**

|                                                                |       |       |
|----------------------------------------------------------------|-------|-------|
| 2.1 Education .....                                            | 31.7  | 111 ○ |
| 2.1.1 Expenditure on education, % GDP .....                    | n/a   | n/a   |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 15.1  | 86 ○  |
| 2.1.3 School life expectancy, years .....                      | 13.5  | 70    |
| 2.1.4 PISA scales in reading, maths, & science .....           | 398.0 | 54 ○  |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | n/a   | n/a   |
| 2.2 Tertiary education .....                                   | 34.7  | 60    |
| 2.2.1 Tertiary enrolment, % gross .....                        | 46.6  | 56    |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 16.1  | 74    |
| 2.2.3 Tertiary inbound mobility, % .....                       | 9.1   | 17 ●  |
| 2.3 Research & development (R&D) .....                         | 12.4  | 61    |
| 2.3.1 Researchers, FTE/mn pop. ....                            | n/a   | n/a   |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.4   | 67    |
| 2.3.3 QS university ranking, average score top 3* .....        | 14.7  | 58    |

**3 Infrastructure .....** **36.4** **81**

|                                                               |        |    |
|---------------------------------------------------------------|--------|----|
| 3.1 Information & communication technologies (ICTs) .....     | 44.0   | 75 |
| 3.1.1 ICT access* .....                                       | 54.7   | 73 |
| 3.1.2 ICT use* .....                                          | 22.2   | 88 |
| 3.1.3 Government's online service* .....                      | 52.0   | 62 |
| 3.1.4 E-participation* .....                                  | 47.1   | 70 |
| 3.2 General infrastructure .....                              | 27.1   | 86 |
| 3.2.1 Electricity output, kWh/cap .....                       | 2625.9 | 68 |
| 3.2.2 Logistics performance* .....                            | 36.4   | 65 |
| 3.2.3 Gross capital formation, % GDP .....                    | 21.7   | 70 |
| 3.3 Ecological sustainability .....                           | 38.1   | 68 |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 8.4    | 48 |
| 3.3.2 Environmental performance* .....                        | 55.8   | 55 |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.5    | 80 |

**4 Market sophistication .....** **38.8** **118 ○**

|                                                      |      |       |
|------------------------------------------------------|------|-------|
| 4.1 Credit .....                                     | 9.0  | 132 ○ |
| 4.1.1 Ease of getting credit* .....                  | 0.0  | 140 ○ |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 72.3 | 44    |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.4  | 48    |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 31.6 | 91    |
| 4.2.1 Ease of protecting investors* .....                      | 41.7 | 123 ○ |
| 4.2.2 Market capitalization, % GDP .....                       | 87.0 | 18 ●  |
| 4.2.3 Total value of stocks traded, % GDP .....                | 9.0  | 41    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | 0.1  | 24    |
| 4.3 Trade & competition .....                                  | 75.9 | 73    |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 5.2  | 85    |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 69.9 | 55    |

**5 Business sophistication .....** **32.8** **76**

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                         | 23.5 | 111 ○ |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 28.2 | 48    |
| 5.1.2 Firms offering formal training, % firms .....                 | 3.4  | 109 ○ |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a  | n/a   |
| 5.1.4 GERD financed by business, % .....                            | n/a  | n/a   |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a  | n/a   |
| 5.2 Innovation linkages .....                                       | 41.3 | 36 ●  |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 47.1 | 50    |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 58.1 | 27 ●  |
| 5.2.3 GERD financed by abroad, % .....                              | n/a  | n/a   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0  | 24 ●  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0  | 59    |
| 5.3 Knowledge absorption .....                                      | 33.5 | 67    |
| 5.3.1 Royalty & license fees payments, % total trade .....          | n/a  | n/a   |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 5.1  | 96    |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a  | n/a   |
| 5.3.4 FDI net inflows, % GDP .....                                  | 5.3  | 30 ●  |

**6 Knowledge & technology outputs .....** **24.0** **83**

|                                                                  |      |      |
|------------------------------------------------------------------|------|------|
| 6.1 Knowledge creation .....                                     | 11.4 | 65   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.5  | 75   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | n/a  | n/a  |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a  | n/a  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 14.9 | 51   |
| 6.1.5 Citable documents H index .....                            | 92.0 | 76   |
| 6.2 Knowledge impact .....                                       | 36.5 | 75   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 3.4  | 25 ● |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 1.0  | 68   |
| 6.2.3 Computer software spending, % GDP .....                    | 0.3  | 43   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 3.5  | 72   |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 24.5 | 47   |
| 6.3 Knowledge diffusion .....                                    | 24.1 | 91   |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | n/a  | n/a  |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.4  | 78   |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | n/a  | n/a  |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.0  | 95 ○ |

**7 Creative outputs .....** **32.5** **69**

|                                                                 |        |       |
|-----------------------------------------------------------------|--------|-------|
| 7.1 Intangible assets .....                                     | 46.6   | 62    |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 27.8   | 73    |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a    | n/a   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 63.2   | 39 ●  |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 62.0   | 29 ●  |
| 7.2 Creative goods & services .....                             | 17.5   | 76    |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a    | n/a   |
| 7.2.2 National feature films/mn pop. 15–69 .....                | n/a    | n/a   |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 1.4    | 52 ○  |
| 7.2.4 Printing & publishing output manufactures, % .....        | 1.5    | 49    |
| 7.2.5 Creative goods exports, % total trade .....               | 0.8    | 45    |
| 7.3 Online creativity .....                                     | 19.5   | 66    |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 7.6    | 50    |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 0.4    | 107 ○ |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 1037.9 | 73    |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 62.6   | 61 ○  |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Kazakhstan

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 16.6                      |
| GDP (US\$ billions) .....   | 212.3                     |
| GDP per capita, PPP\$ ..... | 15,219.4                  |
| Income group .....          | Upper-middle income       |
| Region .....                | Central and Southern Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>31.2</b>                         | <b>82</b> |
| Innovation Output Sub-Index .....                 | 21.5                                | 107       |
| Innovation Input Sub-Index .....                  | 41.0                                | 75        |
| Innovation Efficiency Ratio .....                 | 0.5                                 | 124 ○     |
| Global Innovation Index 2014 (out of 143) .....   | 32.8                                | 79        |

**1 Institutions ..... 61.4 67**

|                                                        |      |      |
|--------------------------------------------------------|------|------|
| 1.1 Political environment .....                        | 40.8 | 98   |
| 1.1.1 Political stability* .....                       | 54.7 | 88   |
| 1.1.2 Government effectiveness* .....                  | 26.9 | 102  |
| 1.2 Regulatory environment .....                       | 66.3 | 71   |
| 1.2.1 Regulatory quality* .....                        | 37.6 | 103  |
| 1.2.2 Rule of law* .....                               | 29.9 | 102  |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 8.6  | 20 ● |
| 1.3 Business environment .....                         | 77.2 | 35 ● |
| 1.3.1 Ease of starting a business* .....               | 90.2 | 46   |
| 1.3.2 Ease of resolving insolvency* .....              | 51.5 | 60   |
| 1.3.3 Ease of paying taxes* .....                      | 90.0 | 16 ● |

**2 Human capital & research ..... 29.6 66**

|                                                           |       |      |
|-----------------------------------------------------------|-------|------|
| 2.1 Education .....                                       | 50.9  | 49   |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....  | 3.1   | 108  |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | n/a   | n/a  |
| 2.1.3 School life expectancy, years .....                 | 15.0  | 43   |
| 2.1.4 PISA scales in reading, maths, & science .....      | 416.4 | 48   |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 8.6   | 13 ● |
| 2.2 Tertiary education .....                              | 21.8  | 99   |
| 2.2.1 Tertiary enrolment, % gross .....                   | 44.5  | 60   |
| 2.2.2 Graduates in science & engineering, % .....         | n/a   | n/a  |
| 2.2.3 Tertiary inbound mobility, % .....                  | 1.4   | 77   |
| 2.3 Research & development (R&D) .....                    | 16.1  | 52   |
| 2.3.1 Researchers, FTE/mn pop. ....                       | 763.5 | 51   |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | 0.2   | 92   |
| 2.3.3 QS university ranking, average score top 3* .....   | 35.1  | 38   |

**3 Infrastructure ..... 43.3 54**

|                                                               |        |       |
|---------------------------------------------------------------|--------|-------|
| 3.1 Information & communication technologies (ICTs) .....     | 65.7   | 33 ●  |
| 3.1.1 ICT access* .....                                       | 68.4   | 49    |
| 3.1.2 ICT use* .....                                          | 43.3   | 52    |
| 3.1.3 Government's online service* .....                      | 74.8   | 23 ●  |
| 3.1.4 E-participation* .....                                  | 76.5   | 22 ●  |
| 3.2 General infrastructure .....                              | 35.8   | 54    |
| 3.2.1 Electricity output, kWh/cap .....                       | 5432.2 | 38    |
| 3.2.2 Logistics performance* .....                            | 27.5   | 83    |
| 3.2.3 Gross capital formation, % GDP .....                    | 28.4   | 31 ●  |
| 3.3 Ecological sustainability .....                           | 28.3   | 104   |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 4.3    | 105 ○ |
| 3.3.2 Environmental performance* .....                        | 51.1   | 75    |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.4    | 91    |

**4 Market sophistication ..... 43.4 96**

|                                                      |      |     |
|------------------------------------------------------|------|-----|
| 4.1 Credit .....                                     | 20.9 | 108 |
| 4.1.1 Ease of getting credit* .....                  | 50.0 | 65  |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 35.6 | 90  |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.2  | 57  |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 34.8 | 71   |
| 4.2.1 Ease of protecting investors* .....               | 65.8 | 25 ● |
| 4.2.2 Market capitalization, % GDP .....                | 11.5 | 87   |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.5  | 77   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a  |
| 4.3 Trade & competition .....                           | 74.5 | 79   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 3.0  | 57   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 59.3 | 107  |

**5 Business sophistication ..... 27.2 110**

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                         | 38.0 | 68    |
| 5.1.1 Knowledge-intensive employment, % .....                       | 32.3 | 41    |
| 5.1.2 Firms offering formal training, % firms .....                 | 28.4 | 67    |
| 5.1.3 GERD performed by business, % of GDP .....                    | 0.1  | 69    |
| 5.1.4 GERD financed by business, % .....                            | 28.9 | 52    |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 17.6 | 29    |
| 5.2 Innovation linkages .....                                       | 18.8 | 128 ○ |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 38.2 | 85    |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 36.2 | 112   |
| 5.2.3 GERD financed by abroad, % .....                              | 0.8  | 92 ○  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a  | n/a   |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.0  | 98 ○  |
| 5.3 Knowledge absorption .....                                      | 24.9 | 115   |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.2  | 86    |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 6.8  | 69    |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.4  | 101   |
| 5.3.4 FDI net inflows, % GDP .....                                  | 4.3  | 36 ●  |

**6 Knowledge & technology outputs ..... 21.9 96**

|                                                                   |      |       |
|-------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation .....                                      | 8.7  | 80    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 4.6  | 24 ●  |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | 0.0  | 80    |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | 0.3  | 42    |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 1.6  | 130 ○ |
| 6.1.5 Citable documents H index .....                             | 59.0 | 107   |
| 6.2 Knowledge impact .....                                        | 36.6 | 70    |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | 4.2  | 13 ●  |
| 6.2.2 New businesses/th pop. 15–64 .....                          | 1.7  | 51    |
| 6.2.3 Computer software spending, % GDP .....                     | n/a  | n/a   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 1.3  | 108   |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 6.8  | 87 ○  |
| 6.3 Knowledge diffusion .....                                     | 20.4 | 109   |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | 0.0  | 111 ○ |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 4.1  | 36    |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | 0.2  | 111 ○ |
| 6.3.4 FDI net outflows, % GDP .....                               | 0.8  | 55    |

**7 Creative outputs ..... 21.1 117**

|                                                                       |       |       |
|-----------------------------------------------------------------------|-------|-------|
| 7.1 Intangible assets .....                                           | 33.5  | 121 ○ |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 17.8  | 90 ○  |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.1   | 55    |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 54.4  | 72    |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 52.8  | 63    |
| 7.2 Creative goods & services .....                                   | 13.6  | 86    |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.0   | 81 ○  |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 3.0   | 51    |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a   | n/a   |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.7   | 36    |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.3   | 70    |
| 7.3 Online creativity .....                                           | 3.9   | 97    |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 0.4   | 119 ○ |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 4.4   | 55    |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 919.7 | 80    |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a   | n/a   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 45.5               |
| GDP (US\$ billions) .....   | 60.8               |
| GDP per capita, PPP\$ ..... | 1,903.4            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                                        | Score 0–100<br>or value (hard data) | Rank       |
|------------------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b>                       | <b>30.2</b>                         | <b>92</b>  |
| Innovation Output Sub-Index .....                                      | 26.6                                | 78         |
| Innovation Input Sub-Index .....                                       | 33.7                                | 113        |
| Innovation Efficiency Ratio .....                                      | 0.8                                 | 30 ●       |
| Global Innovation Index 2014 (out of 143) .....                        | 31.9                                | 85         |
| <b>1 Institutions.....</b>                                             | <b>52.7</b>                         | <b>96</b>  |
| 1.1 Political environment.....                                         | 32.0                                | 118        |
| 1.1.1 Political stability*.....                                        | 35.8                                | 121        |
| 1.1.2 Government effectiveness*.....                                   | 28.2                                | 99         |
| 1.2 Regulatory environment .....                                       | 66.6                                | 70         |
| 1.2.1 Regulatory quality*.....                                         | 38.4                                | 99         |
| 1.2.2 Rule of law*.....                                                | 27.8                                | 107        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....                  | 8.0                                 | 1 ●        |
| 1.3 Business environment.....                                          | 59.6                                | 106        |
| 1.3.1 Ease of starting a business*.....                                | 74.0                                | 115        |
| 1.3.2 Ease of resolving insolvency*.....                               | 33.3                                | 116        |
| 1.3.3 Ease of paying taxes*.....                                       | 71.5                                | 80         |
| <b>2 Human capital &amp; research.....</b>                             | <b>14.7</b>                         | <b>125</b> |
| 2.1 Education .....                                                    | 31.2                                | 115        |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓓ</sup> .....               | 6.6                                 | 19 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓓ</sup> ..... | 21.2                                | 52         |
| 2.1.3 School life expectancy, years <sup>Ⓓ</sup> .....                 | 11.0                                | 106        |
| 2.1.4 PISA scales in reading, maths, & science.....                    | n/a                                 | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                             | 41.1                                | 119 ○      |
| 2.2 Tertiary education.....                                            | 2.8                                 | 135 ○      |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓓ</sup> .....                   | 4.0                                 | 128 ○      |
| 2.2.2 Graduates in science & engineering, % .....                      | n/a                                 | n/a        |
| 2.2.3 Tertiary inbound mobility, %.....                                | n/a                                 | n/a        |
| 2.3 Research & development (R&D).....                                  | 10.1                                | 69         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓓ</sup> .....                      | 227.5                               | 67         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓓ</sup> .....               | 1.0                                 | 35         |
| 2.3.3 QS university ranking, average score top 3*.....                 | 4.9                                 | 69         |
| <b>3 Infrastructure.....</b>                                           | <b>27.2</b>                         | <b>110</b> |
| 3.1 Information & communication technologies (ICTs).....               | 38.6                                | 87         |
| 3.1.1 ICT access*.....                                                 | 32.9                                | 110        |
| 3.1.2 ICT use*.....                                                    | 14.1                                | 104        |
| 3.1.3 Government's online service*.....                                | 42.5                                | 77         |
| 3.1.4 E-participation*.....                                            | 64.7                                | 33         |
| 3.2 General infrastructure.....                                        | 20.9                                | 115        |
| 3.2.1 Electricity output, kWh/cap.....                                 | 192.0                               | 116 ○      |
| 3.2.2 Logistics performance*.....                                      | 33.2                                | 71         |
| 3.2.3 Gross capital formation, % GDP.....                              | 19.6                                | 95         |
| 3.3 Ecological sustainability .....                                    | 22.1                                | 127 ○      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....                | 4.0                                 | 110 ○      |
| 3.3.2 Environmental performance*.....                                  | 37.0                                | 117        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....           | 0.4                                 | 89         |
| <b>4 Market sophistication .....</b>                                   | <b>42.9</b>                         | <b>98</b>  |
| 4.1 Credit.....                                                        | 33.4                                | 59         |
| 4.1.1 Ease of getting credit*.....                                     | 35.0                                | 102        |
| 4.1.2 Domestic credit to private sector, % GDP.....                    | 31.6                                | 95         |
| 4.1.3 Microfinance gross loans, % GDP .....                            | 4.7                                 | 12 ●       |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                                          | 25.0        | 124       |
| 4.2.1 Ease of protecting investors*.....                                      | 45.8        | 107       |
| 4.2.2 Market capitalization, % GDP.....                                       | 29.4        | 57        |
| 4.2.3 Total value of stocks traded, % GDP.....                                | 2.0         | 60        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                                 | 0.1         | 23        |
| 4.3 Trade & competition .....                                                 | 70.4        | 94        |
| 4.3.1 Applied tariff rate, weighted mean, %.....                              | 10.5        | 124       |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                       | 77.6        | 19 ●      |
| <b>5 Business sophistication .....</b>                                        | <b>31.2</b> | <b>86</b> |
| 5.1 Knowledge workers.....                                                    | 26.6        | 101       |
| 5.1.1 Knowledge-intensive employment, %.....                                  | n/a         | n/a       |
| 5.1.2 Firms offering formal training, % firms.....                            | 40.6        | 45        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓓ</sup> .....                 | 0.1         | 61        |
| 5.1.4 GERD financed by business, % <sup>Ⓓ</sup> .....                         | 4.3         | 76        |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a         | n/a       |
| 5.2 Innovation linkages .....                                                 | 41.3        | 37 ●      |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 53.6        | 35 ●      |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 53.3        | 38        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓓ</sup> .....                           | 47.1        | 9 ●       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                           | 0.0         | 72        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓓ</sup> .....              | 0.0         | 84        |
| 5.3 Knowledge absorption.....                                                 | 25.8        | 110       |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓓ</sup> .....       | 0.2         | 83        |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 10.9        | 27 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓓ</sup> ..... | 0.1         | 122 ○     |
| 5.3.4 FDI net inflows, % GDP.....                                             | 1.2         | 107       |
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>24.2</b> | <b>82</b> |
| 6.1 Knowledge creation.....                                                   | 10.0        | 69        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                          | 1.0         | 60        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                               | 0.1         | 68        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                        | 0.6         | 35        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                       | 11.5        | 64        |
| 6.1.5 Citable documents H index.....                                          | 149.0       | 48        |
| 6.2 Knowledge impact.....                                                     | 31.2        | 100       |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | 3.1         | 27 ●      |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓓ</sup> .....                         | 0.8         | 77        |
| 6.2.3 Computer software spending, % GDP.....                                  | 0.2         | 67 ○      |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                         | 4.8         | 65        |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | 7.7         | 84        |
| 6.3 Knowledge diffusion.....                                                  | 31.3        | 52        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓓ</sup> .....       | 0.2         | 33        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.6         | 74        |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓓ</sup> ..... | 3.4         | 15 ●      |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓓ</sup> .....                              | 0.0         | 98        |
| <b>7 Creative outputs .....</b>                                               | <b>29.1</b> | <b>85</b> |
| 7.1 Intangible assets .....                                                   | 48.2        | 58        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                            | n/a         | n/a       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                         | 0.0         | 64 ○      |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                       | 63.9        | 37 ●      |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....                 | 56.3        | 55        |
| 7.2 Creative goods & services.....                                            | 12.1        | 91        |
| 7.2.1 Cultural & creative services exports, % total trade.....                | 0.0         | 87 ○      |
| 7.2.2 National feature films/mn pop. 15–69.....                               | n/a         | n/a       |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                           | 1.3         | 53 ○      |
| 7.2.4 Printing & publishing output manufactures, %.....                       | 1.8         | 34        |
| 7.2.5 Creative goods exports, % total trade.....                              | 0.3         | 71        |
| 7.3 Online creativity.....                                                    | 8.0         | 83        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....                     | 1.3         | 103       |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                                    | 0.7         | 93        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                         | 107.0       | 113       |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                                | 29.2        | 71 ○      |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Korea, Republic of

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 49.5                        |
| GDP (US\$ billions) .....   | 1,416.9                     |
| GDP per capita, PPP\$ ..... | 34,795.4                    |
| Income group .....          | High income                 |
| Region .....                | South East Asia and Oceania |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>56.3</b>                         | <b>14</b> |
| Innovation Output Sub-Index .....                 | 50.1                                | 11        |
| Innovation Input Sub-Index .....                  | 62.4                                | 15        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 27        |
| Global Innovation Index 2014 (out of 143) .....   | 55.3                                | 16        |

|          |                                                         |             |            |
|----------|---------------------------------------------------------|-------------|------------|
| <b>1</b> | <b>Institutions .....</b>                               | <b>76.1</b> | <b>33</b>  |
| 1.1      | Political environment .....                             | 70.9        | 38         |
| 1.1.1    | Political stability* .....                              | 70.0        | 52         |
| 1.1.2    | Government effectiveness* .....                         | 71.7        | 30         |
| 1.2      | Regulatory environment .....                            | 67.4        | 66         |
| 1.2.1    | Regulatory quality* .....                               | 73.9        | 30         |
| 1.2.2    | Rule of law* .....                                      | 72.6        | 33         |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....        | 27.4        | 118 ○      |
| 1.3      | Business environment .....                              | 90.2        | 4 ●        |
| 1.3.1    | Ease of starting a business* .....                      | 94.4        | 16         |
| 1.3.2    | Ease of resolving insolvency* .....                     | 90.1        | 5 ●        |
| 1.3.3    | Ease of paying taxes* .....                             | 86.1        | 24         |
| <b>2</b> | <b>Human capital &amp; research .....</b>               | <b>64.8</b> | <b>2 ●</b> |
| 2.1      | Education .....                                         | 53.9        | 35         |
| 2.1.1    | Expenditure on education, % GDP .....                   | 4.9         | 64         |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap .....     | 23.0        | 47         |
| 2.1.3    | School life expectancy, years .....                     | 16.9        | 12         |
| 2.1.4    | PISA scales in reading, maths, & science .....          | 542.4       | 4          |
| 2.1.5    | Pupil-teacher ratio, secondary .....                    | 15.9        | 68         |
| 2.2      | Tertiary education .....                                | 54.8        | 10         |
| 2.2.1    | Tertiary enrolment, % gross .....                       | 98.4        | 2 ●        |
| 2.2.2    | Graduates in science & engineering, % .....             | 31.1        | 8          |
| 2.2.3    | Tertiary inbound mobility, % .....                      | 1.8         | 71 ○       |
| 2.3      | Research & development (R&D) .....                      | 85.7        | 2 ●        |
| 2.3.1    | Researchers, FTE/mn pop. ....                           | 6533.2      | 5          |
| 2.3.2    | Gross expenditure on R&D, % GDP .....                   | 4.2         | 2 ●        |
| 2.3.3    | QS university ranking, average score top 3* .....       | 79.8        | 10         |
| <b>3</b> | <b>Infrastructure .....</b>                             | <b>62.4</b> | <b>8</b>   |
| 3.1      | Information & communication technologies (ICTs) .....   | 92.4        | 1 ●        |
| 3.1.1    | ICT access* .....                                       | 89.4        | 8          |
| 3.1.2    | ICT use* .....                                          | 82.6        | 3 ●        |
| 3.1.3    | Government's online service* .....                      | 97.6        | 3 ●        |
| 3.1.4    | E-participation* .....                                  | 100.0       | 1 ●        |
| 3.2      | General infrastructure .....                            | 55.5        | 12         |
| 3.2.1    | Electricity output, kWh/cap .....                       | 10643.9     | 11         |
| 3.2.2    | Logistics performance* .....                            | 76.8        | 20         |
| 3.2.3    | Gross capital formation, % GDP .....                    | 28.9        | 27         |
| 3.3      | Ecological sustainability .....                         | 39.4        | 61         |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 5.5         | 93 ○       |
| 3.3.2    | Environmental performance* .....                        | 63.8        | 42         |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 2.8         | 36         |
| <b>4</b> | <b>Market sophistication .....</b>                      | <b>63.3</b> | <b>16</b>  |
| 4.1      | Credit .....                                            | 54.5        | 17         |
| 4.1.1    | Ease of getting credit* .....                           | 65.0        | 34         |
| 4.1.2    | Domestic credit to private sector, % GDP .....          | 135.0       | 18         |
| 4.1.3    | Microfinance gross loans, % GDP .....                   | n/a         | n/a        |

|       |                                                          |       |       |
|-------|----------------------------------------------------------|-------|-------|
| 4.2   | Investment .....                                         | 59.9  | 9     |
| 4.2.1 | Ease of protecting investors* .....                      | 66.7  | 21    |
| 4.2.2 | Market capitalization, % GDP .....                       | 96.5  | 15    |
| 4.2.3 | Total value of stocks traded, % GDP .....                | 123.8 | 1 ●   |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....                 | 0.1   | 38    |
| 4.3   | Trade & competition .....                                | 75.5  | 76    |
| 4.3.1 | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 8.7   | 115 ○ |
| 4.3.2 | Intensity of local competition <sup>†</sup> .....        | 81.5  | 11    |

|          |                                                               |             |           |
|----------|---------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                          | <b>45.2</b> | <b>30</b> |
| 5.1      | Knowledge workers .....                                       | 59.9        | 22        |
| 5.1.1    | Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 21.3        | 67        |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 39.5        | 47        |
| 5.1.3    | GERD performed by business, % of GDP .....                    | 3.3         | 2 ●       |
| 5.1.4    | GERD financed by business, % .....                            | 75.7        | 1 ●       |
| 5.1.5    | Females employed w/advanced degrees, % total .....            | n/a         | n/a       |
| 5.2      | Innovation linkages .....                                     | 40.1        | 44        |
| 5.2.1    | University/industry research collaboration <sup>†</sup> ..... | 60.3        | 25        |
| 5.2.2    | State of cluster development <sup>†</sup> .....               | 55.8        | 29        |
| 5.2.3    | GERD financed by abroad, % .....                              | 0.3         | 96 ○      |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 41        |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                 | 4.4         | 3 ●       |
| 5.3      | Knowledge absorption .....                                    | 35.6        | 61        |
| 5.3.1    | Royalty & license fees payments, % total trade .....          | 1.5         | 17        |
| 5.3.2    | High-tech imports less re-imports, % total trade .....        | 12.7        | 21        |
| 5.3.3    | Comm., computer & info. services imp., % total trade .....    | 0.4         | 108 ○     |
| 5.3.4    | FDI net inflows, % GDP .....                                  | 0.9         | 114 ○     |

|          |                                                             |             |            |
|----------|-------------------------------------------------------------|-------------|------------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>             | <b>56.7</b> | <b>5 ●</b> |
| 6.1      | Knowledge creation .....                                    | 78.6        | 1 ●        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....             | 94.3        | 1 ●        |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                  | 7.4         | 7          |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....           | 6.2         | 6          |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....          | 29.8        | 26         |
| 6.1.5    | Citable documents H index .....                             | 375.0       | 19         |
| 6.2      | Knowledge impact .....                                      | 42.4        | 47         |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                    | 1.7         | 50         |
| 6.2.2    | New businesses/th pop. 15–64 .....                          | 2.0         | 46         |
| 6.2.3    | Computer software spending, % GDP .....                     | 0.3         | 32         |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....            | 6.7         | 53         |
| 6.2.5    | High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 53.4        | 6          |
| 6.3      | Knowledge diffusion .....                                   | 49.1        | 19         |
| 6.3.1    | Royalty & license fees receipts, % total trade .....        | 0.6         | 21         |
| 6.3.2    | High-tech exports less re-exports, % total trade .....      | 22.1        | 5          |
| 6.3.3    | Comm., computer & info. services exp., % total trade .....  | 0.3         | 106 ○      |
| 6.3.4    | FDI net outflows, % GDP .....                               | 2.2         | 31         |

|          |                                                                 |             |           |
|----------|-----------------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs .....</b>                                   | <b>43.6</b> | <b>28</b> |
| 7.1      | Intangible assets .....                                         | 56.8        | 19        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                   | 93.1        | 16        |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.4         | 44 ○      |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....               | 74.6        | 12        |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....         | 67.7        | 19        |
| 7.2      | Creative goods & services .....                                 | 26.0        | 49        |
| 7.2.1    | Cultural & creative services exports, % total trade .....       | 0.3         | 41        |
| 7.2.2    | National feature films/mn pop. 15–69 .....                      | 5.5         | 36        |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....                  | 36.8        | 19        |
| 7.2.4    | Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 0.5         | 90 ○      |
| 7.2.5    | Creative goods exports, % total trade .....                     | 2.6         | 15        |
| 7.3      | Online creativity .....                                         | 34.7        | 41        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....            | 9.5         | 46        |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                           | 10.2        | 44        |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                                | 4407.7      | 33        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                       | 86.5        | 21        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                            |                                  |
|----------------------------|----------------------------------|
| Population (millions)..... | 3.5                              |
| GDP (US\$ billions).....   | 172.4                            |
| GDP per capita, PPP\$..... | 40,222.7                         |
| Income group.....          | High income                      |
| Region.....                | Northern Africa and Western Asia |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>33.2</b>                         | <b>77</b> |
| Innovation Output Sub-Index .....                | 28.0                                | 70        |
| Innovation Input Sub-Index.....                  | 38.4                                | 87        |
| Innovation Efficiency Ratio.....                 | 0.7                                 | 65        |
| Global Innovation Index 2014 (out of 143) .....  | 35.2                                | 69        |

|                                                       |             |           |
|-------------------------------------------------------|-------------|-----------|
| <b>1 Institutions.....</b>                            | <b>58.7</b> | <b>76</b> |
| 1.1 Political environment.....                        | 53.5        | 62        |
| 1.1.1 Political stability*.....                       | 67.7        | 58        |
| 1.1.2 Government effectiveness*.....                  | 39.4        | 73        |
| 1.2 Regulatory environment .....                      | 56.0        | 99        |
| 1.2.1 Regulatory quality*.....                        | 45.5        | 77        |
| 1.2.2 Rule of law*.....                               | 57.9        | 48        |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 28.1        | 124 ○     |
| 1.3 Business environment.....                         | 66.6        | 79        |
| 1.3.1 Ease of starting a business*.....               | 71.3        | 120       |
| 1.3.2 Ease of resolving insolvency*.....              | 36.0        | 111       |
| 1.3.3 Ease of paying taxes*.....                      | 92.5        | 11 ●      |

|                                                          |             |           |
|----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research.....</b>               | <b>24.1</b> | <b>89</b> |
| 2.1 Education .....                                      | 45.6        | 65        |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> ..... | 3.8         | 94        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | 20.9        | 55        |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....   | 14.6        | 46        |
| 2.1.4 PISA scales in reading, maths, & science.....      | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....  | 8.2         | 8 ●       |
| 2.2 Tertiary education.....                              | 23.9        | 91        |
| 2.2.1 Tertiary enrolment, % gross.....                   | 28.5        | 79        |
| 2.2.2 Graduates in science & engineering, %.....         | n/a         | n/a       |
| 2.2.3 Tertiary inbound mobility, %.....                  | n/a         | n/a       |
| 2.3 Research & development (R&D).....                    | 2.8         | 96        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....        | 135.1       | 80        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> ..... | 0.1         | 107 ○     |
| 2.3.3 QS university ranking, average score top 3*.....   | 5.0         | 68        |

|                                                              |             |           |
|--------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure.....</b>                                 | <b>43.6</b> | <b>51</b> |
| 3.1 Information & communication technologies (ICTs).....     | 50.3        | 56        |
| 3.1.1 ICT access*.....                                       | n/a         | n/a       |
| 3.1.2 ICT use*.....                                          | n/a         | n/a       |
| 3.1.3 Government's online service*.....                      | 57.5        | 52        |
| 3.1.4 E-participation*.....                                  | 43.1        | 76        |
| 3.2 General infrastructure.....                              | 42.1        | 37 ●      |
| 3.2.1 Electricity output, kWh/cap.....                       | 19278.5     | 1 ●       |
| 3.2.2 Logistics performance*.....                            | 43.4        | 54        |
| 3.2.3 Gross capital formation, % GDP.....                    | 13.9        | 132 ○     |
| 3.3 Ecological sustainability .....                          | 38.5        | 65        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 7.0         | 63        |
| 3.3.2 Environmental performance*.....                        | 63.9        | 41 ●      |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.3         | 98        |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                              | <b>43.7</b> | <b>93</b> |
| 4.1 Credit.....                                                   | 26.1        | 85        |
| 4.1.1 Ease of getting credit*.....                                | 35.0        | 102       |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 55.8        | 58        |
| 4.1.3 Microfinance gross loans, % GDP.....                        | n/a         | n/a       |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 33.4 | 76   |
| 4.2.1 Ease of protecting investors*.....                | 60.8 | 41 ● |
| 4.2.2 Market capitalization, % GDP.....                 | 55.8 | 33 ● |
| 4.2.3 Total value of stocks traded, % GDP.....          | 13.2 | 34 ● |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | 0.0  | 71 ○ |
| 4.3 Trade & competition .....                           | 71.6 | 91   |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 4.4  | 74   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 58.5 | 110  |

|                                                                     |             |              |
|---------------------------------------------------------------------|-------------|--------------|
| <b>5 Business sophistication .....</b>                              | <b>22.1</b> | <b>132</b> ○ |
| 5.1 Knowledge workers.....                                          | 21.1        | 119          |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 18.7        | 79           |
| 5.1.2 Firms offering formal training, % firms.....                  | n/a         | n/a          |
| 5.1.3 GERD performed by business, % of GDP.....                     | n/a         | n/a          |
| 5.1.4 GERD financed by business, %.....                             | 1.4         | 83 ○         |
| 5.1.5 Females employed w/advanced degrees, % total.....             | n/a         | n/a          |
| 5.2 Innovation linkages .....                                       | 22.8        | 112          |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 35.1        | 105          |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 44.5        | 78           |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 1.2         | 87 ○         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | 0.0         | 29 ●         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                  | 0.0         | 99           |
| 5.3 Knowledge absorption.....                                       | 23.3        | 130 ○        |
| 5.3.1 Royalty & license fees payments, % total trade.....           | n/a         | n/a          |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 3.8         | 114 ○        |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 0.5         | 92           |
| 5.3.4 FDI net inflows, % GDP <sup>Ⓐ</sup> .....                     | 1.6         | 96           |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>               | <b>27.0</b> | <b>63</b> |
| 6.1 Knowledge creation.....                                     | 5.9         | 97        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....            | n/a         | n/a       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                 | n/a         | n/a       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....          | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....         | 2.4         | 123       |
| 6.1.5 Citable documents H index.....                            | 92.0        | 76        |
| 6.2 Knowledge impact.....                                       | 25.4        | 119       |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                   | -1.1        | 113 ○     |
| 6.2.2 New businesses/th pop. 15–64.....                         | n/a         | n/a       |
| 6.2.3 Computer software spending, % GDP.....                    | 0.3         | 42        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....           | 1.7         | 101       |
| 6.2.5 High- & medium-high-tech manufactures, %.....             | 10.5        | 77        |
| 6.3 Knowledge diffusion.....                                    | 49.8        | 17 ●      |
| 6.3.1 Royalty & license fees receipts, % total trade.....       | n/a         | n/a       |
| 6.3.2 High-tech exports less re-exports, % total trade.....     | 0.1         | 105       |
| 6.3.3 Comm., computer & info. services exp., % total trade..... | n/a         | n/a       |
| 6.3.4 FDI net outflows, % GDP.....                              | 5.5         | 8 ●       |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                | <b>28.9</b> | <b>86</b> |
| 7.1 Intangible assets .....                                    | 39.3        | 94        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | n/a         | n/a       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 39.0        | 122 ○     |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 39.6        | 118 ○     |
| 7.2 Creative goods & services.....                             | 11.9        | 94        |
| 7.2.1 Cultural & creative services exports, % total trade..... | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69.....                | n/a         | n/a       |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | 19.8        | 26        |
| 7.2.4 Printing & publishing output manufactures, %.....        | 0.6         | 85        |
| 7.2.5 Creative goods exports, % total trade.....               | 0.4         | 66        |
| 7.3 Online creativity.....                                     | 25.1        | 52        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 11.0        | 42 ●      |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 0.6         | 97        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 1452.2      | 68        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | 78.0        | 40        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Kyrgyzstan

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 5.6                       |
| GDP (US\$ billions) .....   | 7.4                       |
| GDP per capita, PPP\$ ..... | 2,740.3                   |
| Income group .....          | Lower-middle income       |
| Region .....                | Central and Southern Asia |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>28.0</b>                         | <b>109</b> |
| Innovation Output Sub-Index .....                | 19.4                                | 118        |
| Innovation Input Sub-Index .....                 | 36.6                                | 94         |
| Innovation Efficiency Ratio .....                | 0.5                                 | 122        |
| Global Innovation Index 2014 (out of 143) .....  | 27.8                                | 112        |

**1 Institutions.....49.4 105**

|                                      |      |     |
|--------------------------------------|------|-----|
| 1.1 Political environment.....       | 32.2 | 117 |
| 1.1.1 Political stability*.....      | 41.6 | 113 |
| 1.1.2 Government effectiveness*..... | 22.7 | 111 |

**1.2 Regulatory environment.....54.9 103**

|                                                       |      |     |
|-------------------------------------------------------|------|-----|
| 1.2.1 Regulatory quality*.....                        | 39.1 | 94  |
| 1.2.2 Rule of law*.....                               | 17.3 | 130 |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 17.3 | 78  |

**1.3 Business environment.....61.3 98**

|                                          |      |     |
|------------------------------------------|------|-----|
| 1.3.1 Ease of starting a business*.....  | 96.4 | 9   |
| 1.3.2 Ease of resolving insolvency*..... | 24.4 | 132 |
| 1.3.3 Ease of paying taxes*.....         | 63.2 | 104 |

**2 Human capital & research.....28.7 70**

|                                                          |      |     |
|----------------------------------------------------------|------|-----|
| 2.1 Education.....                                       | 55.5 | 27  |
| 2.1.1 Expenditure on education, % GDP.....               | 6.8  | 16  |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | n/a  | n/a |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....   | 12.5 | 84  |
| 2.1.4 PISA scales in reading, maths, & science.....      | n/a  | n/a |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....  | 15.2 | 65  |

**2.2 Tertiary education.....28.9 77**

|                                                  |      |    |
|--------------------------------------------------|------|----|
| 2.2.1 Tertiary enrolment, % gross.....           | 47.6 | 54 |
| 2.2.2 Graduates in science & engineering, %..... | 15.6 | 79 |
| 2.2.3 Tertiary inbound mobility, %.....          | 4.0  | 45 |

**2.3 Research & development (R&D).....1.7 107**

|                                                          |     |     |
|----------------------------------------------------------|-----|-----|
| 2.3.1 Researchers, FTE/mn pop. ....                      | n/a | n/a |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> ..... | 0.2 | 98  |
| 2.3.3 QS university ranking, average score top 3*.....   | 0.0 | 73  |

**3 Infrastructure.....26.0 114****3.1 Information & communication technologies (ICTs).....31.3 102**

|                                         |      |     |
|-----------------------------------------|------|-----|
| 3.1.1 ICT access*.....                  | 40.5 | 100 |
| 3.1.2 ICT use*.....                     | 15.9 | 101 |
| 3.1.3 Government's online service*..... | 27.6 | 111 |
| 3.1.4 E-participation*.....             | 41.2 | 79  |

**3.2 General infrastructure.....24.7 101**

|                                           |        |     |
|-------------------------------------------|--------|-----|
| 3.2.1 Electricity output, kWh/cap.....    | 2703.7 | 67  |
| 3.2.2 Logistics performance*.....         | 2.5    | 129 |
| 3.2.3 Gross capital formation, % GDP..... | 27.2   | 35  |

**3.3 Ecological sustainability.....22.0 128**

|                                                              |      |     |
|--------------------------------------------------------------|------|-----|
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 3.4  | 113 |
| 3.3.2 Environmental performance*.....                        | 40.6 | 105 |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.1  | 132 |

**4 Market sophistication.....49.8 56**

|                                                                   |      |     |
|-------------------------------------------------------------------|------|-----|
| 4.1 Credit.....                                                   | 41.8 | 41  |
| 4.1.1 Ease of getting credit*.....                                | 65.0 | 34  |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 15.1 | 129 |
| 4.1.3 Microfinance gross loans, % GDP.....                        | 4.8  | 10  |

**4.2 Investment.....31.6 92**

|                                                |      |     |
|------------------------------------------------|------|-----|
| 4.2.1 Ease of protecting investors*.....       | 62.5 | 34  |
| 4.2.2 Market capitalization, % GDP.....        | 2.5  | 106 |
| 4.2.3 Total value of stocks traded, % GDP..... | 0.1  | 100 |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....  | n/a  | n/a |

**4.3 Trade & competition.....75.9 74**

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 2.4  | 50  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 60.1 | 103 |

**5 Business sophistication.....28.9 99****5.1 Knowledge workers.....42.8 51**

|                                                               |      |    |
|---------------------------------------------------------------|------|----|
| 5.1.1 Knowledge-intensive employment, %.....                  | 17.3 | 83 |
| 5.1.2 Firms offering formal training, % firms.....            | 63.5 | 7  |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> ..... | 0.0  | 74 |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....         | 38.6 | 39 |
| 5.1.5 Females employed w/advanced degrees, % total.....       | 10.8 | 57 |

**5.2 Innovation linkages.....17.5 131**

|                                                                     |      |     |
|---------------------------------------------------------------------|------|-----|
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 26.2 | 125 |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 32.6 | 124 |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 0.9  | 90  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | n/a  | n/a |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.1  | 48  |

**5.3 Knowledge absorption.....26.5 108**

|                                                                         |      |     |
|-------------------------------------------------------------------------|------|-----|
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> ..... | 0.2  | 93  |
| 5.3.2 High-tech imports less re-imports, % total trade.....             | 5.3  | 93  |
| 5.3.3 Comm., computer & info. services imp., % total trade.....         | 0.4  | 100 |
| 5.3.4 FDI net inflows, % GDP.....                                       | 10.5 | 11  |

**6 Knowledge & technology outputs.....23.2 88****6.1 Knowledge creation.....11.5 64**

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....    | 6.1  | 14  |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....         | 0.1  | 76  |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....  | 0.4  | 38  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP..... | 4.4  | 104 |
| 6.1.5 Citable documents H index.....                    | 35.0 | 131 |

**6.2 Knowledge impact.....40.7 53**

|                                                                   |     |     |
|-------------------------------------------------------------------|-----|-----|
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                     | 6.5 | 2   |
| 6.2.2 New businesses/th pop. 15–64.....                           | 0.9 | 69  |
| 6.2.3 Computer software spending, % GDP.....                      | n/a | n/a |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....             | 0.3 | 135 |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 3.3 | 93  |

**6.3 Knowledge diffusion.....17.4 122**

|                                                                         |     |     |
|-------------------------------------------------------------------------|-----|-----|
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> ..... | 0.1 | 68  |
| 6.3.2 High-tech exports less re-exports, % total trade.....             | 0.1 | 98  |
| 6.3.3 Comm., computer & info. services exp., % total trade.....         | 0.4 | 97  |
| 6.3.4 FDI net outflows, % GDP.....                                      | 0.0 | 106 |

**7 Creative outputs.....15.5 132****7.1 Intangible assets.....26.9 131**

|                                                               |      |     |
|---------------------------------------------------------------|------|-----|
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....            | 17.9 | 89  |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....         | 0.2  | 52  |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....       | 43.9 | 116 |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> ..... | 39.6 | 117 |

**7.2 Creative goods & services.....7.1 109**

|                                                                       |     |     |
|-----------------------------------------------------------------------|-----|-----|
| 7.2.1 Cultural & creative services exports, % total trade.....        | n/a | n/a |
| 7.2.2 National feature films/mn pop. 15–69.....                       | 0.5 | 93  |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | n/a | n/a |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.0 | 73  |
| 7.2.5 Creative goods exports, % total trade.....                      | 0.1 | 102 |

**7.3 Online creativity.....1.1 112**

|                                                           |       |     |
|-----------------------------------------------------------|-------|-----|
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69..... | 0.3   | 122 |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                | 0.6   | 98  |
| 7.3.3 Wikipedia edits/pop. 15–69.....                     | 332.1 | 99  |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....            | n/a   | n/a |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                            |             |
|----------------------------|-------------|
| Population (millions)..... | 2.0         |
| GDP (US\$ billions).....   | 32.0        |
| GDP per capita, PPP\$..... | 20,204.4    |
| Income group.....          | High income |
| Region.....                | Europe      |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>45.5</b>                         | <b>33</b> |
| Innovation Output Sub-Index.....                 | 40.6                                | 30        |
| Innovation Input Sub-Index.....                  | 50.4                                | 34        |
| Innovation Efficiency Ratio.....                 | 0.8                                 | 26        |
| Global Innovation Index 2014 (out of 143).....   | 44.8                                | 34        |

|          |                                                        |             |           |
|----------|--------------------------------------------------------|-------------|-----------|
| <b>1</b> | <b>Institutions.....</b>                               | <b>77.7</b> | <b>31</b> |
| 1.1      | Political environment.....                             | 71.8        | 36        |
| 1.1.1    | Political stability*.....                              | 78.3        | 41        |
| 1.1.2    | Government effectiveness*.....                         | 65.2        | 35        |
| 1.2      | Regulatory environment.....                            | 80.7        | 28        |
| 1.2.1    | Regulatory quality*.....                               | 75.1        | 29        |
| 1.2.2    | Rule of law*.....                                      | 67.5        | 37        |
| 1.2.3    | Cost of redundancy dismissal, salary weeks.....        | 13.0        | 50        |
| 1.3      | Business environment.....                              | 80.6        | 25        |
| 1.3.1    | Ease of starting a business*.....                      | 92.1        | 31        |
| 1.3.2    | Ease of resolving insolvency*.....                     | 63.4        | 38        |
| 1.3.3    | Ease of paying taxes*.....                             | 86.2        | 23        |
| <b>2</b> | <b>Human capital &amp; research.....</b>               | <b>33.1</b> | <b>54</b> |
| 2.1      | Education.....                                         | 52.6        | 38        |
| 2.1.1    | Expenditure on education, % GDP.....                   | 4.9         | 62        |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap.....     | 25.8        | 34        |
| 2.1.3    | School life expectancy, years.....                     | 15.2        | 38        |
| 2.1.4    | PISA scales in reading, maths, & science.....          | 493.8       | 24        |
| 2.1.5    | Pupil-teacher ratio, secondary.....                    | 7.9         | 6 ●       |
| 2.2      | Tertiary education.....                                | 34.9        | 58        |
| 2.2.1    | Tertiary enrolment, % gross.....                       | 65.1        | 30        |
| 2.2.2    | Graduates in science & engineering, %.....             | 18.8        | 62 ○      |
| 2.2.3    | Tertiary inbound mobility, %.....                      | 2.8         | 57        |
| 2.3      | Research & development (R&D).....                      | 11.7        | 65        |
| 2.3.1    | Researchers, FTE/mn pop.....                           | 1768.0      | 38        |
| 2.3.2    | Gross expenditure on R&D, % GDP.....                   | 0.6         | 55        |
| 2.3.3    | QS university ranking, average score top 3*.....       | 0.0         | 73 ○      |
| <b>3</b> | <b>Infrastructure.....</b>                             | <b>50.6</b> | <b>31</b> |
| 3.1      | Information & communication technologies (ICTs).....   | 68.2        | 30        |
| 3.1.1    | ICT access*.....                                       | 72.9        | 38        |
| 3.1.2    | ICT use*.....                                          | 59.1        | 28        |
| 3.1.3    | Government's online service*.....                      | 70.1        | 28        |
| 3.1.4    | E-participation*.....                                  | 70.6        | 24        |
| 3.2      | General infrastructure.....                            | 35.3        | 56        |
| 3.2.1    | Electricity output, kWh/cap.....                       | 3038.4      | 62        |
| 3.2.2    | Logistics performance*.....                            | 63.3        | 35        |
| 3.2.3    | Gross capital formation, % GDP.....                    | 22.5        | 58        |
| 3.3      | Ecological sustainability.....                         | 48.4        | 33        |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 7.2         | 61        |
| 3.3.2    | Environmental performance*.....                        | 64.1        | 39        |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP..... | 6.4         | 18 ●      |
| <b>4</b> | <b>Market sophistication.....</b>                      | <b>52.4</b> | <b>44</b> |
| 4.1      | Credit.....                                            | 44.5        | 36        |
| 4.1.1    | Ease of getting credit*.....                           | 70.0        | 22        |
| 4.1.2    | Domestic credit to private sector, % GDP.....          | 60.7        | 55        |
| 4.1.3    | Microfinance gross loans, % GDP.....                   | n/a         | n/a       |

|       |                                            |      |       |
|-------|--------------------------------------------|------|-------|
| 4.2   | Investment.....                            | 26.0 | 117 ○ |
| 4.2.1 | Ease of protecting investors*.....         | 60.0 | 47    |
| 4.2.2 | Market capitalization, % GDP.....          | 3.9  | 104 ○ |
| 4.2.3 | Total value of stocks traded, % GDP.....   | 0.1  | 98 ○  |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP.....    | 0.1  | 36    |
| 4.3   | Trade & competition.....                   | 86.7 | 17 ●  |
| 4.3.1 | Applied tariff rate, weighted mean, %..... | 1.0  | 9     |
| 4.3.2 | Intensity of local competition†.....       | 76.8 | 21    |

|          |                                                            |             |           |
|----------|------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication.....</b>                        | <b>38.2</b> | <b>46</b> |
| 5.1      | Knowledge workers.....                                     | 41.6        | 58        |
| 5.1.1    | Knowledge-intensive employment, %.....                     | 39.2        | 25        |
| 5.1.2    | Firms offering formal training, % firms.....               | 25.2        | 77 ○      |
| 5.1.3    | GERD performed by business, % of GDP.....                  | 0.2         | 52        |
| 5.1.4    | GERD financed by business, %.....                          | 21.8        | 58 ○      |
| 5.1.5    | Females employed w/advanced degrees, % total.....          | 23.0        | 13 ●      |
| 5.2      | Innovation linkages.....                                   | 40.4        | 41        |
| 5.2.1    | University/industry research collaboration†.....           | 44.5        | 61        |
| 5.2.2    | State of cluster development†.....                         | 41.7        | 87 ○      |
| 5.2.3    | GERD financed by abroad, %.....                            | 51.6        | 4 ●       |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP.....              | 0.0         | 54 ○      |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓢ</sup> ..... | 0.1         | 43        |
| 5.3      | Knowledge absorption.....                                  | 32.7        | 70        |
| 5.3.1    | Royalty & license fees payments, % total trade.....        | 0.3         | 79 ○      |
| 5.3.2    | High-tech imports less re-imports, % total trade.....      | 7.6         | 57        |
| 5.3.3    | Comm., computer & info. services imp., % total trade.....  | 1.3         | 44        |
| 5.3.4    | FDI net inflows, % GDP.....                                | 2.8         | 66        |

|          |                                                           |             |           |
|----------|-----------------------------------------------------------|-------------|-----------|
| <b>6</b> | <b>Knowledge &amp; technology outputs.....</b>            | <b>34.9</b> | <b>38</b> |
| 6.1      | Knowledge creation.....                                   | 18.0        | 52        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP.....            | 4.8         | 21        |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP.....                 | 0.6         | 35        |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP.....          | n/a         | n/a       |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP.....         | 12.8        | 60        |
| 6.1.5    | Citable documents H index.....                            | 94.0        | 75        |
| 6.2      | Knowledge impact.....                                     | 53.6        | 13 ●      |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, %.....                   | 2.0         | 44        |
| 6.2.2    | New businesses/th pop. 15–64.....                         | 11.6        | 9 ●       |
| 6.2.3    | Computer software spending, % GDP.....                    | n/a         | n/a       |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP.....           | 19.9        | 20 ●      |
| 6.2.5    | High- & medium-high-tech manufactures, %.....             | 14.1        | 67 ○      |
| 6.3      | Knowledge diffusion.....                                  | 33.0        | 46        |
| 6.3.1    | Royalty & license fees receipts, % total trade.....       | 0.1         | 51        |
| 6.3.2    | High-tech exports less re-exports, % total trade.....     | 5.8         | 28        |
| 6.3.3    | Comm., computer & info. services exp., % total trade..... | 2.1         | 37        |
| 6.3.4    | FDI net outflows, % GDP.....                              | 1.3         | 46        |

|          |                                                          |             |           |
|----------|----------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs.....</b>                             | <b>46.3</b> | <b>24</b> |
| 7.1      | Intangible assets.....                                   | 50.3        | 46        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP.....             | 53.0        | 43        |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP.....          | 2.3         | 8 ●       |
| 7.1.3    | ICTs & business model creation†.....                     | 58.6        | 59        |
| 7.1.4    | ICTs & organizational model creation†.....               | 60.8        | 35        |
| 7.2      | Creative goods & services.....                           | 45.5        | 6 ●       |
| 7.2.1    | Cultural & creative services exports, % total trade..... | 1.2         | 9 ●       |
| 7.2.2    | National feature films/mn pop. 15–69.....                | 6.8         | 28        |
| 7.2.3    | Global ent. & media output/th pop. 15–69.....            | n/a         | n/a       |
| 7.2.4    | Printing & publishing output manufactures, %.....        | 2.3         | 21        |
| 7.2.5    | Creative goods exports, % total trade.....               | 3.1         | 13 ●      |
| 7.3      | Online creativity.....                                   | 39.2        | 34        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69.....      | 9.9         | 45        |
| 7.3.2    | Country-code TLDs/th pop. 15–69.....                     | 32.1        | 25        |
| 7.3.3    | Wikipedia edits/pop. 15–69.....                          | 3087.0      | 44        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69.....                 | 92.2        | 10 ●      |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓢ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Lebanon

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 5.0                              |
| GDP (US\$ billions) .....   | 49.9                             |
| GDP per capita, PPP\$ ..... | 15,077.6                         |
| Income group .....          | Upper-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>33.8</b>                         | <b>74</b> |
| Innovation Output Sub-Index .....                | 27.1                                | 76        |
| Innovation Input Sub-Index .....                 | 40.5                                | 77        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 87        |
| Global Innovation Index 2014 (out of 143) .....  | 33.6                                | 77        |

|          |                                                          |             |            |
|----------|----------------------------------------------------------|-------------|------------|
| <b>1</b> | <b>Institutions.....</b>                                 | <b>53.1</b> | <b>95</b>  |
| 1.1      | Political environment.....                               | 26.5        | 127 ○      |
| 1.1.1    | Political stability*.....                                | 22.2        | 137 ○      |
| 1.1.2    | Government effectiveness*.....                           | 30.8        | 90         |
| 1.2      | Regulatory environment .....                             | 67.5        | 65         |
| 1.2.1    | Regulatory quality*.....                                 | 45.5        | 78         |
| 1.2.2    | Rule of law*.....                                        | 27.0        | 111        |
| 1.2.3    | Cost of redundancy dismissal, salary weeks.....          | 8.7         | 24 ●       |
| 1.3      | Business environment.....                                | 65.4        | 82         |
| 1.3.1    | Ease of starting a business*.....                        | 80.8        | 97         |
| 1.3.2    | Ease of resolving insolvency*.....                       | 33.0        | 117 ○      |
| 1.3.3    | Ease of paying taxes*.....                               | 82.4        | 35         |
| <b>2</b> | <b>Human capital &amp; research.....</b>                 | <b>38.1</b> | <b>42</b>  |
| 2.1      | Education .....                                          | 35.7        | 96         |
| 2.1.1    | Expenditure on education, % GDP .....                    | 2.6         | 117 ○      |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap.....       | 5.1         | 112 ○      |
| 2.1.3    | School life expectancy, years.....                       | 13.8        | 64         |
| 2.1.4    | PISA scales in reading, maths, & science.....            | n/a         | n/a        |
| 2.1.5    | Pupil-teacher ratio, secondary .....                     | 8.2         | 9 ●        |
| 2.2      | Tertiary education.....                                  | 47.0        | 25 ●       |
| 2.2.1    | Tertiary enrolment, % gross.....                         | 47.9        | 53         |
| 2.2.2    | Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 23.3        | 32         |
| 2.2.3    | Tertiary inbound mobility, %.....                        | 12.8        | 13 ●       |
| 2.3      | Research & development (R&D).....                        | 31.5        | 32         |
| 2.3.1    | Researchers, FTE/mn pop. ....                            | n/a         | n/a        |
| 2.3.2    | Gross expenditure on R&D, % GDP .....                    | n/a         | n/a        |
| 2.3.3    | QS university ranking, average score top 3*.....         | 31.5        | 43         |
| <b>3</b> | <b>Infrastructure.....</b>                               | <b>36.5</b> | <b>80</b>  |
| 3.1      | Information & communication technologies (ICTs).....     | 43.2        | 78         |
| 3.1.1    | ICT access*.....                                         | 64.5        | 58         |
| 3.1.2    | ICT use*.....                                            | 43.3        | 52         |
| 3.1.3    | Government's online service*.....                        | 35.4        | 91         |
| 3.1.4    | E-participation*.....                                    | 29.4        | 104        |
| 3.2      | General infrastructure.....                              | 29.2        | 76         |
| 3.2.1    | Electricity output, kWh/cap.....                         | 3346.7      | 54         |
| 3.2.2    | Logistics performance*.....                              | 28.8        | 80         |
| 3.2.3    | Gross capital formation, % GDP.....                      | 24.5        | 49         |
| 3.3      | Ecological sustainability .....                          | 37.0        | 74         |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq.....        | 9.1         | 40         |
| 3.3.2    | Environmental performance*.....                          | 50.2        | 81         |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP.....   | 0.4         | 87         |
| <b>4</b> | <b>Market sophistication .....</b>                       | <b>42.4</b> | <b>100</b> |
| 4.1      | Credit.....                                              | 22.8        | 101        |
| 4.1.1    | Ease of getting credit*.....                             | 35.0        | 102        |
| 4.1.2    | Domestic credit to private sector, % GDP.....            | 98.6        | 30 ●       |
| 4.1.3    | Microfinance gross loans, % GDP .....                    | 0.1         | 63         |

|       |                                                          |      |       |
|-------|----------------------------------------------------------|------|-------|
| 4.2   | Investment .....                                         | 25.1 | 123 ○ |
| 4.2.1 | Ease of protecting investors*.....                       | 49.2 | 93    |
| 4.2.2 | Market capitalization, % GDP.....                        | 23.8 | 63    |
| 4.2.3 | Total value of stocks traded, % GDP.....                 | 0.9  | 66    |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP.....                  | 0.1  | 27    |
| 4.3   | Trade & competition .....                                | 79.2 | 58    |
| 4.3.1 | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 4.8  | 80    |
| 4.3.2 | Intensity of local competition <sup>†</sup> .....        | 75.3 | 28 ●  |

|          |                                                                         |             |           |
|----------|-------------------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>32.6</b> | <b>77</b> |
| 5.1      | Knowledge workers.....                                                  | 42.0        | 55        |
| 5.1.1    | Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                    | 31.9        | 43        |
| 5.1.2    | Firms offering formal training, % firms.....                            | 26.6        | 71        |
| 5.1.3    | GERD performed by business, % of GDP.....                               | n/a         | n/a       |
| 5.1.4    | GERD financed by business, %.....                                       | n/a         | n/a       |
| 5.1.5    | Females employed w/advanced degrees, % total.....                       | n/a         | n/a       |
| 5.2      | Innovation linkages .....                                               | 30.1        | 79        |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 31.4        | 115 ○     |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 37.9        | 104       |
| 5.2.3    | GERD financed by abroad, %.....                                         | n/a         | n/a       |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP.....                           | 0.0         | 21 ●      |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.0         | 65        |
| 5.3      | Knowledge absorption.....                                               | 25.7        | 111       |
| 5.3.1    | Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 107 ○     |
| 5.3.2    | High-tech imports less re-imports, % total trade.....                   | 2.8         | 126 ○     |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 1.1         | 56        |
| 5.3.4    | FDI net inflows, % GDP .....                                            | 6.4         | 24 ●      |

|          |                                                                         |             |           |
|----------|-------------------------------------------------------------------------|-------------|-----------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>22.4</b> | <b>93</b> |
| 6.1      | Knowledge creation.....                                                 | 15.0        | 60        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a       |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a       |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP.....                        | n/a         | n/a       |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP.....                       | 13.1        | 59        |
| 6.1.5    | Citable documents H index.....                                          | 109.0       | 67        |
| 6.2      | Knowledge impact.....                                                   | 25.8        | 118 ○     |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, %.....                                 | n/a         | n/a       |
| 6.2.2    | New businesses/th pop. 15–64.....                                       | n/a         | n/a       |
| 6.2.3    | Computer software spending, % GDP.....                                  | n/a         | n/a       |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 9.8         | 43        |
| 6.2.5    | High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 22.0        | 51        |
| 6.3      | Knowledge diffusion.....                                                | 26.3        | 76        |
| 6.3.1    | Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 95 ○      |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | 0.1         | 100       |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.3         | 66        |
| 6.3.4    | FDI net outflows, % GDP .....                                           | 2.7         | 25 ●      |

|          |                                                                 |             |           |
|----------|-----------------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs .....</b>                                   | <b>31.8</b> | <b>73</b> |
| 7.1      | Intangible assets .....                                         | 34.4        | 117 ○     |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP.....                    | n/a         | n/a       |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP.....                 | n/a         | n/a       |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....               | 37.7        | 127 ○     |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....         | 31.1        | 130 ○     |
| 7.2      | Creative goods & services.....                                  | 37.9        | 21 ●      |
| 7.2.1    | Cultural & creative services exports, % total trade.....        | 1.3         | 8 ●       |
| 7.2.2    | National feature films/mn pop. 15–69.....                       | 4.2         | 41        |
| 7.2.3    | Global ent. & media output/th pop. 15–69.....                   | 2.9         | 48        |
| 7.2.4    | Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 4.2         | 7 ●       |
| 7.2.5    | Creative goods exports, % total trade <sup>Ⓐ</sup> .....        | 0.7         | 50        |
| 7.3      | Online creativity.....                                          | 20.7        | 64        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69.....             | 9.0         | 47        |
| 7.3.2    | Country-code TLDs/th pop. 15–69.....                            | 0.4         | 106       |
| 7.3.3    | Wikipedia edits/pop. 15–69.....                                 | 876.3       | 81        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69.....                        | 67.1        | 59        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 2.1                 |
| GDP (US\$ billions) .....   | 2.2                 |
| GDP per capita, PPP\$ ..... | 2,410.9             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>27.0</b>                         | <b>118</b> |
| Innovation Output Sub-Index .....                 | 18.0                                | 125        |
| Innovation Input Sub-Index .....                  | 35.9                                | 97         |
| Innovation Efficiency Ratio .....                 | 0.5                                 | 128        |
| Global Innovation Index 2014 (out of 143) .....   | 27.0                                | 117        |

|          |                                                                  |             |            |   |
|----------|------------------------------------------------------------------|-------------|------------|---|
| <b>1</b> | <b>Institutions .....</b>                                        | <b>59.3</b> | <b>74</b>  | ● |
| 1.1      | Political environment .....                                      | 51.6        | 65         | ● |
| 1.1.1    | Political stability* .....                                       | 72.2        | 51         | ● |
| 1.1.2    | Government effectiveness* .....                                  | 31.1        | 89         |   |
| 1.2      | Regulatory environment .....                                     | 62.9        | 79         |   |
| 1.2.1    | Regulatory quality* .....                                        | 38.5        | 97         |   |
| 1.2.2    | Rule of law* .....                                               | 40.7        | 75         | ● |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....                 | 15.0        | 65         | ● |
| 1.3      | Business environment .....                                       | 63.4        | 91         |   |
| 1.3.1    | Ease of starting a business* .....                               | 82.8        | 88         |   |
| 1.3.2    | Ease of resolving insolvency* .....                              | 37.5        | 107        |   |
| 1.3.3    | Ease of paying taxes* .....                                      | 69.7        | 86         |   |
| <b>2</b> | <b>Human capital &amp; research .....</b>                        | <b>25.6</b> | <b>85</b>  |   |
| 2.1      | Education .....                                                  | 63.0        | 8          | ● |
| 2.1.1    | Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 13.0        | 1          | ● |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 51.2        | 3          | ● |
| 2.1.3    | School life expectancy, years .....                              | 11.1        | 104        |   |
| 2.1.4    | PISA scales in reading, maths, & science .....                   | n/a         | n/a        |   |
| 2.1.5    | Pupil-teacher ratio, secondary .....                             | 24.7        | 94         |   |
| 2.2      | Tertiary education .....                                         | 13.8        | 115        |   |
| 2.2.1    | Tertiary enrolment, % gross .....                                | 10.8        | 108        |   |
| 2.2.2    | Graduates in science & engineering, % .....                      | 12.6        | 92         |   |
| 2.2.3    | Tertiary inbound mobility, % .....                               | 0.5         | 96         |   |
| 2.3      | Research & development (R&D) .....                               | 0.0         | 128        | ○ |
| 2.3.1    | Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                      | 5.9         | 105        | ○ |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.0         | 118        | ○ |
| 2.3.3    | QS university ranking, average score top 3* .....                | 0.0         | 73         | ○ |
| <b>3</b> | <b>Infrastructure .....</b>                                      | <b>26.8</b> | <b>111</b> |   |
| 3.1      | Information & communication technologies (ICTs) .....            | 16.3        | 132        | ○ |
| 3.1.1    | ICT access* .....                                                | 30.2        | 117        |   |
| 3.1.2    | ICT use* .....                                                   | 5.5         | 119        |   |
| 3.1.3    | Government's online service* .....                               | 15.7        | 126        |   |
| 3.1.4    | E-participation* .....                                           | 13.7        | 129        | ○ |
| 3.2      | General infrastructure .....                                     | 43.3        | 31         | ● |
| 3.2.1    | Electricity output, kWh/cap .....                                | n/a         | n/a        |   |
| 3.2.2    | Logistics performance* .....                                     | 10.8        | 119        |   |
| 3.2.3    | Gross capital formation, % GDP .....                             | 35.6        | 11         | ● |
| 3.3      | Ecological sustainability .....                                  | 20.8        | 133        | ○ |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | n/a         | n/a        |   |
| 3.3.2    | Environmental performance* .....                                 | 20.8        | 138        | ○ |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP .....          | n/a         | n/a        |   |
| <b>4</b> | <b>Market sophistication .....</b>                               | <b>41.1</b> | <b>107</b> |   |
| 4.1      | Credit .....                                                     | 15.1        | 123        |   |
| 4.1.1    | Ease of getting credit* .....                                    | 25.0        | 125        |   |
| 4.1.2    | Domestic credit to private sector, % GDP .....                   | 20.2        | 115        |   |
| 4.1.3    | Microfinance gross loans, % GDP .....                            | n/a         | n/a        |   |

|       |                                                   |      |     |   |
|-------|---------------------------------------------------|------|-----|---|
| 4.2   | Investment .....                                  | 49.2 | 31  |   |
| 4.2.1 | Ease of protecting investors* .....               | 49.2 | 93  |   |
| 4.2.2 | Market capitalization, % GDP .....                | n/a  | n/a |   |
| 4.2.3 | Total value of stocks traded, % GDP .....         | n/a  | n/a |   |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a |   |
| 4.3   | Trade & competition .....                         | 59.1 | 130 |   |
| 4.3.1 | Applied tariff rate, weighted mean, % .....       | 12.7 | 132 | ○ |
| 4.3.2 | Intensity of local competition <sup>†</sup> ..... | 62.9 | 90  |   |

|          |                                                               |             |            |   |
|----------|---------------------------------------------------------------|-------------|------------|---|
| <b>5</b> | <b>Business sophistication .....</b>                          | <b>26.8</b> | <b>114</b> |   |
| 5.1      | Knowledge workers .....                                       | 25.6        | 103        |   |
| 5.1.1    | Knowledge-intensive employment, % .....                       | 6.8         | 107        |   |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 42.5        | 40         | ● |
| 5.1.3    | GERD performed by business, % of GDP .....                    | n/a         | n/a        |   |
| 5.1.4    | GERD financed by business, % <sup>Ⓐ</sup> .....               | 3.4         | 78         |   |
| 5.1.5    | Females employed w/advanced degrees, % total .....            | n/a         | n/a        |   |
| 5.2      | Innovation linkages .....                                     | 28.0        | 89         |   |
| 5.2.1    | University/industry research collaboration <sup>†</sup> ..... | 36.7        | 96         |   |
| 5.2.2    | State of cluster development <sup>†</sup> .....               | 47.5        | 62         | ● |
| 5.2.3    | GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 3.4         | 73         |   |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a        |   |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a        |   |
| 5.3      | Knowledge absorption .....                                    | 26.9        | 106        |   |
| 5.3.1    | Royalty & license fees payments, % total trade .....          | 0.3         | 78         |   |
| 5.3.2    | High-tech imports less re-imports, % total trade .....        | n/a         | n/a        |   |
| 5.3.3    | Comm., computer & info. services imp., % total trade .....    | 0.7         | 81         |   |
| 5.3.4    | FDI net inflows, % GDP .....                                  | 2.0         | 84         |   |

|          |                                                                         |             |            |   |
|----------|-------------------------------------------------------------------------|-------------|------------|---|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>12.2</b> | <b>132</b> | ○ |
| 6.1      | Knowledge creation .....                                                | 3.6         | 120        |   |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a        |   |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a        |   |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a        |   |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....                      | 4.4         | 105        |   |
| 6.1.5    | Citable documents H index .....                                         | 23.0        | 138        | ○ |
| 6.2      | Knowledge impact .....                                                  | 5.1         | 131        |   |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                                | n/a         | n/a        |   |
| 6.2.2    | New businesses/th pop. 15–64 .....                                      | 1.5         | 56         | ● |
| 6.2.3    | Computer software spending, % GDP .....                                 | n/a         | n/a        |   |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 0.2         | 137        | ○ |
| 6.2.5    | High- & medium-high-tech manufactures, % .....                          | n/a         | n/a        |   |
| 6.3      | Knowledge diffusion .....                                               | 27.9        | 67         |   |
| 6.3.1    | Royalty & license fees receipts, % total trade .....                    | n/a         | n/a        |   |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | n/a         | n/a        |   |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.3         | 107        |   |
| 6.3.4    | FDI net outflows, % GDP .....                                           | 0.7         | 58         | ● |

|          |                                                           |             |            |   |
|----------|-----------------------------------------------------------|-------------|------------|---|
| <b>7</b> | <b>Creative outputs .....</b>                             | <b>23.8</b> | <b>105</b> |   |
| 7.1      | Intangible assets .....                                   | 35.6        | 112        |   |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....             | n/a         | n/a        |   |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a        |   |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....         | 38.3        | 125        | ○ |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....   | 32.8        | 127        | ○ |
| 7.2      | Creative goods & services .....                           | n/a         | n/a        |   |
| 7.2.1    | Cultural & creative services exports, % total trade ..... | n/a         | n/a        |   |
| 7.2.2    | National feature films/mn pop. 15–69 .....                | n/a         | n/a        |   |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a        |   |
| 7.2.4    | Printing & publishing output manufactures, % .....        | n/a         | n/a        |   |
| 7.2.5    | Creative goods exports, % total trade .....               | n/a         | n/a        |   |
| 7.3      | Online creativity .....                                   | 0.2         | 127        |   |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....      | 0.2         | 123        |   |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                     | 0.2         | 113        |   |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                          | 37.3        | 127        |   |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a        |   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Lithuania

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 3.0         |
| GDP (US\$ billions) .....   | 48.2        |
| GDP per capita, PPP\$ ..... | 23,978.1    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                              | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>42.3</b>                         | <b>38</b> |
| Innovation Output Sub-Index .....                            | 34.7                                | 42        |
| Innovation Input Sub-Index .....                             | 49.9                                | 35        |
| Innovation Efficiency Ratio .....                            | 0.7                                 | 74        |
| Global Innovation Index 2014 (out of 143) .....              | 41.0                                | 39        |
| <b>1 Institutions.....</b>                                   | <b>73.6</b>                         | <b>39</b> |
| 1.1 Political environment.....                               | 75.3                                | 32        |
| 1.1.1 Political stability*.....                              | 87.0                                | 25        |
| 1.1.2 Government effectiveness*.....                         | 63.7                                | 38        |
| 1.2 Regulatory environment .....                             | 70.2                                | 54        |
| 1.2.1 Regulatory quality*.....                               | 77.9                                | 24        |
| 1.2.2 Rule of law*.....                                      | 68.7                                | 35        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....       | 24.6                                | 110 ○     |
| 1.3 Business environment.....                                | 75.3                                | 46        |
| 1.3.1 Ease of starting a business*.....                      | 96.2                                | 11 ●      |
| 1.3.2 Ease of resolving insolvency*.....                     | 48.5                                | 64        |
| 1.3.3 Ease of paying taxes*.....                             | 81.2                                | 39        |
| <b>2 Human capital &amp; research.....</b>                   | <b>39.2</b>                         | <b>41</b> |
| 2.1 Education .....                                          | 52.4                                | 40        |
| 2.1.1 Expenditure on education, % GDP .....                  | 5.2                                 | 48        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 19.5                                | 60        |
| 2.1.3 School life expectancy, years.....                     | 16.4                                | 17 ●      |
| 2.1.4 PISA scales in reading, maths, & science.....          | 483.9                               | 32        |
| 2.1.5 Pupil-teacher ratio, secondary .....                   | 8.3                                 | 10 ●      |
| 2.2 Tertiary education.....                                  | 39.5                                | 47        |
| 2.2.1 Tertiary enrolment, % gross.....                       | 73.9                                | 20 ●      |
| 2.2.2 Graduates in science & engineering, % .....            | 22.1                                | 36        |
| 2.2.3 Tertiary inbound mobility, %.....                      | 1.8                                 | 70        |
| 2.3 Research & development (R&D).....                        | 25.5                                | 37        |
| 2.3.1 Researchers, FTE/mn pop. ....                          | 2836.3                              | 29        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                  | 1.0                                 | 36        |
| 2.3.3 QS university ranking, average score top 3*.....       | 19.9                                | 53        |
| <b>3 Infrastructure.....</b>                                 | <b>48.2</b>                         | <b>40</b> |
| 3.1 Information & communication technologies (ICTs).....     | 65.8                                | 32        |
| 3.1.1 ICT access*.....                                       | 70.0                                | 47        |
| 3.1.2 ICT use*.....                                          | 52.9                                | 33        |
| 3.1.3 Government's online service*.....                      | 75.6                                | 21 ●      |
| 3.1.4 E-participation*.....                                  | 64.7                                | 33        |
| 3.2 General infrastructure.....                              | 27.3                                | 85        |
| 3.2.1 Electricity output, kWh/cap.....                       | 1514.7                              | 85        |
| 3.2.2 Logistics performance*.....                            | 51.9                                | 44        |
| 3.2.3 Gross capital formation, % GDP.....                    | 19.6                                | 93        |
| 3.3 Ecological sustainability .....                          | 51.4                                | 25        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 7.6                                 | 54        |
| 3.3.2 Environmental performance*.....                        | 61.3                                | 46        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 8.5                                 | 10 ●      |
| <b>4 Market sophistication .....</b>                         | <b>51.9</b>                         | <b>48</b> |
| 4.1 Credit.....                                              | 42.0                                | 40        |
| 4.1.1 Ease of getting credit*.....                           | 70.0                                | 22        |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 46.2                                | 71        |
| 4.1.3 Microfinance gross loans, % GDP .....                  | n/a                                 | n/a       |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 26.9 | 108 ○ |
| 4.2.1 Ease of protecting investors*.....                | 55.0 | 72    |
| 4.2.2 Market capitalization, % GDP.....                 | 9.4  | 91 ○  |
| 4.2.3 Total value of stocks traded, % GDP.....          | 0.4  | 81 ○  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | 0.2  | 18    |
| 4.3 Trade & competition .....                           | 86.9 | 16 ●  |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 1.0  | 9     |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 77.1 | 20 ●  |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>36.4</b> | <b>59</b> |
| 5.1 Knowledge workers.....                                          | 52.4        | 33        |
| 5.1.1 Knowledge-intensive employment, %.....                        | 42.8        | 19 ●      |
| 5.1.2 Firms offering formal training, % firms.....                  | 42.0        | 42        |
| 5.1.3 GERD performed by business, % of GDP.....                     | 0.2         | 45        |
| 5.1.4 GERD financed by business, % .....                            | 27.4        | 55        |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 26.1        | 6 ●       |
| 5.2 Innovation linkages .....                                       | 36.1        | 55        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 60.1        | 26        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 41.7        | 86        |
| 5.2.3 GERD financed by abroad, %.....                               | 37.1        | 13 ●      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 68 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 58        |
| 5.3 Knowledge absorption.....                                       | 20.9        | 135 ○     |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 0.1         | 98 ○      |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 4.7         | 103 ○     |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 0.5         | 89 ○      |
| 5.3.4 FDI net inflows, % GDP .....                                  | 1.6         | 97 ○      |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>               | <b>28.3</b> | <b>55</b> |
| 6.1 Knowledge creation.....                                     | 17.3        | 53        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....           | 1.5         | 56        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                | 0.6         | 33        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....         | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....        | 25.5        | 34        |
| 6.1.5 Citable documents H index.....                            | 122.0       | 58        |
| 6.2 Knowledge impact.....                                       | 44.0        | 41        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                   | 2.0         | 46        |
| 6.2.2 New businesses/th pop. 15–64.....                         | 4.7         | 24        |
| 6.2.3 Computer software spending, % GDP.....                    | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....          | 14.6        | 27        |
| 6.2.5 High- & medium-high-tech manufactures, % .....            | 20.6        | 55        |
| 6.3 Knowledge diffusion.....                                    | 23.7        | 96        |
| 6.3.1 Royalty & license fees receipts, % total trade.....       | 0.1         | 66        |
| 6.3.2 High-tech exports less re-exports, % total trade .....    | 4.8         | 32        |
| 6.3.3 Comm., computer & info. services exp., % total trade..... | 0.6         | 91 ○      |
| 6.3.4 FDI net outflows, % GDP .....                             | 0.6         | 63        |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                | <b>41.0</b> | <b>35</b> |
| 7.1 Intangible assets .....                                    | 51.0        | 42        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....            | 51.4        | 46        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....         | 1.5         | 22        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 66.9        | 26        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 66.3        | 22        |
| 7.2 Creative goods & services.....                             | 22.4        | 58        |
| 7.2.1 Cultural & creative services exports, % total trade..... | 0.3         | 44        |
| 7.2.2 National feature films/mn pop. 15–69.....                | 6.8         | 29        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, %.....        | 0.9         | 74 ○      |
| 7.2.5 Creative goods exports, % total trade.....               | 1.5         | 33        |
| 7.3 Online creativity.....                                     | 39.5        | 33        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 14.1        | 37        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 32.3        | 24        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 3619.1      | 36        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | 84.8        | 25        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓢ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 0.5         |
| GDP (US\$ billions) .....   | 62.4        |
| GDP per capita, PPP\$ ..... | 79,977.0    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>59.0</b>                         | <b>9</b>  |
| Innovation Output Sub-Index .....                             | 59.0                                | 2 ●       |
| Innovation Input Sub-Index .....                              | 59.0                                | 20        |
| Innovation Efficiency Ratio .....                             | 1.0                                 | 3 ●       |
| Global Innovation Index 2014 (out of 143) .....               | 56.9                                | 9         |
| <b>1 Institutions .....</b>                                   | <b>83.5</b>                         | <b>18</b> |
| 1.1 Political environment .....                               | 91.1                                | 8         |
| 1.1.1 Political stability* .....                              | 97.1                                | 6         |
| 1.1.2 Government effectiveness* .....                         | 85.1                                | 12        |
| 1.2 Regulatory environment .....                              | 83.9                                | 22        |
| 1.2.1 Regulatory quality* .....                               | 94.7                                | 10        |
| 1.2.2 Rule of law* .....                                      | 95.2                                | 9         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 21.7                                | 99 ○      |
| 1.3 Business environment .....                                | 75.6                                | 44        |
| 1.3.1 Ease of starting a business* .....                      | 86.5                                | 68        |
| 1.3.2 Ease of resolving insolvency* .....                     | 51.8                                | 59        |
| 1.3.3 Ease of paying taxes* .....                             | 88.6                                | 19        |
| <b>2 Human capital &amp; research .....</b>                   | <b>40.8</b>                         | <b>34</b> |
| 2.1 Education .....                                           | 51.1                                | 46        |
| 2.1.1 Expenditure on education, % GDP .....                   | n/a                                 | n/a       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 18.3                                | 66        |
| 2.1.3 School life expectancy, years .....                     | 13.8                                | 61        |
| 2.1.4 PISA scales in reading, maths, & science .....          | 489.6                               | 26        |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 7.9                                 | 4 ●       |
| 2.2 Tertiary education .....                                  | 42.7                                | 36        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 19.7                                | 91        |
| 2.2.2 Graduates in science & engineering, % .....             | 14.7                                | 84 ○      |
| 2.2.3 Tertiary inbound mobility, % .....                      | 40.6                                | 1 ●       |
| 2.3 Research & development (R&D) .....                        | 28.8                                | 35        |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 4930.8                              | 10        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 1.2                                 | 31        |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0                                 | 73 ○      |
| <b>3 Infrastructure .....</b>                                 | <b>54.2</b>                         | <b>25</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 72.1                                | 23        |
| 3.1.1 ICT access* .....                                       | 94.6                                | 1 ●       |
| 3.1.2 ICT use* .....                                          | 76.6                                | 8         |
| 3.1.3 Government's online service* .....                      | 62.2                                | 42        |
| 3.1.4 E-participation* .....                                  | 54.9                                | 54        |
| 3.2 General infrastructure .....                              | 38.5                                | 45        |
| 3.2.1 Electricity output, kWh/cap .....                       | 3301.8                              | 56        |
| 3.2.2 Logistics performance* .....                            | 91.1                                | 8         |
| 3.2.3 Gross capital formation, % GDP .....                    | 18.8                                | 105 ○     |
| 3.3 Ecological sustainability .....                           | 52.1                                | 22        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 8.9                                 | 43        |
| 3.3.2 Environmental performance* .....                        | 83.3                                | 2 ●       |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 1.8                                 | 50        |
| <b>4 Market sophistication .....</b>                          | <b>56.2</b>                         | <b>31</b> |
| 4.1 Credit .....                                              | 34.1                                | 55        |
| 4.1.1 Ease of getting credit* .....                           | 15.0                                | 129 ○     |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 162.4                               | 11        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a       |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| 4.2 Investment .....                                                  | 50.9        | 27         |
| 4.2.1 Ease of protecting investors* .....                             | 46.7        | 102 ○      |
| 4.2.2 Market capitalization, % GDP .....                              | 125.0       | 6          |
| 4.2.3 Total value of stocks traded, % GDP .....                       | 0.2         | 91 ○       |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                        | 0.7         | 5          |
| 4.3 Trade & competition .....                                         | 83.7        | 34         |
| 4.3.1 Applied tariff rate, weighted mean, % .....                     | 1.0         | 9          |
| 4.3.2 Intensity of local competition† .....                           | 70.8        | 52         |
| <b>5 Business sophistication .....</b>                                | <b>60.2</b> | <b>2 ●</b> |
| 5.1 Knowledge workers .....                                           | 61.5        | 18         |
| 5.1.1 Knowledge-intensive employment, % .....                         | 59.1        | 1 ●        |
| 5.1.2 Firms offering formal training, % firms .....                   | n/a         | n/a        |
| 5.1.3 GERD performed by business, % of GDP .....                      | 0.7         | 27         |
| 5.1.4 GERD financed by business, % .....                              | 20.5        | 60         |
| 5.1.5 Females employed w/advanced degrees, % total .....              | 20.3        | 22         |
| 5.2 Innovation linkages .....                                         | 57.6        | 6          |
| 5.2.1 University/industry research collaboration† .....               | 65.0        | 17         |
| 5.2.2 State of cluster development† .....                             | 64.2        | 16         |
| 5.2.3 GERD financed by abroad, % <sup>Ⓔ</sup> .....                   | 20.4        | 21         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.1         | 3 ●        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 1.7         | 10         |
| 5.3 Knowledge absorption .....                                        | 61.7        | 4 ●        |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 0.9         | 36         |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 3.9         | 113 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 3.2         | 4 ●        |
| 5.3.4 FDI net inflows, % GDP .....                                    | 49.8        | 1 ●        |
| <b>6 Knowledge &amp; technology outputs .....</b>                     | <b>49.1</b> | <b>13</b>  |
| 6.1 Knowledge creation .....                                          | 36.9        | 25         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                 | 2.3         | 44         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                      | 7.6         | 6          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....               | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....              | 19.3        | 41         |
| 6.1.5 Citable documents H index .....                                 | 92.0        | 76         |
| 6.2 Knowledge impact .....                                            | 43.1        | 44         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                        | -0.2        | 102 ○      |
| 6.2.2 New businesses/th pop. 15–64 .....                              | 21.0        | 1 ●        |
| 6.2.3 Computer software spending, % GDP .....                         | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                | 5.3         | 61         |
| 6.2.5 High- & medium-high-tech manufactures, % .....                  | 3.4         | 92 ○       |
| 6.3 Knowledge diffusion .....                                         | 67.2        | 4 ●        |
| 6.3.1 Royalty & license fees receipts, % total trade .....            | 0.9         | 17         |
| 6.3.2 High-tech exports less re-exports, % total trade .....          | 1.0         | 65         |
| 6.3.3 Comm., computer & info. services exp., % total trade .....      | 4.7         | 7          |
| 6.3.4 FDI net outflows, % GDP .....                                   | 610.0       | 1 ●        |
| <b>7 Creative outputs .....</b>                                       | <b>69.0</b> | <b>2 ●</b> |
| 7.1 Intangible assets .....                                           | 75.5        | 1 ●        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 122.4       | 6          |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 6.8         | 1 ●        |
| 7.1.3 ICTs & business model creation† .....                           | 76.1        | 7          |
| 7.1.4 ICTs & organizational model creation† .....                     | 69.3        | 16         |
| 7.2 Creative goods & services .....                                   | 43.2        | 8          |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 5.7         | 1 ●        |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓔ</sup> .....         | 42.9        | 1 ●        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓔ</sup> ..... | 1.6         | 42         |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.2         | 81         |
| 7.3 Online creativity .....                                           | 81.7        | 4 ●        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 100.0       | 1 ●        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 90.9        | 8          |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 7322.3      | 14         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



# Madagascar

## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 23.6               |
| GDP (US\$ billions) .....   | 10.6               |
| GDP per capita, PPP\$ ..... | 990.5              |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>24.4</b>                         | <b>125</b> |
| Innovation Output Sub-Index .....                 | 18.2                                | 123        |
| Innovation Input Sub-Index .....                  | 30.7                                | 123        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 116        |
| Global Innovation Index 2014 (out of 143) .....   | 25.5                                | 124        |

|                                                               |             |              |
|---------------------------------------------------------------|-------------|--------------|
| <b>1 Institutions .....</b>                                   | <b>52.0</b> | <b>99</b>    |
| 1.1 Political environment .....                               | 28.8        | 123          |
| 1.1.1 Political stability* .....                              | 46.5        | 106          |
| 1.1.2 Government effectiveness* .....                         | 11.0        | 133          |
| 1.2 Regulatory environment .....                              | 59.2        | 87           |
| 1.2.1 Regulatory quality* .....                               | 30.0        | 114          |
| 1.2.2 Rule of law* .....                                      | 23.8        | 120          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 12.2        | 48 ●         |
| 1.3 Business environment .....                                | 68.1        | 75           |
| 1.3.1 Ease of starting a business* .....                      | 92.0        | 32 ●         |
| 1.3.2 Ease of resolving insolvency* .....                     | 34.4        | 113          |
| 1.3.3 Ease of paying taxes* .....                             | 77.8        | 53 ●         |
| <b>2 Human capital &amp; research .....</b>                   | <b>15.3</b> | <b>120</b>   |
| 2.1 Education .....                                           | 22.5        | 130          |
| 2.1.1 Expenditure on education, % GDP .....                   | 2.7         | 113          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 8.4         | 106          |
| 2.1.3 School life expectancy, years .....                     | 10.3        | 112          |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 27.6        | 103          |
| 2.2 Tertiary education .....                                  | 22.5        | 96           |
| 2.2.1 Tertiary enrolment, % gross .....                       | 4.1         | 127          |
| 2.2.2 Graduates in science & engineering, % .....             | 20.5        | 53           |
| 2.2.3 Tertiary inbound mobility, % .....                      | 1.7         | 72           |
| 2.3 Research & development (R&D) .....                        | 0.9         | 116          |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....             | 51.0        | 88           |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....      | 0.1         | 106          |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0         | 73 ○         |
| <b>3 Infrastructure .....</b>                                 | <b>17.3</b> | <b>137</b> ○ |
| 3.1 Information & communication technologies (ICTs) .....     | 19.4        | 124          |
| 3.1.1 ICT access* .....                                       | 16.8        | 137 ○        |
| 3.1.2 ICT use* .....                                          | 0.9         | 134 ○        |
| 3.1.3 Government's online service* .....                      | 24.4        | 113          |
| 3.1.4 E-participation* .....                                  | 35.3        | 88           |
| 3.2 General infrastructure .....                              | 14.5        | 133          |
| 3.2.1 Electricity output, kWh/cap .....                       | n/a         | n/a          |
| 3.2.2 Logistics performance* .....                            | 11.3        | 118          |
| 3.2.3 Gross capital formation, % GDP .....                    | 15.6        | 121          |
| 3.3 Ecological sustainability .....                           | 18.0        | 138 ○        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | n/a         | n/a          |
| 3.3.2 Environmental performance* .....                        | 26.7        | 134 ○        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.1         | 130          |
| <b>4 Market sophistication .....</b>                          | <b>41.8</b> | <b>103</b>   |
| 4.1 Credit .....                                              | 6.6         | 137 ○        |
| 4.1.1 Ease of getting credit* .....                           | 5.0         | 138 ○        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 11.9        | 134 ○        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 1.0         | 38 ●         |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 53.3 | 20  |
| 4.2.1 Ease of protecting investors* .....               | 53.3 | 79  |
| 4.2.2 Market capitalization, % GDP .....                | n/a  | n/a |
| 4.2.3 Total value of stocks traded, % GDP .....         | n/a  | n/a |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a |
| 4.3 Trade & competition .....                           | 65.6 | 115 |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 9.1  | 116 |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 63.3 | 87  |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                                        | <b>26.9</b> | <b>113</b> |
| 5.1 Knowledge workers .....                                                   | 8.2         | 137 ○      |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                    | 3.5         | 114 ○      |
| 5.1.2 Firms offering formal training, % firms .....                           | 12.7        | 103        |
| 5.1.3 GERD performed by business, % of GDP .....                              | n/a         | n/a        |
| 5.1.4 GERD financed by business, % .....                                      | n/a         | n/a        |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> .....         | 2.3         | 82         |
| 5.2 Innovation linkages .....                                                 | 25.3        | 99         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 37.6        | 90         |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 31.1        | 127 ○      |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 10.6        | 41 ●       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a         | n/a        |
| 5.3 Knowledge absorption .....                                                | 47.2        | 19 ●       |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.7         | 46 ●       |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 4.2         | 110        |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 3.0         | 5 ●        |
| 5.3.4 FDI net inflows, % GDP .....                                            | 7.8         | 16 ●       |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>14.2</b> | <b>124</b> |
| 6.1 Knowledge creation .....                                                  | 3.8         | 116        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | 0.1         | 96         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | 0.1         | 72         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 5.7         | 92         |
| 6.1.5 Citable documents H index .....                                         | 62.0        | 102        |
| 6.2 Knowledge impact .....                                                    | 20.0        | 122        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | -0.6        | 107        |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 0.1         | 103 ○      |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.4         | 106        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 2.4         | 94         |
| 6.3 Knowledge diffusion .....                                                 | 19.0        | 113        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.2         | 31 ●       |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.1         | 116        |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.7         | 53         |
| 6.3.4 FDI net outflows, % GDP .....                                           | n/a         | n/a        |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                       | <b>22.1</b> | <b>113</b> |
| 7.1 Intangible assets .....                                           | 35.1        | 116        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 51.5        | 45         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.1         | 59         |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 47.3        | 101        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 47.0        | 95         |
| 7.2 Creative goods & services .....                                   | 18.0        | 74         |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a         | n/a        |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | n/a         | n/a        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 2.1         | 27 ●       |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....        | 0.1         | 90         |
| 7.3 Online creativity .....                                           | 0.1         | 135 ○      |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 0.2         | 129        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 0.1         | 126        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 16.1        | 134 ○      |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 16.8               |
| GDP (US\$ billions) .....   | 4.3                |
| GDP per capita, PPP\$ ..... | 920.0              |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>29.7</b>                         | <b>98</b> |
| Innovation Output Sub-Index .....                | 25.4                                | 89        |
| Innovation Input Sub-Index .....                 | 34.0                                | 111       |
| Innovation Efficiency Ratio .....                | 0.7                                 | 53 ●      |
| Global Innovation Index 2014 (out of 143) .....  | 27.6                                | 113       |

|                                                              |             |              |
|--------------------------------------------------------------|-------------|--------------|
| <b>1 Institutions.....</b>                                   | <b>51.6</b> | <b>103</b>   |
| 1.1 Political environment.....                               | 42.4        | 90           |
| 1.1.1 Political stability*.....                              | 58.6        | 80           |
| 1.1.2 Government effectiveness*.....                         | 26.2        | 104          |
| 1.2 Regulatory environment .....                             | 59.5        | 86           |
| 1.2.1 Regulatory quality*.....                               | 29.7        | 115          |
| 1.2.2 Rule of law*.....                                      | 42.6        | 69           |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 16.6        | 74           |
| 1.3 Business environment.....                                | 53.0        | 125          |
| 1.3.1 Ease of starting a business*.....                      | 68.5        | 124          |
| 1.3.2 Ease of resolving insolvency*.....                     | 19.0        | 138 ○        |
| 1.3.3 Ease of paying taxes*.....                             | 71.4        | 81           |
| <b>2 Human capital &amp; research.....</b>                   | <b>11.5</b> | <b>136 ○</b> |
| 2.1 Education .....                                          | 31.9        | 109          |
| 2.1.1 Expenditure on education, % GDP .....                  | 5.4         | 43 ●         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 33.2        | 15 ●         |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....       | 10.8        | 109          |
| 2.1.4 PISA scales in reading, maths, & science.....          | n/a         | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary .....                   | 41.7        | 120 ○        |
| 2.2 Tertiary education.....                                  | 2.4         | 137 ○        |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....         | 0.8         | 134 ○        |
| 2.2.2 Graduates in science & engineering, % .....            | n/a         | n/a          |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....        | 1.1         | 81           |
| 2.3 Research & development (R&D).....                        | 0.3         | 124          |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....            | 48.8        | 90           |
| 2.3.2 Gross expenditure on R&D, % GDP .....                  | n/a         | n/a          |
| 2.3.3 QS university ranking, average score top 3*.....       | 0.0         | 73 ○         |
| <b>3 Infrastructure.....</b>                                 | <b>23.9</b> | <b>118</b>   |
| 3.1 Information & communication technologies (ICTs).....     | 15.7        | 134 ○        |
| 3.1.1 ICT access*.....                                       | 18.9        | 134 ○        |
| 3.1.2 ICT use*.....                                          | 3.1         | 126 ○        |
| 3.1.3 Government's online service*.....                      | 17.3        | 122          |
| 3.1.4 E-participation*.....                                  | 23.5        | 115          |
| 3.2 General infrastructure.....                              | 28.0        | 81           |
| 3.2.1 Electricity output, kWh/cap.....                       | n/a         | n/a          |
| 3.2.2 Logistics performance*.....                            | 33.3        | 70           |
| 3.2.3 Gross capital formation, % GDP.....                    | 19.9        | 86           |
| 3.3 Ecological sustainability .....                          | 27.9        | 107          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | n/a         | n/a          |
| 3.3.2 Environmental performance*.....                        | 40.1        | 107          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.5         | 85           |
| <b>4 Market sophistication .....</b>                         | <b>39.2</b> | <b>114</b>   |
| 4.1 Credit.....                                              | 20.8        | 111          |
| 4.1.1 Ease of getting credit*.....                           | 25.0        | 125 ○        |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 18.5        | 116          |
| 4.1.3 Microfinance gross loans, % GDP .....                  | 2.7         | 20 ●         |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 25.3 | 122 |
| 4.2.1 Ease of protecting investors*.....                | 45.0 | 114 |
| 4.2.2 Market capitalization, % GDP.....                 | 17.8 | 76  |
| 4.2.3 Total value of stocks traded, % GDP.....          | 0.4  | 83  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a |
| 4.3 Trade & competition .....                           | 71.7 | 90  |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 6.4  | 94  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 65.8 | 73  |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                        | <b>43.7</b> | <b>32</b> |
| 5.1 Knowledge workers.....                                                    | 59.4        | 25        |
| 5.1.1 Knowledge-intensive employment, %.....                                  | n/a         | n/a       |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 48.4        | 31 ●      |
| 5.1.3 GERD performed by business, % of GDP.....                               | n/a         | n/a       |
| 5.1.4 GERD financed by business, %.....                                       | n/a         | n/a       |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a         | n/a       |
| 5.2 Innovation linkages .....                                                 | 40.1        | 43        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 30.7        | 116       |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 44.8        | 76        |
| 5.2.3 GERD financed by abroad, %.....                                         | n/a         | n/a       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a         | n/a       |
| 5.3 Knowledge absorption.....                                                 | 31.6        | 80        |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 116 ○     |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 13.3        | 20 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.4         | 109       |
| 5.3.4 FDI net inflows, % GDP.....                                             | 3.2         | 59 ●      |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>26.7</b> | <b>66</b> |
| 6.1 Knowledge creation.....                                                   | 23.9        | 41        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 26.2        | 30 ●      |
| 6.1.5 Citable documents H index.....                                          | 89.0        | 81        |
| 6.2 Knowledge impact.....                                                     | 28.5        | 112       |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | 1.7         | 52 ●      |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓐ</sup> .....                         | 0.1         | 102 ○     |
| 6.2.3 Computer software spending, % GDP.....                                  | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.7         | 98        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 8.6         | 82        |
| 6.3 Knowledge diffusion.....                                                  | 27.7        | 68        |
| 6.3.1 Royalty & license fees receipts, % total trade.....                     | n/a         | n/a       |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 1.0         | 64        |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.2         | 73        |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 1.2         | 48 ●      |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                       | <b>24.1</b> | <b>104</b> |
| 7.1 Intangible assets .....                                           | 42.1        | 88         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | n/a         | n/a        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 42.6        | 118        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 41.6        | 111        |
| 7.2 Creative goods & services.....                                    | 12.3        | 89         |
| 7.2.1 Cultural & creative services exports, % total trade.....        | 0.0         | 67         |
| 7.2.2 National feature films/mn pop. 15–69.....                       | n/a         | n/a        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.7         | 35 ●       |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....        | 0.1         | 93         |
| 7.3 Online creativity.....                                            | 0.1         | 132 ○      |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 0.2         | 124        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 0.1         | 120        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 14.2        | 135 ○      |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 30.2                        |
| GDP (US\$ billions) .....   | 326.9                       |
| GDP per capita, PPP\$ ..... | 18,639.2                    |
| Income group .....          | Upper-middle income         |
| Region .....                | South East Asia and Oceania |

|                                                              | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>46.0</b>                         | <b>32</b> |
| Innovation Output Sub-Index .....                            | 39.2                                | 34        |
| Innovation Input Sub-Index .....                             | 52.8                                | 31        |
| Innovation Efficiency Ratio .....                            | 0.7                                 | 56        |
| Global Innovation Index 2014 (out of 143) .....              | 45.6                                | 33        |
| <b>1 Institutions.....</b>                                   | <b>71.7</b>                         | <b>42</b> |
| 1.1 Political environment.....                               | 68.3                                | 42        |
| 1.1.1 Political stability*.....                              | 65.4                                | 63        |
| 1.1.2 Government effectiveness*.....                         | 71.1                                | 31        |
| 1.2 Regulatory environment .....                             | 65.4                                | 74        |
| 1.2.1 Regulatory quality*.....                               | 64.2                                | 43        |
| 1.2.2 Rule of law*.....                                      | 60.3                                | 45        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 23.9                                | 108 ○     |
| 1.3 Business environment.....                                | 81.5                                | 22        |
| 1.3.1 Ease of starting a business*.....                      | 94.9                                | 13        |
| 1.3.2 Ease of resolving insolvency*.....                     | 65.6                                | 34        |
| 1.3.3 Ease of paying taxes*.....                             | 84.0                                | 29        |
| <b>2 Human capital &amp; research.....</b>                   | <b>39.9</b>                         | <b>37</b> |
| 2.1 Education .....                                          | 42.3                                | 77        |
| 2.1.1 Expenditure on education, % GDP .....                  | 5.9                                 | 31        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 19.9                                | 57        |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....       | 12.7                                | 82        |
| 2.1.4 PISA scales in reading, maths, & science.....          | 412.7                               | 51 ○      |
| 2.1.5 Pupil-teacher ratio, secondary .....                   | 13.9                                | 53        |
| 2.2 Tertiary education.....                                  | 45.1                                | 29        |
| 2.2.1 Tertiary enrolment, % gross.....                       | 37.2                                | 69        |
| 2.2.2 Graduates in science & engineering, % .....            | 30.9                                | 9 ●       |
| 2.2.3 Tertiary inbound mobility, %.....                      | 5.2                                 | 34        |
| 2.3 Research & development (R&D).....                        | 32.4                                | 31        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....            | 1777.2                              | 37        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....     | 1.1                                 | 32        |
| 2.3.3 QS university ranking, average score top 3*.....       | 49.4                                | 27        |
| <b>3 Infrastructure.....</b>                                 | <b>46.7</b>                         | <b>44</b> |
| 3.1 Information & communication technologies (ICTs).....     | 54.5                                | 49        |
| 3.1.1 ICT access*.....                                       | 65.8                                | 54        |
| 3.1.2 ICT use*.....                                          | 31.6                                | 65        |
| 3.1.3 Government's online service*.....                      | 67.7                                | 31        |
| 3.1.4 E-participation*.....                                  | 52.9                                | 59        |
| 3.2 General infrastructure.....                              | 44.3                                | 30        |
| 3.2.1 Electricity output, kWh/cap.....                       | 4595.8                              | 46        |
| 3.2.2 Logistics performance*.....                            | 72.9                                | 24        |
| 3.2.3 Gross capital formation, % GDP.....                    | 26.7                                | 39        |
| 3.3 Ecological sustainability .....                          | 41.2                                | 52        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 7.0                                 | 65        |
| 3.3.2 Environmental performance*.....                        | 59.3                                | 48        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 3.2                                 | 30        |
| <b>4 Market sophistication .....</b>                         | <b>58.0</b>                         | <b>27</b> |
| 4.1 Credit.....                                              | 37.3                                | 48        |
| 4.1.1 Ease of getting credit*.....                           | 70.0                                | 22        |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 124.0                               | 22        |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> .....     | 0.1                                 | 65 ○      |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                                  | 56.2        | 16        |
| 4.2.1 Ease of protecting investors*.....                              | 74.2        | 5 ●       |
| 4.2.2 Market capitalization, % GDP.....                               | 156.0       | 4 ●       |
| 4.2.3 Total value of stocks traded, % GDP.....                        | 40.8        | 20        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                         | 0.0         | 46        |
| 4.3 Trade & competition .....                                         | 80.6        | 51        |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> .....        | 4.0         | 63        |
| 4.3.2 Intensity of local competition <sup>†</sup> .....               | 74.9        | 32        |
| <b>5 Business sophistication .....</b>                                | <b>47.6</b> | <b>22</b> |
| 5.1 Knowledge workers.....                                            | 48.1        | 38        |
| 5.1.1 Knowledge-intensive employment, %.....                          | 24.7        | 57        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....      | 50.1        | 28        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....         | 0.7         | 26        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                 | 60.2        | 11        |
| 5.1.5 Females employed w/advanced degrees, % total.....               | 10.5        | 60 ○      |
| 5.2 Innovation linkages .....                                         | 38.7        | 46        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 72.1        | 12 ●      |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 71.3        | 8 ●       |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                   | 4.6         | 66 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                   | 0.0         | 23        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                    | 0.0         | 56        |
| 5.3 Knowledge absorption.....                                         | 55.8        | 6 ●       |
| 5.3.1 Royalty & license fees payments, % total trade.....             | 0.6         | 51        |
| 5.3.2 High-tech imports less re-imports, % total trade.....           | 23.4        | 1 ●       |
| 5.3.3 Comm., computer & info. services imp., % total trade.....       | 1.3         | 43        |
| 5.3.4 FDI net inflows, % GDP.....                                     | 3.7         | 43        |
| <b>6 Knowledge &amp; technology outputs .....</b>                     | <b>36.2</b> | <b>35</b> |
| 6.1 Knowledge creation.....                                           | 9.3         | 76        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                  | 1.7         | 49        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                       | 0.4         | 42        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                | 0.1         | 53 ○      |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....               | 13.9        | 54        |
| 6.1.5 Citable documents H index.....                                  | 145.0       | 51        |
| 6.2 Knowledge impact.....                                             | 48.0        | 27        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                         | 3.0         | 29        |
| 6.2.2 New businesses/th pop. 15–64.....                               | 2.3         | 44        |
| 6.2.3 Computer software spending, % GDP.....                          | 0.4         | 20        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                 | 17.3        | 22        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....     | 42.0        | 19        |
| 6.3 Knowledge diffusion.....                                          | 51.3        | 12 ●      |
| 6.3.1 Royalty & license fees receipts, % total trade.....             | 0.0         | 74 ○      |
| 6.3.2 High-tech exports less re-exports, % total trade.....           | 27.8        | 1 ●       |
| 6.3.3 Comm., computer & info. services exp., % total trade.....       | 1.2         | 75        |
| 6.3.4 FDI net outflows, % GDP.....                                    | 4.2         | 12        |
| <b>7 Creative outputs .....</b>                                       | <b>42.1</b> | <b>32</b> |
| 7.1 Intangible assets .....                                           | 53.5        | 32        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                    | 21.2        | 80 ○      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                 | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 75.0        | 10 ●      |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 74.9        | 4 ●       |
| 7.2 Creative goods & services.....                                    | 37.7        | 22        |
| 7.2.1 Cultural & creative services exports, % total trade.....        | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69.....                       | 3.4         | 47        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | 10.7        | 32        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 0.9         | 78 ○      |
| 7.2.5 Creative goods exports, % total trade.....                      | 10.3        | 3 ●       |
| 7.3 Online creativity.....                                            | 23.7        | 57        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 7.6         | 49        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 5.3         | 52        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 1677.1      | 60        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | 69.6        | 56 ○      |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 15.8               |
| GDP (US\$ billions) .....   | 11.9               |
| GDP per capita, PPP\$ ..... | 1,156.6            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                              | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>28.4</b>                         | <b>105</b> |
| Innovation Output Sub-Index .....                            | 26.4                                | 81         |
| Innovation Input Sub-Index .....                             | 30.4                                | 125        |
| Innovation Efficiency Ratio .....                            | 0.9                                 | 14 ●       |
| Global Innovation Index 2014 (out of 143) .....              | 26.2                                | 119        |
| <b>1 Institutions.....</b>                                   | <b>45.0</b>                         | <b>122</b> |
| 1.1 Political environment.....                               | 20.6                                | 135        |
| 1.1.1 Political stability*.....                              | 22.5                                | 136 ○      |
| 1.1.2 Government effectiveness*.....                         | 18.7                                | 120        |
| 1.2 Regulatory environment .....                             | 60.0                                | 85         |
| 1.2.1 Regulatory quality*.....                               | 34.4                                | 108        |
| 1.2.2 Rule of law*.....                                      | 27.7                                | 109        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 13.6                                | 57 ●       |
| 1.3 Business environment.....                                | 54.5                                | 119        |
| 1.3.1 Ease of starting a business*.....                      | 62.9                                | 133        |
| 1.3.2 Ease of resolving insolvency*.....                     | 40.4                                | 100        |
| 1.3.3 Ease of paying taxes*.....                             | 60.2                                | 111        |
| <b>2 Human capital &amp; research.....</b>                   | <b>14.7</b>                         | <b>124</b> |
| 2.1 Education .....                                          | 34.9                                | 101        |
| 2.1.1 Expenditure on education, % GDP .....                  | 4.8                                 | 65         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 31.2                                | 21 ●       |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....       | 8.4                                 | 126        |
| 2.1.4 PISA scales in reading, maths, & science.....          | n/a                                 | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                   | 19.3                                | 81         |
| 2.2 Tertiary education.....                                  | 4.0                                 | 134 ○      |
| 2.2.1 Tertiary enrolment, % gross.....                       | 7.5                                 | 120        |
| 2.2.2 Graduates in science & engineering, % .....            | n/a                                 | n/a        |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....        | 0.5                                 | 94         |
| 2.3 Research & development (R&D).....                        | 5.3                                 | 81         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....            | 31.6                                | 101        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....     | 0.7                                 | 53         |
| 2.3.3 QS university ranking, average score top 3*.....       | 0.0                                 | 73 ○       |
| <b>3 Infrastructure.....</b>                                 | <b>19.9</b>                         | <b>130</b> |
| 3.1 Information & communication technologies (ICTs).....     | 16.5                                | 129        |
| 3.1.1 ICT access*.....                                       | 35.5                                | 107        |
| 3.1.2 ICT use*.....                                          | 1.4                                 | 133 ○      |
| 3.1.3 Government's online service*.....                      | 13.4                                | 131        |
| 3.1.4 E-participation*.....                                  | 15.7                                | 126        |
| 3.2 General infrastructure.....                              | 30.9                                | 68         |
| 3.2.1 Electricity output, kWh/cap.....                       | n/a                                 | n/a        |
| 3.2.2 Logistics performance*.....                            | 17.0                                | 109        |
| 3.2.3 Gross capital formation, % GDP.....                    | 25.6                                | 41 ●       |
| 3.3 Ecological sustainability .....                          | 12.4                                | 141 ○      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | n/a                                 | n/a        |
| 3.3.2 Environmental performance*.....                        | 18.4                                | 139 ○      |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.0                                 | 134 ○      |
| <b>4 Market sophistication.....</b>                          | <b>41.2</b>                         | <b>106</b> |
| 4.1 Credit.....                                              | 14.8                                | 124        |
| 4.1.1 Ease of getting credit*.....                           | 30.0                                | 113        |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 22.8                                | 113        |
| 4.1.3 Microfinance gross loans, % GDP .....                  | 0.7                                 | 41         |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                                          | 42.5        | 45 ●      |
| 4.2.1 Ease of protecting investors*.....                                      | 42.5        | 120       |
| 4.2.2 Market capitalization, % GDP.....                                       | n/a         | n/a       |
| 4.2.3 Total value of stocks traded, % GDP.....                                | n/a         | n/a       |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                                 | n/a         | n/a       |
| 4.3 Trade & competition .....                                                 | 66.1        | 110       |
| 4.3.1 Applied tariff rate, weighted mean, %.....                              | 8.4         | 111       |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                       | 61.7        | 94        |
| <b>5 Business sophistication .....</b>                                        | <b>31.1</b> | <b>87</b> |
| 5.1 Knowledge workers.....                                                    | 22.3        | 114       |
| 5.1.1 Knowledge-intensive employment, %.....                                  | n/a         | n/a       |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 32.1        | 57        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                 | 0.0         | 81        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                         | 10.1        | 70        |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a         | n/a       |
| 5.2 Innovation linkages .....                                                 | 30.8        | 74        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 36.7        | 97        |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 49.2        | 53 ●      |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 8.8         | 47        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 33 ●      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a         | n/a       |
| 5.3 Knowledge absorption.....                                                 | 40.2        | 41 ●      |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 108       |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 5.1         | 97        |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 2.6         | 7 ●       |
| 5.3.4 FDI net inflows, % GDP.....                                             | 3.7         | 41 ●      |
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>24.8</b> | <b>77</b> |
| 6.1 Knowledge creation.....                                                   | 6.0         | 95        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 4.9         | 98        |
| 6.1.5 Citable documents H index.....                                          | 59.0        | 107       |
| 6.2 Knowledge impact.....                                                     | 42.6        | 46 ●      |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | 1.8         | 49 ●      |
| 6.2.2 New businesses/th pop. 15–64.....                                       | n/a         | n/a       |
| 6.2.3 Computer software spending, % GDP.....                                  | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 0.2         | 139 ○     |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | n/a         | n/a       |
| 6.3 Knowledge diffusion.....                                                  | 25.8        | 82        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 93        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.1         | 107       |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 3.3         | 17 ●      |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 0.0         | 96        |
| <b>7 Creative outputs .....</b>                                               | <b>28.0</b> | <b>87</b> |
| 7.1 Intangible assets .....                                                   | 55.7        | 24        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                           | n/a         | n/a       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                        | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                       | 59.1        | 55 ●      |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....                 | 52.4        | 67        |
| 7.2 Creative goods & services.....                                            | 0.3         | 136 ○     |
| 7.2.1 Cultural & creative services exports, % total trade.....                | 0.0         | 80        |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....                 | 0.1         | 103 ○     |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                           | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, %.....                       | n/a         | n/a       |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....                | 0.0         | 127 ○     |
| 7.3 Online creativity.....                                                    | 0.1         | 136 ○     |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....                     | 0.2         | 127       |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                                    | 0.0         | 140 ○     |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                         | 12.7        | 137 ○     |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                                | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 0.4         |
| GDP (US\$ billions) .....   | 10.6        |
| GDP per capita, PPP\$ ..... | 28,741.0    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>50.5</b>                         | <b>26</b> |
| Innovation Output Sub-Index .....                | 49.2                                | 13        |
| Innovation Input Sub-Index .....                 | 51.8                                | 33        |
| Innovation Efficiency Ratio .....                | 0.9                                 | 7 ●       |
| Global Innovation Index 2014 (out of 143) .....  | 50.4                                | 25        |

|                                                       |             |           |
|-------------------------------------------------------|-------------|-----------|
| <b>1 Institutions.....</b>                            | <b>80.6</b> | <b>24</b> |
| 1.1 Political environment.....                        | 82.1        | 21        |
| 1.1.1 Political stability*.....                       | 89.0        | 18        |
| 1.1.2 Government effectiveness*.....                  | 75.1        | 24        |
| 1.2 Regulatory environment.....                       | 91.2        | 15        |
| 1.2.1 Regulatory quality*.....                        | 82.1        | 20        |
| 1.2.2 Rule of law*.....                               | 82.8        | 23        |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 8.0         | 1 ●       |
| 1.3 Business environment.....                         | 68.6        | 73        |
| 1.3.1 Ease of starting a business*.....               | 75.3        | 110 ○     |
| 1.3.2 Ease of resolving insolvency*.....              | 44.8        | 81        |
| 1.3.3 Ease of paying taxes*.....                      | 85.8        | 25        |

|                                                          |             |           |
|----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research.....</b>               | <b>39.3</b> | <b>40</b> |
| 2.1 Education.....                                       | 70.4        | 4 ●       |
| 2.1.1 Expenditure on education, % GDP.....               | 8.0         | 7 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | 66.4        | 2 ●       |
| 2.1.3 School life expectancy, years.....                 | 14.4        | 50        |
| 2.1.4 PISA scales in reading, maths, & science.....      | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary.....                | 8.5         | 12        |
| 2.2 Tertiary education.....                              | 32.3        | 68        |
| 2.2.1 Tertiary enrolment, % gross.....                   | 41.2        | 63        |
| 2.2.2 Graduates in science & engineering, %.....         | 19.1        | 59        |
| 2.2.3 Tertiary inbound mobility, %.....                  | 4.8         | 35        |
| 2.3 Research & development (R&D).....                    | 15.1        | 55        |
| 2.3.1 Researchers, FTE/mn pop.....                       | 2039.6      | 34        |
| 2.3.2 Gross expenditure on R&D, % GDP.....               | 0.9         | 38        |
| 2.3.3 QS university ranking, average score top 3*.....   | 0.0         | 73 ○      |

|                                                              |             |           |
|--------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure.....</b>                                 | <b>48.0</b> | <b>41</b> |
| 3.1 Information & communication technologies (ICTs).....     | 58.0        | 44        |
| 3.1.1 ICT access*.....                                       | 89.8        | 7 ●       |
| 3.1.2 ICT use*.....                                          | 54.8        | 31        |
| 3.1.3 Government's online service*.....                      | 40.2        | 80        |
| 3.1.4 E-participation*.....                                  | 47.1        | 70        |
| 3.2 General infrastructure.....                              | 28.6        | 77        |
| 3.2.1 Electricity output, kWh/cap.....                       | 5452.4      | 37        |
| 3.2.2 Logistics performance*.....                            | 48.2        | 49        |
| 3.2.3 Gross capital formation, % GDP.....                    | 16.9        | 117 ○     |
| 3.3 Ecological sustainability.....                           | 57.4        | 8         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 14.5        | 3 ●       |
| 3.3.2 Environmental performance*.....                        | 67.4        | 34        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 2.6         | 40        |

|                                                     |             |           |
|-----------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication.....</b>                 | <b>50.3</b> | <b>54</b> |
| 4.1 Credit.....                                     | 24.4        | 91 ○      |
| 4.1.1 Ease of getting credit*.....                  | 10.0        | 133 ○     |
| 4.1.2 Domestic credit to private sector, % GDP..... | 119.3       | 24        |
| 4.1.3 Microfinance gross loans, % GDP.....          | n/a         | n/a       |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment.....                                     | 36.0 | 65   |
| 4.2.1 Ease of protecting investors*.....                | 59.2 | 49   |
| 4.2.2 Market capitalization, % GDP.....                 | 41.0 | 49   |
| 4.2.3 Total value of stocks traded, % GDP.....          | 0.5  | 79 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a  |
| 4.3 Trade & competition.....                            | 90.7 | 4 ●  |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 1.0  | 9    |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 84.8 | 2 ●  |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication.....</b>                               | <b>40.8</b> | <b>38</b> |
| 5.1 Knowledge workers.....                                          | 49.0        | 37        |
| 5.1.1 Knowledge-intensive employment, %.....                        | 40.6        | 22        |
| 5.1.2 Firms offering formal training, % firms.....                  | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP.....                     | 0.5         | 33        |
| 5.1.4 GERD financed by business, %.....                             | 44.3        | 29        |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 12.2        | 53 ○      |
| 5.2 Innovation linkages.....                                        | 41.7        | 33        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 47.6        | 49        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 50.7        | 46        |
| 5.2.3 GERD financed by abroad, %.....                               | 20.2        | 22        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                  | 0.7         | 21        |
| 5.3 Knowledge absorption.....                                       | 31.8        | 77        |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 1.5         | 16        |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 13.4        | 19        |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.2         | 47        |
| 5.3.4 FDI net inflows, % GDP.....                                   | 19.4        | 140 ○     |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs.....</b>                  | <b>38.5</b> | <b>29</b> |
| 6.1 Knowledge creation.....                                       | 22.3        | 43        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....              | 1.0         | 62        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                   | 4.1         | 12        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....            | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....           | 17.1        | 45        |
| 6.1.5 Citable documents H index.....                              | 70.0        | 96 ○      |
| 6.2 Knowledge impact.....                                         | 51.8        | 16        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                     | -0.3        | 104 ○     |
| 6.2.2 New businesses/th pop. 15–64.....                           | 13.6        | 6         |
| 6.2.3 Computer software spending, % GDP.....                      | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....             | 34.3        | 6 ●       |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 0.3         | 100 ○     |
| 6.3 Knowledge diffusion.....                                      | 41.5        | 32        |
| 6.3.1 Royalty & license fees receipts, % total trade.....         | 0.2         | 35        |
| 6.3.2 High-tech exports less re-exports, % total trade.....       | 11.8        | 18        |
| 6.3.3 Comm., computer & info. services exp., % total trade.....   | 1.3         | 70        |
| 6.3.4 FDI net outflows, % GDP.....                                | 2.8         | 22        |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs.....</b>                                        | <b>59.8</b> | <b>6 ●</b> |
| 7.1 Intangible assets.....                                            | 66.3        | 5 ●        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                    | 132.5       | 4 ●        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                 | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 64.2        | 35         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 60.2        | 39         |
| 7.2 Creative goods & services.....                                    | 47.3        | 5 ●        |
| 7.2.1 Cultural & creative services exports, % total trade.....        | 0.2         | 50         |
| 7.2.2 National feature films/mn pop. 15–69.....                       | 6.2         | 31         |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 36.2        | 1 ●        |
| 7.2.5 Creative goods exports, % total trade.....                      | 0.9         | 40         |
| 7.3 Online creativity.....                                            | 59.3        | 18         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 100.0       | 1 ●        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 8.2         | 45         |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 9424.4      | 5 ●        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 1.2                 |
| GDP (US\$ billions) .....   | 13.2                |
| GDP per capita, PPP\$ ..... | 16,820.3            |
| Income group .....          | Upper-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                               | Score 0–100<br>or value (hard data) | Rank        |
|---------------------------------------------------------------|-------------------------------------|-------------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>39.2</b>                         | <b>49</b>   |
| Innovation Output Sub-Index .....                             | 31.0                                | 60          |
| Innovation Input Sub-Index .....                              | 47.5                                | 44          |
| Innovation Efficiency Ratio .....                             | 0.7                                 | 96          |
| Global Innovation Index 2014 (out of 143) .....               | 40.9                                | 40          |
| <b>1 Institutions .....</b>                                   | <b>80.7</b>                         | <b>23</b>   |
| 1.1 Political environment .....                               | 76.2                                | 31          |
| 1.1.1 Political stability* .....                              | 87.3                                | 22 ●        |
| 1.1.2 Government effectiveness* .....                         | 65.1                                | 36          |
| 1.2 Regulatory environment .....                              | 83.5                                | 23          |
| 1.2.1 Regulatory quality* .....                               | 72.8                                | 31          |
| 1.2.2 Rule of law* .....                                      | 71.6                                | 34          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 10.6                                | 39          |
| 1.3 Business environment .....                                | 82.4                                | 20 ●        |
| 1.3.1 Ease of starting a business* .....                      | 92.5                                | 26          |
| 1.3.2 Ease of resolving insolvency* .....                     | 62.8                                | 41          |
| 1.3.3 Ease of paying taxes* .....                             | 91.9                                | 13 ●        |
| <b>2 Human capital &amp; research .....</b>                   | <b>23.1</b>                         | <b>95</b>   |
| 2.1 Education .....                                           | 43.8                                | 72          |
| 2.1.1 Expenditure on education, % GDP .....                   | 3.7                                 | 96          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 19.0                                | 61          |
| 2.1.3 School life expectancy, years .....                     | 15.6                                | 31          |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a                                 | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 14.7                                | 62          |
| 2.2 Tertiary education .....                                  | 23.5                                | 92          |
| 2.2.1 Tertiary enrolment, % gross .....                       | 41.2                                | 64          |
| 2.2.2 Graduates in science & engineering, % .....             | n/a                                 | n/a         |
| 2.2.3 Tertiary inbound mobility, % .....                      | 2.9                                 | 55          |
| 2.3 Research & development (R&D) .....                        | 2.1                                 | 101         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓓ</sup> .....             | 183.9                               | 68          |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓓ</sup> .....      | 0.2                                 | 91 ○        |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0                                 | 73 ○        |
| <b>3 Infrastructure .....</b>                                 | <b>40.5</b>                         | <b>66</b>   |
| 3.1 Information & communication technologies (ICTs) .....     | 48.3                                | 66          |
| 3.1.1 ICT access* .....                                       | 63.2                                | 61          |
| 3.1.2 ICT use* .....                                          | 29.7                                | 72          |
| 3.1.3 Government's online service* .....                      | 47.2                                | 68          |
| 3.1.4 E-participation* .....                                  | 52.9                                | 59          |
| 3.2 General infrastructure .....                              | 23.6                                | 106         |
| 3.2.1 Electricity output, kWh/cap .....                       | 2168.2                              | 74          |
| 3.2.2 Logistics performance* .....                            | 18.0                                | 106 ○       |
| 3.2.3 Gross capital formation, % GDP .....                    | 23.2                                | 55          |
| 3.3 Ecological sustainability .....                           | 49.5                                | 30          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 13.9                                | 6 ●         |
| 3.3.2 Environmental performance* .....                        | 58.1                                | 53          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.6                                 | 74          |
| <b>4 Market sophistication .....</b>                          | <b>63.7</b>                         | <b>15 ●</b> |
| 4.1 Credit .....                                              | 50.0                                | 22 ●        |
| 4.1.1 Ease of getting credit* .....                           | 65.0                                | 34          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 108.1                               | 28          |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a         |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 54.0 | 19 ● |
| 4.2.1 Ease of protecting investors* .....               | 65.0 | 28   |
| 4.2.2 Market capitalization, % GDP .....                | 62.0 | 29   |
| 4.2.3 Total value of stocks traded, % GDP .....         | 2.6  | 57   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.8  | 1 ●  |
| 4.3 Trade & competition .....                           | 87.0 | 15 ● |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 0.8  | 5 ●  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 76.7 | 22   |

**5 Business sophistication .....** **29.5** **98**

|                                                                       |      |      |
|-----------------------------------------------------------------------|------|------|
| 5.1 Knowledge workers .....                                           | 24.6 | 106  |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓓ</sup> .....            | 20.4 | 71   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓓ</sup> .....      | 25.6 | 74   |
| 5.1.3 GERD performed by business, % of GDP .....                      | n/a  | n/a  |
| 5.1.4 GERD financed by business, % <sup>Ⓓ</sup> .....                 | 0.3  | 88 ○ |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓓ</sup> ..... | 7.4  | 72 ○ |
| 5.2 Innovation linkages .....                                         | 35.8 | 57   |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 36.5 | 98   |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 54.8 | 33   |
| 5.2.3 GERD financed by abroad, % <sup>Ⓓ</sup> .....                   | 6.4  | 59   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0  | 8 ●  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓓ</sup> .....      | 0.2  | 35   |
| 5.3 Knowledge absorption .....                                        | 28.0 | 100  |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 0.2  | 87   |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 5.1  | 98   |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 1.2  | 50   |
| 5.3.4 FDI net inflows, % GDP .....                                    | 2.2  | 77   |

**6 Knowledge & technology outputs .....** **27.2** **62**

|                                                                  |       |       |
|------------------------------------------------------------------|-------|-------|
| 6.1 Knowledge creation .....                                     | 3.5   | 123 ○ |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.1   | 102 ○ |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | n/a   | n/a   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a   | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 4.5   | 103   |
| 6.1.5 Citable documents H index .....                            | 45.0  | 120 ○ |
| 6.2 Knowledge impact .....                                       | 27.6  | 113 ○ |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | n/a   | n/a   |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 7.4   | 17 ●  |
| 6.2.3 Computer software spending, % GDP .....                    | n/a   | n/a   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 10.0  | 41    |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 9.2   | 80 ○  |
| 6.3 Knowledge diffusion .....                                    | 50.5  | 13 ●  |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.0   | 71    |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.1   | 113 ○ |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.6   | 27    |
| 6.3.4 FDI net outflows, % GDP .....                              | 210.2 | 1 ●   |

**7 Creative outputs .....** **34.8** **57**

|                                                                 |       |      |
|-----------------------------------------------------------------|-------|------|
| 7.1 Intangible assets .....                                     | 44.8  | 72   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 35.3  | 66   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a   | n/a  |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 58.9  | 57   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 56.9  | 53   |
| 7.2 Creative goods & services .....                             | 41.0  | 13 ● |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.0   | 74 ○ |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓓ</sup> .....   | 32.6  | 1 ●  |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a   | n/a  |
| 7.2.4 Printing & publishing output manufactures, % .....        | 3.2   | 10 ● |
| 7.2.5 Creative goods exports, % total trade .....               | 0.8   | 44   |
| 7.3 Online creativity .....                                     | 8.5   | 82   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 14.9  | 35   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 3.4   | 62   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 998.8 | 74   |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a   | n/a  |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Mexico

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 123.8                           |
| GDP (US\$ billions) .....   | 1,282.7                         |
| GDP per capita, PPP\$ ..... | 16,111.5                        |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>38.0</b>                         | <b>57</b> |
| Innovation Output Sub-Index .....                             | 32.2                                | 54        |
| Innovation Input Sub-Index .....                              | 43.9                                | 58        |
| Innovation Efficiency Ratio .....                             | 0.7                                 | 61        |
| Global Innovation Index 2014 (out of 143) .....               | 36.0                                | 66        |
| <b>1 Institutions .....</b>                                   | <b>61.5</b>                         | <b>66</b> |
| 1.1 Political environment .....                               | 47.8                                | 76        |
| 1.1.1 Political stability* .....                              | 45.9                                | 107 ○     |
| 1.1.2 Government effectiveness* .....                         | 49.7                                | 54        |
| 1.2 Regulatory environment .....                              | 59.2                                | 88        |
| 1.2.1 Regulatory quality* .....                               | 60.0                                | 51        |
| 1.2.2 Rule of law* .....                                      | 32.3                                | 96        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 22.0                                | 103       |
| 1.3 Business environment .....                                | 77.5                                | 34        |
| 1.3.1 Ease of starting a business* .....                      | 88.9                                | 57        |
| 1.3.2 Ease of resolving insolvency* .....                     | 72.6                                | 25 ●      |
| 1.3.3 Ease of paying taxes* .....                             | 71.2                                | 83        |
| <b>2 Human capital &amp; research .....</b>                   | <b>34.3</b>                         | <b>52</b> |
| 2.1 Education .....                                           | 38.9                                | 87        |
| 2.1.1 Expenditure on education, % GDP .....                   | 5.1                                 | 50        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 15.9                                | 78        |
| 2.1.3 School life expectancy, years .....                     | 13.1                                | 80        |
| 2.1.4 PISA scales in reading, maths, & science .....          | 417.3                               | 47 ○      |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 17.7                                | 77        |
| 2.2 Tertiary education .....                                  | 44.4                                | 34        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 29.0                                | 77        |
| 2.2.2 Graduates in science & engineering, % .....             | 26.9                                | 18 ●      |
| 2.2.3 Tertiary inbound mobility, % .....                      | n/a                                 | n/a       |
| 2.3 Research & development (R&D) .....                        | 19.8                                | 47        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....             | 386.4                               | 63        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 0.5                                 | 62        |
| 2.3.3 QS university ranking, average score top 3* .....       | 43.2                                | 33 ●      |
| <b>3 Infrastructure .....</b>                                 | <b>39.5</b>                         | <b>69</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 49.9                                | 59        |
| 3.1.1 ICT access* .....                                       | 48.0                                | 81        |
| 3.1.2 ICT use* .....                                          | 24.5                                | 85        |
| 3.1.3 Government's online service* .....                      | 66.1                                | 35        |
| 3.1.4 E-participation* .....                                  | 60.8                                | 45        |
| 3.2 General infrastructure .....                              | 30.4                                | 70        |
| 3.2.1 Electricity output, kWh/cap .....                       | 2518.7                              | 69        |
| 3.2.2 Logistics performance* .....                            | 49.3                                | 48        |
| 3.2.3 Gross capital formation, % GDP .....                    | 21.9                                | 69        |
| 3.3 Ecological sustainability .....                           | 38.4                                | 66        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 8.7                                 | 44        |
| 3.3.2 Environmental performance* .....                        | 55.0                                | 59        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.5                                 | 79        |
| <b>4 Market sophistication .....</b>                          | <b>47.0</b>                         | <b>69</b> |
| 4.1 Credit .....                                              | 30.0                                | 75        |
| 4.1.1 Ease of getting credit* .....                           | 80.0                                | 11 ●      |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 30.6                                | 99        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 0.1                                 | 66        |

|                                                                |      |      |
|----------------------------------------------------------------|------|------|
| 4.2 Investment .....                                           | 30.2 | 96   |
| 4.2.1 Ease of protecting investors* .....                      | 57.5 | 60   |
| 4.2.2 Market capitalization, % GDP .....                       | 44.3 | 45   |
| 4.2.3 Total value of stocks traded, % GDP .....                | 10.0 | 39   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | 0.0  | 62 ○ |
| 4.3 Trade & competition .....                                  | 80.7 | 50   |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 2.2  | 47   |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 68.9 | 62   |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>36.9</b> | <b>56</b> |
| 5.1 Knowledge workers .....                                         | 37.1        | 72        |
| 5.1.1 Knowledge-intensive employment, % .....                       | 19.1        | 77        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 50.8        | 27        |
| 5.1.3 GERD performed by business, % of GDP .....                    | 0.2         | 51        |
| 5.1.4 GERD financed by business, % .....                            | 31.7        | 46        |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 8.2         | 68 ○      |
| 5.2 Innovation linkages .....                                       | 23.4        | 108 ○     |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 49.5        | 42        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 52.5        | 42        |
| 5.2.3 GERD financed by abroad, % .....                              | 0.7         | 93 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 82 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 66        |
| 5.3 Knowledge absorption .....                                      | 50.4        | 13 ●      |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.4         | 65        |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 17.7        | 9 ●       |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a         | n/a       |
| 5.3.4 FDI net inflows, % GDP .....                                  | 3.0         | 64        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>29.4</b> | <b>50</b> |
| 6.1 Knowledge creation .....                                     | 8.4         | 83        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.6         | 73        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.1         | 58        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 0.3         | 43        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 5.5         | 95        |
| 6.1.5 Citable documents H index .....                            | 261.0       | 33 ●      |
| 6.2 Knowledge impact .....                                       | 32.4        | 96        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 0.3         | 92 ○      |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 0.9         | 73        |
| 6.2.3 Computer software spending, % GDP .....                    | 0.2         | 70 ○      |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 2.6         | 87        |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 43.7        | 12 ●      |
| 6.3 Knowledge diffusion .....                                    | 47.5        | 22 ●      |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.6         | 23 ●      |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 14.4        | 10 ●      |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | n/a         | n/a       |
| 6.3.4 FDI net outflows, % GDP .....                              | 1.0         | 53        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>35.0</b> | <b>56</b> |
| 7.1 Intangible assets .....                                     | 43.9        | 78        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 37.4        | 65        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 56.9        | 65        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 54.7        | 61        |
| 7.2 Creative goods & services .....                             | 29.3        | 38        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.0         | 70 ○      |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 1.5         | 66        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 8.0         | 39        |
| 7.2.4 Printing & publishing output manufactures, % .....        | 0.6         | 88 ○      |
| 7.2.5 Creative goods exports, % total trade .....               | 9.8         | 5 ●       |
| 7.3 Online creativity .....                                     | 22.8        | 60        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 3.1         | 71        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 3.6         | 60        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 1479.0      | 65        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 73.7        | 48        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 3.5                 |
| GDP (US\$ billions) .....   | 7.9                 |
| GDP per capita, PPP\$ ..... | 3,926.9             |
| Income group .....          | Lower-middle income |
| Region .....                | Europe              |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>40.5</b>                         | <b>44</b> |
| Innovation Output Sub-Index .....                             | 40.1                                | 31        |
| Innovation Input Sub-Index .....                              | 41.0                                | 74        |
| Innovation Efficiency Ratio .....                             | 1.0                                 | 5 ●       |
| Global Innovation Index 2014 (out of 143) .....               | 40.7                                | 43        |
| <b>1 Institutions .....</b>                                   | <b>59.0</b>                         | <b>75</b> |
| 1.1 Political environment .....                               | 47.0                                | 78        |
| 1.1.1 Political stability* .....                              | 63.3                                | 68        |
| 1.1.2 Government effectiveness* .....                         | 30.6                                | 92        |
| 1.2 Regulatory environment .....                              | 56.1                                | 98        |
| 1.2.1 Regulatory quality* .....                               | 45.5                                | 79        |
| 1.2.2 Rule of law* .....                                      | 36.7                                | 84        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 22.6                                | 104       |
| 1.3 Business environment .....                                | 74.0                                | 53        |
| 1.3.1 Ease of starting a business* .....                      | 92.2                                | 30        |
| 1.3.2 Ease of resolving insolvency* .....                     | 53.3                                | 56        |
| 1.3.3 Ease of paying taxes* .....                             | 76.6                                | 57        |
| <b>2 Human capital &amp; research .....</b>                   | <b>27.6</b>                         | <b>74</b> |
| 2.1 Education .....                                           | 55.8                                | 26 ●      |
| 2.1.1 Expenditure on education, % GDP .....                   | 8.3                                 | 5 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 37.8                                | 9 ●       |
| 2.1.3 School life expectancy, years .....                     | 11.9                                | 94        |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a                                 | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 9.6                                 | 24 ●      |
| 2.2 Tertiary education .....                                  | 21.5                                | 100       |
| 2.2.1 Tertiary enrolment, % gross .....                       | 41.3                                | 62        |
| 2.2.2 Graduates in science & engineering, % .....             | n/a                                 | n/a       |
| 2.2.3 Tertiary inbound mobility, % .....                      | 1.9                                 | 67        |
| 2.3 Research & development (R&D) .....                        | 5.7                                 | 78        |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 752.2                               | 53        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 0.4                                 | 73        |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0                                 | 73 ○      |
| <b>3 Infrastructure .....</b>                                 | <b>36.0</b>                         | <b>82</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 55.1                                | 48        |
| 3.1.1 ICT access* .....                                       | 65.6                                | 55        |
| 3.1.2 ICT use* .....                                          | 39.4                                | 57        |
| 3.1.3 Government's online service* .....                      | 52.8                                | 60        |
| 3.1.4 E-participation* .....                                  | 62.7                                | 40        |
| 3.2 General infrastructure .....                              | 24.1                                | 104       |
| 3.2.1 Electricity output, kWh/cap .....                       | 1629.8                              | 83        |
| 3.2.2 Logistics performance* .....                            | 25.1                                | 89        |
| 3.2.3 Gross capital formation, % GDP .....                    | 22.7                                | 57        |
| 3.3 Ecological sustainability .....                           | 28.9                                | 98        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 4.0                                 | 108 ○     |
| 3.3.2 Environmental performance* .....                        | 53.4                                | 66        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.5                                 | 84        |
| <b>4 Market sophistication .....</b>                          | <b>50.6</b>                         | <b>52</b> |
| 4.1 Credit .....                                              | 36.6                                | 51        |
| 4.1.1 Ease of getting credit* .....                           | 70.0                                | 22        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 39.7                                | 85        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 2.3                                 | 23        |

|                                                                     |             |             |
|---------------------------------------------------------------------|-------------|-------------|
| 4.2 Investment .....                                                | 38.9        | 56          |
| 4.2.1 Ease of protecting investors* .....                           | 58.3        | 54          |
| 4.2.2 Market capitalization, % GDP .....                            | n/a         | n/a         |
| 4.2.3 Total value of stocks traded, % GDP <sup>Ⓔ</sup> .....        | 0.2         | 88 ○        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                      | n/a         | n/a         |
| 4.3 Trade & competition .....                                       | 76.2        | 72          |
| 4.3.1 Applied tariff rate, weighted mean, % .....                   | 2.6         | 53          |
| 4.3.2 Intensity of local competition <sup>†</sup> .....             | 61.4        | 95          |
| <b>5 Business sophistication .....</b>                              | <b>31.7</b> | <b>83</b>   |
| 5.1 Knowledge workers .....                                         | 36.8        | 74          |
| 5.1.1 Knowledge-intensive employment, % .....                       | 30.0        | 47          |
| 5.1.2 Firms offering formal training, % firms .....                 | 32.8        | 56          |
| 5.1.3 GERD performed by business, % of GDP .....                    | 0.1         | 66 ○        |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a         |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 13.9        | 42          |
| 5.2 Innovation linkages .....                                       | 20.9        | 121 ○       |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 29.0        | 120 ○       |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 23.2        | 133 ○       |
| 5.2.3 GERD financed by abroad, % .....                              | 11.8        | 39          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.1         | 37          |
| 5.3 Knowledge absorption .....                                      | 37.4        | 52          |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.5         | 56          |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 7.0         | 65          |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 1.8         | 21 ●        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 3.2         | 61          |
| <b>6 Knowledge &amp; technology outputs .....</b>                   | <b>39.6</b> | <b>26 ●</b> |
| 6.1 Knowledge creation .....                                        | 43.2        | 20 ●        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....               | 4.0         | 25          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                    | 0.2         | 52          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....             | 12.6        | 1 ●         |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....            | 13.8        | 55          |
| 6.1.5 Citable documents H index .....                               | 68.0        | 97          |
| 6.2 Knowledge impact .....                                          | 42.6        | 45          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                      | 5.3         | 4 ●         |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓔ</sup> .....               | 1.6         | 53          |
| 6.2.3 Computer software spending, % GDP .....                       | n/a         | n/a         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....              | 7.2         | 48          |
| 6.2.5 High- & medium-high-tech manufactures, % .....                | 8.3         | 83 ○        |
| 6.3 Knowledge diffusion .....                                       | 33.0        | 47          |
| 6.3.1 Royalty & license fees receipts, % total trade .....          | 0.1         | 50          |
| 6.3.2 High-tech exports less re-exports, % total trade .....        | 0.3         | 85          |
| 6.3.3 Comm., computer & info. services exp., % total trade .....    | 4.1         | 11 ●        |
| 6.3.4 FDI net outflows, % GDP .....                                 | 0.5         | 66          |
| <b>7 Creative outputs .....</b>                                     | <b>40.5</b> | <b>38</b>   |
| 7.1 Intangible assets .....                                         | 68.1        | 3 ●         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                 | 176.7       | 1 ●         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....              | 4.2         | 1 ●         |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....             | 45.2        | 112 ○       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....       | 43.1        | 103 ○       |
| 7.2 Creative goods & services .....                                 | 21.7        | 62          |
| 7.2.1 Cultural & creative services exports, % total trade .....     | 0.8         | 23          |
| 7.2.2 National feature films/mn pop. 15–69 .....                    | 1.1         | 72          |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                | n/a         | n/a         |
| 7.2.4 Printing & publishing output manufactures, % .....            | 2.4         | 20 ●        |
| 7.2.5 Creative goods exports, % total trade .....                   | 0.1         | 99 ○        |
| 7.3 Online creativity .....                                         | 4.3         | 93          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....          | 2.9         | 73          |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                         | 4.0         | 59          |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                              | 812.6       | 83          |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                     | n/a         | n/a         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Mongolia

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 2.9                         |
| GDP (US\$ billions) .....   | 12.0                        |
| GDP per capita, PPP\$ ..... | 6,630.6                     |
| Income group .....          | Lower-middle income         |
| Region .....                | South East Asia and Oceania |

|                                                                        | Score 0–100<br>or value (hard data) | Rank      |
|------------------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b>                       | <b>36.4</b>                         | <b>66</b> |
| Innovation Output Sub-Index .....                                      | 27.6                                | 73        |
| Innovation Input Sub-Index .....                                       | 45.2                                | 53        |
| Innovation Efficiency Ratio .....                                      | 0.6                                 | 111       |
| Global Innovation Index 2014 (out of 143) .....                        | 37.5                                | 56        |
| <b>1 Institutions.....</b>                                             | <b>63.4</b>                         | <b>60</b> |
| 1.1 Political environment.....                                         | 51.6                                | 66        |
| 1.1.1 Political stability*.....                                        | 76.5                                | 44        |
| 1.1.2 Government effectiveness*.....                                   | 26.8                                | 103       |
| 1.2 Regulatory environment .....                                       | 68.9                                | 58        |
| 1.2.1 Regulatory quality*.....                                         | 40.2                                | 89        |
| 1.2.2 Rule of law*.....                                                | 37.8                                | 82        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....                  | 8.6                                 | 20 ●      |
| 1.3 Business environment.....                                          | 69.7                                | 66        |
| 1.3.1 Ease of starting a business*.....                                | 91.3                                | 37        |
| 1.3.2 Ease of resolving insolvency*.....                               | 43.9                                | 84        |
| 1.3.3 Ease of paying taxes*.....                                       | 73.8                                | 66        |
| <b>2 Human capital &amp; research.....</b>                             | <b>26.4</b>                         | <b>79</b> |
| 2.1 Education .....                                                    | 45.6                                | 66        |
| 2.1.1 Expenditure on education, % GDP .....                            | 5.5                                 | 42        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 17.8                                | 70        |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 14.6                                | 48        |
| 2.1.4 PISA scales in reading, maths, & science.....                    | n/a                                 | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 14.5                                | 58        |
| 2.2 Tertiary education.....                                            | 30.7                                | 73        |
| 2.2.1 Tertiary enrolment, % gross.....                                 | 62.3                                | 35        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> .....         | 17.6                                | 65        |
| 2.2.3 Tertiary inbound mobility, %.....                                | 0.6                                 | 89        |
| 2.3 Research & development (R&D).....                                  | 2.9                                 | 94        |
| 2.3.1 Researchers, FTE/mn pop. ....                                    | n/a                                 | n/a       |
| 2.3.2 Gross expenditure on R&D, % GDP .....                            | 0.3                                 | 81        |
| 2.3.3 QS university ranking, average score top 3*.....                 | 0.0                                 | 73 ○      |
| <b>3 Infrastructure.....</b>                                           | <b>43.5</b>                         | <b>52</b> |
| 3.1 Information & communication technologies (ICTs).....               | 48.7                                | 64        |
| 3.1.1 ICT access*.....                                                 | 47.9                                | 82        |
| 3.1.2 ICT use*.....                                                    | 16.9                                | 95        |
| 3.1.3 Government's online service*.....                                | 61.4                                | 43        |
| 3.1.4 E-participation*.....                                            | 68.6                                | 30        |
| 3.2 General infrastructure.....                                        | 54.7                                | 14 ●      |
| 3.2.1 Electricity output, kWh/cap.....                                 | 1720.0                              | 80        |
| 3.2.2 Logistics performance*.....                                      | 9.9                                 | 120 ○     |
| 3.2.3 Gross capital formation, % GDP.....                              | 54.3                                | 1 ●       |
| 3.3 Ecological sustainability .....                                    | 27.1                                | 111       |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....                | 5.2                                 | 94        |
| 3.3.2 Environmental performance*.....                                  | 44.7                                | 95        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....           | 0.1                                 | 127 ○     |
| <b>4 Market sophistication .....</b>                                   | <b>55.9</b>                         | <b>33</b> |
| 4.1 Credit.....                                                        | 58.7                                | 12 ●      |
| 4.1.1 Ease of getting credit*.....                                     | 55.0                                | 56        |
| 4.1.2 Domestic credit to private sector, % GDP.....                    | 67.3                                | 52        |
| 4.1.3 Microfinance gross loans, % GDP .....                            | 18.9                                | 1 ●       |

|                                                                              |             |           |
|------------------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                                         | 35.7        | 66        |
| 4.2.1 Ease of protecting investors*.....                                     | 67.5        | 17 ●      |
| 4.2.2 Market capitalization, % GDP .....                                     | 12.5        | 82        |
| 4.2.3 Total value of stocks traded, % GDP .....                              | 0.4         | 82        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                                | n/a         | n/a       |
| 4.3 Trade & competition .....                                                | 73.4        | 84        |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> .....               | 5.1         | 83        |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                      | 64.7        | 79        |
| <b>5 Business sophistication .....</b>                                       | <b>36.9</b> | <b>55</b> |
| 5.1 Knowledge workers.....                                                   | 41.9        | 56        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                   | 24.3        | 61        |
| 5.1.2 Firms offering formal training, % firms.....                           | 62.3        | 9 ●       |
| 5.1.3 GERD performed by business, % of GDP .....                             | 0.0         | 80 ○      |
| 5.1.4 GERD financed by business, % .....                                     | 8.3         | 71        |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> .....        | 15.4        | 36        |
| 5.2 Innovation linkages .....                                                | 24.1        | 106       |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....          | 33.1        | 111 ○     |
| 5.2.2 State of cluster development <sup>†</sup> .....                        | 30.8        | 128 ○     |
| 5.2.3 GERD financed by abroad, % .....                                       | 4.9         | 64        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                          | 0.0         | 20        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....             | 0.1         | 40        |
| 5.3 Knowledge absorption.....                                                | 44.8        | 28        |
| 5.3.1 Royalty & license fees payments, % total trade.....                    | 0.2         | 84        |
| 5.3.2 High-tech imports less re-imports, % total trade.....                  | 6.8         | 67        |
| 5.3.3 Comm., computer & info. services imp., % total trade.....              | 1.7         | 26        |
| 5.3.4 FDI net inflows, % GDP .....                                           | 18.7        | 6 ●       |
| <b>6 Knowledge &amp; technology outputs .....</b>                            | <b>23.8</b> | <b>85</b> |
| 6.1 Knowledge creation.....                                                  | 50.6        | 13 ●      |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....           | 5.4         | 20        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                             | n/a         | n/a       |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP <sup>Ⓐ</sup> .....         | 6.2         | 5 ●       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                      | 6.1         | 91        |
| 6.1.5 Citable documents H index.....                                         | 61.0        | 104       |
| 6.2 Knowledge impact.....                                                    | 4.5         | 132 ○     |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                | n/a         | n/a       |
| 6.2.2 New businesses/th pop. 15–64.....                                      | n/a         | n/a       |
| 6.2.3 Computer software spending, % GDP.....                                 | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                        | 0.5         | 122 ○     |
| 6.2.5 High- & medium-high-tech manufactures, % .....                         | 5.5         | 88 ○      |
| 6.3 Knowledge diffusion.....                                                 | 16.4        | 125 ○     |
| 6.3.1 Royalty & license fees receipts, % total trade.....                    | 0.0         | 91        |
| 6.3.2 High-tech exports less re-exports, % total trade.....                  | 0.4         | 83        |
| 6.3.3 Comm., computer & info. services exp., % total trade.....              | 0.2         | 110 ○     |
| 6.3.4 FDI net outflows, % GDP .....                                          | 0.4         | 73        |
| <b>7 Creative outputs .....</b>                                              | <b>31.3</b> | <b>74</b> |
| 7.1 Intangible assets .....                                                  | 49.3        | 50        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                           | 135.2       | 3 ●       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                        | 0.0         | 62 ○      |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                      | 52.2        | 81        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....                | 44.0        | 100       |
| 7.2 Creative goods & services.....                                           | 23.4        | 54        |
| 7.2.1 Cultural & creative services exports, % total trade <sup>Ⓐ</sup> ..... | 0.0         | 64        |
| 7.2.2 National feature films/mn pop. 15–69.....                              | 10.5        | 16 ●      |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                          | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, %.....                      | 2.9         | 12 ●      |
| 7.2.5 Creative goods exports, % total trade.....                             | 0.1         | 105       |
| 7.3 Online creativity.....                                                   | 3.4         | 100       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....                    | 0.7         | 109       |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                                   | 2.1         | 71        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                        | 984.7       | 75        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                               | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 0.6                 |
| GDP (US\$ billions) .....   | 4.5                 |
| GDP per capita, PPP\$ ..... | 12,412.0            |
| Income group .....          | Upper-middle income |
| Region .....                | Europe              |

|                                                              | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>41.2</b>                         | <b>41</b> |
| Innovation Output Sub-Index .....                            | 36.5                                | 40        |
| Innovation Input Sub-Index .....                             | 45.9                                | 50        |
| Innovation Efficiency Ratio .....                            | 0.8                                 | 29 ●      |
| Global Innovation Index 2014 (out of 143) .....              | 37.0                                | 59        |
| <b>1 Institutions.....</b>                                   | <b>69.5</b>                         | <b>47</b> |
| 1.1 Political environment.....                               | 60.9                                | 51        |
| 1.1.1 Political stability*.....                              | 76.1                                | 45        |
| 1.1.2 Government effectiveness*.....                         | 45.6                                | 60        |
| 1.2 Regulatory environment .....                             | 71.1                                | 48        |
| 1.2.1 Regulatory quality*.....                               | 49.1                                | 71        |
| 1.2.2 Rule of law*.....                                      | 48.2                                | 61        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 11.2                                | 42        |
| 1.3 Business environment.....                                | 76.6                                | 38        |
| 1.3.1 Ease of starting a business*.....                      | 90.1                                | 47        |
| 1.3.2 Ease of resolving insolvency*.....                     | 68.2                                | 31 ●      |
| 1.3.3 Ease of paying taxes*.....                             | 71.6                                | 77        |
| <b>2 Human capital &amp; research.....</b>                   | <b>35.9</b>                         | <b>49</b> |
| 2.1 Education .....                                          | 54.3                                | 33        |
| 2.1.1 Expenditure on education, % GDP .....                  | n/a                                 | n/a       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | n/a                                 | n/a       |
| 2.1.3 School life expectancy, years <sup>Ⓓ</sup> .....       | 15.2                                | 39        |
| 2.1.4 PISA scales in reading, maths, & science.....          | 413.9                               | 49 ○      |
| 2.1.5 Pupil-teacher ratio, secondary .....                   | n/a                                 | n/a       |
| 2.2 Tertiary education.....                                  | 47.2                                | 23        |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓓ</sup> .....         | 55.5                                | 46        |
| 2.2.2 Graduates in science & engineering, % .....            | n/a                                 | n/a       |
| 2.2.3 Tertiary inbound mobility, %.....                      | n/a                                 | n/a       |
| 2.3 Research & development (R&D).....                        | 6.2                                 | 77        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓓ</sup> .....            | 762.9                               | 52        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓓ</sup> .....     | 0.4                                 | 68        |
| 2.3.3 QS university ranking, average score top 3*.....       | 0.0                                 | 73 ○      |
| <b>3 Infrastructure.....</b>                                 | <b>39.3</b>                         | <b>70</b> |
| 3.1 Information & communication technologies (ICTs).....     | 53.2                                | 51        |
| 3.1.1 ICT access*.....                                       | 67.4                                | 51        |
| 3.1.2 ICT use*.....                                          | 33.7                                | 62        |
| 3.1.3 Government's online service*.....                      | 52.8                                | 60        |
| 3.1.4 E-participation*.....                                  | 58.8                                | 49        |
| 3.2 General infrastructure.....                              | 27.5                                | 84        |
| 3.2.1 Electricity output, kWh/cap.....                       | 4587.1                              | 47        |
| 3.2.2 Logistics performance*.....                            | 36.4                                | 64        |
| 3.2.3 Gross capital formation, % GDP.....                    | 19.6                                | 92        |
| 3.3 Ecological sustainability .....                          | 37.2                                | 73        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 6.2                                 | 85 ○      |
| 3.3.2 Environmental performance*.....                        | 55.5                                | 57        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 2.6                                 | 39        |
| <b>4 Market sophistication .....</b>                         | <b>51.0</b>                         | <b>50</b> |
| 4.1 Credit.....                                              | 38.3                                | 47        |
| 4.1.1 Ease of getting credit*.....                           | 90.0                                | 4 ●       |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 53.6                                | 62        |
| 4.1.3 Microfinance gross loans, % GDP .....                  | 0.7                                 | 42        |

|                                                                     |             |             |
|---------------------------------------------------------------------|-------------|-------------|
| 4.2 Investment .....                                                | 45.2        | 40          |
| 4.2.1 Ease of protecting investors*.....                            | 60.8        | 41          |
| 4.2.2 Market capitalization, % GDP.....                             | 94.6        | 17 ●        |
| 4.2.3 Total value of stocks traded, % GDP.....                      | 1.1         | 64          |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                       | n/a         | n/a         |
| 4.3 Trade & competition .....                                       | 69.5        | 97          |
| 4.3.1 Applied tariff rate, weighted mean, %.....                    | 2.6         | 54          |
| 4.3.2 Intensity of local competition <sup>†</sup> .....             | 48.0        | 128 ○       |
| <b>5 Business sophistication .....</b>                              | <b>34.0</b> | <b>71</b>   |
| 5.1 Knowledge workers.....                                          | 35.1        | 80          |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓓ</sup> .....          | 37.2        | 29          |
| 5.1.2 Firms offering formal training, % firms.....                  | 23.7        | 81 ○        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓓ</sup> .....       | 0.1         | 60          |
| 5.1.4 GERD financed by business, % <sup>Ⓓ</sup> .....               | 22.3        | 57          |
| 5.1.5 Females employed w/advanced degrees, % total.....             | n/a         | n/a         |
| 5.2 Innovation linkages .....                                       | 29.0        | 85          |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 49.1        | 45          |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 33.8        | 117 ○       |
| 5.2.3 GERD financed by abroad, % <sup>Ⓓ</sup> .....                 | 15.3        | 31          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | n/a         | n/a         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓓ</sup> .....    | 0.1         | 39          |
| 5.3 Knowledge absorption.....                                       | 38.0        | 47          |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 0.2         | 88 ○        |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 4.9         | 102 ○       |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.9         | 19 ●        |
| 5.3.4 FDI net inflows, % GDP.....                                   | 10.1        | 12 ●        |
| <b>6 Knowledge &amp; technology outputs .....</b>                   | <b>28.4</b> | <b>54</b>   |
| 6.1 Knowledge creation.....                                         | 13.5        | 63          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....               | 2.5         | 39          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                    | 0.1         | 63          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....              | n/a         | n/a         |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....             | 21.6        | 37          |
| 6.1.5 Citable documents H index.....                                | 23.0        | 138 ○       |
| 6.2 Knowledge impact.....                                           | 48.6        | 23          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                       | n/a         | n/a         |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓓ</sup> .....               | 10.7        | 11 ●        |
| 6.2.3 Computer software spending, % GDP.....                        | n/a         | n/a         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....               | 12.9        | 30 ●        |
| 6.2.5 High- & medium-high-tech manufactures, % .....                | n/a         | n/a         |
| 6.3 Knowledge diffusion.....                                        | 23.3        | 97 ○        |
| 6.3.1 Royalty & license fees receipts, % total trade.....           | 0.0         | 78          |
| 6.3.2 High-tech exports less re-exports, % total trade.....         | 0.3         | 89          |
| 6.3.3 Comm., computer & info. services exp., % total trade.....     | 2.0         | 39          |
| 6.3.4 FDI net outflows, % GDP .....                                 | 0.4         | 68          |
| <b>7 Creative outputs .....</b>                                     | <b>44.6</b> | <b>26 ●</b> |
| 7.1 Intangible assets .....                                         | 48.1        | 59          |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                  | n/a         | n/a         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....               | 1.5         | 20          |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....             | 53.8        | 75          |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....       | 48.9        | 82          |
| 7.2 Creative goods & services.....                                  | 28.8        | 41          |
| 7.2.1 Cultural & creative services exports, % total trade.....      | 1.3         | 7 ●         |
| 7.2.2 National feature films/mn pop. 15–69.....                     | n/a         | n/a         |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                 | n/a         | n/a         |
| 7.2.4 Printing & publishing output manufactures, %.....             | n/a         | n/a         |
| 7.2.5 Creative goods exports, % total trade.....                    | 0.1         | 85          |
| 7.3 Online creativity.....                                          | 53.3        | 20 ●        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....           | 1.7         | 94          |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                          | 100.0       | 1 ●         |
| 7.3.3 Wikipedia edits/pop. 15–69.....                               | 5218.3      | 24 ●        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                      | 73.1        | 52 ○        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 33.5                             |
| GDP (US\$ billions) .....   | 109.2                            |
| GDP per capita, PPP\$ ..... | 5,699.1                          |
| Income group .....          | Lower-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>33.2</b>                         | <b>78</b> |
| Innovation Output Sub-Index .....                | 25.8                                | 84        |
| Innovation Input Sub-Index .....                 | 40.5                                | 76        |
| Innovation Efficiency Ratio .....                | 0.6                                 | 102       |
| Global Innovation Index 2014 (out of 143) .....  | 32.2                                | 84        |

**1 Institutions.....57.6 78**

|                                                        |      |     |
|--------------------------------------------------------|------|-----|
| 1.1 Political environment.....                         | 45.6 | 80  |
| 1.1.1 Political stability*.....                        | 51.8 | 96  |
| 1.1.2 Government effectiveness*.....                   | 39.4 | 74  |
| 1.2 Regulatory environment .....                       | 58.5 | 92  |
| 1.2.1 Regulatory quality*.....                         | 43.3 | 84  |
| 1.2.2 Rule of law*.....                                | 41.0 | 74  |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 20.7 | 95  |
| 1.3 Business environment.....                          | 68.8 | 68  |
| 1.3.1 Ease of starting a business*.....                | 90.3 | 45  |
| 1.3.2 Ease of resolving insolvency*.....               | 38.5 | 104 |
| 1.3.3 Ease of paying taxes*.....                       | 77.7 | 54  |

**2 Human capital & research.....32.6 56**

|                                                                |       |      |
|----------------------------------------------------------------|-------|------|
| 2.1 Education .....                                            | 47.0  | 60   |
| 2.1.1 Expenditure on education, % GDP .....                    | 6.6   | 20 ● |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....       | 36.5  | 11 ● |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....         | 11.6  | 96   |
| 2.1.4 PISA scales in reading, maths, & science.....            | n/a   | n/a  |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....        | 18.7  | 80   |
| 2.2 Tertiary education.....                                    | 41.5  | 38 ● |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....           | 16.2  | 97   |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 34.9  | 5 ●  |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....          | 1.9   | 66   |
| 2.3 Research & development (R&D).....                          | 9.2   | 70   |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 864.5 | 48   |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.7   | 47   |
| 2.3.3 QS university ranking, average score top 3*.....         | 0.0   | 73 ○ |

**3 Infrastructure.....45.9 46**

|                                                              |       |      |
|--------------------------------------------------------------|-------|------|
| 3.1 Information & communication technologies (ICTs).....     | 57.7  | 45   |
| 3.1.1 ICT access*.....                                       | 56.3  | 69   |
| 3.1.2 ICT use*.....                                          | 25.0  | 83   |
| 3.1.3 Government's online service*.....                      | 69.3  | 30 ● |
| 3.1.4 E-participation*.....                                  | 80.4  | 17 ● |
| 3.2 General infrastructure.....                              | 39.2  | 42 ● |
| 3.2.1 Electricity output, kWh/cap.....                       | 840.6 | 96 ○ |
| 3.2.2 Logistics performance*.....                            | n/a   | n/a  |
| 3.2.3 Gross capital formation, % GDP.....                    | 34.3  | 12 ● |
| 3.3 Ecological sustainability .....                          | 40.7  | 55   |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 10.8  | 20 ● |
| 3.3.2 Environmental performance*.....                        | 51.9  | 72   |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.4   | 92   |

**4 Market sophistication.....45.1 82**

|                                                     |      |     |
|-----------------------------------------------------|------|-----|
| 4.1 Credit.....                                     | 22.9 | 100 |
| 4.1.1 Ease of getting credit*.....                  | 40.0 | 93  |
| 4.1.2 Domestic credit to private sector, % GDP..... | 70.2 | 49  |
| 4.1.3 Microfinance gross loans, % GDP.....          | 0.5  | 44  |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 32.1 | 83    |
| 4.2.1 Ease of protecting investors*.....                | 45.8 | 107 ○ |
| 4.2.2 Market capitalization, % GDP.....                 | 54.9 | 34 ●  |
| 4.2.3 Total value of stocks traded, % GDP.....          | 3.7  | 53    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a   |
| 4.3 Trade & competition .....                           | 80.3 | 52    |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 3.4  | 60    |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 72.4 | 46    |

**5 Business sophistication.....21.5 134 ○**

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers.....                                                    | 20.5 | 122 ○ |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                    | 6.8  | 106 ○ |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 24.7 | 79    |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                 | 0.2  | 47    |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                         | 29.9 | 49    |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a  | n/a   |
| 5.2 Innovation linkages .....                                                 | 20.0 | 124 ○ |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 37.2 | 93    |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 46.3 | 68    |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 1.7  | 82 ○  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                           | 0.0  | 70    |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.0  | 95 ○  |
| 5.3 Knowledge absorption.....                                                 | 24.1 | 121 ○ |
| 5.3.1 Royalty & license fees payments, % total trade.....                     | 0.2  | 89    |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | n/a  | n/a   |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.4  | 106 ○ |
| 5.3.4 FDI net inflows, % GDP.....                                             | 3.2  | 58    |

**6 Knowledge & technology outputs.....25.2 73**

|                                                                               |       |       |
|-------------------------------------------------------------------------------|-------|-------|
| 6.1 Knowledge creation.....                                                   | 7.9   | 86    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                          | 1.3   | 58    |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                               | 0.2   | 50    |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                        | n/a   | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                       | 6.4   | 89    |
| 6.1.5 Citable documents H index.....                                          | 109.0 | 67    |
| 6.2 Knowledge impact.....                                                     | 37.4  | 69    |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | 3.6   | 19 ●  |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓐ</sup> .....                         | 1.3   | 60    |
| 6.2.3 Computer software spending, % GDP.....                                  | 0.3   | 56    |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                         | 2.9   | 85    |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | 28.3  | 40    |
| 6.3 Knowledge diffusion.....                                                  | 30.2  | 57    |
| 6.3.1 Royalty & license fees receipts, % total trade.....                     | 0.0   | 101 ○ |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | n/a   | n/a   |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 2.7   | 23 ●  |
| 6.3.4 FDI net outflows, % GDP.....                                            | 0.4   | 67    |

**7 Creative outputs.....26.5 91**

|                                                                |       |      |
|----------------------------------------------------------------|-------|------|
| 7.1 Intangible assets .....                                    | 37.0  | 106  |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | 54.6  | 40   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | 0.3   | 48   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 51.3  | 85   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 44.6  | 97   |
| 7.2 Creative goods & services.....                             | 12.2  | 90   |
| 7.2.1 Cultural & creative services exports, % total trade..... | 0.6   | 32   |
| 7.2.2 National feature films/mn pop. 15–69.....                | 1.0   | 77   |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | 0.6   | 55 ○ |
| 7.2.4 Printing & publishing output manufactures, %.....        | 0.8   | 80 ○ |
| 7.2.5 Creative goods exports, % total trade.....               | n/a   | n/a  |
| 7.3 Online creativity.....                                     | 19.9  | 65   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 1.8   | 92   |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 0.8   | 88   |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 390.4 | 96   |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | 74.1  | 47   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 26.5               |
| GDP (US\$ billions) .....   | 16.7               |
| GDP per capita, PPP\$ ..... | 1,170.2            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>30.1</b>                         | <b>95</b> |
| Innovation Output Sub-Index .....                 | 23.3                                | 97        |
| Innovation Input Sub-Index .....                  | 36.9                                | 93        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 104       |
| Global Innovation Index 2014 (out of 143) .....   | 28.5                                | 107       |

|                                                                        |             |            |
|------------------------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                                            | <b>46.8</b> | <b>116</b> |
| 1.1 Political environment .....                                        | 40.7        | 99         |
| 1.1.1 Political stability* .....                                       | 57.5        | 82         |
| 1.1.2 Government effectiveness* .....                                  | 23.9        | 108        |
| 1.2 Regulatory environment .....                                       | 36.2        | 133 ○      |
| 1.2.1 Regulatory quality* .....                                        | 36.8        | 104        |
| 1.2.2 Rule of law* .....                                               | 25.1        | 117        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....                 | 37.5        | 134 ○      |
| 1.3 Business environment .....                                         | 63.5        | 89         |
| 1.3.1 Ease of starting a business* .....                               | 83.0        | 87         |
| 1.3.2 Ease of resolving insolvency* .....                              | 40.8        | 99         |
| 1.3.3 Ease of paying taxes* .....                                      | 66.9        | 97         |
| <b>2 Human capital &amp; research .....</b>                            | <b>21.1</b> | <b>102</b> |
| 2.1 Education .....                                                    | 51.4        | 44 ●       |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 5.0         | 57 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 86.0        | 1 ●        |
| 2.1.3 School life expectancy, years .....                              | 9.3         | 118        |
| 2.1.4 PISA scales in reading, maths, & science .....                   | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                             | 31.2        | 109        |
| 2.2 Tertiary education .....                                           | 8.3         | 125        |
| 2.2.1 Tertiary enrolment, % gross .....                                | 5.2         | 124 ○      |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> .....         | 8.9         | 99 ○       |
| 2.2.3 Tertiary inbound mobility, % .....                               | 0.3         | 102        |
| 2.3 Research & development (R&D) .....                                 | 3.7         | 87         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                      | 38.1        | 96         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.5         | 66         |
| 2.3.3 QS university ranking, average score top 3* .....                | 0.0         | 73 ○       |
| <b>3 Infrastructure .....</b>                                          | <b>28.5</b> | <b>105</b> |
| 3.1 Information & communication technologies (ICTs) .....              | 22.3        | 118        |
| 3.1.1 ICT access* .....                                                | 22.1        | 131 ○      |
| 3.1.2 ICT use* .....                                                   | 2.4         | 129 ○      |
| 3.1.3 Government's online service* .....                               | 31.5        | 98         |
| 3.1.4 E-participation* .....                                           | 33.3        | 92         |
| 3.2 General infrastructure .....                                       | 47.0        | 24 ●       |
| 3.2.1 Electricity output, kWh/cap .....                                | 601.8       | 104        |
| 3.2.2 Logistics performance* .....                                     | 3.5         | 128 ○      |
| 3.2.3 Gross capital formation, % GDP .....                             | 50.1        | 3 ●        |
| 3.3 Ecological sustainability .....                                    | 16.0        | 139 ○      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | 2.1         | 120 ○      |
| 3.3.2 Environmental performance* .....                                 | 30.0        | 128        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....          | 0.6         | 77         |
| <b>4 Market sophistication .....</b>                                   | <b>46.0</b> | <b>76</b>  |
| 4.1 Credit .....                                                       | 13.7        | 125        |
| 4.1.1 Ease of getting credit* .....                                    | 30.0        | 113        |
| 4.1.2 Domestic credit to private sector, % GDP .....                   | 28.9        | 101        |
| 4.1.3 Microfinance gross loans, % GDP .....                            | 0.2         | 53         |

|                                                                               |             |             |
|-------------------------------------------------------------------------------|-------------|-------------|
| 4.2 Investment .....                                                          | 51.7        | 23          |
| 4.2.1 Ease of protecting investors* .....                                     | 51.7        | 83          |
| 4.2.2 Market capitalization, % GDP .....                                      | n/a         | n/a         |
| 4.2.3 Total value of stocks traded, % GDP .....                               | n/a         | n/a         |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                                | n/a         | n/a         |
| 4.3 Trade & competition .....                                                 | 72.7        | 86          |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> .....                | 4.8         | 78          |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                       | 61.9        | 93          |
| <b>5 Business sophistication .....</b>                                        | <b>41.9</b> | <b>36 ●</b> |
| 5.1 Knowledge workers .....                                                   | 16.9        | 128         |
| 5.1.1 Knowledge-intensive employment, % .....                                 | n/a         | n/a         |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 22.1        | 85          |
| 5.1.3 GERD performed by business, % of GDP .....                              | n/a         | n/a         |
| 5.1.4 GERD financed by business, % .....                                      | n/a         | n/a         |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> .....         | 0.5         | 86 ○        |
| 5.2 Innovation linkages .....                                                 | 57.9        | 5 ●         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 38.0        | 86          |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 42.5        | 82          |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 78.1        | 1 ●         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 36 ●        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a         | n/a         |
| 5.3 Knowledge absorption .....                                                | 51.0        | 12 ●        |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 102         |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 14.4        | 16 ●        |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.7         | 79          |
| 5.3.4 FDI net inflows, % GDP .....                                            | 42.1        | 1 ●         |
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>29.0</b> | <b>52 ●</b> |
| 6.1 Knowledge creation .....                                                  | 6.5         | 92          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a         |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 5.5         | 94          |
| 6.1.5 Citable documents H index .....                                         | 60.0        | 105         |
| 6.2 Knowledge impact .....                                                    | 53.4        | 14          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 4.0         | 14 ●        |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | n/a         | n/a         |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a         | n/a         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.8         | 97          |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | n/a         | n/a         |
| 6.3 Knowledge diffusion .....                                                 | 27.0        | 71 ●        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 77          |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.8         | 69 ●        |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.4         | 95          |
| 6.3.4 FDI net outflows, % GDP .....                                           | 3.3         | 19 ●        |
| <b>7 Creative outputs .....</b>                                               | <b>17.6</b> | <b>128</b>  |
| 7.1 Intangible assets .....                                                   | 33.7        | 119         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                           | n/a         | n/a         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                        | 0.1         | 58          |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                       | 44.1        | 115         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....                 | 39.4        | 119         |
| 7.2 Creative goods & services .....                                           | 2.9         | 120         |
| 7.2.1 Cultural & creative services exports, % total trade .....               | 0.1         | 55          |
| 7.2.2 National feature films/mn pop. 15–69 .....                              | n/a         | n/a         |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                          | n/a         | n/a         |
| 7.2.4 Printing & publishing output manufactures, % .....                      | n/a         | n/a         |
| 7.2.5 Creative goods exports, % total trade .....                             | 0.0         | 117         |
| 7.3 Online creativity .....                                                   | 0.1         | 134 ○       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....                    | 0.0         | 137 ○       |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                                   | 0.1         | 119         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                        | 27.5        | 129         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                               | n/a         | n/a         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Myanmar

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 53.7                        |
| GDP (US\$ billions) .....   | 62.8                        |
| GDP per capita, PPP\$ ..... | 1,866.9                     |
| Income group .....          | Low income                  |
| Region .....                | South East Asia and Oceania |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>20.3</b>                         | <b>138</b> |
| Innovation Output Sub-Index .....                 | 16.6                                | 130        |
| Innovation Input Sub-Index .....                  | 23.9                                | 139        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 75 ●       |
| Global Innovation Index 2014 (out of 143) .....   | 19.6                                | 140        |

|                                                                   |             |             |
|-------------------------------------------------------------------|-------------|-------------|
| <b>1 Institutions .....</b>                                       | <b>33.3</b> | <b>137</b>  |
| 1.1 Political environment .....                                   | 18.1        | 137         |
| 1.1.1 Political stability* .....                                  | 35.6        | 122         |
| 1.1.2 Government effectiveness* .....                             | 0.6         | 140 ○       |
| 1.2 Regulatory environment .....                                  | 43.6        | 124         |
| 1.2.1 Regulatory quality* .....                                   | 7.6         | 138         |
| 1.2.2 Rule of law* .....                                          | 15.2        | 134         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....            | 20.2        | 92 ●        |
| 1.3 Business environment .....                                    | 38.3        | 139         |
| 1.3.1 Ease of starting a business* .....                          | 22.9        | 141 ○       |
| 1.3.2 Ease of resolving insolvency* .....                         | 23.5        | 134         |
| 1.3.3 Ease of paying taxes* .....                                 | 68.6        | 91 ●        |
| <b>2 Human capital &amp; research .....</b>                       | <b>22.7</b> | <b>97 ●</b> |
| 2.1 Education .....                                               | 15.4        | 140 ○       |
| 2.1.1 Expenditure on education, % GDP .....                       | 0.8         | 129 ○       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....         | n/a         | n/a         |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....            | 8.6         | 125         |
| 2.1.4 PISA scales in reading, maths, & science .....              | n/a         | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....           | 34.1        | 114         |
| 2.2 Tertiary education .....                                      | 52.6        | 14 ●        |
| 2.2.1 Tertiary enrolment, % gross .....                           | 13.4        | 102 ●       |
| 2.2.2 Graduates in science & engineering, % .....                 | 47.1        | 2 ●         |
| 2.2.3 Tertiary inbound mobility, % .....                          | 0.0         | 116 ○       |
| 2.3 Research & development (R&D) .....                            | 0.0         | 128 ○       |
| 2.3.1 Researchers, FTE/mn pop. ....                               | n/a         | n/a         |
| 2.3.2 Gross expenditure on R&D, % GDP .....                       | n/a         | n/a         |
| 2.3.3 QS university ranking, average score top 3* .....           | 0.0         | 73 ○        |
| <b>3 Infrastructure .....</b>                                     | <b>16.2</b> | <b>139</b>  |
| 3.1 Information & communication technologies (ICTs) .....         | 7.4         | 139         |
| 3.1.1 ICT access* .....                                           | 18.5        | 136 ○       |
| 3.1.2 ICT use* .....                                              | 0.8         | 136 ○       |
| 3.1.3 Government's online service* .....                          | 2.4         | 138         |
| 3.1.4 E-participation* .....                                      | 7.8         | 137         |
| 3.2 General infrastructure .....                                  | 19.3        | 122         |
| 3.2.1 Electricity output, kWh/cap .....                           | 203.3       | 114         |
| 3.2.2 Logistics performance* .....                                | 4.5         | 126         |
| 3.2.3 Gross capital formation, % GDP .....                        | 24.7        | 47 ●        |
| 3.3 Ecological sustainability .....                               | 21.8        | 130         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....          | 6.1         | 90 ●        |
| 3.3.2 Environmental performance* .....                            | 27.4        | 133         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....     | 0.0         | 136         |
| <b>4 Market sophistication .....</b>                              | <b>36.4</b> | <b>125</b>  |
| 4.1 Credit .....                                                  | 5.0         | 139         |
| 4.1.1 Ease of getting credit* .....                               | 10.0        | 133         |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 4.7         | 139 ○       |
| 4.1.3 Microfinance gross loans, % GDP .....                       | n/a         | n/a         |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 29.2 | 100s  |
| 4.2.1 Ease of protecting investors* .....                      | 29.2 | 139 ○ |
| 4.2.2 Market capitalization, % GDP .....                       | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP .....                | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a   |
| 4.3 Trade & competition .....                                  | 75.2 | 77 ●  |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 3.2  | 59 ●  |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 61.3 | 96 ●  |

|                                                                     |             |              |
|---------------------------------------------------------------------|-------------|--------------|
| <b>5 Business sophistication .....</b>                              | <b>11.0</b> | <b>141 ○</b> |
| 5.1 Knowledge workers .....                                         | 15.4        | 129          |
| 5.1.1 Knowledge-intensive employment, % .....                       | n/a         | n/a          |
| 5.1.2 Firms offering formal training, % firms .....                 | 15.1        | 100          |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a          |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a          |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a          |
| 5.2 Innovation linkages .....                                       | 17.5        | 132          |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 20.8        | 130          |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 28.2        | 130          |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 59 ●         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.0         | 92           |
| 5.3 Knowledge absorption .....                                      | 0.0         | 141 ○        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | n/a         | n/a          |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 2.0         | 129 ○        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a         | n/a          |
| 5.3.4 FDI net inflows, % GDP .....                                  | n/a         | n/a          |

|                                                                  |             |              |
|------------------------------------------------------------------|-------------|--------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>20.0</b> | <b>103 ●</b> |
| 6.1 Knowledge creation .....                                     | 1.5         | 138          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | n/a         | n/a          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | n/a         | n/a          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a         | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 0.3         | 140 ○        |
| 6.1.5 Citable documents H index .....                            | 41.0        | 126          |
| 6.2 Knowledge impact .....                                       | 58.4        | 4 ●          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 5.2         | 7 ●          |
| 6.2.2 New businesses/th pop. 15–64 .....                         | n/a         | n/a          |
| 6.2.3 Computer software spending, % GDP .....                    | n/a         | n/a          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 0.5         | 125          |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | n/a         | n/a          |
| 6.3 Knowledge diffusion .....                                    | 0.0         | 140 ○        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | n/a         | n/a          |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.0         | 128 ○        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | n/a         | n/a          |
| 6.3.4 FDI net outflows, % GDP .....                              | n/a         | n/a          |

|                                                                  |             |            |
|------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                  | <b>13.3</b> | <b>136</b> |
| 7.1 Intangible assets .....                                      | 25.7        | 133        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 21.9        | 79         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....           | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....          | 34.5        | 130        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....    | 31.5        | 129        |
| 7.2 Creative goods & services .....                              | 1.6         | 129        |
| 7.2.1 Cultural & creative services exports, % total trade .....  | n/a         | n/a        |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....    | 0.7         | 85         |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....             | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % .....         | n/a         | n/a        |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....   | 0.0         | 111        |
| 7.3 Online creativity .....                                      | 0.1         | 138        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....       | 0.0         | 138        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                      | 0.0         | 135        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                           | 21.1        | 133        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                  | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 2.3                 |
| GDP (US\$ billions) .....   | 13.4                |
| GDP per capita, PPP\$ ..... | 8,603.1             |
| Income group .....          | Upper-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                                        | Score 0–100<br>or value (hard data) | Rank       |
|------------------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b>                       | <b>28.1</b>                         | <b>107</b> |
| Innovation Output Sub-Index .....                                      | 19.1                                | 119        |
| Innovation Input Sub-Index .....                                       | 37.2                                | 91         |
| Innovation Efficiency Ratio .....                                      | 0.5                                 | 126 ○      |
| Global Innovation Index 2014 (out of 143) .....                        | 28.5                                | 108        |
| <b>1 Institutions.....</b>                                             | <b>67.9</b>                         | <b>53</b>  |
| 1.1 Political environment.....                                         | 66.9                                | 47 ●       |
| 1.1.1 Political stability*.....                                        | 87.1                                | 23 ●       |
| 1.1.2 Government effectiveness*.....                                   | 46.6                                | 59         |
| 1.2 Regulatory environment .....                                       | 74.2                                | 43 ●       |
| 1.2.1 Regulatory quality*.....                                         | 49.2                                | 70         |
| 1.2.2 Rule of law*.....                                                | 54.3                                | 54         |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....                  | 9.6                                 | 32 ●       |
| 1.3 Business environment.....                                          | 62.6                                | 95         |
| 1.3.1 Ease of starting a business*.....                                | 68.7                                | 123 ○      |
| 1.3.2 Ease of resolving insolvency*.....                               | 45.5                                | 76         |
| 1.3.3 Ease of paying taxes*.....                                       | 73.6                                | 67         |
| <b>2 Human capital &amp; research.....</b>                             | <b>18.4</b>                         | <b>108</b> |
| 2.1 Education .....                                                    | 41.0                                | 83         |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 8.5                                 | 4 ●        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 15.8                                | 81         |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 11.3                                | 99         |
| 2.1.4 PISA scales in reading, maths, & science.....                    | n/a                                 | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 24.6                                | 93         |
| 2.2 Tertiary education.....                                            | 12.7                                | 119 ○      |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 9.3                                 | 115        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> .....         | 2.6                                 | 101 ○      |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....                  | 10.2                                | 16 ●       |
| 2.3 Research & development (R&D).....                                  | 1.6                                 | 110        |
| 2.3.1 Researchers, FTE/mn pop. ....                                    | n/a                                 | n/a        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.1                                 | 100        |
| 2.3.3 QS university ranking, average score top 3*.....                 | 0.0                                 | 73 ○       |
| <b>3 Infrastructure.....</b>                                           | <b>32.4</b>                         | <b>93</b>  |
| 3.1 Information & communication technologies (ICTs).....               | 30.4                                | 105        |
| 3.1.1 ICT access*.....                                                 | 39.3                                | 104        |
| 3.1.2 ICT use*.....                                                    | 16.7                                | 97         |
| 3.1.3 Government's online service*.....                                | 32.3                                | 95         |
| 3.1.4 E-participation*.....                                            | 33.3                                | 92         |
| 3.2 General infrastructure.....                                        | 28.0                                | 80         |
| 3.2.1 Electricity output, kWh/cap.....                                 | 727.0                               | 100        |
| 3.2.2 Logistics performance*.....                                      | 25.3                                | 88         |
| 3.2.3 Gross capital formation, % GDP.....                              | 27.3                                | 34 ●       |
| 3.3 Ecological sustainability .....                                    | 38.8                                | 64         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....                | 11.4                                | 18 ●       |
| 3.3.2 Environmental performance*.....                                  | 43.7                                | 100        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....           | 0.5                                 | 83         |
| <b>4 Market sophistication .....</b>                                   | <b>39.9</b>                         | <b>112</b> |
| 4.1 Credit.....                                                        | 23.2                                | 98         |
| 4.1.1 Ease of getting credit*.....                                     | 55.0                                | 56         |
| 4.1.2 Domestic credit to private sector, % GDP.....                    | 47.0                                | 69         |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> .....               | 0.0                                 | 75         |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 28.2 | 103  |
| 4.2.1 Ease of protecting investors*.....                | 53.3 | 79   |
| 4.2.2 Market capitalization, % GDP.....                 | 10.0 | 89   |
| 4.2.3 Total value of stocks traded, % GDP.....          | 0.2  | 95 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a  |
| 4.3 Trade & competition .....                           | 68.2 | 102  |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 6.9  | 101  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 60.7 | 100  |

**5 Business sophistication .....** **27.3** **109**

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers.....                                                    | 30.4 | 93    |
| 5.1.1 Knowledge-intensive employment, %.....                                  | 14.6 | 95    |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 44.5 | 37 ●  |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                 | 0.0  | 78 ○  |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                         | 19.8 | 61    |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a  | n/a   |
| 5.2 Innovation linkages .....                                                 | 26.2 | 95    |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 41.0 | 76    |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 46.8 | 65    |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 1.5  | 85 ○  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                           | 0.0  | 28 ●  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.1  | 44    |
| 5.3 Knowledge absorption.....                                                 | 25.3 | 112   |
| 5.3.1 Royalty & license fees payments, % total trade.....                     | 0.1  | 109 ○ |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 6.3  | 76    |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.5  | 87    |
| 5.3.4 FDI net inflows, % GDP.....                                             | 5.6  | 29 ●  |

**6 Knowledge & technology outputs .....** **8.5** **138** ○

|                                                                         |      |       |
|-------------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation.....                                             | 5.5  | 99    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                    | n/a  | n/a   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                         | 0.1  | 60    |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                  | n/a  | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                 | 6.7  | 86    |
| 6.1.5 Citable documents H index.....                                    | 62.0 | 102   |
| 6.2 Knowledge impact.....                                               | 4.2  | 133 ○ |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                           | n/a  | n/a   |
| 6.2.2 New businesses/th pop. 15–64.....                                 | 0.9  | 76    |
| 6.2.3 Computer software spending, % GDP.....                            | n/a  | n/a   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                   | 1.4  | 107   |
| 6.2.5 High- & medium-high-tech manufactures, %.....                     | n/a  | n/a   |
| 6.3 Knowledge diffusion.....                                            | 15.8 | 127 ○ |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> ..... | 0.0  | 112 ○ |
| 6.3.2 High-tech exports less re-exports, % total trade.....             | 1.1  | 62    |
| 6.3.3 Comm., computer & info. services exp., % total trade.....         | 0.2  | 116 ○ |
| 6.3.4 FDI net outflows, % GDP.....                                      | 0.2  | 82    |

**7 Creative outputs .....** **29.7** **80**

|                                                                |       |       |
|----------------------------------------------------------------|-------|-------|
| 7.1 Intangible assets .....                                    | 49.4  | 49    |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | n/a   | n/a   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | n/a   | n/a   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 51.2  | 88    |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 47.6  | 90    |
| 7.2 Creative goods & services.....                             | 16.1  | 81    |
| 7.2.1 Cultural & creative services exports, % total trade..... | n/a   | n/a   |
| 7.2.2 National feature films/mn pop. 15–69.....                | n/a   | n/a   |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | n/a   | n/a   |
| 7.2.4 Printing & publishing output manufactures, %.....        | n/a   | n/a   |
| 7.2.5 Creative goods exports, % total trade.....               | 0.6   | 53    |
| 7.3 Online creativity.....                                     | 4.0   | 95    |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 10.3  | 44 ●  |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 0.1   | 127 ○ |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 224.1 | 106   |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | n/a   | n/a   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Nepal

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 28.1                      |
| GDP (US\$ billions) .....   | 19.6                      |
| GDP per capita, PPP\$ ..... | 1,575.7                   |
| Income group .....          | Low income                |
| Region .....                | Central and Southern Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank         |
|---------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>21.1</b>                         | <b>135</b> ○ |
| Innovation Output Sub-Index .....                 | 12.1                                | 136 ○        |
| Innovation Input Sub-Index .....                  | 30.0                                | 127          |
| Innovation Efficiency Ratio .....                 | 0.4                                 | 134 ○        |
| Global Innovation Index 2014 (out of 143) .....   | 23.8                                | 136          |

|                                                        |             |            |
|--------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                            | <b>45.1</b> | <b>121</b> |
| 1.1 Political environment .....                        | 26.1        | 128 ○      |
| 1.1.1 Political stability* .....                       | 35.9        | 120        |
| 1.1.2 Government effectiveness* .....                  | 16.3        | 125        |
| 1.2 Regulatory environment .....                       | 44.1        | 123        |
| 1.2.1 Regulatory quality* .....                        | 24.8        | 122        |
| 1.2.2 Rule of law* .....                               | 27.5        | 110        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 27.2        | 116        |
| 1.3 Business environment .....                         | 65.0        | 85         |
| 1.3.1 Ease of starting a business* .....               | 83.0        | 84         |
| 1.3.2 Ease of resolving insolvency* .....              | 45.4        | 77 ●       |
| 1.3.3 Ease of paying taxes* .....                      | 66.5        | 100        |

|                                                                        |             |            |
|------------------------------------------------------------------------|-------------|------------|
| <b>2 Human capital &amp; research .....</b>                            | <b>16.0</b> | <b>117</b> |
| 2.1 Education .....                                                    | 31.4        | 113        |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 4.7         | 67 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 12.2        | 91         |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 12.4        | 87         |
| 2.1.4 PISA scales in reading, maths, & science .....                   | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                             | 29.2        | 106        |
| 2.2 Tertiary education .....                                           | 13.2        | 116        |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 14.5        | 100        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> .....         | 11.8        | 96 ○       |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....                  | 0.0         | 115 ○      |
| 2.3 Research & development (R&D) .....                                 | 3.5         | 89         |
| 2.3.1 Researchers, FTE/mn pop. ....                                    | n/a         | n/a        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.3         | 76         |
| 2.3.3 QS university ranking, average score top 3* .....                | 0.0         | 73 ○       |

|                                                               |             |            |
|---------------------------------------------------------------|-------------|------------|
| <b>3 Infrastructure .....</b>                                 | <b>24.1</b> | <b>116</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 20.3        | 121        |
| 3.1.1 ICT access* .....                                       | 27.0        | 121        |
| 3.1.2 ICT use* .....                                          | 9.2         | 113        |
| 3.1.3 Government's online service* .....                      | 15.7        | 126 ○      |
| 3.1.4 E-participation* .....                                  | 29.4        | 104        |
| 3.2 General infrastructure .....                              | 28.0        | 79 ●       |
| 3.2.1 Electricity output, kWh/cap .....                       | 129.3       | 118 ○      |
| 3.2.2 Logistics performance* .....                            | 21.8        | 99         |
| 3.2.3 Gross capital formation, % GDP .....                    | 28.9        | 28 ●       |
| 3.3 Ecological sustainability .....                           | 23.9        | 125        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 5.2         | 97         |
| 3.3.2 Environmental performance* .....                        | 37.0        | 116        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.1         | 123        |

|                                                          |             |            |
|----------------------------------------------------------|-------------|------------|
| <b>4 Market sophistication .....</b>                     | <b>37.9</b> | <b>121</b> |
| 4.1 Credit .....                                         | 20.9        | 109        |
| 4.1.1 Ease of getting credit* .....                      | 35.0        | 102        |
| 4.1.2 Domestic credit to private sector, % GDP .....     | 58.1        | 57 ●       |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> ..... | 0.8         | 40 ●       |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 31.7 | 87    |
| 4.2.1 Ease of protecting investors* .....               | 56.7 | 67 ●  |
| 4.2.2 Market capitalization, % GDP .....                | 21.7 | 66    |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.3  | 86    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a   |
| 4.3 Trade & competition .....                           | 61.0 | 125   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 11.6 | 128 ○ |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 62.8 | 91    |

|                                                                     |             |            |
|---------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                              | <b>27.1</b> | <b>111</b> |
| 5.1 Knowledge workers .....                                         | 21.8        | 116        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 4.3         | 109 ○      |
| 5.1.2 Firms offering formal training, % firms .....                 | 31.9        | 59 ●       |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a        |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a        |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a        |
| 5.2 Innovation linkages .....                                       | 29.1        | 84         |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 27.3        | 123 ○      |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 39.1        | 99         |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 52         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a        |
| 5.3 Knowledge absorption .....                                      | 30.3        | 90         |
| 5.3.1 Royalty & license fees payments, % total trade .....          | n/a         | n/a        |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 6.0         | 84         |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a         | n/a        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 0.4         | 125        |

|                                                                   |            |              |
|-------------------------------------------------------------------|------------|--------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>3.2</b> | <b>140</b> ○ |
| 6.1 Knowledge creation .....                                      | 6.7        | 90           |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 0.3        | 85           |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | n/a        | n/a          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | n/a        | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 7.4        | 78 ●         |
| 6.1.5 Citable documents H index .....                             | 80.0       | 89           |
| 6.2 Knowledge impact .....                                        | 2.8        | 137 ○        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | n/a        | n/a          |
| 6.2.2 New businesses/th pop. 15–64 .....                          | 0.7        | 82           |
| 6.2.3 Computer software spending, % GDP .....                     | n/a        | n/a          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 1.1        | 111          |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 1.4        | 98 ○         |
| 6.3 Knowledge diffusion .....                                     | 0.2        | 139 ○        |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | n/a        | n/a          |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 0.0        | 119 ○        |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | n/a        | n/a          |
| 6.3.4 FDI net outflows, % GDP .....                               | n/a        | n/a          |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                       | <b>21.1</b> | <b>118</b> |
| 7.1 Intangible assets .....                                           | 33.2        | 122        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 39.9        | 62         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 39.3        | 120        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 39.0        | 120        |
| 7.2 Creative goods & services .....                                   | 16.7        | 80         |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a         | n/a        |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | n/a         | n/a        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.7         | 39 ●       |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.3         | 73 ●       |
| 7.3 Online creativity .....                                           | 10.3        | 113        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 0.6         | 115        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 1.0         | 86         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 218.2       | 107        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 16.8        |
| GDP (US\$ billions) .....   | 866.4       |
| GDP per capita, PPP\$ ..... | 42,585.9    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>61.6</b>                         | <b>4 ●</b> |
| Innovation Output Sub-Index .....                             | 58.9                                | 3 ●        |
| Innovation Input Sub-Index .....                              | 64.2                                | 11         |
| Innovation Efficiency Ratio .....                             | 0.9                                 | 8          |
| Global Innovation Index 2014 (out of 143) .....               | 60.6                                | 5          |
| <b>1 Institutions .....</b>                                   | <b>91.9</b>                         | <b>7</b>   |
| 1.1 Political environment .....                               | 90.5                                | 10         |
| 1.1.1 Political stability* .....                              | 91.8                                | 12         |
| 1.1.2 Government effectiveness* .....                         | 89.2                                | 8          |
| 1.2 Regulatory environment .....                              | 97.0                                | 5 ●        |
| 1.2.1 Regulatory quality* .....                               | 94.8                                | 8          |
| 1.2.2 Rule of law* .....                                      | 95.8                                | 7          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 8.7                                 | 24         |
| 1.3 Business environment .....                                | 88.2                                | 9          |
| 1.3.1 Ease of starting a business* .....                      | 94.1                                | 20         |
| 1.3.2 Ease of resolving insolvency* .....                     | 83.8                                | 11         |
| 1.3.3 Ease of paying taxes* .....                             | 86.8                                | 22         |
| <b>2 Human capital &amp; research .....</b>                   | <b>51.7</b>                         | <b>17</b>  |
| 2.1 Education .....                                           | 58.2                                | 14         |
| 2.1.1 Expenditure on education, % GDP .....                   | 5.9                                 | 32         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 25.9                                | 33         |
| 2.1.3 School life expectancy, years .....                     | 17.9                                | 7          |
| 2.1.4 PISA scales in reading, maths, & science .....          | 518.8                               | 10         |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 13.9                                | 51 ○       |
| 2.2 Tertiary education .....                                  | 37.4                                | 52 ○       |
| 2.2.1 Tertiary enrolment, % gross .....                       | 77.3                                | 15         |
| 2.2.2 Graduates in science & engineering, % .....             | 14.4                                | 85 ○       |
| 2.2.3 Tertiary inbound mobility, % .....                      | 7.2                                 | 24         |
| 2.3 Research & development (R&D) .....                        | 59.5                                | 15         |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 4315.5                              | 15         |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 2.1                                 | 16         |
| 2.3.3 QS university ranking, average score top 3* .....       | 76.7                                | 12         |
| <b>3 Infrastructure .....</b>                                 | <b>60.5</b>                         | <b>13</b>  |
| 3.1 Information & communication technologies (ICTs) .....     | 89.1                                | 2 ●        |
| 3.1.1 ICT access* .....                                       | 89.3                                | 9          |
| 3.1.2 ICT use* .....                                          | 74.3                                | 12         |
| 3.1.3 Government's online service* .....                      | 92.9                                | 8          |
| 3.1.4 E-participation* .....                                  | 100.0                               | 1 ●        |
| 3.2 General infrastructure .....                              | 42.4                                | 34         |
| 3.2.1 Electricity output, kWh/cap .....                       | 5879.5                              | 33         |
| 3.2.2 Logistics performance* .....                            | 96.2                                | 2 ●        |
| 3.2.3 Gross capital formation, % GDP .....                    | 18.1                                | 108 ○      |
| 3.3 Ecological sustainability .....                           | 49.9                                | 28         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 7.9                                 | 52 ○       |
| 3.3.2 Environmental performance* .....                        | 77.8                                | 11         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 3.1                                 | 34         |
| <b>4 Market sophistication .....</b>                          | <b>61.8</b>                         | <b>17</b>  |
| 4.1 Credit .....                                              | 54.3                                | 18         |
| 4.1.1 Ease of getting credit* .....                           | 50.0                                | 65 ○       |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 178.0                               | 6 ●        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a        |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| 4.2 Investment .....                                                  | 42.2        | 48         |
| 4.2.1 Ease of protecting investors* .....                             | 51.7        | 83 ○       |
| 4.2.2 Market capitalization, % GDP .....                              | 79.1        | 20         |
| 4.2.3 Total value of stocks traded, % GDP .....                       | 53.6        | 16         |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                        | 0.1         | 21         |
| 4.3 Trade & competition .....                                         | 88.9        | 9          |
| 4.3.1 Applied tariff rate, weighted mean, % .....                     | 1.0         | 9          |
| 4.3.2 Intensity of local competition† .....                           | 81.1        | 12         |
| <b>5 Business sophistication .....</b>                                | <b>55.3</b> | <b>10</b>  |
| 5.1 Knowledge workers .....                                           | 61.3        | 19         |
| 5.1.1 Knowledge-intensive employment, % .....                         | 46.4        | 9          |
| 5.1.2 Firms offering formal training, % firms .....                   | n/a         | n/a        |
| 5.1.3 GERD performed by business, % of GDP .....                      | 1.2         | 18         |
| 5.1.4 GERD financed by business, % .....                              | 47.1        | 22         |
| 5.1.5 Females employed w/advanced degrees, % total .....              | 17.8        | 28         |
| 5.2 Innovation linkages .....                                         | 49.0        | 16         |
| 5.2.1 University/industry research collaboration† .....               | 73.0        | 9          |
| 5.2.2 State of cluster development† .....                             | 72.4        | 6 ●        |
| 5.2.3 GERD financed by abroad, % .....                                | 14.3        | 32         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 34 ○       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 1.3         | 13         |
| 5.3 Knowledge absorption .....                                        | 55.5        | 7          |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 4.2         | 1 ●        |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 12.6        | 22         |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 1.6         | 37         |
| 5.3.4 FDI net inflows, % GDP .....                                    | 4.0         | 39         |
| <b>6 Knowledge &amp; technology outputs .....</b>                     | <b>55.9</b> | <b>6 ●</b> |
| 6.1 Knowledge creation .....                                          | 55.2        | 11         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                 | 3.0         | 33         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                      | 5.3         | 9          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....               | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....              | 43.8        | 13         |
| 6.1.5 Citable documents H index .....                                 | 636.0       | 8          |
| 6.2 Knowledge impact .....                                            | 48.1        | 26         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                        | 0.4         | 87 ○       |
| 6.2.2 New businesses/th pop. 15–64 .....                              | 4.4         | 26         |
| 6.2.3 Computer software spending, % GDP .....                         | 0.7         | 7          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                | 14.6        | 26         |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓔ</sup> .....     | 41.2        | 20         |
| 6.3 Knowledge diffusion .....                                         | 64.5        | 5 ●        |
| 6.3.1 Royalty & license fees receipts, % total trade .....            | 5.3         | 2 ●        |
| 6.3.2 High-tech exports less re-exports, % total trade .....          | 13.3        | 13         |
| 6.3.3 Comm., computer & info. services exp., % total trade .....      | 2.0         | 40         |
| 6.3.4 FDI net outflows, % GDP .....                                   | 4.9         | 9          |
| <b>7 Creative outputs .....</b>                                       | <b>61.9</b> | <b>4 ●</b> |
| 7.1 Intangible assets .....                                           | 58.4        | 15         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 59.6        | 37 ○       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 1.8         | 15         |
| 7.1.3 ICTs & business model creation† .....                           | 76.6        | 5 ●        |
| 7.1.4 ICTs & organizational model creation† .....                     | 74.5        | 6 ●        |
| 7.2 Creative goods & services .....                                   | 42.2        | 9          |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.5         | 36 ○       |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 5.7         | 34         |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 49.9        | 12         |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓔ</sup> ..... | 1.8         | 32         |
| 7.2.5 Creative goods exports, % total trade .....                     | 5.6         | 8          |
| 7.3 Online creativity .....                                           | 88.6        | 2 ●        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 89.6        | 7          |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 100.0       | 1 ●        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 9406.7      | 6 ●        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 95.3        | 3 ●        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# New Zealand

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 4.6                         |
| GDP (US\$ billions) .....   | 198.1                       |
| GDP per capita, PPP\$ ..... | 31,692.2                    |
| Income group .....          | High income                 |
| Region .....                | South East Asia and Oceania |

|                                                                   | Score 0–100<br>or value (hard data) | Rank       |
|-------------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b>                 | <b>55.9</b>                         | <b>15</b>  |
| Innovation Output Sub-Index .....                                 | 48.7                                | 15         |
| Innovation Input Sub-Index .....                                  | 63.1                                | 13         |
| Innovation Efficiency Ratio .....                                 | 0.8                                 | 40         |
| Global Innovation Index 2014 (out of 143) .....                   | 54.5                                | 18         |
| <b>1 Institutions .....</b>                                       | <b>93.0</b>                         | <b>5 ●</b> |
| 1.1 Political environment .....                                   | 94.3                                | 4 ●        |
| 1.1.1 Political stability* .....                                  | 100.0                               | 1 ●        |
| 1.1.2 Government effectiveness* .....                             | 88.6                                | 9          |
| 1.2 Regulatory environment .....                                  | 98.3                                | 3 ●        |
| 1.2.1 Regulatory quality* .....                                   | 96.1                                | 5 ●        |
| 1.2.2 Rule of law* .....                                          | 97.1                                | 5 ●        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....            | 8.0                                 | 1 ●        |
| 1.3 Business environment .....                                    | 86.5                                | 13         |
| 1.3.1 Ease of starting a business* .....                          | 100.0                               | 1 ●        |
| 1.3.2 Ease of resolving insolvency* .....                         | 71.6                                | 26         |
| 1.3.3 Ease of paying taxes* .....                                 | 88.0                                | 21         |
| <b>2 Human capital &amp; research .....</b>                       | <b>52.9</b>                         | <b>16</b>  |
| 2.1 Education .....                                               | 62.1                                | 10         |
| 2.1.1 Expenditure on education, % GDP .....                       | 7.4                                 | 11         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....         | 25.2                                | 37         |
| 2.1.3 School life expectancy, years .....                         | 19.2                                | 2 ●        |
| 2.1.4 PISA scales in reading, maths, & science .....              | 509.2                               | 16         |
| 2.1.5 Pupil-teacher ratio, secondary .....                        | 14.4                                | 57 ○       |
| 2.2 Tertiary education .....                                      | 52.0                                | 16         |
| 2.2.1 Tertiary enrolment, % gross .....                           | 79.8                                | 11         |
| 2.2.2 Graduates in science & engineering, % .....                 | 18.8                                | 61 ○       |
| 2.2.3 Tertiary inbound mobility, % .....                          | 15.8                                | 10         |
| 2.3 Research & development (R&D) .....                            | 44.6                                | 23         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                 | 3692.9                              | 23         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....          | 1.3                                 | 29         |
| 2.3.3 QS university ranking, average score top 3* .....           | 59.7                                | 18         |
| <b>3 Infrastructure .....</b>                                     | <b>56.3</b>                         | <b>20</b>  |
| 3.1 Information & communication technologies (ICTs) .....         | 77.9                                | 14         |
| 3.1.1 ICT access* .....                                           | 77.9                                | 27         |
| 3.1.2 ICT use* .....                                              | 71.0                                | 15         |
| 3.1.3 Government's online service* .....                          | 84.3                                | 15         |
| 3.1.4 E-participation* .....                                      | 78.4                                | 19         |
| 3.2 General infrastructure .....                                  | 46.3                                | 27         |
| 3.2.1 Electricity output, kWh/cap .....                           | 9456.3                              | 15         |
| 3.2.2 Logistics performance* .....                                | 75.6                                | 22         |
| 3.2.3 Gross capital formation, % GDP .....                        | 22.1                                | 66         |
| 3.3 Ecological sustainability .....                               | 44.7                                | 47         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....          | 6.4                                 | 82 ○       |
| 3.3.2 Environmental performance* .....                            | 76.4                                | 16         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....     | 1.8                                 | 49         |
| <b>4 Market sophistication .....</b>                              | <b>67.6</b>                         | <b>8</b>   |
| 4.1 Credit .....                                                  | 73.8                                | 3 ●        |
| 4.1.1 Ease of getting credit* .....                               | 100.0                               | 1 ●        |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 145.4                               | 15         |
| 4.1.3 Microfinance gross loans, % GDP .....                       | n/a                                 | n/a        |

|                                                                              |             |           |
|------------------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                                         | 43.5        | 44        |
| 4.2.1 Ease of protecting investors* .....                                    | 81.7        | 1 ●       |
| 4.2.2 Market capitalization, % GDP .....                                     | 46.5        | 41        |
| 4.2.3 Total value of stocks traded, % GDP .....                              | 14.6        | 31        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                               | 0.1         | 22        |
| 4.3 Trade & competition .....                                                | 85.5        | 25        |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> .....               | 1.6         | 42        |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                      | 76.5        | 24        |
| <b>5 Business sophistication .....</b>                                       | <b>45.8</b> | <b>26</b> |
| 5.1 Knowledge workers .....                                                  | 55.1        | 29        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                   | 42.9        | 17        |
| 5.1.2 Firms offering formal training, % firms .....                          | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                | 0.6         | 32        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                        | 40.0        | 38        |
| 5.1.5 Females employed w/advanced degrees, % total .....                     | 20.8        | 20        |
| 5.2 Innovation linkages .....                                                | 41.5        | 34        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....          | 65.1        | 16        |
| 5.2.2 State of cluster development <sup>†</sup> .....                        | 50.1        | 50        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                          | 6.3         | 60 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                         | 0.0         | 7         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                          | 0.5         | 25        |
| 5.3 Knowledge absorption .....                                               | 40.9        | 38        |
| 5.3.1 Royalty & license fees payments, % total trade .....                   | 1.9         | 10        |
| 5.3.2 High-tech imports less re-imports, % total trade .....                 | 9.5         | 40        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....             | 1.3         | 42        |
| 5.3.4 FDI net inflows, % GDP .....                                           | 0.5         | 122 ○     |
| <b>6 Knowledge &amp; technology outputs .....</b>                            | <b>42.0</b> | <b>20</b> |
| 6.1 Knowledge creation .....                                                 | 54.8        | 12        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                        | 10.6        | 6 ●       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                             | 2.2         | 19        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                      | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                     | 51.9        | 7 ●       |
| 6.1.5 Citable documents H index .....                                        | 318.0       | 26        |
| 6.2 Knowledge impact .....                                                   | 45.8        | 35        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                               | 0.8         | 81 ○      |
| 6.2.2 New businesses/th pop. 15–64 .....                                     | 15.1        | 1 ●       |
| 6.2.3 Computer software spending, % GDP .....                                | 0.3         | 33        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                       | 8.1         | 46        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....            | 14.8        | 66 ○      |
| 6.3 Knowledge diffusion .....                                                | 25.4        | 84 ○      |
| 6.3.1 Royalty & license fees receipts, % total trade .....                   | 0.6         | 22        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                 | 1.5         | 55        |
| 6.3.3 Comm., computer & info. services exp., % total trade .....             | 1.2         | 76 ○      |
| 6.3.4 FDI net outflows, % GDP .....                                          | -0.9        | 120 ○     |
| <b>7 Creative outputs .....</b>                                              | <b>55.4</b> | <b>10</b> |
| 7.1 Intangible assets .....                                                  | 63.0        | 9         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                          | 95.2        | 15        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                       | 2.1         | 12        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                      | 72.8        | 15        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....                | 69.5        | 15        |
| 7.2 Creative goods & services .....                                          | 29.2        | 39        |
| 7.2.1 Cultural & creative services exports, % total trade <sup>Ⓐ</sup> ..... | 0.9         | 17        |
| 7.2.2 National feature films/mn pop. 15–69 .....                             | 7.9         | 24        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                         | 44.6        | 16        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> .....        | 2.0         | 28        |
| 7.2.5 Creative goods exports, % total trade .....                            | 0.3         | 69 ○      |
| 7.3 Online creativity .....                                                  | 66.3        | 13        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....                   | 39.9        | 21        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                                  | 78.4        | 12        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                       | 7816.3      | 10        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                              | 89.2        | 15        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 6.2                             |
| GDP (US\$ billions) .....   | 11.7                            |
| GDP per capita, PPP\$ ..... | 4,758.0                         |
| Income group .....          | Lower-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>23.5</b>                         | <b>130</b> |
| Innovation Output Sub-Index .....                 | 15.0                                | 133 ○      |
| Innovation Input Sub-Index .....                  | 31.9                                | 120        |
| Innovation Efficiency Ratio .....                 | 0.5                                 | 130        |
| Global Innovation Index 2014 (out of 143) .....   | 25.5                                | 125        |

|                                                                        |             |              |
|------------------------------------------------------------------------|-------------|--------------|
| <b>1 Institutions .....</b>                                            | <b>51.9</b> | <b>100</b>   |
| 1.1 Political environment .....                                        | 38.7        | 104          |
| 1.1.1 Political stability* .....                                       | 58.0        | 81 ●         |
| 1.1.2 Government effectiveness* .....                                  | 19.3        | 118          |
| 1.2 Regulatory environment .....                                       | 60.7        | 84           |
| 1.2.1 Regulatory quality* .....                                        | 39.7        | 91           |
| 1.2.2 Rule of law* .....                                               | 30.4        | 101          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....                 | 14.9        | 64 ●         |
| 1.3 Business environment .....                                         | 56.5        | 113          |
| 1.3.1 Ease of starting a business* .....                               | 80.3        | 98           |
| 1.3.2 Ease of resolving insolvency* .....                              | 39.6        | 102          |
| 1.3.3 Ease of paying taxes* .....                                      | 49.5        | 125          |
| <b>2 Human capital &amp; research .....</b>                            | <b>10.4</b> | <b>139</b> ○ |
| 2.1 Education .....                                                    | 20.9        | 134 ○        |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 4.4         | 75           |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 7.3         | 107 ○        |
| 2.1.3 School life expectancy, years .....                              | n/a         | n/a          |
| 2.1.4 PISA scales in reading, maths, & science .....                   | n/a         | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 30.8        | 107          |
| 2.2 Tertiary education .....                                           | n/a         | n/a          |
| 2.2.1 Tertiary enrolment, % gross .....                                | n/a         | n/a          |
| 2.2.2 Graduates in science & engineering, % .....                      | n/a         | n/a          |
| 2.2.3 Tertiary inbound mobility, % .....                               | n/a         | n/a          |
| 2.3 Research & development (R&D) .....                                 | 0.0         | 128 ○        |
| 2.3.1 Researchers, FTE/mn pop. ....                                    | n/a         | n/a          |
| 2.3.2 Gross expenditure on R&D, % GDP .....                            | n/a         | n/a          |
| 2.3.3 QS university ranking, average score top 3* .....                | 0.0         | 73 ○         |
| <b>3 Infrastructure .....</b>                                          | <b>22.7</b> | <b>126</b>   |
| 3.1 Information & communication technologies (ICTs) .....              | 16.5        | 130          |
| 3.1.1 ICT access* .....                                                | 39.8        | 102          |
| 3.1.2 ICT use* .....                                                   | 6.8         | 117          |
| 3.1.3 Government's online service* .....                               | 9.4         | 135 ○        |
| 3.1.4 E-participation* .....                                           | 9.8         | 133 ○        |
| 3.2 General infrastructure .....                                       | 18.9        | 123          |
| 3.2.1 Electricity output, kWh/cap .....                                | 673.0       | 101          |
| 3.2.2 Logistics performance* .....                                     | 25.1        | 90           |
| 3.2.3 Gross capital formation, % GDP .....                             | 19.0        | 101          |
| 3.3 Ecological sustainability .....                                    | 32.8        | 87           |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | 6.8         | 70           |
| 3.3.2 Environmental performance* .....                                 | 50.3        | 80           |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....          | 0.4         | 97           |
| <b>4 Market sophistication .....</b>                                   | <b>41.6</b> | <b>104</b>   |
| 4.1 Credit .....                                                       | 28.8        | 78 ●         |
| 4.1.1 Ease of getting credit* .....                                    | 45.0        | 80           |
| 4.1.2 Domestic credit to private sector, % GDP .....                   | 28.8        | 102          |
| 4.1.3 Microfinance gross loans, % GDP .....                            | 2.8         | 19 ●         |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 23.6 | 131   |
| 4.2.1 Ease of protecting investors* .....                      | 33.3 | 134 ○ |
| 4.2.2 Market capitalization, % GDP .....                       | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP .....                | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | 0.0  | 45    |
| 4.3 Trade & competition .....                                  | 72.5 | 88    |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 2.3  | 49 ●  |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 52.9 | 124 ○ |

|                                                                     |             |             |
|---------------------------------------------------------------------|-------------|-------------|
| <b>5 Business sophistication .....</b>                              | <b>33.0</b> | <b>75</b> ● |
| 5.1 Knowledge workers .....                                         | 41.0        | 59          |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 14.8        | 94          |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 47.2        | 33 ●        |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a         |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a         |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a         |
| 5.2 Innovation linkages .....                                       | 26.9        | 93          |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 32.6        | 113         |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 37.5        | 107         |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 108 ○       |
| 5.3 Knowledge absorption .....                                      | 31.3        | 81 ●        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.0         | 118 ○       |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 6.5         | 73 ●        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a         | n/a         |
| 5.3.4 FDI net inflows, % GDP .....                                  | 7.5         | 17 ●        |

|                                                                  |             |            |
|------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>12.3</b> | <b>131</b> |
| 6.1 Knowledge creation .....                                     | 2.5         | 134 ○      |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.1         | 98         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | n/a         | n/a        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 2.1         | 125        |
| 6.1.5 Citable documents H index .....                            | 51.0        | 114        |
| 6.2 Knowledge impact .....                                       | 3.6         | 136 ○      |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | n/a         | n/a        |
| 6.2.2 New businesses/th pop. 15–64 .....                         | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP .....                    | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 1.8         | 96         |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | n/a         | n/a        |
| 6.3 Knowledge diffusion .....                                    | 30.8        | 53 ●       |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | n/a         | n/a        |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.1         | 104        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.4         | 29 ●       |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.9         | 54 ●       |

|                                                                 |             |            |
|-----------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                 | <b>17.7</b> | <b>127</b> |
| 7.1 Intangible assets .....                                     | 32.5        | 124        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 41.2        | 60         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 37.0        | 128 ○      |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 38.3        | 122        |
| 7.2 Creative goods & services .....                             | 2.8         | 122        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a         | n/a        |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....   | 0.3         | 100 ○      |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a         | n/a        |
| 7.2.5 Creative goods exports, % total trade .....               | 0.1         | 89         |
| 7.3 Online creativity .....                                     | 3.1         | 103        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 3.3         | 70 ●       |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 0.8         | 89         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 691.2       | 88         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Niger

## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 18.5               |
| GDP (US\$ billions) .....   | 8.0                |
| GDP per capita, PPP\$ ..... | 869.6              |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>21.2</b>                         | <b>134</b> |
| Innovation Output Sub-Index .....                | 9.6                                 | 139 ○      |
| Innovation Input Sub-Index .....                 | 32.9                                | 117        |
| Innovation Efficiency Ratio .....                | 0.3                                 | 139 ○      |
| Global Innovation Index 2014 (out of 143) .....  | 24.3                                | 131        |

|                                                       |             |            |
|-------------------------------------------------------|-------------|------------|
| <b>1 Institutions.....</b>                            | <b>45.1</b> | <b>119</b> |
| 1.1 Political environment.....                        | 27.2        | 126        |
| 1.1.1 Political stability*.....                       | 32.1        | 129        |
| 1.1.2 Government effectiveness*.....                  | 22.3        | 113        |
| 1.2 Regulatory environment .....                      | 58.9        | 90         |
| 1.2.1 Regulatory quality*.....                        | 31.6        | 110        |
| 1.2.2 Rule of law*.....                               | 27.8        | 108        |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 14.0        | 58 ●       |
| 1.3 Business environment.....                         | 49.2        | 135        |
| 1.3.1 Ease of starting a business*.....               | 54.4        | 137 ○      |
| 1.3.2 Ease of resolving insolvency*.....              | 36.0        | 112        |
| 1.3.3 Ease of paying taxes*.....                      | 57.1        | 119        |

|                                                                |             |            |
|----------------------------------------------------------------|-------------|------------|
| <b>2 Human capital &amp; research.....</b>                     | <b>11.7</b> | <b>135</b> |
| 2.1 Education .....                                            | 27.3        | 124        |
| 2.1.1 Expenditure on education, % GDP .....                    | 4.4         | 73         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....       | 46.7        | 4 ●        |
| 2.1.3 School life expectancy, years.....                       | 5.4         | 132 ○      |
| 2.1.4 PISA scales in reading, maths, & science.....            | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....        | 34.7        | 115        |
| 2.2 Tertiary education.....                                    | 7.8         | 127        |
| 2.2.1 Tertiary enrolment, % gross.....                         | 1.8         | 132 ○      |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 4.3         | 100 ○      |
| 2.2.3 Tertiary inbound mobility, %.....                        | 5.4         | 33 ●       |
| 2.3 Research & development (R&D).....                          | 0.0         | 127        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 7.7         | 104 ○      |
| 2.3.2 Gross expenditure on R&D, % GDP .....                    | n/a         | n/a        |
| 2.3.3 QS university ranking, average score top 3*.....         | 0.0         | 73 ○       |

|                                                              |             |           |
|--------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure.....</b>                                 | <b>32.7</b> | <b>91</b> |
| 3.1 Information & communication technologies (ICTs).....     | 14.1        | 136       |
| 3.1.1 ICT access*.....                                       | 19.5        | 133       |
| 3.1.2 ICT use*.....                                          | 0.9         | 134 ○     |
| 3.1.3 Government's online service*.....                      | 12.6        | 133       |
| 3.1.4 E-participation*.....                                  | 23.5        | 115       |
| 3.2 General infrastructure.....                              | 59.2        | 8 ●       |
| 3.2.1 Electricity output, kWh/cap.....                       | n/a         | n/a       |
| 3.2.2 Logistics performance*.....                            | 11.9        | 117       |
| 3.2.3 Gross capital formation, % GDP.....                    | 46.4        | 5 ●       |
| 3.3 Ecological sustainability .....                          | 24.8        | 120       |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | n/a         | n/a       |
| 3.3.2 Environmental performance*.....                        | 36.3        | 119       |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.2         | 111       |

|                                                     |             |            |
|-----------------------------------------------------|-------------|------------|
| <b>4 Market sophistication .....</b>                | <b>40.4</b> | <b>111</b> |
| 4.1 Credit.....                                     | 12.8        | 127        |
| 4.1.1 Ease of getting credit*.....                  | 30.0        | 113        |
| 4.1.2 Domestic credit to private sector, % GDP..... | 14.2        | 131        |
| 4.1.3 Microfinance gross loans, % GDP .....         | 0.4         | 45 ●       |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 42.5 | 45  |
| 4.2.1 Ease of protecting investors*.....                | 42.5 | 120 |
| 4.2.2 Market capitalization, % GDP.....                 | n/a  | n/a |
| 4.2.3 Total value of stocks traded, % GDP.....          | n/a  | n/a |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a |
| 4.3 Trade & competition .....                           | 66.0 | 112 |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 9.7  | 118 |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | n/a  | n/a |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                        | <b>34.4</b> | <b>70</b> |
| 5.1 Knowledge workers.....                                                    | 37.9        | 69        |
| 5.1.1 Knowledge-intensive employment, %.....                                  | n/a         | n/a       |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 32.1        | 57        |
| 5.1.3 GERD performed by business, % of GDP.....                               | n/a         | n/a       |
| 5.1.4 GERD financed by business, %.....                                       | n/a         | n/a       |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a         | n/a       |
| 5.2 Innovation linkages .....                                                 | 12.9        | 136 ○     |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | n/a         | n/a       |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | n/a         | n/a       |
| 5.2.3 GERD financed by abroad, %.....                                         | n/a         | n/a       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | 0.1         | 45 ●      |
| 5.3 Knowledge absorption.....                                                 | 52.5        | 10 ●      |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 99        |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 6.9         | 66 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 7.8         | 1 ●       |
| 5.3.4 FDI net inflows, % GDP .....                                            | 8.6         | 14 ●      |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>18.4</b> | <b>111</b> |
| 6.1 Knowledge creation.....                                                   | 4.8         | 106        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....                 | 0.1         | 71         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                        | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                       | 6.6         | 87         |
| 6.1.5 Citable documents H index.....                                          | 51.0        | 114        |
| 6.2 Knowledge impact.....                                                     | 34.0        | 89         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | 2.4         | 39 ●       |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓐ</sup> .....                         | 0.0         | 106 ○      |
| 6.2.3 Computer software spending, % GDP.....                                  | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                         | 0.7         | 121        |
| 6.2.5 High- & medium-high-tech manufactures, %.....                           | n/a         | n/a        |
| 6.3 Knowledge diffusion.....                                                  | 16.3        | 126        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 113 ○      |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.1         | 96         |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.7         | 88         |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 0.0         | 102        |

|                                                                |            |              |
|----------------------------------------------------------------|------------|--------------|
| <b>7 Creative outputs .....</b>                                | <b>0.8</b> | <b>140 ○</b> |
| 7.1 Intangible assets .....                                    | n/a        | n/a          |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | n/a        | n/a          |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | n/a        | n/a          |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | n/a        | n/a          |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | n/a        | n/a          |
| 7.2 Creative goods & services.....                             | 1.1        | 131          |
| 7.2.1 Cultural & creative services exports, % total trade..... | n/a        | n/a          |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....  | 0.7        | 84           |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | n/a        | n/a          |
| 7.2.4 Printing & publishing output manufactures, %.....        | n/a        | n/a          |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> ..... | 0.0        | 123          |
| 7.3 Online creativity.....                                     | 0.4        | 119          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 1.3        | 101          |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 0.0        | 137 ○        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 5.3        | 141 ○        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | n/a        | n/a          |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 178.5               |
| GDP (US\$ billions) .....   | 573.7               |
| GDP per capita, PPP\$ ..... | 2,997.4             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                              | Score 0–100<br>or value (hard data) | Rank         |
|--------------------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>23.7</b>                         | <b>128</b>   |
| Innovation Output Sub-Index .....                            | 21.1                                | 109          |
| Innovation Input Sub-Index .....                             | 26.3                                | 135          |
| Innovation Efficiency Ratio .....                            | 0.8                                 | 28 ●         |
| Global Innovation Index 2014 (out of 143) .....              | 27.8                                | 110          |
| <b>1 Institutions.....</b>                                   | <b>39.2</b>                         | <b>133</b>   |
| 1.1 Political environment.....                               | 13.4                                | 138 ○        |
| 1.1.1 Political stability*.....                              | 12.7                                | 138 ○        |
| 1.1.2 Government effectiveness*.....                         | 14.1                                | 129          |
| 1.2 Regulatory environment .....                             | 54.1                                | 104          |
| 1.2.1 Regulatory quality*.....                               | 29.0                                | 117          |
| 1.2.2 Rule of law*.....                                      | 16.8                                | 131          |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 15.4                                | 67 ●         |
| 1.3 Business environment.....                                | 50.0                                | 132          |
| 1.3.1 Ease of starting a business*.....                      | 77.1                                | 106          |
| 1.3.2 Ease of resolving insolvency*.....                     | 33.8                                | 114          |
| 1.3.3 Ease of paying taxes*.....                             | 39.2                                | 135          |
| <b>2 Human capital &amp; research.....</b>                   | <b>11.5</b>                         | <b>137 ○</b> |
| 2.1 Education .....                                          | 24.5                                | 128          |
| 2.1.1 Expenditure on education, % GDP .....                  | n/a                                 | n/a          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | n/a                                 | n/a          |
| 2.1.3 School life expectancy, years <sup>Ⓓ</sup> .....       | 9.0                                 | 121          |
| 2.1.4 PISA scales in reading, maths, & science.....          | n/a                                 | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓓ</sup> .....      | 33.1                                | 112          |
| 2.2 Tertiary education.....                                  | 8.3                                 | 124          |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓓ</sup> .....         | 10.4                                | 109          |
| 2.2.2 Graduates in science & engineering, % .....            | n/a                                 | n/a          |
| 2.2.3 Tertiary inbound mobility, %.....                      | n/a                                 | n/a          |
| 2.3 Research & development (R&D).....                        | 1.8                                 | 106          |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓓ</sup> .....            | 38.6                                | 95           |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓓ</sup> .....     | 0.2                                 | 87           |
| 2.3.3 QS university ranking, average score top 3*.....       | 0.0                                 | 73 ○         |
| <b>3 Infrastructure.....</b>                                 | <b>22.9</b>                         | <b>124</b>   |
| 3.1 Information & communication technologies (ICTs).....     | 26.3                                | 111          |
| 3.1.1 ICT access*.....                                       | 25.3                                | 125          |
| 3.1.2 ICT use*.....                                          | 16.0                                | 100          |
| 3.1.3 Government's online service*.....                      | 30.7                                | 101          |
| 3.1.4 E-participation*.....                                  | 33.3                                | 92           |
| 3.2 General infrastructure.....                              | 15.9                                | 128          |
| 3.2.1 Electricity output, kWh/cap.....                       | 170.0                               | 117          |
| 3.2.2 Logistics performance*.....                            | 33.0                                | 72           |
| 3.2.3 Gross capital formation, % GDP.....                    | 15.0                                | 123          |
| 3.3 Ecological sustainability .....                          | 26.5                                | 115          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 6.1                                 | 89           |
| 3.3.2 Environmental performance*.....                        | 39.2                                | 111          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.0                                 | 133 ○        |
| <b>4 Market sophistication .....</b>                         | <b>37.6</b>                         | <b>122</b>   |
| 4.1 Credit.....                                              | 21.2                                | 107          |
| 4.1.1 Ease of getting credit*.....                           | 60.0                                | 48 ●         |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 12.6                                | 132          |
| 4.1.3 Microfinance gross loans, % GDP .....                  | 0.1                                 | 71           |

|                                                                     |             |              |
|---------------------------------------------------------------------|-------------|--------------|
| 4.2 Investment .....                                                | 24.7        | 128          |
| 4.2.1 Ease of protecting investors*.....                            | 57.5        | 60 ●         |
| 4.2.2 Market capitalization, % GDP.....                             | 12.2        | 83           |
| 4.2.3 Total value of stocks traded, % GDP.....                      | 0.9         | 67           |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                       | 0.0         | 70           |
| 4.3 Trade & competition .....                                       | 67.1        | 105          |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓓ</sup> .....      | 10.6        | 125          |
| 4.3.2 Intensity of local competition <sup>†</sup> .....             | 71.3        | 48 ●         |
| <b>5 Business sophistication .....</b>                              | <b>20.3</b> | <b>137 ○</b> |
| 5.1 Knowledge workers.....                                          | 19.6        | 124          |
| 5.1.1 Knowledge-intensive employment, %.....                        | n/a         | n/a          |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓓ</sup> .....    | 25.7        | 73           |
| 5.1.3 GERD performed by business, % of GDP.....                     | n/a         | n/a          |
| 5.1.4 GERD financed by business, % <sup>Ⓓ</sup> .....               | 0.2         | 89 ○         |
| 5.1.5 Females employed w/advanced degrees, % total.....             | n/a         | n/a          |
| 5.2 Innovation linkages .....                                       | 17.8        | 129          |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 29.2        | 119          |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 46.2        | 69 ●         |
| 5.2.3 GERD financed by abroad, % <sup>Ⓓ</sup> .....                 | 1.0         | 88           |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | 0.0         | 90 ○         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓓ</sup> .....    | 0.0         | 102          |
| 5.3 Knowledge absorption.....                                       | 23.4        | 123          |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 0.3         | 75           |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 2.9         | 124 ○        |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.1         | 57 ●         |
| 5.3.4 FDI net inflows, % GDP.....                                   | 1.1         | 112          |
| <b>6 Knowledge &amp; technology outputs .....</b>                   | <b>19.8</b> | <b>105</b>   |
| 6.1 Knowledge creation.....                                         | 3.2         | 124          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....               | 0.1         | 107          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                    | 0.0         | 100 ○        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....              | n/a         | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....             | 2.1         | 124          |
| 6.1.5 Citable documents H index.....                                | 103.0       | 69 ●         |
| 6.2 Knowledge impact.....                                           | 31.2        | 99           |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                       | 3.5         | 22 ●         |
| 6.2.2 New businesses/th pop. 15–64.....                             | 0.9         | 71           |
| 6.2.3 Computer software spending, % GDP.....                        | 0.1         | 74 ○         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....               | 0.1         | 140 ○        |
| 6.2.5 High- & medium-high-tech manufactures, % .....                | n/a         | n/a          |
| 6.3 Knowledge diffusion.....                                        | 25.0        | 88           |
| 6.3.1 Royalty & license fees receipts, % total trade.....           | n/a         | n/a          |
| 6.3.2 High-tech exports less re-exports, % total trade .....        | 0.1         | 108          |
| 6.3.3 Comm., computer & info. services exp., % total trade.....     | n/a         | n/a          |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓓ</sup> .....                    | 0.3         | 74           |
| <b>7 Creative outputs .....</b>                                     | <b>22.5</b> | <b>111</b>   |
| 7.1 Intangible assets .....                                         | 38.0        | 100          |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                  | 19.9        | 83           |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....               | n/a         | n/a          |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....             | 55.8        | 69 ●         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....       | 48.2        | 85           |
| 7.2 Creative goods & services.....                                  | 13.8        | 85           |
| 7.2.1 Cultural & creative services exports, % total trade.....      | n/a         | n/a          |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓓ</sup> .....       | 11.2        | 14 ●         |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                 | 0.3         | 56           |
| 7.2.4 Printing & publishing output manufactures, %.....             | n/a         | n/a          |
| 7.2.5 Creative goods exports, % total trade.....                    | 0.2         | 78           |
| 7.3 Online creativity.....                                          | 0.3         | 125          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....           | 0.6         | 113          |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                          | 0.1         | 116          |
| 7.3.3 Wikipedia edits/pop. 15–69.....                               | 36.2        | 128          |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                      | 0.0         | 74 ○         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



# Norway

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 5.1         |
| GDP (US\$ billions) .....   | 500.2       |
| GDP per capita, PPP\$ ..... | 56,222.6    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>53.8</b>                         | <b>20</b> |
| Innovation Output Sub-Index .....                 | 45.4                                | 25        |
| Innovation Input Sub-Index .....                  | 62.2                                | 16        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 63        |
| Global Innovation Index 2014 (out of 143) .....   | 55.6                                | 14        |

|                                                                   |             |            |
|-------------------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                                       | <b>94.0</b> | <b>3 ●</b> |
| 1.1 Political environment .....                                   | 94.4        | 3 ●        |
| 1.1.1 Political stability* .....                                  | 97.1        | 7 ●        |
| 1.1.2 Government effectiveness* .....                             | 91.8        | 5 ●        |
| 1.2 Regulatory environment .....                                  | 97.3        | 4 ●        |
| 1.2.1 Regulatory quality* .....                                   | 91.9        | 12         |
| 1.2.2 Rule of law* .....                                          | 100.0       | 1 ●        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....            | 8.7         | 24         |
| 1.3 Business environment .....                                    | 90.2        | 5 ●        |
| 1.3.1 Ease of starting a business* .....                          | 94.0        | 21         |
| 1.3.2 Ease of resolving insolvency* .....                         | 85.6        | 7 ●        |
| 1.3.3 Ease of paying taxes* .....                                 | 90.8        | 14         |
| <b>2 Human capital &amp; research .....</b>                       | <b>49.9</b> | <b>21</b>  |
| 2.1 Education .....                                               | 54.2        | 34         |
| 2.1.1 Expenditure on education, % GDP .....                       | 6.6         | 21         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....         | 26.2        | 32         |
| 2.1.3 School life expectancy, years .....                         | 17.5        | 9          |
| 2.1.4 PISA scales in reading, maths, & science .....              | 495.9       | 23         |
| 2.1.5 Pupil-teacher ratio, secondary .....                        | n/a         | n/a        |
| 2.2 Tertiary education .....                                      | 40.1        | 45         |
| 2.2.1 Tertiary enrolment, % gross .....                           | 74.1        | 19         |
| 2.2.2 Graduates in science & engineering, % .....                 | 17.0        | 66 ○       |
| 2.2.3 Tertiary inbound mobility, % .....                          | 7.7         | 23         |
| 2.3 Research & development (R&D) .....                            | 55.3        | 18         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                 | 5575.0      | 8          |
| 2.3.2 Gross expenditure on R&D, % GDP .....                       | 1.7         | 22         |
| 2.3.3 QS university ranking, average score top 3* .....           | 58.9        | 19         |
| <b>3 Infrastructure .....</b>                                     | <b>64.8</b> | <b>3 ●</b> |
| 3.1 Information & communication technologies (ICTs) .....         | 77.1        | 16         |
| 3.1.1 ICT access* .....                                           | 83.6        | 15         |
| 3.1.2 ICT use* .....                                              | 80.7        | 5 ●        |
| 3.1.3 Government's online service* .....                          | 75.6        | 21         |
| 3.1.4 E-participation* .....                                      | 68.6        | 30         |
| 3.2 General infrastructure .....                                  | 68.1        | 1 ●        |
| 3.2.1 Electricity output, kWh/cap .....                           | 26317.9     | 1 ●        |
| 3.2.2 Logistics performance* .....                                | 91.7        | 7 ●        |
| 3.2.3 Gross capital formation, % GDP .....                        | 26.8        | 38         |
| 3.3 Ecological sustainability .....                               | 49.1        | 31         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....          | 7.3         | 59 ○       |
| 3.3.2 Environmental performance* .....                            | 78.0        | 10         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....     | 3.1         | 32         |
| <b>4 Market sophistication .....</b>                              | <b>56.5</b> | <b>29</b>  |
| 4.1 Credit .....                                                  | 41.3        | 43         |
| 4.1.1 Ease of getting credit* .....                               | 55.0        | 56         |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 86.2        | 37         |
| 4.1.3 Microfinance gross loans, % GDP .....                       | n/a         | n/a        |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                                  | 42.5        | 47        |
| 4.2.1 Ease of protecting investors* .....                             | 70.0        | 12        |
| 4.2.2 Market capitalization, % GDP .....                              | 50.6        | 38        |
| 4.2.3 Total value of stocks traded, % GDP .....                       | 26.6        | 27        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                        | 0.2         | 17        |
| 4.3 Trade & competition .....                                         | 85.7        | 23        |
| 4.3.1 Applied tariff rate, weighted mean, % .....                     | 0.3         | 2 ●       |
| 4.3.2 Intensity of local competition <sup>†</sup> .....               | 72.3        | 47        |
| <b>5 Business sophistication .....</b>                                | <b>45.8</b> | <b>27</b> |
| 5.1 Knowledge workers .....                                           | 62.1        | 17        |
| 5.1.1 Knowledge-intensive employment, % .....                         | 46.8        | 7         |
| 5.1.2 Firms offering formal training, % firms .....                   | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP .....                      | 0.9         | 23        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                 | 44.2        | 31        |
| 5.1.5 Females employed w/advanced degrees, % total .....              | 23.2        | 11        |
| 5.2 Innovation linkages .....                                         | 42.9        | 29        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 67.0        | 14        |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 67.7        | 13        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                   | 7.8         | 50 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 25        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 0.5         | 23        |
| 5.3 Knowledge absorption .....                                        | 32.4        | 71 ○      |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 0.4         | 62 ○      |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 5.9         | 85 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 1.7         | 31        |
| 5.3.4 FDI net inflows, % GDP .....                                    | -0.5        | 131 ○     |
| <b>6 Knowledge &amp; technology outputs .....</b>                     | <b>39.2</b> | <b>27</b> |
| 6.1 Knowledge creation .....                                          | 34.5        | 27        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                 | 3.3         | 29        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                      | 2.0         | 23        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....               | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....              | 33.6        | 24        |
| 6.1.5 Citable documents H index .....                                 | 362.0       | 20        |
| 6.2 Knowledge impact .....                                            | 49.1        | 22        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                        | 1.4         | 63 ○      |
| 6.2.2 New businesses/th pop. 15–64 .....                              | 7.8         | 16        |
| 6.2.3 Computer software spending, % GDP .....                         | 0.6         | 17        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                | 6.3         | 56        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....     | 37.9        | 24        |
| 6.3 Knowledge diffusion .....                                         | 33.9        | 43        |
| 6.3.1 Royalty & license fees receipts, % total trade .....            | 0.3         | 30        |
| 6.3.2 High-tech exports less re-exports, % total trade .....          | 3.2         | 41        |
| 6.3.3 Comm., computer & info. services exp., % total trade .....      | 1.5         | 61 ○      |
| 6.3.4 FDI net outflows, % GDP .....                                   | 2.3         | 30        |
| <b>7 Creative outputs .....</b>                                       | <b>51.7</b> | <b>16</b> |
| 7.1 Intangible assets .....                                           | 50.5        | 45        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 30.0        | 71 ○      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.9         | 32 ○      |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 74.9        | 11        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 75.1        | 3 ●       |
| 7.2 Creative goods & services .....                                   | 35.5        | 26        |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.6         | 34        |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 8.1         | 23        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 100.0       | 1 ●       |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.8         | 33        |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.5         | 59        |
| 7.3 Online creativity .....                                           | 70.1        | 10        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 62.6        | 15        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 76.5        | 13        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 7232.9      | 15        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 88.0        | 18        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 3.9                              |
| GDP (US\$ billions) .....   | 77.8                             |
| GDP per capita, PPP\$ ..... | 30,325.1                         |
| Income group .....          | High income                      |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>35.0</b>                         | <b>69</b> |
| Innovation Output Sub-Index .....                 | 28.2                                | 68        |
| Innovation Input Sub-Index .....                  | 41.8                                | 68        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 86        |
| Global Innovation Index 2014 (out of 143) .....   | 33.9                                | 75        |

|                                                                |             |            |
|----------------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                                    | <b>70.9</b> | <b>44</b>  |
| 1.1 Political environment .....                                | 61.5        | 50         |
| 1.1.1 Political stability* .....                               | 75.9        | 47         |
| 1.1.2 Government effectiveness* .....                          | 47.1        | 58         |
| 1.2 Regulatory environment .....                               | 80.7        | 29 ●       |
| 1.2.1 Regulatory quality* .....                                | 60.4        | 50         |
| 1.2.2 Rule of law* .....                                       | 62.4        | 41 ●       |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 8.0         | 1 ●        |
| 1.3 Business environment .....                                 | 70.4        | 62         |
| 1.3.1 Ease of starting a business* .....                       | 79.3        | 100        |
| 1.3.2 Ease of resolving insolvency* .....                      | 39.0        | 103        |
| 1.3.3 Ease of paying taxes* .....                              | 92.9        | 10 ●       |
| <b>2 Human capital &amp; research .....</b>                    | <b>29.1</b> | <b>68</b>  |
| 2.1 Education .....                                            | 33.6        | 105        |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....       | 4.2         | 80         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 15.9        | 79         |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....         | 13.6        | 66         |
| 2.1.4 PISA scales in reading, maths, & science .....           | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | n/a         | n/a        |
| 2.2 Tertiary education .....                                   | 49.4        | 20 ●       |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....           | 28.1        | 81         |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 38.9        | 4 ●        |
| 2.2.3 Tertiary inbound mobility, % .....                       | 2.6         | 58         |
| 2.3 Research & development (R&D) .....                         | 4.3         | 85         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 159.9       | 76         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.1         | 102 ○      |
| 2.3.3 QS university ranking, average score top 3* .....        | 8.3         | 63         |
| <b>3 Infrastructure .....</b>                                  | <b>45.4</b> | <b>48</b>  |
| 3.1 Information & communication technologies (ICTs) .....      | 65.4        | 36 ●       |
| 3.1.1 ICT access* .....                                        | 71.2        | 42 ●       |
| 3.1.2 ICT use* .....                                           | 46.5        | 44         |
| 3.1.3 Government's online service* .....                       | 73.2        | 26 ●       |
| 3.1.4 E-participation* .....                                   | 70.6        | 24 ●       |
| 3.2 General infrastructure .....                               | 42.3        | 35 ●       |
| 3.2.1 Electricity output, kWh/cap .....                        | 7558.0      | 26 ●       |
| 3.2.2 Logistics performance* .....                             | 42.5        | 57         |
| 3.2.3 Gross capital formation, % GDP .....                     | 28.4        | 30 ●       |
| 3.3 Ecological sustainability .....                            | 28.5        | 103        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 5.0         | 98         |
| 3.3.2 Environmental performance* .....                         | 47.8        | 88         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 0.5         | 81         |
| <b>4 Market sophistication .....</b>                           | <b>40.7</b> | <b>108</b> |
| 4.1 Credit .....                                               | 23.8        | 94         |
| 4.1.1 Ease of getting credit* .....                            | 35.0        | 102        |
| 4.1.2 Domestic credit to private sector, % GDP .....           | 42.2        | 80         |
| 4.1.3 Microfinance gross loans, % GDP .....                    | n/a         | n/a        |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 22.2 | 134 ○ |
| 4.2.1 Ease of protecting investors* .....               | 45.8 | 107   |
| 4.2.2 Market capitalization, % GDP .....                | 25.9 | 62    |
| 4.2.3 Total value of stocks traded, % GDP .....         | 3.4  | 54    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 66 ○  |
| 4.3 Trade & competition .....                           | 76.2 | 71    |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 4.1  | 65    |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 66.6 | 70    |

|                                                                     |             |              |
|---------------------------------------------------------------------|-------------|--------------|
| <b>5 Business sophistication .....</b>                              | <b>23.0</b> | <b>128</b> ○ |
| 5.1 Knowledge workers .....                                         | 3.4         | 139 ○        |
| 5.1.1 Knowledge-intensive employment, % .....                       | n/a         | n/a          |
| 5.1.2 Firms offering formal training, % firms .....                 | n/a         | n/a          |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.0         | 76 ○         |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....               | 4.6         | 75 ○         |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a          |
| 5.2 Innovation linkages .....                                       | 40.9        | 39 ●         |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 43.6        | 67           |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 49.8        | 51           |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 13 ●         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.0         | 74           |
| 5.3 Knowledge absorption .....                                      | 24.7        | 116          |
| 5.3.1 Royalty & license fees payments, % total trade .....          | n/a         | n/a          |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 2.9         | 125 ○        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a         | n/a          |
| 5.3.4 FDI net inflows, % GDP .....                                  | 2.0         | 83           |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>23.9</b> | <b>84</b> |
| 6.1 Knowledge creation .....                                      | 4.1         | 112       |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | n/a         | n/a       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....     | 0.0         | 92 ○      |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 3.8         | 110       |
| 6.1.5 Citable documents H index .....                             | 74.0        | 93        |
| 6.2 Knowledge impact .....                                        | 35.4        | 82        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | 2.6         | 36        |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓐ</sup> .....             | 1.7         | 49        |
| 6.2.3 Computer software spending, % GDP .....                     | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 3.0         | 80        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 14.9        | 65        |
| 6.3 Knowledge diffusion .....                                     | 32.0        | 51        |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | n/a         | n/a       |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 0.3         | 88        |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | n/a         | n/a       |
| 6.3.4 FDI net outflows, % GDP .....                               | 1.7         | 38        |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>32.5</b> | <b>70</b> |
| 7.1 Intangible assets .....                                           | 55.4        | 27        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | n/a         | n/a       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 58.7        | 58        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 52.1        | 70        |
| 7.2 Creative goods & services .....                                   | 3.0         | 119 ○     |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....         | 0.0         | 104 ○     |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 7.8         | 40        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 0.4         | 92 ○      |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.0         | 119 ○     |
| 7.3 Online creativity .....                                           | 16.0        | 72        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 2.5         | 80        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 0.2         | 111       |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 637.4       | 89        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 56.7        | 64 ○      |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Pakistan

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 185.1                     |
| GDP (US\$ billions) .....   | 250.1                     |
| GDP per capita, PPP\$ ..... | 3,231.2                   |
| Income group .....          | Lower-middle income       |
| Region .....                | Central and Southern Asia |

|                                                  | Score 0–100<br>or value (hard data) | Rank         |
|--------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>23.1</b>                         | <b>131</b> ○ |
| Innovation Output Sub-Index .....                | 19.9                                | 117          |
| Innovation Input Sub-Index .....                 | 26.2                                | 136 ○        |
| Innovation Efficiency Ratio .....                | 0.8                                 | 47 ●         |
| Global Innovation Index 2014 (out of 143) .....  | 24.0                                | 134          |

|                                                       |             |              |
|-------------------------------------------------------|-------------|--------------|
| <b>1 Institutions.....</b>                            | <b>37.1</b> | <b>134</b> ○ |
| 1.1 Political environment.....                        | 9.9         | 139 ○        |
| 1.1.1 Political stability*.....                       | 0.0         | 141 ○        |
| 1.1.2 Government effectiveness*.....                  | 19.8        | 117          |
| 1.2 Regulatory environment .....                      | 44.3        | 122          |
| 1.2.1 Regulatory quality*.....                        | 28.8        | 118          |
| 1.2.2 Rule of law*.....                               | 24.2        | 118          |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 27.2        | 116          |
| 1.3 Business environment.....                         | 57.2        | 111          |
| 1.3.1 Ease of starting a business*.....               | 80.9        | 95           |
| 1.3.2 Ease of resolving insolvency*.....              | 46.2        | 73           |
| 1.3.3 Ease of paying taxes*.....                      | 44.5        | 130 ○        |

|                                                          |             |              |
|----------------------------------------------------------|-------------|--------------|
| <b>2 Human capital &amp; research.....</b>               | <b>12.8</b> | <b>134</b> ○ |
| 2.1 Education .....                                      | 20.4        | 136 ○        |
| 2.1.1 Expenditure on education, % GDP .....              | 2.5         | 118          |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | 10.4        | 99           |
| 2.1.3 School life expectancy, years.....                 | 7.8         | 128 ○        |
| 2.1.4 PISA scales in reading, maths, & science.....      | n/a         | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary .....               | 21.0        | 87           |
| 2.2 Tertiary education.....                              | 7.8         | 128 ○        |
| 2.2.1 Tertiary enrolment, % gross.....                   | 9.8         | 113          |
| 2.2.2 Graduates in science & engineering, % .....        | n/a         | n/a          |
| 2.2.3 Tertiary inbound mobility, %.....                  | n/a         | n/a          |
| 2.3 Research & development (R&D).....                    | 10.2        | 68 ●         |
| 2.3.1 Researchers, FTE/mn pop. ....                      | 166.0       | 70           |
| 2.3.2 Gross expenditure on R&D, % GDP .....              | 0.3         | 79           |
| 2.3.3 QS university ranking, average score top 3*.....   | 22.1        | 51 ●         |

|                                                              |             |            |
|--------------------------------------------------------------|-------------|------------|
| <b>3 Infrastructure.....</b>                                 | <b>23.1</b> | <b>123</b> |
| 3.1 Information & communication technologies (ICTs).....     | 25.0        | 114        |
| 3.1.1 ICT access*.....                                       | 30.3        | 116        |
| 3.1.2 ICT use*.....                                          | 4.2         | 125        |
| 3.1.3 Government's online service*.....                      | 32.3        | 95         |
| 3.1.4 E-participation*.....                                  | 33.3        | 92         |
| 3.2 General infrastructure.....                              | 15.5        | 131 ○      |
| 3.2.1 Electricity output, kWh/cap.....                       | 536.5       | 106        |
| 3.2.2 Logistics performance*.....                            | 33.9        | 69         |
| 3.2.3 Gross capital formation, % GDP.....                    | 14.0        | 130 ○      |
| 3.3 Ecological sustainability .....                          | 28.8        | 99         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 8.1         | 50 ●       |
| 3.3.2 Environmental performance*.....                        | 34.6        | 123        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.3         | 99         |

|                                                     |             |            |
|-----------------------------------------------------|-------------|------------|
| <b>4 Market sophistication .....</b>                | <b>35.8</b> | <b>129</b> |
| 4.1 Credit.....                                     | 11.9        | 129        |
| 4.1.1 Ease of getting credit*.....                  | 30.0        | 113        |
| 4.1.2 Domestic credit to private sector, % GDP..... | 16.0        | 125        |
| 4.1.3 Microfinance gross loans, % GDP .....         | 0.1         | 61         |

|                                                                |      |      |
|----------------------------------------------------------------|------|------|
| 4.2 Investment .....                                           | 29.9 | 97   |
| 4.2.1 Ease of protecting investors*.....                       | 66.7 | 21 ● |
| 4.2.2 Market capitalization, % GDP.....                        | 19.5 | 71   |
| 4.2.3 Total value of stocks traded, % GDP.....                 | 5.3  | 48 ● |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                  | 0.0  | 73 ○ |
| 4.3 Trade & competition .....                                  | 65.5 | 116  |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 9.5  | 117  |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 64.5 | 81   |

|                                                                     |             |              |
|---------------------------------------------------------------------|-------------|--------------|
| <b>5 Business sophistication .....</b>                              | <b>22.5</b> | <b>131</b> ○ |
| 5.1 Knowledge workers.....                                          | 18.2        | 125          |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 19.5        | 74           |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 6.7         | 107 ○        |
| 5.1.3 GERD performed by business, % of GDP.....                     | n/a         | n/a          |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a          |
| 5.1.5 Females employed w/advanced degrees, % total.....             | n/a         | n/a          |
| 5.2 Innovation linkages .....                                       | 20.2        | 123          |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 36.9        | 95           |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 49.0        | 55 ●         |
| 5.2.3 GERD financed by abroad, % .....                              | 1.3         | 86           |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | 0.0         | 79           |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.0         | 104          |
| 5.3 Knowledge absorption.....                                       | 28.9        | 97           |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 0.3         | 71           |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 7.3         | 60 ●         |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.0         | 60           |
| 5.3.4 FDI net inflows, % GDP .....                                  | 0.6         | 121          |

|                                                                   |             |            |
|-------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>20.2</b> | <b>101</b> |
| 6.1 Knowledge creation.....                                       | 8.4         | 82         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 0.2         | 91         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | n/a         | n/a        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....            | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....           | 7.8         | 75         |
| 6.1.5 Citable documents H index.....                              | 130.0       | 55 ●       |
| 6.2 Knowledge impact.....                                         | 29.0        | 107        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | 0.9         | 75         |
| 6.2.2 New businesses/th pop. 15–64.....                           | 0.0         | 104 ○      |
| 6.2.3 Computer software spending, % GDP.....                      | 0.3         | 51         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....             | 2.8         | 86         |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 23.7        | 49 ●       |
| 6.3 Knowledge diffusion.....                                      | 23.1        | 100        |
| 6.3.1 Royalty & license fees receipts, % total trade.....         | 0.0         | 88         |
| 6.3.2 High-tech exports less re-exports, % total trade.....       | 0.9         | 67         |
| 6.3.3 Comm., computer & info. services exp., % total trade.....   | 2.3         | 34 ●       |
| 6.3.4 FDI net outflows, % GDP .....                               | 0.1         | 90         |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                       | <b>19.6</b> | <b>121</b> |
| 7.1 Intangible assets .....                                           | 34.3        | 118        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                    | 18.8        | 84         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                 | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 50.3        | 91         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 43.3        | 101        |
| 7.2 Creative goods & services.....                                    | 9.0         | 100        |
| 7.2.1 Cultural & creative services exports, % total trade.....        | 0.0         | 77         |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....         | 0.3         | 102 ○      |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | 0.0         | 59 ○       |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 0.3         | 96 ○       |
| 7.2.5 Creative goods exports, % total trade.....                      | 1.1         | 37 ●       |
| 7.3 Online creativity.....                                            | 0.9         | 114        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 0.7         | 111        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 0.2         | 115        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 244.8       | 104        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 3.9                             |
| GDP (US\$ billions) .....   | 43.8                            |
| GDP per capita, PPP\$ ..... | 17,809.9                        |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>36.8</b>                         | <b>62</b> |
| Innovation Output Sub-Index .....                 | 32.2                                | 53        |
| Innovation Input Sub-Index .....                  | 41.4                                | 72        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 36        |
| Global Innovation Index 2014 (out of 143) .....   | 38.3                                | 52        |

|          |                                                          |             |           |
|----------|----------------------------------------------------------|-------------|-----------|
| <b>1</b> | <b>Institutions .....</b>                                | <b>59.4</b> | <b>73</b> |
| 1.1      | Political environment .....                              | 55.5        | 57        |
| 1.1.1    | Political stability* .....                               | 60.9        | 75        |
| 1.1.2    | Government effectiveness* .....                          | 50.1        | 53        |
| 1.2      | Regulatory environment .....                             | 64.7        | 78        |
| 1.2.1    | Regulatory quality* .....                                | 57.7        | 58        |
| 1.2.2    | Rule of law* .....                                       | 41.3        | 73        |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....         | 18.1        | 83        |
| 1.3      | Business environment .....                               | 58.1        | 110       |
| 1.3.1    | Ease of starting a business* .....                       | 91.9        | 33        |
| 1.3.2    | Ease of resolving insolvency* .....                      | 33.7        | 115       |
| 1.3.3    | Ease of paying taxes* .....                              | 48.6        | 127 ○     |
| <b>2</b> | <b>Human capital &amp; research .....</b>                | <b>26.2</b> | <b>83</b> |
| 2.1      | Education .....                                          | 35.4        | 98        |
| 2.1.1    | Expenditure on education, % GDP .....                    | 3.3         | 102       |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap .....      | 9.7         | 103 ○     |
| 2.1.3    | School life expectancy, years .....                      | 13.3        | 75        |
| 2.1.4    | PISA scales in reading, maths, & science .....           | n/a         | n/a       |
| 2.1.5    | Pupil-teacher ratio, secondary .....                     | 14.2        | 55        |
| 2.2      | Tertiary education .....                                 | 41.3        | 40        |
| 2.2.1    | Tertiary enrolment, % gross .....                        | 43.5        | 61        |
| 2.2.2    | Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 22.0        | 38        |
| 2.2.3    | Tertiary inbound mobility, % .....                       | n/a         | n/a       |
| 2.3      | Research & development (R&D) .....                       | 1.8         | 103       |
| 2.3.1    | Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 117.1       | 81        |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.2         | 93        |
| 2.3.3    | QS university ranking, average score top 3* .....        | 0.0         | 73 ○      |
| <b>3</b> | <b>Infrastructure .....</b>                              | <b>43.1</b> | <b>55</b> |
| 3.1      | Information & communication technologies (ICTs) .....    | 42.1        | 80        |
| 3.1.1    | ICT access* .....                                        | 55.3        | 71        |
| 3.1.2    | ICT use* .....                                           | 27.0        | 77        |
| 3.1.3    | Government's online service* .....                       | 37.0        | 87        |
| 3.1.4    | E-participation* .....                                   | 49.0        | 64        |
| 3.2      | General infrastructure .....                             | 39.5        | 41        |
| 3.2.1    | Electricity output, kWh/cap .....                        | 2264.7      | 73        |
| 3.2.2    | Logistics performance* .....                             | 52.7        | 43        |
| 3.2.3    | Gross capital formation, % GDP .....                     | 29.8        | 22 ●      |
| 3.3      | Ecological sustainability .....                          | 47.7        | 36        |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 13.5        | 7 ●       |
| 3.3.2    | Environmental performance* .....                         | 56.8        | 54        |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 0.3         | 105       |
| <b>4</b> | <b>Market sophistication .....</b>                       | <b>43.8</b> | <b>92</b> |
| 4.1      | Credit .....                                             | 34.0        | 56        |
| 4.1.1    | Ease of getting credit* .....                            | 75.0        | 16 ●      |
| 4.1.2    | Domestic credit to private sector, % GDP .....           | 70.7        | 46        |
| 4.1.3    | Microfinance gross loans, % GDP .....                    | 0.4         | 47        |

|       |                                                          |      |     |
|-------|----------------------------------------------------------|------|-----|
| 4.2   | Investment .....                                         | 26.7 | 109 |
| 4.2.1 | Ease of protecting investors* .....                      | 55.8 | 70  |
| 4.2.2 | Market capitalization, % GDP .....                       | 33.0 | 54  |
| 4.2.3 | Total value of stocks traded, % GDP .....                | 0.3  | 85  |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....                 | 0.0  | 57  |
| 4.3   | Trade & competition .....                                | 70.8 | 92  |
| 4.3.1 | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 7.6  | 105 |
| 4.3.2 | Intensity of local competition <sup>†</sup> .....        | 68.4 | 65  |

|          |                                                                     |             |           |
|----------|---------------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                                | <b>34.5</b> | <b>69</b> |
| 5.1      | Knowledge workers .....                                             | 25.0        | 104       |
| 5.1.1    | Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                | 24.4        | 59        |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....          | 11.0        | 104 ○     |
| 5.1.3    | GERD performed by business, % of GDP <sup>Ⓐ</sup> .....             | 0.0         | 84 ○      |
| 5.1.4    | GERD financed by business, % <sup>Ⓐ</sup> .....                     | 18.9        | 63        |
| 5.1.5    | Females employed w/advanced degrees, % total <sup>Ⓐ</sup> .....     | 16.6        | 33        |
| 5.2      | Innovation linkages .....                                           | 32.2        | 63        |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....       | 50.6        | 39        |
| 5.2.2    | State of cluster development <sup>†</sup> .....                     | 50.3        | 49        |
| 5.2.3    | GERD financed by abroad, % <sup>Ⓐ</sup> .....                       | 20.7        | 19 ●      |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                      | 0.0         | 55        |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                       | 0.1         | 47        |
| 5.3      | Knowledge absorption .....                                          | 46.1        | 23 ●      |
| 5.3.1    | Royalty & license fees payments, % total trade .....                | 0.3         | 76        |
| 5.3.2    | High-tech imports less re-imports, % total trade <sup>Ⓐ</sup> ..... | 20.2        | 7 ●       |
| 5.3.3    | Comm., computer & info. services imp., % total trade .....          | 0.3         | 114 ○     |
| 5.3.4    | FDI net inflows, % GDP .....                                        | 11.8        | 9 ●       |

|          |                                                                     |             |           |
|----------|---------------------------------------------------------------------|-------------|-----------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                     | <b>24.7</b> | <b>79</b> |
| 6.1      | Knowledge creation .....                                            | 3.6         | 121       |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                     | 0.1         | 95        |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                          | 0.2         | 48        |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....                   | 0.0         | 60 ○      |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....                  | 4.6         | 101       |
| 6.1.5    | Citable documents H index .....                                     | 119.0       | 60        |
| 6.2      | Knowledge impact .....                                              | 30.4        | 101       |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                            | n/a         | n/a       |
| 6.2.2    | New businesses/th pop. 15–64 .....                                  | 14.1        | 5 ●       |
| 6.2.3    | Computer software spending, % GDP .....                             | 0.2         | 62        |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                    | 2.0         | 91        |
| 6.2.5    | High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....         | 5.2         | 89 ○      |
| 6.3      | Knowledge diffusion .....                                           | 40.0        | 35        |
| 6.3.1    | Royalty & license fees receipts, % total trade .....                | 0.0         | 72        |
| 6.3.2    | High-tech exports less re-exports, % total trade <sup>Ⓐ</sup> ..... | 18.4        | 6 ●       |
| 6.3.3    | Comm., computer & info. services exp., % total trade .....          | 1.3         | 68        |
| 6.3.4    | FDI net outflows, % GDP .....                                       | 1.6         | 41        |

|          |                                                                 |             |           |
|----------|-----------------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs .....</b>                                   | <b>39.7</b> | <b>42</b> |
| 7.1      | Intangible assets .....                                         | 53.0        | 36        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                   | 63.0        | 35        |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a       |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....               | 64.5        | 33        |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....         | 59.8        | 41        |
| 7.2      | Creative goods & services .....                                 | 30.1        | 37        |
| 7.2.1    | Cultural & creative services exports, % total trade .....       | 0.1         | 57        |
| 7.2.2    | National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....         | 0.4         | 97 ○      |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....                  | n/a         | n/a       |
| 7.2.4    | Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 5.3         | 6 ●       |
| 7.2.5    | Creative goods exports, % total trade .....                     | 0.0         | 124 ○     |
| 7.3      | Online creativity .....                                         | 22.7        | 61        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....            | 56.0        | 16 ●      |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                           | 1.6         | 79        |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                                | 1416.5      | 69        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                       | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Paraguay

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 6.9                             |
| GDP (US\$ billions) .....   | 29.7                            |
| GDP per capita, PPP\$ ..... | 7,134.4                         |
| Income group .....          | Lower-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>30.7</b>                         | <b>88</b> |
| Innovation Output Sub-Index .....                | 26.2                                | 83        |
| Innovation Input Sub-Index .....                 | 35.2                                | 103       |
| Innovation Efficiency Ratio .....                | 0.7                                 | 54 ●      |
| Global Innovation Index 2014 (out of 143) .....  | 31.6                                | 89        |

|                                                              |             |            |
|--------------------------------------------------------------|-------------|------------|
| <b>1 Institutions.....</b>                                   | <b>47.9</b> | <b>112</b> |
| 1.1 Political environment.....                               | 32.6        | 116        |
| 1.1.1 Political stability*.....                              | 47.6        | 103        |
| 1.1.2 Government effectiveness*.....                         | 17.6        | 122        |
| 1.2 Regulatory environment .....                             | 48.4        | 117        |
| 1.2.1 Regulatory quality*.....                               | 39.3        | 93         |
| 1.2.2 Rule of law*.....                                      | 25.7        | 113        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 26.1        | 113        |
| 1.3 Business environment.....                                | 62.6        | 94         |
| 1.3.1 Ease of starting a business*.....                      | 77.5        | 103        |
| 1.3.2 Ease of resolving insolvency*.....                     | 40.9        | 98         |
| 1.3.3 Ease of paying taxes*.....                             | 69.5        | 87         |
| <b>2 Human capital &amp; research.....</b>                   | <b>23.9</b> | <b>90</b>  |
| 2.1 Education .....                                          | 41.5        | 81         |
| 2.1.1 Expenditure on education, % GDP .....                  | 5.0         | 60 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 17.6        | 72         |
| 2.1.3 School life expectancy, years <sup>a</sup> .....       | 11.9        | 93         |
| 2.1.4 PISA scales in reading, maths, & science.....          | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>a</sup> .....      | 8.9         | 16 ●       |
| 2.2 Tertiary education.....                                  | 29.1        | 76         |
| 2.2.1 Tertiary enrolment, % gross <sup>a</sup> .....         | 34.5        | 71         |
| 2.2.2 Graduates in science & engineering, % .....            | n/a         | n/a        |
| 2.2.3 Tertiary inbound mobility, %.....                      | n/a         | n/a        |
| 2.3 Research & development (R&D).....                        | 1.2         | 113        |
| 2.3.1 Researchers, FTE/mn pop. <sup>a</sup> .....            | 161.6       | 73         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>a</sup> .....     | 0.1         | 108 ○      |
| 2.3.3 QS university ranking, average score top 3*.....       | 0.0         | 73 ○       |
| <b>3 Infrastructure.....</b>                                 | <b>28.8</b> | <b>103</b> |
| 3.1 Information & communication technologies (ICTs).....     | 27.1        | 108        |
| 3.1.1 ICT access*.....                                       | 44.9        | 90         |
| 3.1.2 ICT use*.....                                          | 15.0        | 102        |
| 3.1.3 Government's online service*.....                      | 22.8        | 118        |
| 3.1.4 E-participation*.....                                  | 25.5        | 110        |
| 3.2 General infrastructure.....                              | 27.8        | 82         |
| 3.2.1 Electricity output, kWh/cap.....                       | 9003.6      | 16 ●       |
| 3.2.2 Logistics performance*.....                            | 31.6        | 75         |
| 3.2.3 Gross capital formation, % GDP.....                    | 15.7        | 119        |
| 3.3 Ecological sustainability .....                          | 31.5        | 91         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 8.6         | 45 ●       |
| 3.3.2 Environmental performance*.....                        | 39.3        | 110        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.3         | 108        |
| <b>4 Market sophistication .....</b>                         | <b>45.5</b> | <b>80</b>  |
| 4.1 Credit.....                                              | 40.1        | 44 ●       |
| 4.1.1 Ease of getting credit*.....                           | 50.0        | 65         |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 45.8        | 73         |
| 4.1.3 Microfinance gross loans, % GDP .....                  | 4.7         | 11 ●       |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 19.8 | 138 ○ |
| 4.2.1 Ease of protecting investors*.....                | 38.3 | 132 ○ |
| 4.2.2 Market capitalization, % GDP.....                 | 3.9  | 105 ○ |
| 4.2.3 Total value of stocks traded, % GDP.....          | 0.2  | 90    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a   |
| 4.3 Trade & competition .....                           | 76.5 | 67    |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 4.3  | 72    |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 67.9 | 66    |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>29.7</b> | <b>97</b> |
| 5.1 Knowledge workers.....                                          | 33.7        | 83        |
| 5.1.1 Knowledge-intensive employment, %.....                        | 18.9        | 78        |
| 5.1.2 Firms offering formal training, % firms <sup>a</sup> .....    | 54.9        | 19 ●      |
| 5.1.3 GERD performed by business, % of GDP <sup>a</sup> .....       | 0.0         | 88 ○      |
| 5.1.4 GERD financed by business, % <sup>a</sup> .....               | 0.8         | 85 ○      |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 12.4        | 51        |
| 5.2 Innovation linkages .....                                       | 23.2        | 109       |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 28.3        | 121       |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 34.3        | 116       |
| 5.2.3 GERD financed by abroad, % <sup>a</sup> .....                 | 7.7         | 51        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a       |
| 5.3 Knowledge absorption.....                                       | 32.3        | 73        |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 0.3         | 77        |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 16.0        | 11 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 0.0         | 123 ○     |
| 5.3.4 FDI net inflows, % GDP .....                                  | 1.2         | 109       |

|                                                                         |             |            |
|-------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                       | <b>16.2</b> | <b>121</b> |
| 6.1 Knowledge creation.....                                             | 2.6         | 131 ○      |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP <sup>a</sup> .....      | 0.4         | 79         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                        | n/a         | n/a        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                 | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                 | 1.0         | 133 ○      |
| 6.1.5 Citable documents H index.....                                    | 48.0        | 118        |
| 6.2 Knowledge impact.....                                               | 15.7        | 123        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                           | n/a         | n/a        |
| 6.2.2 New businesses/th pop. 15–64.....                                 | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP.....                            | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                  | 4.7         | 66 ●       |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>a</sup> .....       | 15.1        | 64         |
| 6.3 Knowledge diffusion.....                                            | 30.3        | 56 ●       |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>a</sup> ..... | 3.1         | 6 ●        |
| 6.3.2 High-tech exports less re-exports, % total trade .....            | 0.5         | 76         |
| 6.3.3 Comm., computer & info. services exp., % total trade.....         | 0.1         | 117 ○      |
| 6.3.4 FDI net outflows, % GDP .....                                     | -0.1        | 112        |

|                                                                       |             |             |
|-----------------------------------------------------------------------|-------------|-------------|
| <b>7 Creative outputs .....</b>                                       | <b>36.3</b> | <b>51 ●</b> |
| 7.1 Intangible assets .....                                           | 66.7        | 4 ●         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP <sup>a</sup> .....      | 296.3       | 1 ●         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a         |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 52.1        | 82          |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 48.1        | 87          |
| 7.2 Creative goods & services.....                                    | 8.3         | 103         |
| 7.2.1 Cultural & creative services exports, % total trade.....        | 0.0         | 85 ○        |
| 7.2.2 National feature films/mn pop. 15–69 <sup>a</sup> .....         | 1.3         | 70          |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | n/a         | n/a         |
| 7.2.4 Printing & publishing output manufactures, % <sup>a</sup> ..... | 1.4         | 52          |
| 7.2.5 Creative goods exports, % total trade.....                      | 0.0         | 113         |
| 7.3 Online creativity.....                                            | 3.3         | 101         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 1.9         | 89          |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 1.4         | 82          |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 872.4       | 82          |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | n/a         | n/a         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>a</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



**Key indicators**

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 30.8                            |
| GDP (US\$ billions) .....   | 202.9                           |
| GDP per capita, PPP\$ ..... | 11,735.3                        |
| Income group .....          | Upper-middle income             |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>34.9</b>                         | <b>71</b> |
| Innovation Output Sub-Index .....                 | 26.2                                | 82        |
| Innovation Input Sub-Index .....                  | 43.5                                | 60        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 113       |
| Global Innovation Index 2014 (out of 143) .....   | 34.7                                | 73        |

|          |                                                         |             |             |
|----------|---------------------------------------------------------|-------------|-------------|
| <b>1</b> | <b>Institutions .....</b>                               | <b>60.4</b> | <b>69</b>   |
| 1.1      | Political environment .....                             | 41.3        | 97          |
| 1.1.1    | Political stability* .....                              | 45.1        | 111         |
| 1.1.2    | Government effectiveness* .....                         | 37.5        | 80          |
| 1.2      | Regulatory environment .....                            | 69.4        | 56          |
| 1.2.1    | Regulatory quality* .....                               | 59.8        | 52          |
| 1.2.2    | Rule of law* .....                                      | 31.4        | 99          |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....        | 11.4        | 43          |
| 1.3      | Business environment .....                              | 70.4        | 64          |
| 1.3.1    | Ease of starting a business* .....                      | 85.1        | 74          |
| 1.3.2    | Ease of resolving insolvency* .....                     | 46.6        | 71          |
| 1.3.3    | Ease of paying taxes* .....                             | 79.4        | 48          |
| <b>2</b> | <b>Human capital &amp; research .....</b>               | <b>26.8</b> | <b>77</b>   |
| 2.1      | Education .....                                         | 32.3        | 107         |
| 2.1.1    | Expenditure on education, % GDP .....                   | 3.3         | 104         |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap .....     | 10.4        | 98 ○        |
| 2.1.3    | School life expectancy, years <sup>Ⓐ</sup> .....        | 13.1        | 79          |
| 2.1.4    | PISA scales in reading, maths, & science .....          | 375.1       | 61 ○        |
| 2.1.5    | Pupil-teacher ratio, secondary .....                    | 15.5        | 67          |
| 2.2      | Tertiary education .....                                | 34.4        | 61          |
| 2.2.1    | Tertiary enrolment, % gross <sup>Ⓐ</sup> .....          | 40.6        | 65          |
| 2.2.2    | Graduates in science & engineering, % .....             | n/a         | n/a         |
| 2.2.3    | Tertiary inbound mobility, % .....                      | n/a         | n/a         |
| 2.3      | Research & development (R&D) .....                      | 13.8        | 60          |
| 2.3.1    | Researchers, FTE/mn pop. .....                          | n/a         | n/a         |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....      | 0.2         | 95 ○        |
| 2.3.3    | QS university ranking, average score top 3* .....       | 24.1        | 50          |
| <b>3</b> | <b>Infrastructure .....</b>                             | <b>42.0</b> | <b>59</b>   |
| 3.1      | Information & communication technologies (ICTs) .....   | 49.0        | 62          |
| 3.1.1    | ICT access* .....                                       | 45.4        | 89          |
| 3.1.2    | ICT use* .....                                          | 16.9        | 95          |
| 3.1.3    | Government's online service* .....                      | 63.0        | 41          |
| 3.1.4    | E-participation* .....                                  | 70.6        | 24 ●        |
| 3.2      | General infrastructure .....                            | 31.6        | 66          |
| 3.2.1    | Electricity output, kWh/cap .....                       | 1330.7      | 90          |
| 3.2.2    | Logistics performance* .....                            | 34.7        | 68          |
| 3.2.3    | Gross capital formation, % GDP .....                    | 27.8        | 32 ●        |
| 3.3      | Ecological sustainability .....                         | 45.5        | 43          |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 14.3        | 4 ●         |
| 3.3.2    | Environmental performance* .....                        | 45.1        | 94          |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 1.0         | 65          |
| <b>4</b> | <b>Market sophistication .....</b>                      | <b>56.6</b> | <b>28 ●</b> |
| 4.1      | Credit .....                                            | 49.4        | 26 ●        |
| 4.1.1    | Ease of getting credit* .....                           | 80.0        | 11 ●        |
| 4.1.2    | Domestic credit to private sector, % GDP .....          | 31.4        | 96          |
| 4.1.3    | Microfinance gross loans, % GDP .....                   | 5.0         | 9 ●         |

|       |                                                          |      |      |
|-------|----------------------------------------------------------|------|------|
| 4.2   | Investment .....                                         | 39.1 | 55   |
| 4.2.1 | Ease of protecting investors* .....                      | 61.7 | 38 ● |
| 4.2.2 | Market capitalization, % GDP .....                       | 50.3 | 39   |
| 4.2.3 | Total value of stocks traded, % GDP .....                | 2.6  | 58   |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a  |
| 4.3   | Trade & competition .....                                | 81.4 | 44   |
| 4.3.1 | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 1.5  | 40   |
| 4.3.2 | Intensity of local competition <sup>†</sup> .....        | 67.8 | 67   |

|          |                                                                         |             |           |
|----------|-------------------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>31.6</b> | <b>85</b> |
| 5.1      | Knowledge workers .....                                                 | 40.1        | 63        |
| 5.1.1    | Knowledge-intensive employment, % .....                                 | 15.0        | 93        |
| 5.1.2    | Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 60.1        | 12 ●      |
| 5.1.3    | GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                 | 0.0         | 72 ○      |
| 5.1.4    | GERD financed by business, % .....                                      | n/a         | n/a       |
| 5.1.5    | Females employed w/advanced degrees, % total .....                      | 13.9        | 44        |
| 5.2      | Innovation linkages .....                                               | 22.5        | 113 ○     |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 35.0        | 106       |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 37.7        | 105       |
| 5.2.3    | GERD financed by abroad, % .....                                        | n/a         | n/a       |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 86 ○      |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.0         | 101 ○     |
| 5.3      | Knowledge absorption .....                                              | 32.2        | 74        |
| 5.3.1    | Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.5         | 57        |
| 5.3.2    | High-tech imports less re-imports, % total trade .....                  | 8.8         | 51        |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.8         | 69        |
| 5.3.4    | FDI net inflows, % GDP .....                                            | 5.0         | 34 ●      |

|          |                                                                         |             |            |
|----------|-------------------------------------------------------------------------|-------------|------------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>19.2</b> | <b>107</b> |
| 6.1      | Knowledge creation .....                                                | 4.6         | 108        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                         | 0.2         | 89         |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | 0.0         | 84 ○       |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....                       | 0.3         | 41         |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....                      | 2.4         | 122 ○      |
| 6.1.5    | Citable documents H index .....                                         | 126.0       | 56         |
| 6.2      | Knowledge impact .....                                                  | 36.3        | 76         |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                                | 3.9         | 15 ●       |
| 6.2.2    | New businesses/th pop. 15–64 .....                                      | 3.8         | 31         |
| 6.2.3    | Computer software spending, % GDP .....                                 | 0.3         | 57         |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 2.9         | 83         |
| 6.2.5    | High- & medium-high-tech manufactures, % .....                          | 9.2         | 79         |
| 6.3      | Knowledge diffusion .....                                               | 16.6        | 124 ○      |
| 6.3.1    | Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 81         |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | 0.4         | 79         |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.4         | 102 ○      |
| 6.3.4    | FDI net outflows, % GDP .....                                           | 0.1         | 94         |

|          |                                                            |             |           |
|----------|------------------------------------------------------------|-------------|-----------|
| <b>7</b> | <b>Creative outputs .....</b>                              | <b>33.3</b> | <b>64</b> |
| 7.1      | Intangible assets .....                                    | 45.2        | 67        |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 54.3        | 41        |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....           | n/a         | n/a       |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....          | 54.0        | 74        |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....    | 52.1        | 71        |
| 7.2      | Creative goods & services .....                            | 18.9        | 70        |
| 7.2.1    | Cultural & creative services exports, % total trade .....  | 0.1         | 56        |
| 7.2.2    | National feature films/mn pop. 15–69 .....                 | 0.6         | 90 ○      |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....             | n/a         | n/a       |
| 7.2.4    | Printing & publishing output manufactures, % .....         | 2.7         | 15 ●      |
| 7.2.5    | Creative goods exports, % total trade .....                | 0.3         | 67        |
| 7.3      | Online creativity .....                                    | 23.8        | 56        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....       | 5.7         | 56        |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                      | 1.7         | 78        |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                           | 1929.6      | 54        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                  | 73.7        | 48        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Philippines

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 100.1                       |
| GDP (US\$ billions) .....   | 284.9                       |
| GDP per capita, PPP\$ ..... | 4,961.7                     |
| Income group .....          | Lower-middle income         |
| Region .....                | South East Asia and Oceania |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>31.1</b>                         | <b>83</b> |
| Innovation Output Sub-Index .....                 | 26.9                                | 77        |
| Innovation Input Sub-Index .....                  | 35.2                                | 101       |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 44 ●      |
| Global Innovation Index 2014 (out of 143) .....   | 29.9                                | 100       |

|                                                                        |             |            |
|------------------------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                                            | <b>51.8</b> | <b>102</b> |
| 1.1 Political environment .....                                        | 40.5        | 100        |
| 1.1.1 Political stability* .....                                       | 38.0        | 116        |
| 1.1.2 Government effectiveness* .....                                  | 43.0        | 65         |
| 1.2 Regulatory environment .....                                       | 51.3        | 110        |
| 1.2.1 Regulatory quality* .....                                        | 45.9        | 74         |
| 1.2.2 Rule of law* .....                                               | 36.3        | 86         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....                 | 27.4        | 118        |
| 1.3 Business environment .....                                         | 63.5        | 90         |
| 1.3.1 Ease of starting a business* .....                               | 67.2        | 128 ○      |
| 1.3.2 Ease of resolving insolvency* .....                              | 56.7        | 48 ●       |
| 1.3.3 Ease of paying taxes* .....                                      | 66.5        | 101        |
| <b>2 Human capital &amp; research .....</b>                            | <b>14.8</b> | <b>123</b> |
| 2.1 Education .....                                                    | 21.3        | 132 ○      |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 2.7         | 115 ○      |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 9.1         | 104 ○      |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 11.3        | 102        |
| 2.1.4 PISA scales in reading, maths, & science .....                   | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 34.8        | 116 ○      |
| 2.2 Tertiary education .....                                           | 12.0        | 120        |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 28.2        | 80         |
| 2.2.2 Graduates in science & engineering, % .....                      | n/a         | n/a        |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....                  | 0.1         | 110 ○      |
| 2.3 Research & development (R&D) .....                                 | 11.0        | 66         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                      | 78.3        | 85         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.1         | 105 ○      |
| 2.3.3 QS university ranking, average score top 3* .....                | 29.9        | 45 ●       |
| <b>3 Infrastructure .....</b>                                          | <b>35.8</b> | <b>83</b>  |
| 3.1 Information & communication technologies (ICTs) .....              | 42.7        | 79         |
| 3.1.1 ICT access* .....                                                | 43.0        | 96         |
| 3.1.2 ICT use* .....                                                   | 22.8        | 87         |
| 3.1.3 Government's online service* .....                               | 48.0        | 66         |
| 3.1.4 E-participation* .....                                           | 56.9        | 51         |
| 3.2 General infrastructure .....                                       | 23.6        | 105        |
| 3.2.1 Electricity output, kWh/cap .....                                | 754.0       | 98         |
| 3.2.2 Logistics performance* .....                                     | 43.0        | 55         |
| 3.2.3 Gross capital formation, % GDP .....                             | 19.1        | 99         |
| 3.3 Ecological sustainability .....                                    | 41.2        | 53         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | 12.2        | 13 ●       |
| 3.3.2 Environmental performance* .....                                 | 44.0        | 98         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....          | 1.0         | 66         |
| <b>4 Market sophistication .....</b>                                   | <b>42.1</b> | <b>101</b> |
| 4.1 Credit .....                                                       | 17.6        | 120        |
| 4.1.1 Ease of getting credit* .....                                    | 40.0        | 93         |
| 4.1.2 Domestic credit to private sector, % GDP .....                   | 35.8        | 89         |
| 4.1.3 Microfinance gross loans, % GDP .....                            | 0.2         | 58         |

|                                                                |       |       |
|----------------------------------------------------------------|-------|-------|
| 4.2 Investment .....                                           | 32.4  | 81    |
| 4.2.1 Ease of protecting investors* .....                      | 41.7  | 123 ○ |
| 4.2.2 Market capitalization, % GDP .....                       | 105.6 | 12 ●  |
| 4.2.3 Total value of stocks traded, % GDP .....                | 13.9  | 32 ●  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | 0.0   | 50    |
| 4.3 Trade & competition .....                                  | 76.3  | 69    |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 4.8   | 79    |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 69.2  | 59    |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                | <b>31.7</b> | <b>81</b> |
| 5.1 Knowledge workers .....                                           | 39.6        | 67        |
| 5.1.1 Knowledge-intensive employment, % .....                         | 23.7        | 63        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....      | 31.1        | 62        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....         | 0.1         | 68        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                 | 62.0        | 6 ●       |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> ..... | 14.1        | 41        |
| 5.2 Innovation linkages .....                                         | 25.4        | 97        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 46.6        | 53        |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 50.5        | 48        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                   | 4.1         | 70        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 46        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 0.0         | 77        |
| 5.3 Knowledge absorption .....                                        | 30.2        | 91        |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 0.7         | 44 ●      |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | n/a         | n/a       |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 0.7         | 75        |
| 5.3.4 FDI net inflows, % GDP .....                                    | 1.4         | 100       |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>28.9</b> | <b>53</b> |
| 6.1 Knowledge creation .....                                      | 9.1         | 77        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 0.3         | 82        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | 0.1         | 79        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | 1.2         | 23        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 1.6         | 131 ○     |
| 6.1.5 Citable documents H index .....                             | 131.0       | 54        |
| 6.2 Knowledge impact .....                                        | 36.0        | 80        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | 4.6         | 10 ●      |
| 6.2.2 New businesses/th pop. 15–64 .....                          | 0.3         | 93 ○      |
| 6.2.3 Computer software spending, % GDP .....                     | 0.3         | 53        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 3.0         | 81        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 16.3        | 62        |
| 6.3 Knowledge diffusion .....                                     | 41.7        | 31 ●      |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | 0.0         | 98        |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | n/a         | n/a       |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | 4.6         | 10 ●      |
| 6.3.4 FDI net outflows, % GDP .....                               | 1.4         | 45        |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                       | <b>24.8</b> | <b>101</b> |
| 7.1 Intangible assets .....                                           | 38.5        | 96         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 26.0        | 76         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.1         | 57         |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 60.5        | 48         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 60.3        | 38 ●       |
| 7.2 Creative goods & services .....                                   | 3.6         | 117        |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 0.1         | 60         |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 0.8         | 81         |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 2.1         | 49         |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 0.4         | 95 ○       |
| 7.2.5 Creative goods exports, % total trade .....                     | n/a         | n/a        |
| 7.3 Online creativity .....                                           | 18.6        | 68         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 1.4         | 99         |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 0.5         | 103        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 1298.3      | 71         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 62.9        | 60         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 38.2        |
| GDP (US\$ billions) .....   | 546.6       |
| GDP per capita, PPP\$ ..... | 22,201.1    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>40.2</b>                         | <b>46</b> |
| Innovation Output Sub-Index .....                 | 31.9                                | 56        |
| Innovation Input Sub-Index .....                  | 48.4                                | 39        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 93        |
| Global Innovation Index 2014 (out of 143) .....   | 40.6                                | 45        |

**1 Institutions ..... 75.3 34**

|                                                        |      |      |
|--------------------------------------------------------|------|------|
| 1.1 Political environment .....                        | 74.1 | 35   |
| 1.1.1 Political stability* .....                       | 87.6 | 20 ● |
| 1.1.2 Government effectiveness* .....                  | 60.5 | 40   |
| 1.2 Regulatory environment .....                       | 75.4 | 42   |
| 1.2.1 Regulatory quality* .....                        | 75.7 | 28   |
| 1.2.2 Rule of law* .....                               | 68.5 | 36   |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 18.8 | 85   |
| 1.3 Business environment .....                         | 76.3 | 39   |
| 1.3.1 Ease of starting a business* .....               | 85.8 | 71   |
| 1.3.2 Ease of resolving insolvency* .....              | 69.7 | 30   |
| 1.3.3 Ease of paying taxes* .....                      | 73.5 | 69   |

**2 Human capital & research ..... 37.2 45**

|                                                           |        |      |
|-----------------------------------------------------------|--------|------|
| 2.1 Education .....                                       | 53.6   | 36   |
| 2.1.1 Expenditure on education, % GDP .....               | 4.9    | 61   |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 24.2   | 42   |
| 2.1.3 School life expectancy, years .....                 | 15.5   | 33   |
| 2.1.4 PISA scales in reading, maths, & science .....      | 520.5  | 9 ●  |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 8.7    | 14 ● |
| 2.2 Tertiary education .....                              | 32.8   | 66   |
| 2.2.1 Tertiary enrolment, % gross .....                   | 73.2   | 21 ● |
| 2.2.2 Graduates in science & engineering, % .....         | 16.8   | 68   |
| 2.2.3 Tertiary inbound mobility, % .....                  | 1.2    | 80 ○ |
| 2.3 Research & development (R&D) .....                    | 25.3   | 38   |
| 2.3.1 Researchers, FTE/mn pop. ....                       | 1870.2 | 36   |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | 0.9    | 39   |
| 2.3.3 QS university ranking, average score top 3* .....   | 32.8   | 42   |

**3 Infrastructure ..... 45.5 47**

|                                                               |        |    |
|---------------------------------------------------------------|--------|----|
| 3.1 Information & communication technologies (ICTs) .....     | 55.8   | 46 |
| 3.1.1 ICT access* .....                                       | 70.4   | 44 |
| 3.1.2 ICT use* .....                                          | 49.4   | 40 |
| 3.1.3 Government's online service* .....                      | 54.3   | 57 |
| 3.1.4 E-participation* .....                                  | 49.0   | 64 |
| 3.2 General infrastructure .....                              | 36.0   | 53 |
| 3.2.1 Electricity output, kWh/cap .....                       | 4255.9 | 50 |
| 3.2.2 Logistics performance* .....                            | 68.0   | 30 |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.6   | 79 |
| 3.3 Ecological sustainability .....                           | 44.7   | 46 |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 7.4    | 58 |
| 3.3.2 Environmental performance* .....                        | 69.5   | 30 |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 2.4    | 43 |

**4 Market sophistication ..... 49.0 60**

|                                                      |      |      |
|------------------------------------------------------|------|------|
| 4.1 Credit .....                                     | 31.0 | 69   |
| 4.1.1 Ease of getting credit* .....                  | 75.0 | 16 ● |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 53.9 | 61   |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.1  | 67 ○ |

|                                                   |      |      |
|---------------------------------------------------|------|------|
| 4.2 Investment .....                              | 32.0 | 84   |
| 4.2.1 Ease of protecting investors* .....         | 62.5 | 34   |
| 4.2.2 Market capitalization, % GDP .....          | 35.8 | 53   |
| 4.2.3 Total value of stocks traded, % GDP .....   | 13.6 | 33   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....    | 0.0  | 53 ○ |
| 4.3 Trade & competition .....                     | 83.9 | 33   |
| 4.3.1 Applied tariff rate, weighted mean, % ..... | 1.0  | 9    |
| 4.3.2 Intensity of local competition† .....       | 71.2 | 49   |

**5 Business sophistication ..... 35.2 66**

|                                                                  |      |       |
|------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                      | 45.3 | 45    |
| 5.1.1 Knowledge-intensive employment, % .....                    | 35.9 | 32    |
| 5.1.2 Firms offering formal training, % firms .....              | 34.6 | 53    |
| 5.1.3 GERD performed by business, % of GDP .....                 | 0.4  | 40    |
| 5.1.4 GERD financed by business, % .....                         | 37.3 | 42    |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 18.2 | 27    |
| 5.2 Innovation linkages .....                                    | 24.8 | 102 ○ |
| 5.2.1 University/industry research collaboration† .....          | 41.7 | 71    |
| 5.2.2 State of cluster development† .....                        | 41.4 | 89    |
| 5.2.3 GERD financed by abroad, % .....                           | 13.1 | 34    |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0  | 76 ○  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 0.1  | 49    |
| 5.3 Knowledge absorption .....                                   | 35.6 | 60    |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 1.1  | 23 ●  |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 9.2  | 45    |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 1.2  | 49    |
| 5.3.4 FDI net inflows, % GDP .....                               | -0.9 | 134 ○ |

**6 Knowledge & technology outputs ..... 28.3 56**

|                                                                  |       |       |
|------------------------------------------------------------------|-------|-------|
| 6.1 Knowledge creation .....                                     | 24.4  | 40    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 4.7   | 23    |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.4   | 45    |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 1.1   | 25    |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 24.7  | 36    |
| 6.1.5 Citable documents H index .....                            | 336.0 | 24 ●  |
| 6.2 Knowledge impact .....                                       | 35.7  | 81    |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 1.2   | 67    |
| 6.2.2 New businesses/th pop. 15–64 <sup>a</sup> .....            | 0.5   | 86 ○  |
| 6.2.3 Computer software spending, % GDP .....                    | 0.3   | 50    |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 11.6  | 36    |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 33.6  | 31    |
| 6.3 Knowledge diffusion .....                                    | 24.9  | 89    |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.1   | 49    |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 5.6   | 30    |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 1.4   | 63    |
| 6.3.4 FDI net outflows, % GDP .....                              | -0.8  | 119 ○ |

**7 Creative outputs ..... 35.4 53**

|                                                                 |        |       |
|-----------------------------------------------------------------|--------|-------|
| 7.1 Intangible assets .....                                     | 36.9   | 108 ○ |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 50.1   | 51    |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 0.4    | 43    |
| 7.1.3 ICTs & business model creation† .....                     | 49.4   | 95 ○  |
| 7.1.4 ICTs & organizational model creation† .....               | 47.7   | 89    |
| 7.2 Creative goods & services .....                             | 31.0   | 36    |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 1.0    | 14 ●  |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 0.9    | 80 ○  |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 9.7    | 34    |
| 7.2.4 Printing & publishing output manufactures, % .....        | 1.1    | 71 ○  |
| 7.2.5 Creative goods exports, % total trade .....               | 3.9    | 12 ●  |
| 7.3 Online creativity .....                                     | 36.8   | 37    |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 8.2    | 48    |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 37.2   | 21 ●  |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 2614.2 | 46    |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 82.4   | 29    |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>a</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Portugal

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 10.6        |
| GDP (US\$ billions) .....   | 230.0       |
| GDP per capita, PPP\$ ..... | 23,671.0    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>46.6</b>                         | <b>30</b> |
| Innovation Output Sub-Index .....                             | 39.4                                | 33        |
| Innovation Input Sub-Index .....                              | 53.8                                | 28        |
| Innovation Efficiency Ratio .....                             | 0.7                                 | 62        |
| Global Innovation Index 2014 (out of 143) .....               | 45.6                                | 32        |
| <b>1 Institutions .....</b>                                   | <b>80.6</b>                         | <b>25</b> |
| 1.1 Political environment .....                               | 78.5                                | 25        |
| 1.1.1 Political stability* .....                              | 82.5                                | 36        |
| 1.1.2 Government effectiveness* .....                         | 74.6                                | 26        |
| 1.2 Regulatory environment .....                              | 77.1                                | 37        |
| 1.2.1 Regulatory quality* .....                               | 68.8                                | 36        |
| 1.2.2 Rule of law* .....                                      | 75.1                                | 26        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 17.0                                | 77        |
| 1.3 Business environment .....                                | 86.1                                | 14 ●      |
| 1.3.1 Ease of starting a business* .....                      | 96.3                                | 10 ●      |
| 1.3.2 Ease of resolving insolvency* .....                     | 84.2                                | 9 ●       |
| 1.3.3 Ease of paying taxes* .....                             | 77.8                                | 52        |
| <b>2 Human capital &amp; research .....</b>                   | <b>47.6</b>                         | <b>25</b> |
| 2.1 Education .....                                           | 57.1                                | 18 ●      |
| 2.1.1 Expenditure on education, % GDP .....                   | 5.3                                 | 46        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 33.5                                | 14 ●      |
| 2.1.3 School life expectancy, years .....                     | 16.3                                | 20        |
| 2.1.4 PISA scales in reading, maths, & science .....          | 488.0                               | 29        |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 8.2                                 | 7 ●       |
| 2.2 Tertiary education .....                                  | 44.8                                | 32        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 68.9                                | 27        |
| 2.2.2 Graduates in science & engineering, % .....             | 25.0                                | 24        |
| 2.2.3 Tertiary inbound mobility, % .....                      | 4.7                                 | 36        |
| 2.3 Research & development (R&D) .....                        | 40.8                                | 25        |
| 2.3.1 Researchers, FTE/mn pop. ....                           | 4083.8                              | 20        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 1.4                                 | 26        |
| 2.3.3 QS university ranking, average score top 3* .....       | 40.4                                | 35        |
| <b>3 Infrastructure .....</b>                                 | <b>50.3</b>                         | <b>33</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 62.8                                | 39        |
| 3.1.1 ICT access* .....                                       | 76.7                                | 31        |
| 3.1.2 ICT use* .....                                          | 46.1                                | 46        |
| 3.1.3 Government's online service* .....                      | 63.8                                | 39        |
| 3.1.4 E-participation* .....                                  | 64.7                                | 33        |
| 3.2 General infrastructure .....                              | 32.2                                | 63        |
| 3.2.1 Electricity output, kWh/cap .....                       | 4818.8                              | 44        |
| 3.2.2 Logistics performance* .....                            | 71.4                                | 25        |
| 3.2.3 Gross capital formation, % GDP .....                    | 15.7                                | 120 ○     |
| 3.3 Ecological sustainability .....                           | 55.7                                | 15 ●      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 9.9                                 | 25        |
| 3.3.2 Environmental performance* .....                        | 75.8                                | 17 ●      |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 4.8                                 | 21        |
| <b>4 Market sophistication .....</b>                          | <b>55.4</b>                         | <b>34</b> |
| 4.1 Credit .....                                              | 50.4                                | 21        |
| 4.1.1 Ease of getting credit* .....                           | 45.0                                | 80 ○      |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 169.8                               | 8 ●       |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a       |

|                                                   |      |      |
|---------------------------------------------------|------|------|
| 4.2 Investment .....                              | 32.9 | 78 ○ |
| 4.2.1 Ease of protecting investors* .....         | 59.2 | 49   |
| 4.2.2 Market capitalization, % GDP .....          | 30.1 | 56   |
| 4.2.3 Total value of stocks traded, % GDP .....   | 12.2 | 36   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....    | 0.1  | 19   |
| 4.3 Trade & competition .....                     | 82.9 | 38   |
| 4.3.1 Applied tariff rate, weighted mean, % ..... | 1.0  | 9    |
| 4.3.2 Intensity of local competition† .....       | 69.1 | 61   |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                           | <b>35.2</b> | <b>65</b> |
| 5.1 Knowledge workers .....                                      | 45.1        | 47        |
| 5.1.1 Knowledge-intensive employment, % .....                    | 34.8        | 38        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> ..... | 31.9        | 59 ○      |
| 5.1.3 GERD performed by business, % of GDP .....                 | 0.7         | 31        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....            | 46.0        | 26        |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 14.9        | 37        |
| 5.2 Innovation linkages .....                                    | 28.4        | 88 ○      |
| 5.2.1 University/industry research collaboration† .....          | 61.4        | 22        |
| 5.2.2 State of cluster development† .....                        | 53.2        | 39        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....              | 5.2         | 63 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 83 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 0.1         | 41        |
| 5.3 Knowledge absorption .....                                   | 32.2        | 75        |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 0.5         | 54        |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 6.3         | 77 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 1.3         | 46        |
| 5.3.4 FDI net inflows, % GDP .....                               | 3.6         | 47        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>33.2</b> | <b>42</b> |
| 6.1 Knowledge creation .....                                     | 21.9        | 44        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 2.4         | 43        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.6         | 37        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 0.3         | 40 ○      |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 45.0        | 12 ●      |
| 6.1.5 Citable documents H index .....                            | 269.0       | 31        |
| 6.2 Knowledge impact .....                                       | 47.3        | 29        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 0.3         | 89 ○      |
| 6.2.2 New businesses/th pop. 15–64 <sup>Ⓐ</sup> .....            | 3.6         | 32        |
| 6.2.3 Computer software spending, % GDP .....                    | 0.7         | 10        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 25.7        | 15 ●      |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 27.0        | 43        |
| 6.3 Knowledge diffusion .....                                    | 30.3        | 55        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.0         | 73 ○      |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 2.4         | 48        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 1.5         | 60        |
| 6.3.4 FDI net outflows, % GDP .....                              | 2.7         | 24        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>45.7</b> | <b>25</b> |
| 7.1 Intangible assets .....                                     | 57.7        | 16 ●      |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 91.7        | 17        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 0.9         | 33        |
| 7.1.3 ICTs & business model creation† .....                     | 71.7        | 17 ●      |
| 7.1.4 ICTs & organizational model creation† .....               | 68.6        | 18        |
| 7.2 Creative goods & services .....                             | 25.4        | 51        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.6         | 33        |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 1.7         | 62 ○      |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 26.3        | 24        |
| 7.2.4 Printing & publishing output manufactures, % .....        | 1.5         | 51        |
| 7.2.5 Creative goods exports, % total trade .....               | 1.6         | 31        |
| 7.3 Online creativity .....                                     | 41.8        | 29        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 20.8        | 30        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 38.2        | 18 ●      |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 3156.4      | 42        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 85.0        | 24        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 2.3                              |
| GDP (US\$ billions) .....   | 210.0                            |
| GDP per capita, PPP\$ ..... | 96,992.9                         |
| Income group .....          | High income                      |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>39.0</b>                         | <b>50</b> |
| Innovation Output Sub-Index .....                 | 29.6                                | 62        |
| Innovation Input Sub-Index .....                  | 48.4                                | 40        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 110       |
| Global Innovation Index 2014 (out of 143) .....   | 40.3                                | 47        |

**1 Institutions ..... 77.7 30**

|                                                        |      |      |
|--------------------------------------------------------|------|------|
| 1.1 Political environment .....                        | 82.3 | 20   |
| 1.1.1 Political stability* .....                       | 94.3 | 10 ● |
| 1.1.2 Government effectiveness* .....                  | 70.3 | 32   |
| 1.2 Regulatory environment .....                       | 70.6 | 51   |
| 1.2.1 Regulatory quality* .....                        | 67.5 | 39   |
| 1.2.2 Rule of law* .....                               | 75.4 | 25   |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 23.2 | 107  |
| 1.3 Business environment .....                         | 80.3 | 27   |
| 1.3.1 Ease of starting a business* .....               | 83.1 | 83   |
| 1.3.2 Ease of resolving insolvency* .....              | 58.3 | 45   |
| 1.3.3 Ease of paying taxes* .....                      | 99.4 | 1 ●  |

**2 Human capital & research ..... 35.3 51**

|                                                                        |       |       |
|------------------------------------------------------------------------|-------|-------|
| 2.1 Education .....                                                    | 34.4  | 104   |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 2.4   | 120 ○ |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 10.3  | 100 ○ |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 13.8  | 63    |
| 2.1.4 PISA scales in reading, maths, & science .....                   | 382.5 | 60 ○  |
| 2.1.5 Pupil-teacher ratio, secondary .....                             | 9.7   | 26    |
| 2.2 Tertiary education .....                                           | 62.6  | 3 ●   |
| 2.2.1 Tertiary enrolment, % gross .....                                | 14.3  | 101   |
| 2.2.2 Graduates in science & engineering, % .....                      | 33.6  | 7 ●   |
| 2.2.3 Tertiary inbound mobility, % .....                               | 40.7  | 1 ●   |
| 2.3 Research & development (R&D) .....                                 | 8.8   | 71    |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                      | 586.9 | 56    |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.5   | 65    |
| 2.3.3 QS university ranking, average score top 3* .....                | 8.6   | 62    |

**3 Infrastructure ..... 55.5 22**

|                                                               |         |     |
|---------------------------------------------------------------|---------|-----|
| 3.1 Information & communication technologies (ICTs) .....     | 66.6    | 31  |
| 3.1.1 ICT access* .....                                       | 80.9    | 21  |
| 3.1.2 ICT use* .....                                          | 59.5    | 27  |
| 3.1.3 Government's online service* .....                      | 65.4    | 37  |
| 3.1.4 E-participation* .....                                  | 60.8    | 45  |
| 3.2 General infrastructure .....                              | 61.8    | 6 ● |
| 3.2.1 Electricity output, kWh/cap .....                       | 16969.3 | 6 ● |
| 3.2.2 Logistics performance* .....                            | 69.1    | 28  |
| 3.2.3 Gross capital formation, % GDP .....                    | 29.0    | 26  |
| 3.3 Ecological sustainability .....                           | 37.9    | 70  |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 6.5     | 78  |
| 3.3.2 Environmental performance* .....                        | 63.0    | 43  |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.8     | 72  |

**4 Market sophistication ..... 45.9 78**

|                                                      |      |       |
|------------------------------------------------------|------|-------|
| 4.1 Credit .....                                     | 20.8 | 110   |
| 4.1.1 Ease of getting credit* .....                  | 30.0 | 113 ○ |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 39.3 | 86    |
| 4.1.3 Microfinance gross loans, % GDP .....          | n/a  | n/a   |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 34.8 | 70  |
| 4.2.1 Ease of protecting investors* .....               | 45.8 | 107 |
| 4.2.2 Market capitalization, % GDP .....                | 66.4 | 26  |
| 4.2.3 Total value of stocks traded, % GDP .....         | 8.1  | 43  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a |
| 4.3 Trade & competition .....                           | 82.2 | 40  |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 4.1  | 67  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 78.8 | 16  |

**5 Business sophistication ..... 27.7 106**

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                         | 21.7 | 117   |
| 5.1.1 Knowledge-intensive employment, % .....                       | 18.2 | 80    |
| 5.1.2 Firms offering formal training, % firms .....                 | n/a  | n/a   |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.1  | 57    |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....               | 24.2 | 56    |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 4.5  | 76    |
| 5.2 Innovation linkages .....                                       | 40.6 | 40    |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 74.0 | 8 ●   |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 70.2 | 10 ●  |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 2.4  | 78    |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0  | 11 ●  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.0  | 97    |
| 5.3 Knowledge absorption .....                                      | 20.7 | 136 ○ |
| 5.3.1 Royalty & license fees payments, % total trade .....          | n/a  | n/a   |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 2.3  | 128 ○ |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a  | n/a   |
| 5.3.4 FDI net inflows, % GDP .....                                  | -0.4 | 130 ○ |

**6 Knowledge & technology outputs ..... 24.5 80**

|                                                                   |      |       |
|-------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation .....                                      | 2.8  | 128 ○ |
| 6.1.1 Domestic resident patent app./bn PPP\$ GDP .....            | 0.0  | 110 ○ |
| 6.1.2 PCT resident patent app./bn PPP\$ GDP .....                 | 0.1  | 75    |
| 6.1.3 Domestic res utility model app./bn PPP\$ GDP .....          | n/a  | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 3.9  | 108   |
| 6.1.5 Citable documents H index .....                             | 60.0 | 105   |
| 6.2 Knowledge impact .....                                        | 28.6 | 111   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | 0.4  | 85    |
| 6.2.2 New businesses/th pop. 15–64 .....                          | 1.7  | 50    |
| 6.2.3 Computer software spending, % GDP .....                     | 0.3  | 58    |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 2.2  | 89    |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 20.8 | 54    |
| 6.3 Knowledge diffusion .....                                     | 42.2 | 30    |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | n/a  | n/a   |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 0.0  | 129 ○ |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | n/a  | n/a   |
| 6.3.4 FDI net outflows, % GDP .....                               | 3.9  | 15    |

**7 Creative outputs ..... 34.7 58**

|                                                                       |        |       |
|-----------------------------------------------------------------------|--------|-------|
| 7.1 Intangible assets .....                                           | 50.6   | 44    |
| 7.1.1 Domestic res trademark app./bn PPP\$ GDP .....                  | 2.7    | 103 ○ |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a    | n/a   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 77.4   | 4 ●   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 74.4   | 7 ●   |
| 7.2 Creative goods & services .....                                   | 13.3   | 88    |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a    | n/a   |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | n/a    | n/a   |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 31.1   | 21    |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.2    | 66    |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.0    | 121 ○ |
| 7.3 Online creativity .....                                           | 24.2   | 53    |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 4.9    | 61    |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 4.1    | 58    |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 2058.2 | 53    |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 72.6   | 53    |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



# Romania

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 21.6                |
| GDP (US\$ billions) .....   | 200.0               |
| GDP per capita, PPP\$ ..... | 13,932.0            |
| Income group .....          | Upper-middle income |
| Region .....                | Europe              |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>38.2</b>                         | <b>54</b> |
| Innovation Output Sub-Index .....                | 32.4                                | 52        |
| Innovation Input Sub-Index .....                 | 44.0                                | 57        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 58        |
| Global Innovation Index 2014 (out of 143) .....  | 38.1                                | 55        |

## 1 Institutions.....69.7 46

|                                                       |      |      |
|-------------------------------------------------------|------|------|
| 1.1 Political environment.....                        | 53.7 | 61   |
| 1.1.1 Political stability*.....                       | 67.9 | 57   |
| 1.1.2 Government effectiveness*.....                  | 39.4 | 72   |
| 1.2 Regulatory environment .....                      | 78.5 | 32 ● |
| 1.2.1 Regulatory quality*.....                        | 63.5 | 46   |
| 1.2.2 Rule of law*.....                               | 50.5 | 58   |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 8.0  | 1 ●  |
| 1.3 Business environment.....                         | 76.9 | 37   |
| 1.3.1 Ease of starting a business*.....               | 91.9 | 33 ● |
| 1.3.2 Ease of resolving insolvency*.....              | 58.7 | 44   |
| 1.3.3 Ease of paying taxes*.....                      | 80.1 | 45   |

## 2 Human capital & research.....27.8 73

|                                                                |       |       |
|----------------------------------------------------------------|-------|-------|
| 2.1 Education .....                                            | 38.6  | 88    |
| 2.1.1 Expenditure on education, % GDP .....                    | 3.1   | 107 ○ |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....       | 11.9  | 93 ○  |
| 2.1.3 School life expectancy, years <sup>a</sup> .....         | 14.2  | 54    |
| 2.1.4 PISA scales in reading, maths, & science.....            | 440.3 | 43    |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 12.8  | 45    |
| 2.2 Tertiary education.....                                    | 32.6  | 67    |
| 2.2.1 Tertiary enrolment, % gross <sup>a</sup> .....           | 51.6  | 50    |
| 2.2.2 Graduates in science & engineering, % <sup>a</sup> ..... | 20.2  | 55    |
| 2.2.3 Tertiary inbound mobility, % <sup>a</sup> .....          | 1.8   | 69    |
| 2.3 Research & development (R&D).....                          | 12.1  | 63    |
| 2.3.1 Researchers, FTE/mn pop. ....                            | 862.0 | 49    |
| 2.3.2 Gross expenditure on R&D, % GDP .....                    | 0.4   | 69    |
| 2.3.3 QS university ranking, average score top 3*.....         | 17.1  | 55    |

## 3 Infrastructure.....42.4 58

|                                                              |        |      |
|--------------------------------------------------------------|--------|------|
| 3.1 Information & communication technologies (ICTs).....     | 49.0   | 61   |
| 3.1.1 ICT access*.....                                       | 66.2   | 52   |
| 3.1.2 ICT use*.....                                          | 38.7   | 58   |
| 3.1.3 Government's online service*.....                      | 44.1   | 74   |
| 3.1.4 E-participation*.....                                  | 47.1   | 70   |
| 3.2 General infrastructure.....                              | 25.8   | 96   |
| 3.2.1 Electricity output, kWh/cap.....                       | 2927.0 | 64   |
| 3.2.2 Logistics performance*.....                            | n/a    | n/a  |
| 3.2.3 Gross capital formation, % GDP.....                    | 22.5   | 59   |
| 3.3 Ecological sustainability .....                          | 52.3   | 20 ● |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 6.8    | 72   |
| 3.3.2 Environmental performance*.....                        | 50.5   | 77   |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 23.2   | 1 ●  |

## 4 Market sophistication.....45.3 81

|                                                     |      |     |
|-----------------------------------------------------|------|-----|
| 4.1 Credit.....                                     | 33.4 | 58  |
| 4.1.1 Ease of getting credit*.....                  | 85.0 | 7 ● |
| 4.1.2 Domestic credit to private sector, % GDP..... | 41.4 | 82  |
| 4.1.3 Microfinance gross loans, % GDP .....         | 0.2  | 54  |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 26.1 | 114 ○ |
| 4.2.1 Ease of protecting investors*.....                | 61.7 | 38    |
| 4.2.2 Market capitalization, % GDP.....                 | 9.4  | 90 ○  |
| 4.2.3 Total value of stocks traded, % GDP.....          | 1.3  | 63    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | 0.0  | 67 ○  |
| 4.3 Trade & competition .....                           | 76.3 | 70    |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 1.0  | 9 ●   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 56.0 | 115 ○ |

## 5 Business sophistication.....34.7 67

|                                                                     |      |      |
|---------------------------------------------------------------------|------|------|
| 5.1 Knowledge workers.....                                          | 34.6 | 81   |
| 5.1.1 Knowledge-intensive employment, %.....                        | 21.2 | 68   |
| 5.1.2 Firms offering formal training, % firms.....                  | 40.8 | 44   |
| 5.1.3 GERD performed by business, % of GDP.....                     | 0.1  | 58   |
| 5.1.4 GERD financed by business, %.....                             | 31.0 | 47   |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 9.8  | 64 ○ |
| 5.2 Innovation linkages .....                                       | 29.9 | 81   |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 43.2 | 69   |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 46.4 | 67   |
| 5.2.3 GERD financed by abroad, %.....                               | 15.5 | 29   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a  | n/a  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0  | 78   |
| 5.3 Knowledge absorption.....                                       | 39.7 | 42   |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 1.1  | 25 ● |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 9.1  | 47   |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 1.5  | 38   |
| 5.3.4 FDI net inflows, % GDP .....                                  | 2.0  | 86   |

## 6 Knowledge & technology outputs.....32.8 43

|                                                                 |       |       |
|-----------------------------------------------------------------|-------|-------|
| 6.1 Knowledge creation.....                                     | 11.2  | 66    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....           | 2.6   | 36    |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                | 0.1   | 69    |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....          | 0.1   | 49 ○  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....         | 17.9  | 42    |
| 6.1.5 Citable documents H index.....                            | 153.0 | 46    |
| 6.2 Knowledge impact.....                                       | 54.4  | 11 ●  |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                   | 1.7   | 55    |
| 6.2.2 New businesses/th pop. 15–64.....                         | 4.1   | 30    |
| 6.2.3 Computer software spending, % GDP.....                    | 0.3   | 37    |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....          | 49.0  | 1 ●   |
| 6.2.5 High- & medium-high-tech manufactures, % .....            | 36.0  | 26    |
| 6.3 Knowledge diffusion.....                                    | 32.9  | 48    |
| 6.3.1 Royalty & license fees receipts, % total trade.....       | 0.2   | 45    |
| 6.3.2 High-tech exports less re-exports, % total trade.....     | 4.5   | 34    |
| 6.3.3 Comm., computer & info. services exp., % total trade..... | 3.3   | 18 ●  |
| 6.3.4 FDI net outflows, % GDP .....                             | 0.0   | 110 ○ |

## 7 Creative outputs.....32.1 72

|                                                                |       |      |
|----------------------------------------------------------------|-------|------|
| 7.1 Intangible assets .....                                    | 39.3  | 93   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | 64.0  | 33   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | 0.2   | 51 ○ |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 51.8  | 83   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 48.5  | 84   |
| 7.2 Creative goods & services.....                             | 21.9  | 61   |
| 7.2.1 Cultural & creative services exports, % total trade..... | 0.7   | 27   |
| 7.2.2 National feature films/mn pop. 15–69.....                | 2.3   | 56   |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | 4.1   | 46 ○ |
| 7.2.4 Printing & publishing output manufactures, %.....        | 1.1   | 69   |
| 7.2.5 Creative goods exports, % total trade.....               | 1.5   | 32 ● |
| 7.3 Online creativity.....                                     | 27.7  | 47   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 5.2   | 59   |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 19.7  | 34 ● |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 934.5 | 78   |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | 79.1  | 35   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>a</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 142.5       |
| GDP (US\$ billions) .....   | 1,857.5     |
| GDP per capita, PPP\$ ..... | 18,407.8    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>39.3</b>                         | <b>48</b> |
| Innovation Output Sub-Index .....                 | 33.3                                | 49        |
| Innovation Input Sub-Index .....                  | 45.3                                | 52        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 60        |
| Global Innovation Index 2014 (out of 143) .....   | 39.1                                | 49        |

|                                                        |             |           |
|--------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                            | <b>56.6</b> | <b>80</b> |
| 1.1 Political environment .....                        | 38.6        | 105 ○     |
| 1.1.1 Political stability* .....                       | 45.6        | 108 ○     |
| 1.1.2 Government effectiveness* .....                  | 31.6        | 88        |
| 1.2 Regulatory environment .....                       | 56.9        | 96        |
| 1.2.1 Regulatory quality* .....                        | 38.0        | 102 ○     |
| 1.2.2 Rule of law* .....                               | 26.8        | 112 ○     |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 17.4        | 81        |
| 1.3 Business environment .....                         | 74.2        | 50        |
| 1.3.1 Ease of starting a business* .....               | 92.2        | 29        |
| 1.3.2 Ease of resolving insolvency* .....              | 49.7        | 62        |
| 1.3.3 Ease of paying taxes* .....                      | 80.6        | 43        |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research .....</b>                    | <b>47.5</b> | <b>26</b> |
| 2.1 Education .....                                            | 57.0        | 20 ●      |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....       | 4.1         | 82        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | n/a         | n/a       |
| 2.1.3 School life expectancy, years .....                      | 14.7        | 45        |
| 2.1.4 PISA scales in reading, maths, & science .....           | 481.2       | 35        |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 8.8         | 15 ●      |
| 2.2 Tertiary education .....                                   | 47.1        | 24        |
| 2.2.1 Tertiary enrolment, % gross .....                        | 76.1        | 17 ●      |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 28.1        | 13 ●      |
| 2.2.3 Tertiary inbound mobility, % .....                       | 2.2         | 64        |
| 2.3 Research & development (R&D) .....                         | 38.5        | 28        |
| 2.3.1 Researchers, FTE/mn pop. ....                            | 3084.6      | 27        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                    | 1.1         | 33        |
| 2.3.3 QS university ranking, average score top 3* .....        | 52.1        | 25        |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure .....</b>                                 | <b>40.6</b> | <b>65</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 65.4        | 35        |
| 3.1.1 ICT access* .....                                       | 72.5        | 40        |
| 3.1.2 ICT use* .....                                          | 49.7        | 39        |
| 3.1.3 Government's online service* .....                      | 70.9        | 27        |
| 3.1.4 E-participation* .....                                  | 68.6        | 30        |
| 3.2 General infrastructure .....                              | 29.8        | 74        |
| 3.2.1 Electricity output, kWh/cap .....                       | 7450.1      | 27        |
| 3.2.2 Logistics performance* .....                            | 27.2        | 85        |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.5        | 81        |
| 3.3 Ecological sustainability .....                           | 26.6        | 114 ○     |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 2.9         | 115 ○     |
| 3.3.2 Environmental performance* .....                        | 53.5        | 65        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.4         | 95        |

|                                                      |             |           |
|------------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                 | <b>43.5</b> | <b>94</b> |
| 4.1 Credit .....                                     | 23.8        | 96        |
| 4.1.1 Ease of getting credit* .....                  | 55.0        | 56        |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 52.5        | 63        |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.0         | 81 ○      |

|                                                         |      |    |
|---------------------------------------------------------|------|----|
| 4.2 Investment .....                                    | 32.3 | 82 |
| 4.2.1 Ease of protecting investors* .....               | 50.8 | 88 |
| 4.2.2 Market capitalization, % GDP .....                | 43.4 | 46 |
| 4.2.3 Total value of stocks traded, % GDP .....         | 36.3 | 23 |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 44 |
| 4.3 Trade & competition .....                           | 74.4 | 81 |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 5.0  | 82 |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 66.2 | 71 |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>38.4</b> | <b>44</b> |
| 5.1 Knowledge workers .....                                         | 59.1        | 26        |
| 5.1.1 Knowledge-intensive employment, % .....                       | 43.6        | 16 ●      |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 46.1        | 34        |
| 5.1.3 GERD performed by business, % of GDP .....                    | 0.7         | 29        |
| 5.1.4 GERD financed by business, % .....                            | 28.2        | 54        |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 32.9        | 2 ●       |
| 5.2 Innovation linkages .....                                       | 19.6        | 127 ○     |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 43.9        | 65        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 35.6        | 114 ○     |
| 5.2.3 GERD financed by abroad, % .....                              | 3.0         | 74 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 56        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 64        |
| 5.3 Knowledge absorption .....                                      | 36.6        | 55        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 1.6         | 15 ●      |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 7.1         | 63        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 1.1         | 53        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 3.4         | 51        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>36.6</b> | <b>33</b> |
| 6.1 Knowledge creation .....                                     | 39.9        | 21 ●      |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 8.2         | 9 ●       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.2         | 47        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 3.9         | 8 ●       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 8.2         | 74        |
| 6.1.5 Citable documents H index .....                            | 355.0       | 21 ●      |
| 6.2 Knowledge impact .....                                       | 36.0        | 79        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 1.6         | 56        |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 4.3         | 29        |
| 6.2.3 Computer software spending, % GDP .....                    | 0.3         | 54 ○      |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 3.4         | 74        |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 26.0        | 45        |
| 6.3 Knowledge diffusion .....                                    | 33.9        | 42        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.1         | 46        |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 1.7         | 53        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 0.8         | 82        |
| 6.3.4 FDI net outflows, % GDP .....                              | 4.1         | 13 ●      |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>30.1</b> | <b>79</b> |
| 7.1 Intangible assets .....                                     | 37.4        | 104 ○     |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 48.2        | 54        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 0.4         | 47        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 50.4        | 90        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 50.3        | 76        |
| 7.2 Creative goods & services .....                             | 17.0        | 78        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.8         | 19        |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 0.7         | 87 ○      |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 7.1         | 41 ○      |
| 7.2.4 Printing & publishing output manufactures, % .....        | 1.2         | 62        |
| 7.2.5 Creative goods exports, % total trade .....               | 0.4         | 62        |
| 7.3 Online creativity .....                                     | 28.3        | 46        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 3.8         | 64        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 19.3        | 35        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 1569.0      | 63        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 78.6        | 37        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Rwanda

## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 12.1               |
| GDP (US\$ billions) .....   | 8.0                |
| GDP per capita, PPP\$ ..... | 1,644.3            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>30.1</b>                         | <b>94</b> |
| Innovation Output Sub-Index .....                | 17.8                                | 128 ○     |
| Innovation Input Sub-Index .....                 | 42.3                                | 66        |
| Innovation Efficiency Ratio .....                | 0.4                                 | 131 ○     |
| Global Innovation Index 2014 (out of 143) .....  | 29.3                                | 102       |

|                                                        |             |           |
|--------------------------------------------------------|-------------|-----------|
| <b>1 Institutions.....</b>                             | <b>63.2</b> | <b>61</b> |
| 1.1 Political environment.....                         | 51.7        | 64        |
| 1.1.1 Political stability*.....                        | 62.1        | 72        |
| 1.1.2 Government effectiveness*.....                   | 41.4        | 67        |
| 1.2 Regulatory environment .....                       | 68.2        | 62        |
| 1.2.1 Regulatory quality*.....                         | 48.7        | 72        |
| 1.2.2 Rule of law*.....                                | 43.7        | 67        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 13.0        | 50        |
| 1.3 Business environment.....                          | 69.7        | 65        |
| 1.3.1 Ease of starting a business*.....                | 81.7        | 91        |
| 1.3.2 Ease of resolving insolvency*.....               | 41.8        | 94        |
| 1.3.3 Ease of paying taxes*.....                       | 85.8        | 26 ●      |

|                                                          |             |           |
|----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research.....</b>               | <b>21.9</b> | <b>99</b> |
| 2.1 Education .....                                      | 41.4        | 82        |
| 2.1.1 Expenditure on education, % GDP .....              | 5.1         | 55        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | 41.8        | 5 ●       |
| 2.1.3 School life expectancy, years.....                 | 10.3        | 114       |
| 2.1.4 PISA scales in reading, maths, & science .....     | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary .....               | 22.8        | 92        |
| 2.2 Tertiary education.....                              | 24.3        | 89        |
| 2.2.1 Tertiary enrolment, % gross.....                   | 6.9         | 121 ○     |
| 2.2.2 Graduates in science & engineering, % .....        | 22.5        | 34 ●      |
| 2.2.3 Tertiary inbound mobility, %.....                  | 0.8         | 87        |
| 2.3 Research & development (R&D).....                    | 0.0         | 126       |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....        | 11.7        | 103 ○     |
| 2.3.2 Gross expenditure on R&D, % GDP .....              | n/a         | n/a       |
| 2.3.3 QS university ranking, average score top 3*.....   | 0.0         | 73 ○      |

|                                                              |             |           |
|--------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure.....</b>                                 | <b>29.9</b> | <b>98</b> |
| 3.1 Information & communication technologies (ICTs).....     | 32.8        | 99        |
| 3.1.1 ICT access*.....                                       | 24.3        | 128 ○     |
| 3.1.2 ICT use*.....                                          | 4.9         | 123       |
| 3.1.3 Government's online service*.....                      | 51.2        | 63        |
| 3.1.4 E-participation*.....                                  | 51.0        | 63        |
| 3.2 General infrastructure.....                              | 32.9        | 61        |
| 3.2.1 Electricity output, kWh/cap.....                       | n/a         | n/a       |
| 3.2.2 Logistics performance*.....                            | 30.5        | 77        |
| 3.2.3 Gross capital formation, % GDP.....                    | 23.9        | 50        |
| 3.3 Ecological sustainability .....                          | 23.9        | 124       |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | n/a         | n/a       |
| 3.3.2 Environmental performance*.....                        | 35.4        | 122       |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.1         | 124       |

|                                                                   |             |             |
|-------------------------------------------------------------------|-------------|-------------|
| <b>4 Market sophistication .....</b>                              | <b>58.4</b> | <b>26 ●</b> |
| 4.1 Credit.....                                                   | 53.7        | 19 ●        |
| 4.1.1 Ease of getting credit*.....                                | 90.0        | 4 ●         |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 11.2        | 135 ○       |
| 4.1.3 Microfinance gross loans, % GDP .....                       | 5.8         | 6 ●         |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 46.7 | 33  |
| 4.2.1 Ease of protecting investors*.....                | 46.7 | 102 |
| 4.2.2 Market capitalization, % GDP.....                 | n/a  | n/a |
| 4.2.3 Total value of stocks traded, % GDP.....          | n/a  | n/a |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a |
| 4.3 Trade & competition .....                           | 74.7 | 78  |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 4.6  | 77  |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 65.6 | 75  |

|                                                                               |             |             |
|-------------------------------------------------------------------------------|-------------|-------------|
| <b>5 Business sophistication .....</b>                                        | <b>38.3</b> | <b>45 ●</b> |
| 5.1 Knowledge workers.....                                                    | 36.9        | 73          |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                    | 3.8         | 113 ○       |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 55.4        | 17 ●        |
| 5.1.3 GERD performed by business, % of GDP.....                               | n/a         | n/a         |
| 5.1.4 GERD financed by business, %.....                                       | n/a         | n/a         |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a         | n/a         |
| 5.2 Innovation linkages .....                                                 | 47.3        | 20          |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 44.2        | 62          |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 48.9        | 56          |
| 5.2.3 GERD financed by abroad, %.....                                         | n/a         | n/a         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a         | n/a         |
| 5.3 Knowledge absorption.....                                                 | 30.6        | 89          |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 111         |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 10.6        | 28 ●        |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.8         | 71          |
| 5.3.4 FDI net inflows, % GDP .....                                            | 1.5         | 99          |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>14.1</b> | <b>125</b> |
| 6.1 Knowledge creation.....                                                   | 9.6         | 72         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....            | 2.4         | 41         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....                 | 0.1         | 74         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP <sup>Ⓐ</sup> .....          | 0.7         | 33         |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                       | 8.4         | 72         |
| 6.1.5 Citable documents H index.....                                          | 43.0        | 122        |
| 6.2 Knowledge impact.....                                                     | 3.7         | 135 ○      |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | n/a         | n/a        |
| 6.2.2 New businesses/th pop. 15–64.....                                       | 1.1         | 65         |
| 6.2.3 Computer software spending, % GDP.....                                  | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                         | 0.2         | 138 ○      |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | n/a         | n/a        |
| 6.3 Knowledge diffusion.....                                                  | 29.0        | 64         |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 2.0         | 9 ●        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.1         | 101        |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.0         | 78         |
| 6.3.4 FDI net outflows, % GDP .....                                           | n/a         | n/a        |

|                                                                  |             |            |
|------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                  | <b>21.6</b> | <b>115</b> |
| 7.1 Intangible assets .....                                      | 42.6        | 85         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 6.7         | 100 ○      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....            | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....          | 66.7        | 27 ●       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....    | 58.8        | 45 ●       |
| 7.2 Creative goods & services.....                               | 0.9         | 132 ○      |
| 7.2.1 Cultural & creative services exports, % total trade.....   | 0.0         | 78         |
| 7.2.2 National feature films/mn pop. 15–69.....                  | n/a         | n/a        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....              | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, %.....          | n/a         | n/a        |
| 7.2.5 Creative goods exports, % total trade.....                 | 0.0         | 109        |
| 7.3 Online creativity.....                                       | 0.2         | 129 ○      |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....        | 0.2         | 128 ○      |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                       | 0.0         | 128 ○      |
| 7.3.3 Wikipedia edits/pop. 15–69.....                            | 38.6        | 126        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                   | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 29.4                             |
| GDP (US\$ billions) .....   | 752.5                            |
| GDP per capita, PPP\$ ..... | 32,340.1                         |
| Income group .....          | High income                      |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>40.7</b>                         | <b>43</b> |
| Innovation Output Sub-Index .....                 | 34.0                                | 44        |
| Innovation Input Sub-Index .....                  | 47.3                                | 45        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 69        |
| Global Innovation Index 2014 (out of 143) .....   | 41.6                                | 38        |

|          |                                                                  |             |           |
|----------|------------------------------------------------------------------|-------------|-----------|
| <b>1</b> | <b>Institutions .....</b>                                        | <b>60.4</b> | <b>68</b> |
| 1.1      | Political environment .....                                      | 48.5        | 73        |
| 1.1.1    | Political stability* .....                                       | 54.1        | 89        |
| 1.1.2    | Government effectiveness* .....                                  | 43.0        | 64        |
| 1.2      | Regulatory environment .....                                     | 64.8        | 77        |
| 1.2.1    | Regulatory quality* .....                                        | 49.9        | 68        |
| 1.2.2    | Rule of law* .....                                               | 54.7        | 52        |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....                 | 19.5        | 89        |
| 1.3      | Business environment .....                                       | 67.9        | 77        |
| 1.3.1    | Ease of starting a business* .....                               | 82.7        | 89        |
| 1.3.2    | Ease of resolving insolvency* .....                              | 21.7        | 136 ○     |
| 1.3.3    | Ease of paying taxes* .....                                      | 99.2        | 3 ●       |
| <b>2</b> | <b>Human capital &amp; research .....</b>                        | <b>39.8</b> | <b>39</b> |
| 2.1      | Education .....                                                  | 49.5        | 55        |
| 2.1.1    | Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 5.1         | 51        |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 18.1        | 67        |
| 2.1.3    | School life expectancy, years .....                              | 16.3        | 21 ●      |
| 2.1.4    | PISA scales in reading, maths, & science .....                   | n/a         | n/a       |
| 2.1.5    | Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 11.3        | 36        |
| 2.2      | Tertiary education .....                                         | 46.6        | 26 ●      |
| 2.2.1    | Tertiary enrolment, % gross .....                                | 57.5        | 43        |
| 2.2.2    | Graduates in science & engineering, % .....                      | 29.0        | 11 ●      |
| 2.2.3    | Tertiary inbound mobility, % .....                               | 4.6         | 38        |
| 2.3      | Research & development (R&D) .....                               | 23.4        | 41        |
| 2.3.1    | Researchers, FTE/mn pop. .....                                   | n/a         | n/a       |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.1         | 110 ○     |
| 2.3.3    | QS university ranking, average score top 3* .....                | 45.4        | 31        |
| <b>3</b> | <b>Infrastructure .....</b>                                      | <b>50.2</b> | <b>34</b> |
| 3.1      | Information & communication technologies (ICTs) .....            | 63.0        | 37        |
| 3.1.1    | ICT access* .....                                                | 70.4        | 44        |
| 3.1.2    | ICT use* .....                                                   | 47.7        | 41        |
| 3.1.3    | Government's online service* .....                               | 77.2        | 18 ●      |
| 3.1.4    | E-participation* .....                                           | 56.9        | 51        |
| 3.2      | General infrastructure .....                                     | 49.5        | 17 ●      |
| 3.2.1    | Electricity output, kWh/cap .....                                | 9603.4      | 14 ●      |
| 3.2.2    | Logistics performance* .....                                     | 50.4        | 47        |
| 3.2.3    | Gross capital formation, % GDP .....                             | 30.8        | 20 ●      |
| 3.3      | Ecological sustainability .....                                  | 38.2        | 67        |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | 6.4         | 82        |
| 3.3.2    | Environmental performance* .....                                 | 66.7        | 35        |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP .....          | 0.2         | 116 ○     |
| <b>4</b> | <b>Market sophistication .....</b>                               | <b>50.3</b> | <b>55</b> |
| 4.1      | Credit .....                                                     | 31.0        | 68        |
| 4.1.1    | Ease of getting credit* .....                                    | 50.0        | 65        |
| 4.1.2    | Domestic credit to private sector, % GDP .....                   | 40.3        | 83        |
| 4.1.3    | Microfinance gross loans, % GDP .....                            | n/a         | n/a       |

|       |                                                   |      |      |
|-------|---------------------------------------------------|------|------|
| 4.2   | Investment .....                                  | 40.6 | 50   |
| 4.2.1 | Ease of protecting investors* .....               | 57.5 | 60   |
| 4.2.2 | Market capitalization, % GDP .....                | 50.9 | 37   |
| 4.2.3 | Total value of stocks traded, % GDP .....         | 70.1 | 9 ●  |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 72 ○ |
| 4.3   | Trade & competition .....                         | 79.3 | 57   |
| 4.3.1 | Applied tariff rate, weighted mean, % .....       | 4.3  | 73   |
| 4.3.2 | Intensity of local competition <sup>†</sup> ..... | 73.5 | 38   |

|          |                                                                 |             |           |
|----------|-----------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                            | <b>35.8</b> | <b>64</b> |
| 5.1      | Knowledge workers .....                                         | 33.8        | 82        |
| 5.1.1    | Knowledge-intensive employment, % .....                         | 26.6        | 53        |
| 5.1.2    | Firms offering formal training, % firms .....                   | n/a         | n/a       |
| 5.1.3    | GERD performed by business, % of GDP .....                      | n/a         | n/a       |
| 5.1.4    | GERD financed by business, % .....                              | n/a         | n/a       |
| 5.1.5    | Females employed w/advanced degrees, % total <sup>Ⓐ</sup> ..... | 4.4         | 78 ○      |
| 5.2      | Innovation linkages .....                                       | 42.3        | 32        |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....   | 53.3        | 36        |
| 5.2.2    | State of cluster development <sup>†</sup> .....                 | 61.0        | 21 ●      |
| 5.2.3    | GERD financed by abroad, % .....                                | n/a         | n/a       |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 30        |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                   | 0.0         | 71        |
| 5.3      | Knowledge absorption .....                                      | 31.2        | 84        |
| 5.3.1    | Royalty & license fees payments, % total trade .....            | n/a         | n/a       |
| 5.3.2    | High-tech imports less re-imports, % total trade .....          | 6.0         | 83        |
| 5.3.3    | Comm., computer & info. services imp., % total trade .....      | n/a         | n/a       |
| 5.3.4    | FDI net inflows, % GDP .....                                    | 1.2         | 105 ○     |

|          |                                                             |             |           |
|----------|-------------------------------------------------------------|-------------|-----------|
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>             | <b>25.1</b> | <b>74</b> |
| 6.1      | Knowledge creation .....                                    | 8.9         | 78        |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....             | 0.3         | 83 ○      |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                  | n/a         | n/a       |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....           | n/a         | n/a       |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....          | 6.9         | 82        |
| 6.1.5    | Citable documents H index .....                             | 144.0       | 52        |
| 6.2      | Knowledge impact .....                                      | 39.8        | 55        |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                    | 1.2         | 68        |
| 6.2.2    | New businesses/th pop. 15–64 .....                          | n/a         | n/a       |
| 6.2.3    | Computer software spending, % GDP .....                     | 0.3         | 29        |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....            | 1.5         | 105 ○     |
| 6.2.5    | High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 35.9        | 27        |
| 6.3      | Knowledge diffusion .....                                   | 26.6        | 75        |
| 6.3.1    | Royalty & license fees receipts, % total trade .....        | n/a         | n/a       |
| 6.3.2    | High-tech exports less re-exports, % total trade .....      | 0.1         | 111 ○     |
| 6.3.3    | Comm., computer & info. services exp., % total trade .....  | n/a         | n/a       |
| 6.3.4    | FDI net outflows, % GDP .....                               | 0.7         | 61        |

|          |                                                                 |             |             |
|----------|-----------------------------------------------------------------|-------------|-------------|
| <b>7</b> | <b>Creative outputs .....</b>                                   | <b>42.9</b> | <b>30 ●</b> |
| 7.1      | Intangible assets .....                                         | 65.0        | 8           |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                   | n/a         | n/a         |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a         |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....               | 65.9        | 29 ●        |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....         | 64.1        | 24 ●        |
| 7.2      | Creative goods & services .....                                 | 18.2        | 72          |
| 7.2.1    | Cultural & creative services exports, % total trade .....       | n/a         | n/a         |
| 7.2.2    | National feature films/mn pop. 15–69 .....                      | n/a         | n/a         |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....                  | 10.2        | 33          |
| 7.2.4    | Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 2.3         | 22          |
| 7.2.5    | Creative goods exports, % total trade .....                     | 0.1         | 88 ○        |
| 7.3      | Online creativity .....                                         | 23.5        | 58          |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....            | 3.8         | 62          |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                           | 0.8         | 90          |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                                | 1469.8      | 67          |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                       | 78.5        | 39          |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Senegal

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 14.5                |
| GDP (US\$ billions) .....   | 15.6                |
| GDP per capita, PPP\$ ..... | 2,019.7             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                                        | Score 0–100<br>or value (hard data) | Rank       |
|------------------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b>                       | <b>31.0</b>                         | <b>84</b>  |
| Innovation Output Sub-Index .....                                      | 27.8                                | 72         |
| Innovation Input Sub-Index .....                                       | 34.1                                | 110        |
| Innovation Efficiency Ratio .....                                      | 0.8                                 | 24 ●       |
| Global Innovation Index 2014 (out of 143) .....                        | 30.1                                | 98         |
| <b>1 Institutions.....</b>                                             | <b>54.3</b>                         | <b>89</b>  |
| 1.1 Political environment.....                                         | 45.2                                | 81         |
| 1.1.1 Political stability*.....                                        | 62.0                                | 73         |
| 1.1.2 Government effectiveness*.....                                   | 28.5                                | 97         |
| 1.2 Regulatory environment .....                                       | 65.0                                | 75         |
| 1.2.1 Regulatory quality*.....                                         | 46.5                                | 73         |
| 1.2.2 Rule of law*.....                                                | 40.4                                | 77         |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....                  | 14.8                                | 63 ●       |
| 1.3 Business environment.....                                          | 52.6                                | 129        |
| 1.3.1 Ease of starting a business*.....                                | 85.0                                | 75         |
| 1.3.2 Ease of resolving insolvency*.....                               | 41.9                                | 93         |
| 1.3.3 Ease of paying taxes*.....                                       | 30.9                                | 138 ○      |
| <b>2 Human capital &amp; research.....</b>                             | <b>14.4</b>                         | <b>128</b> |
| 2.1 Education .....                                                    | 31.5                                | 112        |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 5.6                                 | 40 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 29.0                                | 26 ●       |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 7.9                                 | 127 ○      |
| 2.1.4 PISA scales in reading, maths, & science.....                    | n/a                                 | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 27.4                                | 101        |
| 2.2 Tertiary education.....                                            | 5.9                                 | 131 ○      |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 7.6                                 | 118        |
| 2.2.2 Graduates in science & engineering, % .....                      | n/a                                 | n/a        |
| 2.2.3 Tertiary inbound mobility, %.....                                | n/a                                 | n/a        |
| 2.3 Research & development (R&D).....                                  | 5.6                                 | 79         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                      | 361.3                               | 64         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.5                                 | 58         |
| 2.3.3 QS university ranking, average score top 3*.....                 | 0.0                                 | 73 ○       |
| <b>3 Infrastructure.....</b>                                           | <b>27.6</b>                         | <b>108</b> |
| 3.1 Information & communication technologies (ICTs).....               | 27.7                                | 107        |
| 3.1.1 ICT access*.....                                                 | 32.3                                | 111        |
| 3.1.2 ICT use*.....                                                    | 12.5                                | 107        |
| 3.1.3 Government's online service*.....                                | 30.7                                | 101        |
| 3.1.4 E-participation*.....                                            | 35.3                                | 88         |
| 3.2 General infrastructure.....                                        | 27.0                                | 87         |
| 3.2.1 Electricity output, kWh/cap.....                                 | 251.3                               | 113 ○      |
| 3.2.2 Logistics performance*.....                                      | 23.5                                | 96         |
| 3.2.3 Gross capital formation, % GDP.....                              | 27.4                                | 33 ●       |
| 3.3 Ecological sustainability .....                                    | 28.1                                | 105        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....                | 6.5                                 | 81         |
| 3.3.2 Environmental performance*.....                                  | 40.8                                | 104        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....           | 0.3                                 | 102        |
| <b>4 Market sophistication .....</b>                                   | <b>46.1</b>                         | <b>75</b>  |
| 4.1 Credit.....                                                        | 24.1                                | 92         |
| 4.1.1 Ease of getting credit*.....                                     | 30.0                                | 113        |
| 4.1.2 Domestic credit to private sector, % GDP.....                    | 33.0                                | 91         |
| 4.1.3 Microfinance gross loans, % GDP.....                             | 2.7                                 | 21 ●       |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| 4.2 Investment .....                                                          | 45.8        | 37         |
| 4.2.1 Ease of protecting investors*.....                                      | 45.8        | 107        |
| 4.2.2 Market capitalization, % GDP.....                                       | n/a         | n/a        |
| 4.2.3 Total value of stocks traded, % GDP.....                                | n/a         | n/a        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                                 | n/a         | n/a        |
| 4.3 Trade & competition .....                                                 | 68.3        | 101        |
| 4.3.1 Applied tariff rate, weighted mean, %.....                              | 8.0         | 107        |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                       | 64.8        | 78         |
| <b>5 Business sophistication .....</b>                                        | <b>28.3</b> | <b>101</b> |
| 5.1 Knowledge workers.....                                                    | 8.3         | 136 ○      |
| 5.1.1 Knowledge-intensive employment, %.....                                  | n/a         | n/a        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 16.3        | 97         |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                 | 0.0         | 85 ○       |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                         | 4.1         | 77         |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> .....         | 0.7         | 84 ○       |
| 5.2 Innovation linkages .....                                                 | 45.0        | 24 ●       |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 44.0        | 63         |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 38.8        | 100        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 40.5        | 11 ●       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                           | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                            | n/a         | n/a        |
| 5.3 Knowledge absorption.....                                                 | 31.7        | 78         |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 104        |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 3.1         | 122 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 2.0         | 13 ●       |
| 5.3.4 FDI net inflows, % GDP.....                                             | 2.0         | 85         |
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>22.4</b> | <b>91</b>  |
| 6.1 Knowledge creation.....                                                   | 8.1         | 84         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                          | n/a         | n/a        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                               | 0.1         | 65         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                        | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                       | 10.7        | 67         |
| 6.1.5 Citable documents H index.....                                          | 83.0        | 85         |
| 6.2 Knowledge impact.....                                                     | 26.5        | 116        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | 0.9         | 73         |
| 6.2.2 New businesses/th pop. 15–64.....                                       | 0.3         | 94         |
| 6.2.3 Computer software spending, % GDP.....                                  | 0.3         | 60         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                         | 1.7         | 99         |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 15.3        | 63         |
| 6.3 Knowledge diffusion.....                                                  | 32.6        | 49 ●       |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 64         |
| 6.3.2 High-tech exports less re-exports, % total trade.....                   | 0.1         | 97         |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 4.6         | 9 ●        |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 0.3         | 75         |
| <b>7 Creative outputs .....</b>                                               | <b>33.1</b> | <b>66</b>  |
| 7.1 Intangible assets .....                                                   | 56.6        | 20         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                            | n/a         | n/a        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                         | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                       | 59.9        | 51 ●       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....                 | 53.3        | 62 ●       |
| 7.2 Creative goods & services.....                                            | 9.6         | 98         |
| 7.2.1 Cultural & creative services exports, % total trade.....                | 0.0         | 84 ○       |
| 7.2.2 National feature films/mn pop. 15–69.....                               | 0.4         | 98 ○       |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                           | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> .....         | 1.5         | 47         |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....                | 0.2         | 83         |
| 7.3 Online creativity.....                                                    | 9.7         | 79         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....                     | 1.3         | 102        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                                    | 0.2         | 112        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                         | 51.4        | 119        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                                | 36.8        | 69 ○       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 9.5                 |
| GDP (US\$ billions) .....   | 43.9                |
| GDP per capita, PPP\$ ..... | 11,553.4            |
| Income group .....          | Upper-middle income |
| Region .....                | Europe              |

|                                                               | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>36.5</b>                         | <b>63</b> |
| Innovation Output Sub-Index .....                             | 31.2                                | 59        |
| Innovation Input Sub-Index .....                              | 41.8                                | 70        |
| Innovation Efficiency Ratio .....                             | 0.7                                 | 55        |
| Global Innovation Index 2014 (out of 143) .....               | 35.9                                | 67        |
| <b>1 Institutions .....</b>                                   | <b>62.2</b>                         | <b>64</b> |
| 1.1 Political environment .....                               | 50.2                                | 70        |
| 1.1.1 Political stability* .....                              | 61.8                                | 74        |
| 1.1.2 Government effectiveness* .....                         | 38.6                                | 77        |
| 1.2 Regulatory environment .....                              | 71.1                                | 49        |
| 1.2.1 Regulatory quality* .....                               | 45.8                                | 75        |
| 1.2.2 Rule of law* .....                                      | 38.5                                | 80        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 8.0                                 | 1 ●       |
| 1.3 Business environment .....                                | 65.2                                | 83        |
| 1.3.1 Ease of starting a business* .....                      | 88.9                                | 56        |
| 1.3.2 Ease of resolving insolvency* .....                     | 57.9                                | 46        |
| 1.3.3 Ease of paying taxes* .....                             | 48.9                                | 126 ○     |
| <b>2 Human capital &amp; research .....</b>                   | <b>30.1</b>                         | <b>64</b> |
| 2.1 Education .....                                           | 35.3                                | 99 ○      |
| 2.1.1 Expenditure on education, % GDP .....                   | 0.1                                 | 130 ○     |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 13.9                                | 89 ○      |
| 2.1.3 School life expectancy, years .....                     | 14.4                                | 51        |
| 2.1.4 PISA scales in reading, maths, & science .....          | 446.6                               | 41        |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 9.0                                 | 18 ●      |
| 2.2 Tertiary education .....                                  | 40.8                                | 42        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 56.4                                | 44        |
| 2.2.2 Graduates in science & engineering, % .....             | 24.8                                | 27        |
| 2.2.3 Tertiary inbound mobility, % .....                      | 3.7                                 | 48        |
| 2.3 Research & development (R&D) .....                        | 14.0                                | 58        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓔ</sup> .....             | 1235.5                              | 44        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓔ</sup> .....      | 1.0                                 | 34        |
| 2.3.3 QS university ranking, average score top 3* .....       | 4.5                                 | 70        |
| <b>3 Infrastructure .....</b>                                 | <b>42.6</b>                         | <b>56</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 49.0                                | 60        |
| 3.1.1 ICT access* .....                                       | 72.2                                | 41        |
| 3.1.2 ICT use* .....                                          | 43.4                                | 50        |
| 3.1.3 Government's online service* .....                      | 39.4                                | 82        |
| 3.1.4 E-participation* .....                                  | 41.2                                | 79        |
| 3.2 General infrastructure .....                              | 30.3                                | 71        |
| 3.2.1 Electricity output, kWh/cap .....                       | 5009.8                              | 42        |
| 3.2.2 Logistics performance* .....                            | 40.9                                | 61        |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.7                                | 78        |
| 3.3 Ecological sustainability .....                           | 48.4                                | 34        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 4.8                                 | 100 ○     |
| 3.3.2 Environmental performance* .....                        | 69.1                                | 31        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 7.9                                 | 13 ●      |
| <b>4 Market sophistication .....</b>                          | <b>43.9</b>                         | <b>90</b> |
| 4.1 Credit .....                                              | 31.1                                | 67        |
| 4.1.1 Ease of getting credit* .....                           | 60.0                                | 48        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 43.6                                | 77        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 1.7                                 | 30        |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| 4.2 Investment .....                                                | 34.6        | 72        |
| 4.2.1 Ease of protecting investors* .....                           | 63.3        | 31        |
| 4.2.2 Market capitalization, % GDP .....                            | 18.3        | 72        |
| 4.2.3 Total value of stocks traded, % GDP .....                     | 0.7         | 73        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                      | n/a         | n/a       |
| 4.3 Trade & competition .....                                       | 66.1        | 111 ○     |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓔ</sup> .....      | 6.0         | 90        |
| 4.3.2 Intensity of local competition <sup>†</sup> .....             | 53.3        | 122 ○     |
| <b>5 Business sophistication .....</b>                              | <b>30.2</b> | <b>95</b> |
| 5.1 Knowledge workers .....                                         | 30.9        | 92        |
| 5.1.1 Knowledge-intensive employment, % .....                       | 28.1        | 49        |
| 5.1.2 Firms offering formal training, % firms .....                 | 30.6        | 65        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓔ</sup> .....       | 0.2         | 46        |
| 5.1.4 GERD financed by business, % <sup>Ⓔ</sup> .....               | 5.8         | 72 ○      |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 12.2        | 52        |
| 5.2 Innovation linkages .....                                       | 21.0        | 119 ○     |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 37.3        | 92        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 36.5        | 111 ○     |
| 5.2.3 GERD financed by abroad, % <sup>Ⓔ</sup> .....                 | 9.2         | 44        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 63 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 62        |
| 5.3 Knowledge absorption .....                                      | 38.7        | 45        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 1.0         | 28        |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 6.6         | 71        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 1.7         | 25 ●      |
| 5.3.4 FDI net inflows, % GDP .....                                  | 3.2         | 56        |
| <b>6 Knowledge &amp; technology outputs .....</b>                   | <b>27.7</b> | <b>59</b> |
| 6.1 Knowledge creation .....                                        | 21.2        | 47        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....               | 2.1         | 46        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                    | 0.1         | 56        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....             | 0.7         | 32        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....            | 51.6        | 8 ●       |
| 6.1.5 Citable documents H index .....                               | 86.0        | 83        |
| 6.2 Knowledge impact .....                                          | 29.9        | 105 ○     |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                      | n/a         | n/a       |
| 6.2.2 New businesses/th pop. 15–64 .....                            | 1.7         | 52        |
| 6.2.3 Computer software spending, % GDP .....                       | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....              | 24.7        | 16 ●      |
| 6.2.5 High- & medium-high-tech manufactures, % .....                | 19.7        | 57        |
| 6.3 Knowledge diffusion .....                                       | 32.1        | 50        |
| 6.3.1 Royalty & license fees receipts, % total trade .....          | 0.2         | 37        |
| 6.3.2 High-tech exports less re-exports, % total trade .....        | 2.0         | 50        |
| 6.3.3 Comm., computer & info. services exp., % total trade .....    | 2.7         | 22 ●      |
| 6.3.4 FDI net outflows, % GDP .....                                 | 0.8         | 56        |
| <b>7 Creative outputs .....</b>                                     | <b>34.6</b> | <b>60</b> |
| 7.1 Intangible assets .....                                         | 38.0        | 99 ○      |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                 | 43.7        | 58        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....              | 1.8         | 14 ●      |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....             | 46.0        | 106 ○     |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....       | 42.6        | 106 ○     |
| 7.2 Creative goods & services .....                                 | 33.3        | 34        |
| 7.2.1 Cultural & creative services exports, % total trade .....     | 1.7         | 1 ●       |
| 7.2.2 National feature films/mn pop. 15–69 .....                    | 2.6         | 54        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % .....            | 1.7         | 38        |
| 7.2.5 Creative goods exports, % total trade .....                   | 0.7         | 48        |
| 7.3 Online creativity .....                                         | 29.0        | 44        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....          | 1.5         | 95        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                         | 5.1         | 53        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                              | 4693.0      | 29 ●      |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                     | 74.9        | 46        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Seychelles

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 0.1                 |
| GDP (US\$ billions) .....   | 1.4                 |
| GDP per capita, PPP\$ ..... | 27,575.9            |
| Income group .....          | Upper-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>36.4</b>                         | <b>65</b> |
| Innovation Output Sub-Index .....                | 29.2                                | 64        |
| Innovation Input Sub-Index .....                 | 43.7                                | 59        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 88        |
| Global Innovation Index 2014 (out of 143) .....  | 38.6                                | 51        |

|                                                                |             |              |
|----------------------------------------------------------------|-------------|--------------|
| <b>1 Institutions.....</b>                                     | <b>68.7</b> | <b>49</b>    |
| 1.1 Political environment.....                                 | 67.3        | 46 ●         |
| 1.1.1 Political stability*.....                                | 85.7        | 30 ●         |
| 1.1.2 Government effectiveness*.....                           | 49.0        | 55           |
| 1.2 Regulatory environment .....                               | 68.3        | 61           |
| 1.2.1 Regulatory quality*.....                                 | 40.0        | 90           |
| 1.2.2 Rule of law*.....                                        | 48.8        | 60           |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....          | 11.9        | 46 ●         |
| 1.3 Business environment.....                                  | 70.4        | 63           |
| 1.3.1 Ease of starting a business*.....                        | 77.5        | 104          |
| 1.3.2 Ease of resolving insolvency*.....                       | 52.2        | 58           |
| 1.3.3 Ease of paying taxes*.....                               | 81.5        | 38 ●         |
| <b>2 Human capital &amp; research.....</b>                     | <b>24.2</b> | <b>88</b>    |
| 2.1 Education .....                                            | 36.2        | 93           |
| 2.1.1 Expenditure on education, % GDP .....                    | 3.6         | 97           |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....       | 6.8         | 109 ○        |
| 2.1.3 School life expectancy, years.....                       | 13.4        | 73           |
| 2.1.4 PISA scales in reading, maths, & science.....            | n/a         | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 12.2        | 42           |
| 2.2 Tertiary education.....                                    | 33.6        | 62           |
| 2.2.1 Tertiary enrolment, % gross.....                         | 1.3         | 133 ○        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 25.0        | 25 ●         |
| 2.2.3 Tertiary inbound mobility, %.....                        | n/a         | n/a          |
| 2.3 Research & development (R&D).....                          | 2.9         | 95           |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 149.3       | 78           |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.3         | 77           |
| 2.3.3 QS university ranking, average score top 3*.....         | 0.0         | 73 ○         |
| <b>3 Infrastructure.....</b>                                   | <b>46.1</b> | <b>45 ●</b>  |
| 3.1 Information & communication technologies (ICTs).....       | 37.6        | 90           |
| 3.1.1 ICT access*.....                                         | 64.6        | 57           |
| 3.1.2 ICT use*.....                                            | 27.4        | 76           |
| 3.1.3 Government's online service*.....                        | 33.1        | 93           |
| 3.1.4 E-participation*.....                                    | 25.5        | 110 ○        |
| 3.2 General infrastructure.....                                | 60.3        | 7            |
| 3.2.1 Electricity output, kWh/cap.....                         | n/a         | n/a          |
| 3.2.2 Logistics performance*.....                              | n/a         | n/a          |
| 3.2.3 Gross capital formation, % GDP.....                      | 36.0        | 10 ●         |
| 3.3 Ecological sustainability .....                            | 40.4        | 56           |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....        | n/a         | n/a          |
| 3.3.2 Environmental performance*.....                          | 55.6        | 56           |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....   | 1.3         | 55           |
| <b>4 Market sophistication .....</b>                           | <b>31.0</b> | <b>138 ○</b> |
| 4.1 Credit.....                                                | 7.9         | 134 ○        |
| 4.1.1 Ease of getting credit*.....                             | 10.0        | 133 ○        |
| 4.1.2 Domestic credit to private sector, % GDP.....            | 21.9        | 114 ○        |
| 4.1.3 Microfinance gross loans, % GDP .....                    | n/a         | n/a          |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 58.3 | 12    |
| 4.2.1 Ease of protecting investors*.....                       | 58.3 | 54    |
| 4.2.2 Market capitalization, % GDP.....                        | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP.....                 | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                  | n/a  | n/a   |
| 4.3 Trade & competition .....                                  | 26.9 | 141 ○ |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 28.3 | 139 ○ |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 53.9 | 121 ○ |

|                                                                         |             |           |
|-------------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                  | <b>48.3</b> | <b>21</b> |
| 5.1 Knowledge workers.....                                              | 43.9        | 49        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....              | 26.4        | 54        |
| 5.1.2 Firms offering formal training, % firms.....                      | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP.....                         | n/a         | n/a       |
| 5.1.4 GERD financed by business, %.....                                 | n/a         | n/a       |
| 5.1.5 Females employed w/advanced degrees, % total.....                 | n/a         | n/a       |
| 5.2 Innovation linkages .....                                           | 52.7        | 10 ●      |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....     | 40.0        | 77        |
| 5.2.2 State of cluster development <sup>†</sup> .....                   | 48.1        | 60        |
| 5.2.3 GERD financed by abroad, %.....                                   | n/a         | n/a       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                     | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....        | 2.2         | 8 ●       |
| 5.3 Knowledge absorption.....                                           | 48.4        | 18        |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> ..... | 0.1         | 96        |
| 5.3.2 High-tech imports less re-imports, % total trade.....             | n/a         | n/a       |
| 5.3.3 Comm., computer & info. services imp., % total trade.....         | n/a         | n/a       |
| 5.3.4 FDI net inflows, % GDP.....                                       | 14.0        | 7 ●       |

|                                                                               |             |              |
|-------------------------------------------------------------------------------|-------------|--------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>18.3</b> | <b>113 ○</b> |
| 6.1 Knowledge creation.....                                                   | 16.1        | 54           |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                          | n/a         | n/a          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                               | 2.1         | 21 ●         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                        | n/a         | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                       | 13.7        | 56           |
| 6.1.5 Citable documents H index.....                                          | 38.0        | 128 ○        |
| 6.2 Knowledge impact.....                                                     | 8.0         | 128 ○        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | n/a         | n/a          |
| 6.2.2 New businesses/th pop. 15–64.....                                       | n/a         | n/a          |
| 6.2.3 Computer software spending, % GDP.....                                  | n/a         | n/a          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                         | 3.9         | 70           |
| 6.2.5 High- & medium-high-tech manufactures, %.....                           | n/a         | n/a          |
| 6.3 Knowledge diffusion.....                                                  | 30.7        | 54           |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.2         | 44           |
| 6.3.2 High-tech exports less re-exports, % total trade.....                   | n/a         | n/a          |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.4         | 62           |
| 6.3.4 FDI net outflows, % GDP.....                                            | 0.5         | 65           |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                | <b>40.2</b> | <b>41</b> |
| 7.1 Intangible assets .....                                    | 38.5        | 97        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | 46.0        | 56        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 47.6        | 100       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 42.9        | 105 ○     |
| 7.2 Creative goods & services.....                             | n/a         | n/a       |
| 7.2.1 Cultural & creative services exports, % total trade..... | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69.....                | n/a         | n/a       |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, %.....        | n/a         | n/a       |
| 7.2.5 Creative goods exports, % total trade.....               | n/a         | n/a       |
| 7.3 Online creativity.....                                     | 43.6        | 27 ●      |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 100.0       | 1 ●       |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 27.3        | 27 ●      |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 473.2       | 93        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 5.5                         |
| GDP (US\$ billions) .....   | 308.1                       |
| GDP per capita, PPP\$ ..... | 67,035.4                    |
| Income group .....          | High income                 |
| Region .....                | South East Asia and Oceania |

|                                                   | Score 0–100<br>or value (hard data) | Rank     |
|---------------------------------------------------|-------------------------------------|----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>59.4</b>                         | <b>7</b> |
| Innovation Output Sub-Index .....                 | 46.6                                | 20       |
| Innovation Input Sub-Index .....                  | 72.1                                | 1 ●      |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 100 ○    |
| Global Innovation Index 2014 (out of 143) .....   | 59.2                                | 7        |

|          |                                                                  |             |            |
|----------|------------------------------------------------------------------|-------------|------------|
| <b>1</b> | <b>Institutions .....</b>                                        | <b>95.4</b> | <b>2 ●</b> |
| 1.1      | Political environment .....                                      | 97.3        | 2 ●        |
| 1.1.1    | Political stability* .....                                       | 97.1        | 5          |
| 1.1.2    | Government effectiveness* .....                                  | 97.5        | 2 ●        |
| 1.2      | Regulatory environment .....                                     | 98.5        | 1 ●        |
| 1.2.1    | Regulatory quality* .....                                        | 100.0       | 1 ●        |
| 1.2.2    | Rule of law* .....                                               | 94.0        | 11         |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....                 | 8.0         | 1 ●        |
| 1.3      | Business environment .....                                       | 90.5        | 3 ●        |
| 1.3.1    | Ease of starting a business* .....                               | 96.5        | 6          |
| 1.3.2    | Ease of resolving insolvency* .....                              | 77.9        | 17         |
| 1.3.3    | Ease of paying taxes* .....                                      | 97.2        | 5          |
| <b>2</b> | <b>Human capital &amp; research .....</b>                        | <b>60.9</b> | <b>5</b>   |
| 2.1      | Education .....                                                  | 39.8        | 86 ○       |
| 2.1.1    | Expenditure on education, % GDP .....                            | 2.9         | 110 ○      |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓔ</sup> ..... | 16.7        | 74 ○       |
| 2.1.3    | School life expectancy, years .....                              | n/a         | n/a        |
| 2.1.4    | PISA scales in reading, maths, & science .....                   | 555.7       | 2 ●        |
| 2.1.5    | Pupil-teacher ratio, secondary <sup>Ⓔ</sup> .....                | 14.9        | 64 ○       |
| 2.2      | Tertiary education .....                                         | 81.7        | 1 ●        |
| 2.2.1    | Tertiary enrolment, % gross .....                                | n/a         | n/a        |
| 2.2.2    | Graduates in science & engineering, % .....                      | n/a         | n/a        |
| 2.2.3    | Tertiary inbound mobility, % .....                               | 19.2        | 6          |
| 2.3      | Research & development (R&D) .....                               | 61.2        | 13         |
| 2.3.1    | Researchers, FTE/mn pop. <sup>Ⓔ</sup> .....                      | 6437.7      | 7          |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓔ</sup> .....               | 2.0         | 18         |
| 2.3.3    | QS university ranking, average score top 3* .....                | 58.4        | 20         |
| <b>3</b> | <b>Infrastructure .....</b>                                      | <b>69.5</b> | <b>1 ●</b> |
| 3.1      | Information & communication technologies (ICTs) .....            | 86.9        | 6          |
| 3.1.1    | ICT access* .....                                                | 86.1        | 13         |
| 3.1.2    | ICT use* .....                                                   | 71.9        | 14         |
| 3.1.3    | Government's online service* .....                               | 99.2        | 2 ●        |
| 3.1.4    | E-participation* .....                                           | 90.2        | 10         |
| 3.2      | General infrastructure .....                                     | 57.8        | 9          |
| 3.2.1    | Electricity output, kWh/cap .....                                | 8835.4      | 17         |
| 3.2.2    | Logistics performance* .....                                     | 94.0        | 5          |
| 3.2.3    | Gross capital formation, % GDP .....                             | 29.2        | 23         |
| 3.3      | Ecological sustainability .....                                  | 64.0        | 5          |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | 13.5        | 7          |
| 3.3.2    | Environmental performance* .....                                 | 81.8        | 4 ●        |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP .....          | 4.3         | 24         |
| <b>4</b> | <b>Market sophistication .....</b>                               | <b>71.6</b> | <b>6</b>   |
| 4.1      | Credit .....                                                     | 58.5        | 13         |
| 4.1.1    | Ease of getting credit* .....                                    | 75.0        | 16         |
| 4.1.2    | Domestic credit to private sector, % GDP .....                   | 128.9       | 19         |
| 4.1.3    | Microfinance gross loans, % GDP .....                            | n/a         | n/a        |

|          |                                                                         |             |            |
|----------|-------------------------------------------------------------------------|-------------|------------|
| 4.2      | Investment .....                                                        | 67.4        | 7          |
| 4.2.1    | Ease of protecting investors* .....                                     | 80.0        | 3 ●        |
| 4.2.2    | Market capitalization, % GDP .....                                      | 144.3       | 5          |
| 4.2.3    | Total value of stocks traded, % GDP .....                               | 54.5        | 15         |
| 4.2.4    | Venture capital deals/tr PPP\$ GDP .....                                | 0.4         | 11         |
| 4.3      | Trade & competition .....                                               | 88.9        | 8          |
| 4.3.1    | Applied tariff rate, weighted mean, % <sup>Ⓔ</sup> .....                | 0.1         | 1 ●        |
| 4.3.2    | Intensity of local competition <sup>†</sup> .....                       | 77.8        | 18         |
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>63.1</b> | <b>1 ●</b> |
| 5.1      | Knowledge workers .....                                                 | 70.2        | 7          |
| 5.1.1    | Knowledge-intensive employment, % .....                                 | 52.7        | 2 ●        |
| 5.1.2    | Firms offering formal training, % firms .....                           | n/a         | n/a        |
| 5.1.3    | GERD performed by business, % of GDP <sup>Ⓔ</sup> .....                 | 1.2         | 17         |
| 5.1.4    | GERD financed by business, % <sup>Ⓔ</sup> .....                         | 53.4        | 16         |
| 5.1.5    | Females employed w/advanced degrees, % total .....                      | 22.7        | 14         |
| 5.2      | Innovation linkages .....                                               | 50.5        | 13         |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 76.3        | 5          |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 68.8        | 11         |
| 5.2.3    | GERD financed by abroad, % <sup>Ⓔ</sup> .....                           | 5.9         | 62 ○       |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0         | 5          |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP .....                           | 0.8         | 19         |
| 5.3      | Knowledge absorption .....                                              | 68.6        | 2 ●        |
| 5.3.1    | Royalty & license fees payments, % total trade .....                    | 3.8         | 1 ●        |
| 5.3.2    | High-tech imports less re-imports, % total trade .....                  | 20.7        | 6          |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>Ⓔ</sup> ..... | 0.6         | 85 ○       |
| 5.3.4    | FDI net inflows, % GDP .....                                            | 21.4        | 5          |
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>51.5</b> | <b>12</b>  |
| 6.1      | Knowledge creation .....                                                | 29.0        | 34         |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                         | 2.6         | 37         |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | 2.1         | 20         |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a        |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....                      | 25.7        | 33         |
| 6.1.5    | Citable documents H index .....                                         | 308.0       | 27         |
| 6.2      | Knowledge impact .....                                                  | 56.1        | 7          |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                                | 1.6         | 59 ○       |
| 6.2.2    | New businesses/th pop. 15–64 .....                                      | 8.0         | 14         |
| 6.2.3    | Computer software spending, % GDP .....                                 | 0.4         | 21         |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 13.8        | 28         |
| 6.2.5    | High- & medium-high-tech manufactures, % .....                          | 69.2        | 1 ●        |
| 6.3      | Knowledge diffusion .....                                               | 69.3        | 3 ●        |
| 6.3.1    | Royalty & license fees receipts, % total trade .....                    | 0.4         | 26         |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | 26.8        | 1 ●        |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓔ</sup> ..... | 0.7         | 90 ○       |
| 6.3.4    | FDI net outflows, % GDP .....                                           | 9.1         | 1 ●        |
| <b>7</b> | <b>Creative outputs .....</b>                                           | <b>41.7</b> | <b>33</b>  |
| 7.1      | Intangible assets .....                                                 | 46.4        | 64         |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                           | 17.4        | 91 ○       |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....                        | 0.5         | 40 ○       |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....                       | 75.6        | 9          |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....                 | 72.2        | 11         |
| 7.2      | Creative goods & services .....                                         | 34.3        | 30         |
| 7.2.1    | Cultural & creative services exports, % total trade .....               | n/a         | n/a        |
| 7.2.2    | National feature films/mn pop. 15–69 .....                              | 3.1         | 50         |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....                          | 36.7        | 20         |
| 7.2.4    | Printing & publishing output manufactures, % .....                      | 0.9         | 76 ○       |
| 7.2.5    | Creative goods exports, % total trade .....                             | 5.0         | 10         |
| 7.3      | Online creativity .....                                                 | 39.7        | 31         |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....                    | 30.9        | 24         |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                                   | 16.7        | 37         |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                                        | 2562.1      | 48         |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                               | 92.5        | 8          |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Slovakia

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 5.5         |
| GDP (US\$ billions) .....   | 100.0       |
| GDP per capita, PPP\$ ..... | 25,524.7    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                                   | Score 0–100<br>or value (hard data) | Rank      |
|-------------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b>                  | <b>43.0</b>                         | <b>36</b> |
| Innovation Output Sub-Index .....                                 | 37.1                                | 38        |
| Innovation Input Sub-Index .....                                  | 48.9                                | 37        |
| Innovation Efficiency Ratio .....                                 | 0.8                                 | 48        |
| Global Innovation Index 2014 (out of 143) .....                   | 41.9                                | 37        |
| <b>1 Institutions.....</b>                                        | <b>75.1</b>                         | <b>36</b> |
| 1.1 Political environment.....                                    | 76.9                                | 30        |
| 1.1.1 Political stability*.....                                   | 91.4                                | 13 ●      |
| 1.1.2 Government effectiveness*.....                              | 62.4                                | 39        |
| 1.2 Regulatory environment .....                                  | 72.2                                | 46        |
| 1.2.1 Regulatory quality*.....                                    | 72.2                                | 33        |
| 1.2.2 Rule of law*.....                                           | 59.5                                | 46        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....            | 18.8                                | 86        |
| 1.3 Business environment.....                                     | 76.2                                | 41        |
| 1.3.1 Ease of starting a business*.....                           | 87.0                                | 65        |
| 1.3.2 Ease of resolving insolvency*.....                          | 69.9                                | 29        |
| 1.3.3 Ease of paying taxes*.....                                  | 71.6                                | 78        |
| <b>2 Human capital &amp; research.....</b>                        | <b>33.2</b>                         | <b>53</b> |
| 2.1 Education .....                                               | 46.0                                | 64        |
| 2.1.1 Expenditure on education, % GDP .....                       | 4.1                                 | 85        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....          | 18.4                                | 64        |
| 2.1.3 School life expectancy, years.....                          | 15.1                                | 42        |
| 2.1.4 PISA scales in reading, maths, & science.....               | 471.9                               | 37        |
| 2.1.5 Pupil-teacher ratio, secondary .....                        | 11.3                                | 37        |
| 2.2 Tertiary education.....                                       | 36.2                                | 56        |
| 2.2.1 Tertiary enrolment, % gross.....                            | 55.1                                | 49        |
| 2.2.2 Graduates in science & engineering, % .....                 | 20.6                                | 52        |
| 2.2.3 Tertiary inbound mobility, %.....                           | 4.1                                 | 43        |
| 2.3 Research & development (R&D).....                             | 17.4                                | 49        |
| 2.3.1 Researchers, FTE/mn pop. ....                               | 2702.2                              | 30        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                       | 0.8                                 | 40        |
| 2.3.3 QS university ranking, average score top 3* .....           | 0.0                                 | 73 ○      |
| <b>3 Infrastructure.....</b>                                      | <b>49.3</b>                         | <b>37</b> |
| 3.1 Information & communication technologies (ICTs).....          | 58.7                                | 42        |
| 3.1.1 ICT access*.....                                            | 70.3                                | 46        |
| 3.1.2 ICT use*.....                                               | 52.8                                | 34        |
| 3.1.3 Government's online service*.....                           | 48.8                                | 65        |
| 3.1.4 E-participation*.....                                       | 62.7                                | 40        |
| 3.2 General infrastructure.....                                   | 32.0                                | 65        |
| 3.2.1 Electricity output, kWh/cap.....                            | 5216.6                              | 40        |
| 3.2.2 Logistics performance*.....                                 | 55.8                                | 41        |
| 3.2.3 Gross capital formation, % GDP.....                         | 18.6                                | 106 ○     |
| 3.3 Ecological sustainability .....                               | 57.2                                | 10 ●      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....           | 6.8                                 | 70        |
| 3.3.2 Environmental performance*.....                             | 74.5                                | 21 ●      |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....      | 9.8                                 | 7 ●       |
| <b>4 Market sophistication .....</b>                              | <b>50.4</b>                         | <b>53</b> |
| 4.1 Credit.....                                                   | 39.2                                | 45        |
| 4.1.1 Ease of getting credit*.....                                | 65.0                                | 34        |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 44.1                                | 76        |
| 4.1.3 Microfinance gross loans, % GDP .....                       | n/a                                 | n/a       |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 26.2 | 112 ○ |
| 4.2.1 Ease of protecting investors*.....                | 50.8 | 88    |
| 4.2.2 Market capitalization, % GDP.....                 | 5.0  | 101 ○ |
| 4.2.3 Total value of stocks traded, % GDP.....          | 0.2  | 93 ○  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a   |
| 4.3 Trade & competition .....                           | 85.8 | 22 ●  |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 1.0  | 9     |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 75.0 | 30    |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>36.7</b> | <b>58</b> |
| 5.1 Knowledge workers.....                                          | 45.0        | 48        |
| 5.1.1 Knowledge-intensive employment, %.....                        | 31.8        | 44        |
| 5.1.2 Firms offering formal training, % firms.....                  | 44.9        | 36        |
| 5.1.3 GERD performed by business, % of GDP.....                     | 0.4         | 39        |
| 5.1.4 GERD financed by business, % .....                            | 40.2        | 37        |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 11.9        | 55        |
| 5.2 Innovation linkages .....                                       | 31.3        | 69        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 39.3        | 81        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 46.7        | 66        |
| 5.2.3 GERD financed by abroad, %.....                               | 18.0        | 23        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.1         | 53        |
| 5.3 Knowledge absorption.....                                       | 33.7        | 66        |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 0.2         | 92 ○      |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 14.8        | 14 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 0.4         | 105 ○     |
| 5.3.4 FDI net inflows, % GDP .....                                  | 2.2         | 76        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>               | <b>33.7</b> | <b>41</b> |
| 6.1 Knowledge creation.....                                     | 22.8        | 42        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....           | 1.3         | 59        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                | 0.4         | 40        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....          | 2.3         | 14        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....         | 21.5        | 38        |
| 6.1.5 Citable documents H index.....                            | 165.0       | 41        |
| 6.2 Knowledge impact.....                                       | 50.9        | 19 ●      |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                   | 0.9         | 77 ○      |
| 6.2.2 New businesses/th pop. 15–64.....                         | 5.1         | 21 ●      |
| 6.2.3 Computer software spending, % GDP.....                    | 0.3         | 35        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....          | 26.4        | 12 ●      |
| 6.2.5 High- & medium-high-tech manufactures, % .....            | 55.8        | 4 ●       |
| 6.3 Knowledge diffusion.....                                    | 27.5        | 69        |
| 6.3.1 Royalty & license fees receipts, % total trade.....       | 0.0         | 96 ○      |
| 6.3.2 High-tech exports less re-exports, % total trade .....    | 9.0         | 25 ●      |
| 6.3.3 Comm., computer & info. services exp., % total trade..... | 0.8         | 84 ○      |
| 6.3.4 FDI net outflows, % GDP .....                             | 1.1         | 51        |

|                                                                |             |           |
|----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                | <b>40.4</b> | <b>40</b> |
| 7.1 Intangible assets .....                                    | 43.2        | 81        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | 68.5        | 27        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | 0.8         | 37        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 52.4        | 80        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 51.4        | 72        |
| 7.2 Creative goods & services.....                             | 40.2        | 17 ●      |
| 7.2.1 Cultural & creative services exports, % total trade..... | 0.4         | 38        |
| 7.2.2 National feature films/mn pop. 15–69.....                | 5.3         | 38        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, %.....        | 0.6         | 87 ○      |
| 7.2.5 Creative goods exports, % total trade.....               | 10.5        | 2 ●       |
| 7.3 Online creativity.....                                     | 34.9        | 39        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 3.6         | 66        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 32.5        | 23 ●      |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 3369.6      | 38        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | 78.8        | 36        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 2.1         |
| GDP (US\$ billions) .....   | 49.5        |
| GDP per capita, PPP\$ ..... | 28,372.8    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>48.5</b>                         | <b>28</b> |
| Innovation Output Sub-Index .....                 | 43.8                                | 27        |
| Innovation Input Sub-Index .....                  | 53.2                                | 30        |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 22        |
| Global Innovation Index 2014 (out of 143) .....   | 47.2                                | 28        |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                                   | <b>79.5</b> | <b>29</b> |
| 1.1 Political environment .....                               | 77.0        | 29        |
| 1.1.1 Political stability* .....                              | 85.6        | 31        |
| 1.1.2 Government effectiveness* .....                         | 68.4        | 33        |
| 1.2 Regulatory environment .....                              | 81.7        | 25        |
| 1.2.1 Regulatory quality* .....                               | 64.0        | 44        |
| 1.2.2 Rule of law* .....                                      | 73.4        | 31        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 10.7        | 40        |
| 1.3 Business environment .....                                | 79.7        | 29        |
| 1.3.1 Ease of starting a business* .....                      | 94.4        | 15        |
| 1.3.2 Ease of resolving insolvency* .....                     | 62.9        | 40        |
| 1.3.3 Ease of paying taxes* .....                             | 81.9        | 37        |
| <b>2 Human capital &amp; research .....</b>                   | <b>48.3</b> | <b>24</b> |
| 2.1 Education .....                                           | 58.3        | 12 ●      |
| 2.1.1 Expenditure on education, % GDP .....                   | 5.7         | 36        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 31.4        | 20        |
| 2.1.3 School life expectancy, years .....                     | 16.8        | 13        |
| 2.1.4 PISA scales in reading, maths, & science .....          | 498.9       | 21        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓔ</sup> .....       | 9.0         | 17        |
| 2.2 Tertiary education .....                                  | 45.6        | 28        |
| 2.2.1 Tertiary enrolment, % gross .....                       | 86.0        | 7 ●       |
| 2.2.2 Graduates in science & engineering, % .....             | 24.7        | 28        |
| 2.2.3 Tertiary inbound mobility, % .....                      | 2.3         | 62        |
| 2.3 Research & development (R&D) .....                        | 40.8        | 24        |
| 2.3.1 Researchers, FTE/mn pop. .....                          | 4202.2      | 17        |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 2.7         | 11 ●      |
| 2.3.3 QS university ranking, average score top 3* .....       | 9.2         | 61        |
| <b>3 Infrastructure .....</b>                                 | <b>49.4</b> | <b>36</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 53.2        | 50        |
| 3.1.1 ICT access* .....                                       | 79.1        | 23        |
| 3.1.2 ICT use* .....                                          | 52.1        | 36        |
| 3.1.3 Government's online service* .....                      | 42.5        | 77        |
| 3.1.4 E-participation* .....                                  | 39.2        | 82 ○      |
| 3.2 General infrastructure .....                              | 38.4        | 47        |
| 3.2.1 Electricity output, kWh/cap .....                       | 7666.5      | 23        |
| 3.2.2 Logistics performance* .....                            | 62.3        | 37        |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.1        | 84        |
| 3.3 Ecological sustainability .....                           | 56.5        | 13 ●      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 7.6         | 55        |
| 3.3.2 Environmental performance* .....                        | 76.4        | 15        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 8.0         | 12 ●      |
| <b>4 Market sophistication .....</b>                          | <b>46.9</b> | <b>70</b> |
| 4.1 Credit .....                                              | 28.7        | 79        |
| 4.1.1 Ease of getting credit* .....                           | 35.0        | 102 ○     |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 70.8        | 45        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a         | n/a       |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 29.5 | 99 ○ |
| 4.2.1 Ease of protecting investors* .....               | 68.3 | 14   |
| 4.2.2 Market capitalization, % GDP .....                | 14.0 | 79 ○ |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.9  | 69 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 55 ○ |
| 4.3 Trade & competition .....                           | 82.6 | 39   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 1.0  | 9    |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 68.6 | 64   |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>42.1</b> | <b>35</b> |
| 5.1 Knowledge workers .....                                         | 62.9        | 14        |
| 5.1.1 Knowledge-intensive employment, % .....                       | 42.2        | 20        |
| 5.1.2 Firms offering formal training, % firms .....                 | 41.4        | 43        |
| 5.1.3 GERD performed by business, % of GDP .....                    | 2.0         | 9         |
| 5.1.4 GERD financed by business, % .....                            | 63.8        | 5 ●       |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 18.8        | 25        |
| 5.2 Innovation linkages .....                                       | 29.3        | 82        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 49.3        | 43        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 40.4        | 93 ○      |
| 5.2.3 GERD financed by abroad, % .....                              | 8.9         | 46        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.2         | 34        |
| 5.3 Knowledge absorption .....                                      | 34.0        | 64        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.7         | 43        |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 5.5         | 90 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 1.8         | 22        |
| 5.3.4 FDI net inflows, % GDP .....                                  | -0.9        | 135 ○     |

|                                                                      |             |           |
|----------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                    | <b>38.1</b> | <b>30</b> |
| 6.1 Knowledge creation .....                                         | 33.9        | 28        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP <sup>Ⓔ</sup> .....   | 8.0         | 10 ●      |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                     | 2.6         | 17        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP <sup>Ⓔ</sup> ..... | 0.2         | 48 ○      |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....             | 59.4        | 3 ●       |
| 6.1.5 Citable documents H index .....                                | 172.0       | 40        |
| 6.2 Knowledge impact .....                                           | 50.6        | 20        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                       | -1.0        | 111 ○     |
| 6.2.2 New businesses/th pop. 15–64 .....                             | 4.4         | 27        |
| 6.2.3 Computer software spending, % GDP .....                        | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....               | 34.0        | 7 ●       |
| 6.2.5 High- & medium-high-tech manufactures, % .....                 | 46.5        | 9 ●       |
| 6.3 Knowledge diffusion .....                                        | 29.8        | 59        |
| 6.3.1 Royalty & license fees receipts, % total trade .....           | 0.2         | 43        |
| 6.3.2 High-tech exports less re-exports, % total trade .....         | 4.6         | 33        |
| 6.3.3 Comm., computer & info. services exp., % total trade .....     | 1.8         | 48        |
| 6.3.4 FDI net outflows, % GDP .....                                  | 0.6         | 62        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                  | <b>49.4</b> | <b>22</b> |
| 7.1 Intangible assets .....                                      | 61.0        | 12 ●      |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP <sup>Ⓔ</sup> ..... | 111.6       | 8 ●       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....           | 3.1         | 6 ●       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....          | 57.3        | 64        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....    | 56.7        | 54        |
| 7.2 Creative goods & services .....                              | 35.3        | 27        |
| 7.2.1 Cultural & creative services exports, % total trade .....  | 1.0         | 13        |
| 7.2.2 National feature films/mn pop. 15–69 .....                 | 15.1        | 11        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....             | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % .....         | 1.9         | 29        |
| 7.2.5 Creative goods exports, % total trade .....                | 0.7         | 49        |
| 7.3 Online creativity .....                                      | 40.4        | 30        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....       | 24.1        | 29        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                      | 31.9        | 26        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                           | 3298.3      | 39        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                  | 81.2        | 31        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



# South Africa

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 53.1                |
| GDP (US\$ billions) .....   | 350.1               |
| GDP per capita, PPP\$ ..... | 11,542.9            |
| Income group .....          | Upper-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>37.4</b>                         | <b>60</b> |
| Innovation Output Sub-Index .....                 | 29.7                                | 61        |
| Innovation Input Sub-Index .....                  | 45.2                                | 54        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 94        |
| Global Innovation Index 2014 (out of 143) .....   | 38.2                                | 53        |

|                                                               |             |             |
|---------------------------------------------------------------|-------------|-------------|
| <b>1 Institutions .....</b>                                   | <b>71.6</b> | <b>43</b>   |
| 1.1 Political environment .....                               | 57.9        | 53          |
| 1.1.1 Political stability* .....                              | 62.7        | 71          |
| 1.1.2 Government effectiveness* .....                         | 53.1        | 48          |
| 1.2 Regulatory environment .....                              | 76.1        | 38          |
| 1.2.1 Regulatory quality* .....                               | 58.7        | 56          |
| 1.2.2 Rule of law* .....                                      | 51.0        | 56          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 9.3         | 29          |
| 1.3 Business environment .....                                | 80.9        | 24 ●        |
| 1.3.1 Ease of starting a business* .....                      | 89.4        | 52          |
| 1.3.2 Ease of resolving insolvency* .....                     | 64.5        | 37          |
| 1.3.3 Ease of paying taxes* .....                             | 88.7        | 18 ●        |
| <b>2 Human capital &amp; research .....</b>                   | <b>27.4</b> | <b>75</b>   |
| 2.1 Education .....                                           | 42.1        | 79          |
| 2.1.1 Expenditure on education, % GDP .....                   | 6.2         | 26 ●        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 21.6        | 50          |
| 2.1.3 School life expectancy, years .....                     | 13.6        | 67          |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a         |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....       | 25.0        | 95 ○        |
| 2.2 Tertiary education .....                                  | 17.1        | 109 ○       |
| 2.2.1 Tertiary enrolment, % gross .....                       | 19.7        | 92          |
| 2.2.2 Graduates in science & engineering, % .....             | n/a         | n/a         |
| 2.2.3 Tertiary inbound mobility, % .....                      | 4.2         | 42          |
| 2.3 Research & development (R&D) .....                        | 22.9        | 43          |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....             | 408.2       | 61          |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....      | 0.8         | 45          |
| 2.3.3 QS university ranking, average score top 3* .....       | 46.0        | 30          |
| <b>3 Infrastructure .....</b>                                 | <b>33.9</b> | <b>89</b>   |
| 3.1 Information & communication technologies (ICTs) .....     | 36.9        | 91          |
| 3.1.1 ICT access* .....                                       | 48.2        | 80          |
| 3.1.2 ICT use* .....                                          | 27.5        | 75          |
| 3.1.3 Government's online service* .....                      | 38.6        | 85          |
| 3.1.4 E-participation* .....                                  | 33.3        | 92 ○        |
| 3.2 General infrastructure .....                              | 34.6        | 58          |
| 3.2.1 Electricity output, kWh/cap .....                       | 4878.6      | 43          |
| 3.2.2 Logistics performance* .....                            | 64.8        | 33          |
| 3.2.3 Gross capital formation, % GDP .....                    | 19.4        | 97          |
| 3.3 Ecological sustainability .....                           | 30.1        | 95          |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 4.0         | 109 ○       |
| 3.3.2 Environmental performance* .....                        | 53.5        | 64          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 1.3         | 54          |
| <b>4 Market sophistication .....</b>                          | <b>59.1</b> | <b>23 ●</b> |
| 4.1 Credit .....                                              | 37.1        | 49          |
| 4.1.1 Ease of getting credit* .....                           | 60.0        | 48          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 156.0       | 12 ●        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 0.0         | 82 ○        |

|                                                         |       |      |
|---------------------------------------------------------|-------|------|
| 4.2 Investment .....                                    | 60.4  | 8 ●  |
| 4.2.1 Ease of protecting investors* .....               | 67.5  | 17   |
| 4.2.2 Market capitalization, % GDP .....                | 160.1 | 3 ●  |
| 4.2.3 Total value of stocks traded, % GDP .....         | 81.5  | 6 ●  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0   | 54 ○ |
| 4.3 Trade & competition .....                           | 79.8  | 54   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 4.2   | 70   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 74.4  | 34   |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>34.0</b> | <b>73</b> |
| 5.1 Knowledge workers .....                                         | 37.7        | 70        |
| 5.1.1 Knowledge-intensive employment, % .....                       | 25.5        | 55        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 36.8        | 48        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.3         | 41        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....               | 38.3        | 40        |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 10.3        | 63 ○      |
| 5.2 Innovation linkages .....                                       | 30.3        | 77        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 58.1        | 30        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 52.7        | 41        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 13.1        | 35        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 53        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 69        |
| 5.3 Knowledge absorption .....                                      | 33.9        | 65        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 1.7         | 11 ●      |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 10.2        | 31        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.4         | 110 ○     |
| 5.3.4 FDI net inflows, % GDP .....                                  | 2.3         | 75        |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>28.3</b> | <b>58</b> |
| 6.1 Knowledge creation .....                                      | 15.5        | 58        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 0.9         | 64        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | 0.4         | 41        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 15.4        | 50        |
| 6.1.5 Citable documents H index .....                             | 260.0       | 34        |
| 6.2 Knowledge impact .....                                        | 45.6        | 36        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | 3.5         | 23 ●      |
| 6.2.2 New businesses/th pop. 15–64 .....                          | 6.5         | 18 ●      |
| 6.2.3 Computer software spending, % GDP .....                     | 0.4         | 25        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 5.2         | 62        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 28.2        | 41        |
| 6.3 Knowledge diffusion .....                                     | 23.7        | 94        |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | 0.1         | 69        |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 2.3         | 49        |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | 0.4         | 98 ○      |
| 6.3.4 FDI net outflows, % GDP .....                               | 1.6         | 43        |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>31.1</b> | <b>76</b> |
| 7.1 Intangible assets .....                                           | 43.6        | 79        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 30.5        | 70        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 59.0        | 56        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 55.8        | 57        |
| 7.2 Creative goods & services .....                                   | 21.4        | 63        |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 0.7         | 86 ○      |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 9.6         | 35        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 2.4         | 19 ●      |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.7         | 47        |
| 7.3 Online creativity .....                                           | 16.0        | 71        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 3.8         | 63        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 11.8        | 41        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 363.8       | 98        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 45.9        | 67 ○      |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 47.1        |
| GDP (US\$ billions) .....   | 1,406.9     |
| GDP per capita, PPP\$ ..... | 30,637.4    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>49.1</b>                         | <b>27</b> |
| Innovation Output Sub-Index .....                 | 41.1                                | 29        |
| Innovation Input Sub-Index .....                  | 57.0                                | 24        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 67 ○      |
| Global Innovation Index 2014 (out of 143) .....   | 49.3                                | 27        |

|                                                        |             |           |
|--------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                            | <b>75.2</b> | <b>35</b> |
| 1.1 Political environment .....                        | 68.4        | 41        |
| 1.1.1 Political stability* .....                       | 64.5        | 65 ○      |
| 1.1.2 Government effectiveness* .....                  | 72.4        | 29        |
| 1.2 Regulatory environment .....                       | 77.4        | 35        |
| 1.2.1 Regulatory quality* .....                        | 72.6        | 32        |
| 1.2.2 Rule of law* .....                               | 74.1        | 30        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 17.4        | 80 ○      |
| 1.3 Business environment .....                         | 79.7        | 30        |
| 1.3.1 Ease of starting a business* .....               | 88.1        | 62        |
| 1.3.2 Ease of resolving insolvency* .....              | 75.9        | 21        |
| 1.3.3 Ease of paying taxes* .....                      | 75.3        | 60        |

|                                                           |             |           |
|-----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research .....</b>               | <b>45.9</b> | <b>27</b> |
| 2.1 Education .....                                       | 55.0        | 30        |
| 2.1.1 Expenditure on education, % GDP .....               | 5.0         | 59        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 26.5        | 31        |
| 2.1.3 School life expectancy, years .....                 | 17.3        | 10 ●      |
| 2.1.4 PISA scales in reading, maths, & science .....      | 489.6       | 27        |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 11.4        | 38        |
| 2.2 Tertiary education .....                              | 43.0        | 35        |
| 2.2.1 Tertiary enrolment, % gross .....                   | 84.6        | 8 ●       |
| 2.2.2 Graduates in science & engineering, % .....         | 22.2        | 35        |
| 2.2.3 Tertiary inbound mobility, % .....                  | 2.8         | 56 ○      |
| 2.3 Research & development (R&D) .....                    | 39.8        | 27        |
| 2.3.1 Researchers, FTE/mn pop. ....                       | 2633.5      | 31        |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | 1.3         | 28        |
| 2.3.3 QS university ranking, average score top 3* .....   | 57.6        | 21        |

|                                                               |             |            |
|---------------------------------------------------------------|-------------|------------|
| <b>3 Infrastructure .....</b>                                 | <b>61.0</b> | <b>9 ●</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 77.6        | 15 ●       |
| 3.1.1 ICT access* .....                                       | 77.0        | 30         |
| 3.1.2 ICT use* .....                                          | 60.4        | 26         |
| 3.1.3 Government's online service* .....                      | 94.5        | 4 ●        |
| 3.1.4 E-participation* .....                                  | 78.4        | 19         |
| 3.2 General infrastructure .....                              | 38.4        | 46         |
| 3.2.1 Electricity output, kWh/cap .....                       | 6118.7      | 32         |
| 3.2.2 Logistics performance* .....                            | 79.4        | 18         |
| 3.2.3 Gross capital formation, % GDP .....                    | 18.0        | 110 ○      |
| 3.3 Ecological sustainability .....                           | 67.0        | 3 ●        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 10.3        | 22         |
| 3.3.2 Environmental performance* .....                        | 79.8        | 7 ●        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 10.5        | 6 ●        |

|                                                      |             |             |
|------------------------------------------------------|-------------|-------------|
| <b>4 Market sophistication .....</b>                 | <b>64.7</b> | <b>10 ●</b> |
| 4.1 Credit .....                                     | 58.3        | 14 ●        |
| 4.1.1 Ease of getting credit* .....                  | 60.0        | 48          |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 172.0       | 7 ●         |
| 4.1.3 Microfinance gross loans, % GDP .....          | n/a         | n/a         |

|                                                   |      |     |
|---------------------------------------------------|------|-----|
| 4.2 Investment .....                              | 50.2 | 28  |
| 4.2.1 Ease of protecting investors* .....         | 64.2 | 30  |
| 4.2.2 Market capitalization, % GDP .....          | 73.4 | 21  |
| 4.2.3 Total value of stocks traded, % GDP .....   | 79.4 | 7 ● |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....    | 0.1  | 25  |
| 4.3 Trade & competition .....                     | 85.6 | 24  |
| 4.3.1 Applied tariff rate, weighted mean, % ..... | 1.0  | 9   |
| 4.3.2 Intensity of local competition† .....       | 74.6 | 33  |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                           | <b>38.2</b> | <b>47</b> |
| 5.1 Knowledge workers .....                                      | 54.4        | 30        |
| 5.1.1 Knowledge-intensive employment, % .....                    | 33.1        | 40        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> ..... | 51.3        | 24        |
| 5.1.3 GERD performed by business, % of GDP .....                 | 0.7         | 30        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....            | 45.6        | 27        |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 21.5        | 18        |
| 5.2 Innovation linkages .....                                    | 28.5        | 87 ○      |
| 5.2.1 University/industry research collaboration† .....          | 46.2        | 55        |
| 5.2.2 State of cluster development† .....                        | 49.7        | 52        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....              | 6.6         | 57 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0         | 50 ○      |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 0.2         | 33        |
| 5.3 Knowledge absorption .....                                   | 31.6        | 79 ○      |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 0.5         | 58 ○      |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 6.0         | 81 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 1.3         | 45        |
| 5.3.4 FDI net inflows, % GDP .....                               | 3.3         | 53        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>39.9</b> | <b>25</b> |
| 6.1 Knowledge creation .....                                     | 31.3        | 33        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 2.0         | 47        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 1.1         | 30        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 1.7         | 18        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 33.6        | 23        |
| 6.1.5 Citable documents H index .....                            | 531.0       | 12 ●      |
| 6.2 Knowledge impact .....                                       | 51.8        | 17        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 1.6         | 58 ○      |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 2.7         | 40        |
| 6.2.3 Computer software spending, % GDP .....                    | 0.7         | 9 ●       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 28.0        | 10 ●      |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 34.8        | 30        |
| 6.3 Knowledge diffusion .....                                    | 36.6        | 38        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.2         | 36        |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 3.9         | 38        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.3         | 32        |
| 6.3.4 FDI net outflows, % GDP .....                              | 2.3         | 29        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>42.4</b> | <b>31</b> |
| 7.1 Intangible assets .....                                     | 48.3        | 56        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 57.0        | 38        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 0.8         | 36 ○      |
| 7.1.3 ICTs & business model creation† .....                     | 67.2        | 25        |
| 7.1.4 ICTs & organizational model creation† .....               | 60.9        | 34        |
| 7.2 Creative goods & services .....                             | 27.0        | 48        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.8         | 21        |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 6.9         | 27        |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 22.9        | 25        |
| 7.2.4 Printing & publishing output manufactures, % .....        | 1.6         | 41        |
| 7.2.5 Creative goods exports, % total trade .....               | 0.8         | 41        |
| 7.3 Online creativity .....                                     | 45.9        | 26        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 31.8        | 23        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 22.1        | 32        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 5678.2      | 20        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 87.8        | 19        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Sri Lanka

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 21.4                      |
| GDP (US\$ billions) .....   | 74.6                      |
| GDP per capita, PPP\$ ..... | 7,046.3                   |
| Income group .....          | Lower-middle income       |
| Region .....                | Central and Southern Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>30.8</b>                         | <b>85</b> |
| Innovation Output Sub-Index .....                 | 26.6                                | 79        |
| Innovation Input Sub-Index .....                  | 35.0                                | 104       |
| Innovation Efficiency Ratio .....                 | 0.8                                 | 46 ●      |
| Global Innovation Index 2014 (out of 143) .....   | 29.0                                | 105       |

|                                                        |             |            |   |
|--------------------------------------------------------|-------------|------------|---|
| <b>1 Institutions .....</b>                            | <b>41.7</b> | <b>128</b> | ○ |
| 1.1 Political environment .....                        | 42.1        | 91         |   |
| 1.1.1 Political stability* .....                       | 49.2        | 101        |   |
| 1.1.2 Government effectiveness* .....                  | 35.1        | 83         |   |
| 1.2 Regulatory environment .....                       | 21.0        | 137        | ○ |
| 1.2.1 Regulatory quality* .....                        | 43.5        | 82         |   |
| 1.2.2 Rule of law* .....                               | 40.4        | 76         |   |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 58.5        | 138        | ○ |
| 1.3 Business environment .....                         | 61.9        | 96         |   |
| 1.3.1 Ease of starting a business* .....               | 83.0        | 84         |   |
| 1.3.2 Ease of resolving insolvency* .....              | 47.8        | 67         |   |
| 1.3.3 Ease of paying taxes* .....                      | 55.0        | 121        | ○ |

|                                                           |             |            |   |
|-----------------------------------------------------------|-------------|------------|---|
| <b>2 Human capital &amp; research .....</b>               | <b>17.8</b> | <b>112</b> |   |
| 2.1 Education .....                                       | 30.5        | 117        | ○ |
| 2.1.1 Expenditure on education, % GDP .....               | 1.7         | 127        | ○ |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 6.9         | 108        | ○ |
| 2.1.3 School life expectancy, years .....                 | 13.7        | 65         |   |
| 2.1.4 PISA scales in reading, maths, & science .....      | n/a         | n/a        |   |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 17.3        | 75         |   |
| 2.2 Tertiary education .....                              | 19.4        | 104        |   |
| 2.2.1 Tertiary enrolment, % gross .....                   | 17.0        | 96         |   |
| 2.2.2 Graduates in science & engineering, % .....         | 16.7        | 71         |   |
| 2.2.3 Tertiary inbound mobility, % .....                  | 0.1         | 106        | ○ |
| 2.3 Research & development (R&D) .....                    | 3.5         | 88         |   |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....         | 103.1       | 82         |   |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....  | 0.2         | 97         | ○ |
| 2.3.3 QS university ranking, average score top 3* .....   | 5.9         | 66         |   |

|                                                               |             |           |   |
|---------------------------------------------------------------|-------------|-----------|---|
| <b>3 Infrastructure .....</b>                                 | <b>42.4</b> | <b>57</b> |   |
| 3.1 Information & communication technologies (ICTs) .....     | 44.9        | 72        |   |
| 3.1.1 ICT access* .....                                       | 38.5        | 105       |   |
| 3.1.2 ICT use* .....                                          | 11.0        | 108       |   |
| 3.1.3 Government's online service* .....                      | 65.4        | 37        | ● |
| 3.1.4 E-participation* .....                                  | 64.7        | 33        | ● |
| 3.2 General infrastructure .....                              | 33.3        | 60        |   |
| 3.2.1 Electricity output, kWh/cap .....                       | 585.4       | 105       | ○ |
| 3.2.2 Logistics performance* .....                            | 27.2        | 84        |   |
| 3.2.3 Gross capital formation, % GDP .....                    | 32.0        | 15        | ● |
| 3.3 Ecological sustainability .....                           | 49.0        | 32        | ● |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 14.3        | 4         | ● |
| 3.3.2 Environmental performance* .....                        | 53.9        | 62        |   |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.9         | 67        |   |

|                                                                   |             |           |  |
|-------------------------------------------------------------------|-------------|-----------|--|
| <b>4 Market sophistication .....</b>                              | <b>44.9</b> | <b>84</b> |  |
| 4.1 Credit .....                                                  | 22.2        | 105       |  |
| 4.1.1 Ease of getting credit* .....                               | 45.0        | 80        |  |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 31.1        | 98        |  |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> .....          | 1.1         | 37        |  |

|                                                         |      |     |   |
|---------------------------------------------------------|------|-----|---|
| 4.2 Investment .....                                    | 34.5 | 73  |   |
| 4.2.1 Ease of protecting investors* .....               | 59.2 | 49  |   |
| 4.2.2 Market capitalization, % GDP .....                | 28.7 | 59  |   |
| 4.2.3 Total value of stocks traded, % GDP .....         | 2.8  | 55  |   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a |   |
| 4.3 Trade & competition .....                           | 77.9 | 63  |   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 6.7  | 99  |   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 79.4 | 14  | ● |

|                                                                       |             |            |   |
|-----------------------------------------------------------------------|-------------|------------|---|
| <b>5 Business sophistication .....</b>                                | <b>28.3</b> | <b>102</b> |   |
| 5.1 Knowledge workers .....                                           | 24.2        | 107        |   |
| 5.1.1 Knowledge-intensive employment, % .....                         | 15.7        | 91         |   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....      | 18.4        | 94         | ○ |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....         | 0.1         | 67         |   |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                 | 40.9        | 36         |   |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> ..... | 7.6         | 69         |   |
| 5.2 Innovation linkages .....                                         | 21.3        | 118        | ○ |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 34.6        | 107        |   |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 47.3        | 64         |   |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                   | 2.7         | 76         |   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 66         |   |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 0.0         | 60         |   |
| 5.3 Knowledge absorption .....                                        | 39.4        | 43         | ● |
| 5.3.1 Royalty & license fees payments, % total trade .....            | n/a         | n/a        |   |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 5.3         | 94         |   |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 2.0         | 15         | ● |
| 5.3.4 FDI net inflows, % GDP .....                                    | 1.4         | 102        |   |

|                                                                   |             |           |   |
|-------------------------------------------------------------------|-------------|-----------|---|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>26.8</b> | <b>64</b> |   |
| 6.1 Knowledge creation .....                                      | 6.6         | 91        |   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 1.6         | 50        |   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | 0.1         | 64        |   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | n/a         | n/a       |   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 2.9         | 116       | ○ |
| 6.1.5 Citable documents H index .....                             | 96.0        | 74        |   |
| 6.2 Knowledge impact .....                                        | 39.2        | 60        |   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                    | 6.2         | 3         | ● |
| 6.2.2 New businesses/th pop. 15–64 .....                          | 0.5         | 88        | ○ |
| 6.2.3 Computer software spending, % GDP .....                     | 0.3         | 30        |   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 3.3         | 76        |   |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 8.9         | 81        |   |
| 6.3 Knowledge diffusion .....                                     | 34.6        | 40        | ● |
| 6.3.1 Royalty & license fees receipts, % total trade .....        | n/a         | n/a       |   |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 0.4         | 81        |   |
| 6.3.3 Comm., computer & info. services exp., % total trade .....  | 3.9         | 12        | ● |
| 6.3.4 FDI net outflows, % GDP .....                               | 0.1         | 91        |   |

|                                                                       |             |           |   |
|-----------------------------------------------------------------------|-------------|-----------|---|
| <b>7 Creative outputs .....</b>                                       | <b>26.3</b> | <b>92</b> |   |
| 7.1 Intangible assets .....                                           | 43.5        | 80        |   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 27.5        | 74        |   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a       |   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 58.3        | 61        |   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 57.8        | 49        | ● |
| 7.2 Creative goods & services .....                                   | 16.7        | 79        |   |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a         | n/a       |   |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 1.0         | 74        |   |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a         | n/a       |   |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.8         | 31        | ● |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.4         | 64        |   |
| 7.3 Online creativity .....                                           | 1.7         | 110       |   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 0.9         | 106       |   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 0.2         | 110       |   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 536.6       | 91        |   |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a         | n/a       |   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 38.8                |
| GDP (US\$ billions) .....   | 73.8                |
| GDP per capita, PPP\$ ..... | 2,673.2             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                   | Score 0–100<br>or value (hard data) | Rank         |
|---------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>15.0</b>                         | <b>141</b> ○ |
| Innovation Output Sub-Index .....                 | 8.0                                 | 140 ○        |
| Innovation Input Sub-Index .....                  | 21.9                                | 141 ○        |
| Innovation Efficiency Ratio .....                 | 0.4                                 | 136          |
| Global Innovation Index 2014 (out of 143) .....   | 12.7                                | 143          |

|                                                        |             |              |
|--------------------------------------------------------|-------------|--------------|
| <b>1 Institutions .....</b>                            | <b>32.5</b> | <b>138</b> ○ |
| 1.1 Political environment .....                        | 4.9         | 141 ○        |
| 1.1.1 Political stability* .....                       | 9.7         | 139 ○        |
| 1.1.2 Government effectiveness* .....                  | 0.0         | 141 ○        |
| 1.2 Regulatory environment .....                       | 38.1        | 130          |
| 1.2.1 Regulatory quality* .....                        | 9.4         | 136          |
| 1.2.2 Rule of law* .....                               | 14.3        | 137 ○        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 26.0        | 111          |
| 1.3 Business environment .....                         | 54.5        | 118          |
| 1.3.1 Ease of starting a business* .....               | 74.7        | 112          |
| 1.3.2 Ease of resolving insolvency* .....              | 26.5        | 131          |
| 1.3.3 Ease of paying taxes* .....                      | 62.3        | 106 ●        |

|                                                           |             |            |
|-----------------------------------------------------------|-------------|------------|
| <b>2 Human capital &amp; research .....</b>               | <b>15.1</b> | <b>121</b> |
| 2.1 Education .....                                       | 17.2        | 137 ○      |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....  | 2.2         | 124        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | n/a         | n/a        |
| 2.1.3 School life expectancy, years .....                 | 7.0         | 130 ○      |
| 2.1.4 PISA scales in reading, maths, & science .....      | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 31.1        | 108        |
| 2.2 Tertiary education .....                              | 24.7        | 86 ●       |
| 2.2.1 Tertiary enrolment, % gross .....                   | 17.2        | 95 ●       |
| 2.2.2 Graduates in science & engineering, % .....         | 16.0        | 76 ●       |
| 2.2.3 Tertiary inbound mobility, % .....                  | n/a         | n/a        |
| 2.3 Research & development (R&D) .....                    | 3.4         | 90 ●       |
| 2.3.1 Researchers, FTE/mn pop. ....                       | n/a         | n/a        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....  | 0.3         | 78 ●       |
| 2.3.3 QS university ranking, average score top 3* .....   | 0.0         | 73 ○       |

|                                                               |             |            |
|---------------------------------------------------------------|-------------|------------|
| <b>3 Infrastructure .....</b>                                 | <b>19.7</b> | <b>132</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 26.9        | 110        |
| 3.1.1 ICT access* .....                                       | 34.6        | 108        |
| 3.1.2 ICT use* .....                                          | 16.5        | 99 ●       |
| 3.1.3 Government's online service* .....                      | 29.1        | 109        |
| 3.1.4 E-participation* .....                                  | 27.5        | 108        |
| 3.2 General infrastructure .....                              | 10.4        | 138 ○      |
| 3.2.1 Electricity output, kWh/cap .....                       | 196.5       | 115        |
| 3.2.2 Logistics performance* .....                            | 0.0         | 131 ○      |
| 3.2.3 Gross capital formation, % GDP .....                    | 17.5        | 113        |
| 3.3 Ecological sustainability .....                           | 21.8        | 129        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 6.7         | 75 ●       |
| 3.3.2 Environmental performance* .....                        | 24.6        | 137 ○      |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.1         | 128        |

|                                                      |             |              |
|------------------------------------------------------|-------------|--------------|
| <b>4 Market sophistication .....</b>                 | <b>28.6</b> | <b>140</b> ○ |
| 4.1 Credit .....                                     | 5.9         | 138 ○        |
| 4.1.1 Ease of getting credit* .....                  | 15.0        | 129          |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 10.4        | 136 ○        |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.1         | 70           |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 31.7 | 88    |
| 4.2.1 Ease of protecting investors* .....                      | 31.7 | 135 ○ |
| 4.2.2 Market capitalization, % GDP .....                       | n/a  | n/a   |
| 4.2.3 Total value of stocks traded, % GDP .....                | n/a  | n/a   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a   |
| 4.3 Trade & competition .....                                  | 48.1 | 139 ○ |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 14.7 | 134   |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | n/a  | n/a   |

|                                                                     |             |              |
|---------------------------------------------------------------------|-------------|--------------|
| <b>5 Business sophistication .....</b>                              | <b>13.7</b> | <b>140</b> ○ |
| 5.1 Knowledge workers .....                                         | 2.9         | 140 ○        |
| 5.1.1 Knowledge-intensive employment, % .....                       | n/a         | n/a          |
| 5.1.2 Firms offering formal training, % firms .....                 | n/a         | n/a          |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.1         | 59 ●         |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a          |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a          |
| 5.2 Innovation linkages .....                                       | n/a         | n/a          |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | n/a         | n/a          |
| 5.2.2 State of cluster development <sup>†</sup> .....               | n/a         | n/a          |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a          |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a          |
| 5.3 Knowledge absorption .....                                      | 24.4        | 120          |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.0         | 126 ○        |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 9.0         | 48 ●         |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.2         | 116          |
| 5.3.4 FDI net inflows, % GDP .....                                  | 3.3         | 54 ●         |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>14.7</b> | <b>122</b> |
| 6.1 Knowledge creation .....                                                  | 2.6         | 132        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | 0.0         | 88         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 2.0         | 127        |
| 6.1.5 Citable documents H index .....                                         | 58.0        | 109        |
| 6.2 Knowledge impact .....                                                    | 38.8        | 62 ●       |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 0.9         | 74 ●       |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 0.7         | 120        |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | n/a         | n/a        |
| 6.3 Knowledge diffusion .....                                                 | 2.7         | 134        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 84 ●       |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.0         | 117        |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.3         | 108        |
| 6.3.4 FDI net outflows, % GDP .....                                           | n/a         | n/a        |

|                                                                  |            |              |
|------------------------------------------------------------------|------------|--------------|
| <b>7 Creative outputs .....</b>                                  | <b>1.3</b> | <b>139</b> ○ |
| 7.1 Intangible assets .....                                      | 1.6        | 138 ○        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 5.9        | 101 ○        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....           | 0.1        | 60           |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....          | n/a        | n/a          |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....    | n/a        | n/a          |
| 7.2 Creative goods & services .....                              | 1.8        | 127          |
| 7.2.1 Cultural & creative services exports, % total trade .....  | n/a        | n/a          |
| 7.2.2 National feature films/mn pop. 15–69 .....                 | n/a        | n/a          |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....             | n/a        | n/a          |
| 7.2.4 Printing & publishing output manufactures, % .....         | n/a        | n/a          |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....   | 0.1        | 103          |
| 7.3 Online creativity .....                                      | 0.1        | 133          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....       | 0.1        | 135          |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                      | 0.0        | 136          |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                           | 48.9       | 122          |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                  | n/a        | n/a          |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Swaziland

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 1.3                 |
| GDP (US\$ billions) .....   | 3.7                 |
| GDP per capita, PPP\$ ..... | 6,366.5             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>25.4</b>                         | <b>123</b> |
| Innovation Output Sub-Index .....                | 15.0                                | 132 ○      |
| Innovation Input Sub-Index .....                 | 35.7                                | 98         |
| Innovation Efficiency Ratio .....                | 0.4                                 | 132 ○      |
| Global Innovation Index 2014 (out of 143) .....  | 25.3                                | 127        |

|          |                                                        |             |              |
|----------|--------------------------------------------------------|-------------|--------------|
| <b>1</b> | <b>Institutions.....</b>                               | <b>56.2</b> | <b>82</b>    |
| 1.1      | Political environment.....                             | 41.4        | 96           |
| 1.1.1    | Political stability*.....                              | 53.4        | 92           |
| 1.1.2    | Government effectiveness*.....                         | 29.4        | 93           |
| 1.2      | Regulatory environment .....                           | 62.1        | 82           |
| 1.2.1    | Regulatory quality*.....                               | 38.2        | 100          |
| 1.2.2    | Rule of law*.....                                      | 36.4        | 85           |
| 1.2.3    | Cost of redundancy dismissal, salary weeks.....        | 14.6        | 62 ●         |
| 1.3      | Business environment.....                              | 65.0        | 84           |
| 1.3.1    | Ease of starting a business*.....                      | 73.5        | 116          |
| 1.3.2    | Ease of resolving insolvency*.....                     | 45.8        | 75           |
| 1.3.3    | Ease of paying taxes*.....                             | 75.8        | 59 ●         |
| <b>2</b> | <b>Human capital &amp; research.....</b>               | <b>22.8</b> | <b>96</b>    |
| 2.1      | Education .....                                        | 51.1        | 47 ●         |
| 2.1.1    | Expenditure on education, % GDP .....                  | 7.8         | 8 ●          |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap.....     | 38.7        | 7 ●          |
| 2.1.3    | School life expectancy, years <sup>a</sup> .....       | 11.3        | 100          |
| 2.1.4    | PISA scales in reading, maths, & science.....          | n/a         | n/a          |
| 2.1.5    | Pupil-teacher ratio, secondary .....                   | 16.3        | 72           |
| 2.2      | Tertiary education.....                                | 17.3        | 107          |
| 2.2.1    | Tertiary enrolment, % gross.....                       | 5.3         | 123 ○        |
| 2.2.2    | Graduates in science & engineering, % .....            | 16.8        | 70           |
| 2.2.3    | Tertiary inbound mobility, %.....                      | 0.5         | 95           |
| 2.3      | Research & development (R&D).....                      | 0.0         | 128 ○        |
| 2.3.1    | Researchers, FTE/mn pop. ....                          | n/a         | n/a          |
| 2.3.2    | Gross expenditure on R&D, % GDP.....                   | n/a         | n/a          |
| 2.3.3    | QS university ranking, average score top 3*.....       | 0.0         | 73 ○         |
| <b>3</b> | <b>Infrastructure.....</b>                             | <b>17.1</b> | <b>138</b> ○ |
| 3.1      | Information & communication technologies (ICTs).....   | 17.3        | 126          |
| 3.1.1    | ICT access*.....                                       | 30.2        | 117          |
| 3.1.2    | ICT use*.....                                          | 9.9         | 111          |
| 3.1.3    | Government's online service*.....                      | 13.4        | 131 ○        |
| 3.1.4    | E-participation*.....                                  | 15.7        | 126 ○        |
| 3.2      | General infrastructure.....                            | 7.2         | 140 ○        |
| 3.2.1    | Electricity output, kWh/cap.....                       | n/a         | n/a          |
| 3.2.2    | Logistics performance*.....                            | n/a         | n/a          |
| 3.2.3    | Gross capital formation, % GDP.....                    | 11.5        | 137 ○        |
| 3.3      | Ecological sustainability .....                        | 26.8        | 113          |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | n/a         | n/a          |
| 3.3.2    | Environmental performance*.....                        | 37.4        | 115          |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.7         | 73 ●         |
| <b>4</b> | <b>Market sophistication .....</b>                     | <b>39.6</b> | <b>113</b>   |
| 4.1      | Credit.....                                            | 27.2        | 81           |
| 4.1.1    | Ease of getting credit*.....                           | 55.0        | 56 ●         |
| 4.1.2    | Domestic credit to private sector, % GDP.....          | 25.3        | 109          |
| 4.1.3    | Microfinance gross loans, % GDP <sup>a</sup> .....     | 1.6         | 31 ●         |

|       |                                                        |      |       |
|-------|--------------------------------------------------------|------|-------|
| 4.2   | Investment .....                                       | 24.7 | 126   |
| 4.2.1 | Ease of protecting investors*.....                     | 47.5 | 97    |
| 4.2.2 | Market capitalization, % GDP <sup>a</sup> .....        | 6.7  | 95    |
| 4.2.3 | Total value of stocks traded, % GDP <sup>a</sup> ..... | 0.0  | 109 ○ |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP.....                | n/a  | n/a   |
| 4.3   | Trade & competition .....                              | 67.0 | 107   |
| 4.3.1 | Applied tariff rate, weighted mean, %.....             | 7.0  | 102   |
| 4.3.2 | Intensity of local competition <sup>†</sup> .....      | 58.4 | 111   |

|          |                                                                         |             |           |
|----------|-------------------------------------------------------------------------|-------------|-----------|
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>42.9</b> | <b>34</b> |
| 5.1      | Knowledge workers.....                                                  | 62.8        | 15        |
| 5.1.1    | Knowledge-intensive employment, %.....                                  | n/a         | n/a       |
| 5.1.2    | Firms offering formal training, % firms <sup>a</sup> .....              | 51.0        | 26 ●      |
| 5.1.3    | GERD performed by business, % of GDP.....                               | n/a         | n/a       |
| 5.1.4    | GERD financed by business, % .....                                      | n/a         | n/a       |
| 5.1.5    | Females employed w/advanced degrees, % total.....                       | n/a         | n/a       |
| 5.2      | Innovation linkages .....                                               | 34.6        | 61 ●      |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 39.1        | 82        |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 39.5        | 97        |
| 5.2.3    | GERD financed by abroad, % .....                                        | n/a         | n/a       |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP.....                           | n/a         | n/a       |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP <sup>a</sup> .....              | 0.1         | 36 ●      |
| 5.3      | Knowledge absorption.....                                               | 31.2        | 82        |
| 5.3.1    | Royalty & license fees payments, % total trade <sup>a</sup> .....       | 2.0         | 7 ●       |
| 5.3.2    | High-tech imports less re-imports, % total trade.....                   | n/a         | n/a       |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>a</sup> ..... | 0.2         | 119 ○     |
| 5.3.4    | FDI net inflows, % GDP .....                                            | 1.8         | 92        |

|          |                                                                         |            |              |
|----------|-------------------------------------------------------------------------|------------|--------------|
| <b>6</b> | <b>Knowledge &amp; technology outputs.....</b>                          | <b>9.7</b> | <b>136</b> ○ |
| 6.1      | Knowledge creation.....                                                 | 3.5        | 122          |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP <sup>a</sup> .....            | 0.4        | 80           |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | n/a        | n/a          |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP.....                        | n/a        | n/a          |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP.....                       | 3.8        | 109          |
| 6.1.5    | Citable documents H index.....                                          | 35.0       | 131 ○        |
| 6.2      | Knowledge impact.....                                                   | 4.1        | 134 ○        |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                                | n/a        | n/a          |
| 6.2.2    | New businesses/th pop. 15–64.....                                       | n/a        | n/a          |
| 6.2.3    | Computer software spending, % GDP.....                                  | n/a        | n/a          |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP.....                         | 2.0        | 92           |
| 6.2.5    | High- & medium-high-tech manufactures, % .....                          | n/a        | n/a          |
| 6.3      | Knowledge diffusion.....                                                | 21.4       | 106          |
| 6.3.1    | Royalty & license fees receipts, % total trade <sup>a</sup> .....       | 0.1        | 67           |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | n/a        | n/a          |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>a</sup> ..... | 0.4        | 104          |
| 6.3.4    | FDI net outflows, % GDP .....                                           | 0.0        | 99           |

|          |                                                                        |             |            |
|----------|------------------------------------------------------------------------|-------------|------------|
| <b>7</b> | <b>Creative outputs .....</b>                                          | <b>20.4</b> | <b>120</b> |
| 7.1      | Intangible assets .....                                                | 38.4        | 98         |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP.....                           | n/a         | n/a        |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP.....                        | n/a         | n/a        |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....                      | 38.9        | 123 ○      |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....                | 37.8        | 123 ○      |
| 7.2      | Creative goods & services.....                                         | 4.2         | 116        |
| 7.2.1    | Cultural & creative services exports, % total trade <sup>a</sup> ..... | 0.1         | 62         |
| 7.2.2    | National feature films/mn pop. 15–69.....                              | n/a         | n/a        |
| 7.2.3    | Global ent. & media output/th pop. 15–69.....                          | n/a         | n/a        |
| 7.2.4    | Printing & publishing output manufactures, %.....                      | n/a         | n/a        |
| 7.2.5    | Creative goods exports, % total trade.....                             | n/a         | n/a        |
| 7.3      | Online creativity.....                                                 | 0.6         | 116        |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69.....                    | 0.6         | 112        |
| 7.3.2    | Country-code TLDs/th pop. 15–69.....                                   | 0.6         | 96         |
| 7.3.3    | Wikipedia edits/pop. 15–69.....                                        | 64.0        | 117        |
| 7.3.4    | Video uploads on YouTube/pop. 15–69.....                               | n/a         | n/a        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>a</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



**Key indicators**

|                            |             |
|----------------------------|-------------|
| Population (millions)..... | 9.6         |
| GDP (US\$ billions).....   | 570.1       |
| GDP per capita, PPP\$..... | 42,624.1    |
| Income group.....          | High income |
| Region.....                | Europe      |

|                                                              | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>62.4</b>                         | <b>3 ●</b> |
| Innovation Output Sub-Index.....                             | 57.8                                | 4 ●        |
| Innovation Input Sub-Index.....                              | 67.0                                | 7          |
| Innovation Efficiency Ratio.....                             | 0.9                                 | 16         |
| Global Innovation Index 2014 (out of 143).....               | 62.3                                | 3          |
| <b>1 Institutions.....</b>                                   | <b>90.0</b>                         | <b>9</b>   |
| 1.1 Political environment.....                               | 92.3                                | 6 ●        |
| 1.1.1 Political stability*.....                              | 92.0                                | 11         |
| 1.1.2 Government effectiveness*.....                         | 92.5                                | 4 ●        |
| 1.2 Regulatory environment.....                              | 93.1                                | 13         |
| 1.2.1 Regulatory quality*.....                               | 98.1                                | 3 ●        |
| 1.2.2 Rule of law*.....                                      | 99.6                                | 2 ●        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 14.4                                | 61 ○       |
| 1.3 Business environment.....                                | 84.7                                | 17         |
| 1.3.1 Ease of starting a business*.....                      | 92.3                                | 28         |
| 1.3.2 Ease of resolving insolvency*.....                     | 78.4                                | 16         |
| 1.3.3 Ease of paying taxes*.....                             | 83.3                                | 31         |
| <b>2 Human capital &amp; research.....</b>                   | <b>61.7</b>                         | <b>4 ●</b> |
| 2.1 Education.....                                           | 58.2                                | 13         |
| 2.1.1 Expenditure on education, % GDP.....                   | 6.8                                 | 15         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 32.7                                | 18         |
| 2.1.3 School life expectancy, years.....                     | 15.8                                | 26         |
| 2.1.4 PISA scales in reading, maths, & science.....          | 482.1                               | 34 ○       |
| 2.1.5 Pupil-teacher ratio, secondary.....                    | 9.5                                 | 22         |
| 2.2 Tertiary education.....                                  | 49.2                                | 21         |
| 2.2.1 Tertiary enrolment, % gross.....                       | 70.0                                | 25         |
| 2.2.2 Graduates in science & engineering, %.....             | 27.2                                | 16         |
| 2.2.3 Tertiary inbound mobility, %.....                      | 6.3                                 | 27         |
| 2.3 Research & development (R&D).....                        | 77.6                                | 4 ●        |
| 2.3.1 Researchers, FTE/mn pop.....                           | 6508.5                              | 6          |
| 2.3.2 Gross expenditure on R&D, % GDP.....                   | 3.4                                 | 5 ●        |
| 2.3.3 QS university ranking, average score top 3*.....       | 73.5                                | 13         |
| <b>3 Infrastructure.....</b>                                 | <b>62.8</b>                         | <b>7</b>   |
| 3.1 Information & communication technologies (ICTs).....     | 75.8                                | 18         |
| 3.1.1 ICT access*.....                                       | 89.3                                | 9          |
| 3.1.2 ICT use*.....                                          | 82.9                                | 2 ●        |
| 3.1.3 Government's online service*.....                      | 70.1                                | 28         |
| 3.1.4 E-participation*.....                                  | 60.8                                | 45         |
| 3.2 General infrastructure.....                              | 55.5                                | 11         |
| 3.2.1 Electricity output, kWh/cap.....                       | 15884.2                             | 7          |
| 3.2.2 Logistics performance*.....                            | 91.8                                | 6 ●        |
| 3.2.3 Gross capital formation, % GDP.....                    | 19.2                                | 98 ○       |
| 3.3 Ecological sustainability.....                           | 57.0                                | 12         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 7.0                                 | 63 ○       |
| 3.3.2 Environmental performance*.....                        | 78.1                                | 9          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 8.5                                 | 9          |
| <b>4 Market sophistication.....</b>                          | <b>63.7</b>                         | <b>14</b>  |
| 4.1 Credit.....                                              | 49.6                                | 25         |
| 4.1.1 Ease of getting credit*.....                           | 55.0                                | 56 ○       |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 135.3                               | 17         |
| 4.1.3 Microfinance gross loans, % GDP.....                   | n/a                                 | n/a        |

|                                                                 |             |            |
|-----------------------------------------------------------------|-------------|------------|
| 4.2 Investment.....                                             | 56.5        | 15         |
| 4.2.1 Ease of protecting investors*.....                        | 63.3        | 31         |
| 4.2.2 Market capitalization, % GDP.....                         | 103.1       | 14         |
| 4.2.3 Total value of stocks traded, % GDP.....                  | 69.2        | 10         |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                   | 0.3         | 13         |
| 4.3 Trade & competition.....                                    | 85.1        | 28         |
| 4.3.1 Applied tariff rate, weighted mean, %.....                | 1.0         | 9          |
| 4.3.2 Intensity of local competition†.....                      | 73.5        | 39         |
| <b>5 Business sophistication.....</b>                           | <b>56.9</b> | <b>7</b>   |
| 5.1 Knowledge workers.....                                      | 76.8        | 2 ●        |
| 5.1.1 Knowledge-intensive employment, %.....                    | 49.4        | 4 ●        |
| 5.1.2 Firms offering formal training, % firms.....              | n/a         | n/a        |
| 5.1.3 GERD performed by business, % of GDP.....                 | 2.4         | 5          |
| 5.1.4 GERD financed by business, %.....                         | 61.0        | 8          |
| 5.1.5 Females employed w/advanced degrees, % total.....         | 23.3        | 10         |
| 5.2 Innovation linkages.....                                    | 45.5        | 23         |
| 5.2.1 University/industry research collaboration†.....          | 72.1        | 11         |
| 5.2.2 State of cluster development†.....                        | 62.3        | 19         |
| 5.2.3 GERD financed by abroad, %.....                           | 6.8         | 56 ○       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....             | 0.0         | 27         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....              | 1.9         | 9          |
| 5.3 Knowledge absorption.....                                   | 48.5        | 16         |
| 5.3.1 Royalty & license fees payments, % total trade.....       | 1.0         | 33         |
| 5.3.2 High-tech imports less re-imports, % total trade.....     | 9.2         | 46         |
| 5.3.3 Comm., computer & info. services imp., % total trade..... | 2.8         | 6 ●        |
| 5.3.4 FDI net inflows, % GDP.....                               | -0.9        | 136 ○      |
| <b>6 Knowledge &amp; technology outputs.....</b>                | <b>60.5</b> | <b>2 ●</b> |
| 6.1 Knowledge creation.....                                     | 70.6        | 2 ●        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....            | 5.4         | 19         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                 | 8.8         | 1 ●        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....          | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....         | 53.7        | 6 ●        |
| 6.1.5 Citable documents H index.....                            | 567.0       | 11         |
| 6.2 Knowledge impact.....                                       | 47.7        | 28         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                   | 1.4         | 65 ○       |
| 6.2.2 New businesses/th pop. 15–64.....                         | 6.4         | 19         |
| 6.2.3 Computer software spending, % GDP.....                    | 0.6         | 15         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....           | 10.7        | 39         |
| 6.2.5 High- & medium-high-tech manufactures, %.....             | 31.8        | 34         |
| 6.3 Knowledge diffusion.....                                    | 63.0        | 6 ●        |
| 6.3.1 Royalty & license fees receipts, % total trade.....       | 2.6         | 7          |
| 6.3.2 High-tech exports less re-exports, % total trade.....     | 9.4         | 22         |
| 6.3.3 Comm., computer & info. services exp., % total trade..... | 4.7         | 8          |
| 6.3.4 FDI net outflows, % GDP.....                              | 3.5         | 18         |
| <b>7 Creative outputs.....</b>                                  | <b>55.1</b> | <b>11</b>  |
| 7.1 Intangible assets.....                                      | 56.2        | 22         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....              | 52.9        | 44 ○       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....           | 1.6         | 19         |
| 7.1.3 ICTs & business model creation†.....                      | 76.1        | 6 ●        |
| 7.1.4 ICTs & organizational model creation†.....                | 73.4        | 10         |
| 7.2 Creative goods & services.....                              | 37.4        | 23         |
| 7.2.1 Cultural & creative services exports, % total trade.....  | 0.8         | 24         |
| 7.2.2 National feature films/mn pop. 15–69.....                 | 9.1         | 18         |
| 7.2.3 Global ent. & media output/th pop. 15–69.....             | 65.5        | 5          |
| 7.2.4 Printing & publishing output manufactures, %.....         | 1.4         | 55 ○       |
| 7.2.5 Creative goods exports, % total trade.....                | 1.8         | 24         |
| 7.3 Online creativity.....                                      | 70.6        | 9          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....       | 50.3        | 18         |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                      | 84.2        | 10         |
| 7.3.3 Wikipedia edits/pop. 15–69.....                           | 7625.1      | 12         |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                  | 91.4        | 13         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓢ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Switzerland

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 8.2         |
| GDP (US\$ billions) .....   | 712.1       |
| GDP per capita, PPP\$ ..... | 47,863.0    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                                | Score 0–100<br>or value (hard data) | Rank       |
|----------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b>              | <b>68.3</b>                         | <b>1 ●</b> |
| Innovation Output Sub-Index .....                              | 68.6                                | 1 ●        |
| Innovation Input Sub-Index .....                               | 68.0                                | 2 ●        |
| Innovation Efficiency Ratio .....                              | 1.0                                 | 2 ●        |
| Global Innovation Index 2014 (out of 143) .....                | 64.8                                | 1          |
| <b>1 Institutions .....</b>                                    | <b>89.6</b>                         | <b>10</b>  |
| 1.1 Political environment .....                                | 94.2                                | 5          |
| 1.1.1 Political stability* .....                               | 98.1                                | 2 ●        |
| 1.1.2 Government effectiveness* .....                          | 90.2                                | 6          |
| 1.2 Regulatory environment .....                               | 94.5                                | 11         |
| 1.2.1 Regulatory quality* .....                                | 91.3                                | 13         |
| 1.2.2 Rule of law* .....                                       | 95.3                                | 8          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 10.1                                | 37         |
| 1.3 Business environment .....                                 | 80.2                                | 28         |
| 1.3.1 Ease of starting a business* .....                       | 88.4                                | 59 ○       |
| 1.3.2 Ease of resolving insolvency* .....                      | 63.1                                | 39         |
| 1.3.3 Ease of paying taxes* .....                              | 89.1                                | 17         |
| <b>2 Human capital &amp; research .....</b>                    | <b>59.2</b>                         | <b>6</b>   |
| 2.1 Education .....                                            | 55.5                                | 28         |
| 2.1.1 Expenditure on education, % GDP .....                    | 5.3                                 | 44         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 27.5                                | 29         |
| 2.1.3 School life expectancy, years .....                      | 15.8                                | 27         |
| 2.1.4 PISA scales in reading, maths, & science .....           | 518.4                               | 11         |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 9.3                                 | 21         |
| 2.2 Tertiary education .....                                   | 49.8                                | 19         |
| 2.2.1 Tertiary enrolment, % gross .....                        | 55.6                                | 45         |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 20.8                                | 50 ○       |
| 2.2.3 Tertiary inbound mobility, % .....                       | 16.5                                | 9          |
| 2.3 Research & development (R&D) .....                         | 72.4                                | 7          |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 4495.2                              | 12         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 3.1                                 | 6          |
| 2.3.3 QS university ranking, average score top 3* .....        | 89.0                                | 3 ●        |
| <b>3 Infrastructure .....</b>                                  | <b>58.6</b>                         | <b>15</b>  |
| 3.1 Information & communication technologies (ICTs) .....      | 62.2                                | 41         |
| 3.1.1 ICT access* .....                                        | 93.6                                | 2 ●        |
| 3.1.2 ICT use* .....                                           | 67.5                                | 18         |
| 3.1.3 Government's online service* .....                       | 50.4                                | 64 ○       |
| 3.1.4 E-participation* .....                                   | 37.3                                | 87 ○       |
| 3.2 General infrastructure .....                               | 46.6                                | 26         |
| 3.2.1 Electricity output, kWh/cap .....                        | 8540.3                              | 19         |
| 3.2.2 Logistics performance* .....                             | 85.8                                | 14         |
| 3.2.3 Gross capital formation, % GDP .....                     | 21.1                                | 73 ○       |
| 3.3 Ecological sustainability .....                            | 67.1                                | 2 ●        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 12.0                                | 14         |
| 3.3.2 Environmental performance* .....                         | 87.7                                | 1 ●        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 6.6                                 | 15         |
| <b>4 Market sophistication .....</b>                           | <b>72.3</b>                         | <b>5</b>   |
| 4.1 Credit .....                                               | 57.8                                | 15         |
| 4.1.1 Ease of getting credit* .....                            | 60.0                                | 48 ○       |
| 4.1.2 Domestic credit to private sector, % GDP .....           | 169.0                               | 9          |
| 4.1.3 Microfinance gross loans, % GDP .....                    | n/a                                 | n/a        |

|                                                                         |             |            |
|-------------------------------------------------------------------------|-------------|------------|
| 4.2 Investment .....                                                    | 71.6        | 4          |
| 4.2.1 Ease of protecting investors* .....                               | 55.0        | 72 ○       |
| 4.2.2 Market capitalization, % GDP .....                                | 162.0       | 1 ●        |
| 4.2.3 Total value of stocks traded, % GDP .....                         | 96.2        | 4          |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                          | 0.6         | 7          |
| 4.3 Trade & competition .....                                           | 87.6        | 14         |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> .....          | 1.0         | 7          |
| 4.3.2 Intensity of local competition <sup>†</sup> .....                 | 78.5        | 17         |
| <b>5 Business sophistication .....</b>                                  | <b>60.0</b> | <b>3 ●</b> |
| 5.1 Knowledge workers .....                                             | 73.0        | 4          |
| 5.1.1 Knowledge-intensive employment, % .....                           | 51.0        | 3 ●        |
| 5.1.2 Firms offering formal training, % firms .....                     | n/a         | n/a        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....           | 2.2         | 6          |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....                   | 60.8        | 10         |
| 5.1.5 Females employed w/advanced degrees, % total .....                | 17.0        | 30         |
| 5.2 Innovation linkages .....                                           | 56.8        | 7          |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....     | 79.8        | 3 ●        |
| 5.2.2 State of cluster development <sup>†</sup> .....                   | 72.5        | 5          |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                     | 12.1        | 37         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                    | 0.0         | 12         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                     | 3.3         | 4          |
| 5.3 Knowledge absorption .....                                          | 50.1        | 14         |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> ..... | 8.4         | 1 ●        |
| 5.3.2 High-tech imports less re-imports, % total trade .....            | 9.9         | 32         |
| 5.3.3 Comm., computer & info. services imp., % total trade .....        | n/a         | n/a        |
| 5.3.4 FDI net inflows, % GDP .....                                      | -1.3        | 137 ○      |
| <b>6 Knowledge &amp; technology outputs .....</b>                       | <b>72.4</b> | <b>1 ●</b> |
| 6.1 Knowledge creation .....                                            | 69.2        | 3 ●        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                   | 3.3         | 28         |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                        | 8.7         | 1 ●        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                 | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                | 55.7        | 4          |
| 6.1.5 Citable documents H index .....                                   | 629.0       | 9          |
| 6.2 Knowledge impact .....                                              | 57.8        | 5          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                          | 0.4         | 86 ○       |
| 6.2.2 New businesses/th pop. 15–64 .....                                | 2.5         | 41 ○       |
| 6.2.3 Computer software spending, % GDP .....                           | 0.8         | 2 ●        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                  | 26.3        | 13         |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....       | 64.0        | 2 ●        |
| 6.3 Knowledge diffusion .....                                           | 90.3        | 1 ●        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> ..... | 7.2         | 1 ●        |
| 6.3.2 High-tech exports less re-exports, % total trade .....            | 17.1        | 7          |
| 6.3.3 Comm., computer & info. services exp., % total trade .....        | n/a         | n/a        |
| 6.3.4 FDI net outflows, % GDP .....                                     | 8.3         | 6          |
| <b>7 Creative outputs .....</b>                                         | <b>64.8</b> | <b>3 ●</b> |
| 7.1 Intangible assets .....                                             | 65.8        | 6          |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                     | 76.3        | 21         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                  | 6.6         | 1 ●        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....                 | 74.0        | 13         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....           | 64.0        | 25         |
| 7.2 Creative goods & services .....                                     | 52.6        | 3 ●        |
| 7.2.1 Cultural & creative services exports, % total trade .....         | n/a         | n/a        |
| 7.2.2 National feature films/mn pop. 15–69 .....                        | 17.5        | 9          |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                    | 79.0        | 2 ●        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> .....   | 1.7         | 37         |
| 7.2.5 Creative goods exports, % total trade .....                       | 4.0         | 11         |
| 7.3 Online creativity .....                                             | 75.2        | 5          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....              | 75.4        | 11         |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                             | 100.0       | 1 ●        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                  | 4555.6      | 32         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                         | 91.7        | 12         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 8.4                       |
| GDP (US\$ billions) .....   | 9.2                       |
| GDP per capita, PPP\$ ..... | 2,486.0                   |
| Income group .....          | Low income                |
| Region .....                | Central and Southern Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>27.5</b>                         | <b>114</b> |
| Innovation Output Sub-Index .....                 | 21.5                                | 106        |
| Innovation Input Sub-Index .....                  | 33.4                                | 115        |
| Innovation Efficiency Ratio .....                 | 0.6                                 | 101        |
| Global Innovation Index 2014 (out of 143) .....   | 23.7                                | 137        |

|                                                               |             |              |
|---------------------------------------------------------------|-------------|--------------|
| <b>1 Institutions .....</b>                                   | <b>42.7</b> | <b>127</b>   |
| 1.1 Political environment .....                               | 24.2        | 130          |
| 1.1.1 Political stability* .....                              | 36.0        | 119          |
| 1.1.2 Government effectiveness* .....                         | 12.3        | 132          |
| 1.2 Regulatory environment .....                              | 51.0        | 112          |
| 1.2.1 Regulatory quality* .....                               | 19.4        | 131          |
| 1.2.2 Rule of law* .....                                      | 14.7        | 136 ○        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 15.5        | 69           |
| 1.3 Business environment .....                                | 52.8        | 128          |
| 1.3.1 Ease of starting a business* .....                      | 83.0        | 86           |
| 1.3.2 Ease of resolving insolvency* .....                     | 29.3        | 126          |
| 1.3.3 Ease of paying taxes* .....                             | 46.1        | 128          |
| <b>2 Human capital &amp; research .....</b>                   | <b>25.5</b> | <b>86</b>    |
| 2.1 Education .....                                           | 43.4        | 75           |
| 2.1.1 Expenditure on education, % GDP .....                   | 4.0         | 86           |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | n/a         | n/a          |
| 2.1.3 School life expectancy, years .....                     | 11.2        | 103          |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓓ</sup> .....       | 15.4        | 66           |
| 2.2 Tertiary education .....                                  | 32.0        | 70           |
| 2.2.1 Tertiary enrolment, % gross .....                       | 22.5        | 88           |
| 2.2.2 Graduates in science & engineering, % .....             | 25.5        | 21 ●         |
| 2.2.3 Tertiary inbound mobility, % .....                      | 1.6         | 73           |
| 2.3 Research & development (R&D) .....                        | 1.2         | 112          |
| 2.3.1 Researchers, FTE/mn pop. ....                           | n/a         | n/a          |
| 2.3.2 Gross expenditure on R&D, % GDP .....                   | 0.1         | 104          |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0         | 73 ○         |
| <b>3 Infrastructure .....</b>                                 | <b>18.0</b> | <b>135</b> ○ |
| 3.1 Information & communication technologies (ICTs) .....     | 9.0         | 138 ○        |
| 3.1.1 ICT access* .....                                       | n/a         | n/a          |
| 3.1.2 ICT use* .....                                          | n/a         | n/a          |
| 3.1.3 Government's online service* .....                      | 6.3         | 137 ○        |
| 3.1.4 E-participation* .....                                  | 11.8        | 132 ○        |
| 3.2 General infrastructure .....                              | 12.2        | 136 ○        |
| 3.2.1 Electricity output, kWh/cap .....                       | 2119.1      | 76           |
| 3.2.2 Logistics performance* .....                            | 18.7        | 105          |
| 3.2.3 Gross capital formation, % GDP .....                    | 12.6        | 136 ○        |
| 3.3 Ecological sustainability .....                           | 32.7        | 88           |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 7.3         | 59 ●         |
| 3.3.2 Environmental performance* .....                        | 31.3        | 125          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 4.7         | 22 ●         |
| <b>4 Market sophistication .....</b>                          | <b>53.3</b> | <b>40</b> ●  |
| 4.1 Credit .....                                              | 33.1        | 61 ●         |
| 4.1.1 Ease of getting credit* .....                           | 35.0        | 102          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 17.9        | 119          |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 5.0         | 8 ●          |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 58.3 | 12   |
| 4.2.1 Ease of protecting investors* .....               | 58.3 | 54 ● |
| 4.2.2 Market capitalization, % GDP .....                | n/a  | n/a  |
| 4.2.3 Total value of stocks traded, % GDP .....         | n/a  | n/a  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a  |
| 4.3 Trade & competition .....                           | 68.5 | 100  |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 5.2  | 86   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 55.3 | 117  |

**5 Business sophistication .....** **27.4** **108**

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                                   | 27.3 | 99    |
| 5.1.1 Knowledge-intensive employment, % .....                                 | n/a  | n/a   |
| 5.1.2 Firms offering formal training, % firms .....                           | 33.6 | 55    |
| 5.1.3 GERD performed by business, % of GDP .....                              | n/a  | n/a   |
| 5.1.4 GERD financed by business, % <sup>Ⓓ</sup> .....                         | 1.6  | 82    |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | n/a  | n/a   |
| 5.2 Innovation linkages .....                                                 | 24.8 | 101   |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 37.9 | 88    |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 38.6 | 103   |
| 5.2.3 GERD financed by abroad, % .....                                        | 0.2  | 98 ○  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | 0.0  | 26 ●  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a  | n/a   |
| 5.3 Knowledge absorption .....                                                | 30.1 | 92    |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓓ</sup> .....       | 0.0  | 124 ○ |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | n/a  | n/a   |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓓ</sup> ..... | 1.1  | 54 ●  |
| 5.3.4 FDI net inflows, % GDP .....                                            | 1.3  | 104   |

**6 Knowledge & technology outputs .....** **26.1** **70**

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation .....                                                  | 21.3 | 46 ●  |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | 0.1  | 100   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a  | n/a   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | 3.2  | 10 ●  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 2.1  | 126   |
| 6.1.5 Citable documents H index .....                                         | 24.0 | 137 ○ |
| 6.2 Knowledge impact .....                                                    | 33.7 | 91    |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 4.5  | 12 ●  |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 0.3  | 95    |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a  | n/a   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 0.2  | 136 ○ |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓓ</sup> .....             | 2.4  | 95    |
| 6.3 Knowledge diffusion .....                                                 | 23.2 | 98    |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓓ</sup> .....       | 0.0  | 89    |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | n/a  | n/a   |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓓ</sup> ..... | 2.6  | 26 ●  |
| 6.3.4 FDI net outflows, % GDP .....                                           | n/a  | n/a   |

**7 Creative outputs .....** **17.0** **130**

|                                                                       |      |       |
|-----------------------------------------------------------------------|------|-------|
| 7.1 Intangible assets .....                                           | 30.3 | 127   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 12.0 | 94    |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.0  | 61    |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 51.2 | 87    |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 48.9 | 81    |
| 7.2 Creative goods & services .....                                   | 7.0  | 111   |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a  | n/a   |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 1.8  | 60    |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a  | n/a   |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓓ</sup> ..... | 0.6  | 89    |
| 7.2.5 Creative goods exports, % total trade .....                     | n/a  | n/a   |
| 7.3 Online creativity .....                                           | 0.4  | 117   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 0.1  | 133 ○ |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 0.6  | 101   |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 97.5 | 115   |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a  | n/a   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓓ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Tanzania, United Republic of

## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 50.8               |
| GDP (US\$ billions) .....   | 47.9               |
| GDP per capita, PPP\$ ..... | 1,812.7            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                                        | Score 0–100<br>or value (hard data) | Rank         |
|------------------------------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141) .....</b>                      | <b>27.0</b>                         | <b>117</b>   |
| Innovation Output Sub-Index .....                                      | 23.6                                | 95           |
| Innovation Input Sub-Index .....                                       | 30.5                                | 124          |
| Innovation Efficiency Ratio .....                                      | 0.8                                 | 38 ●         |
| Global Innovation Index 2014 (out of 143) .....                        | 25.6                                | 123          |
| <b>1 Institutions .....</b>                                            | <b>56.1</b>                         | <b>83</b>    |
| 1.1 Political environment .....                                        | 41.8                                | 93           |
| 1.1.1 Political stability* .....                                       | 60.4                                | 76           |
| 1.1.2 Government effectiveness* .....                                  | 23.2                                | 110          |
| 1.2 Regulatory environment .....                                       | 66.9                                | 67 ●         |
| 1.2.1 Regulatory quality* .....                                        | 38.7                                | 95           |
| 1.2.2 Rule of law* .....                                               | 34.2                                | 90           |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....                 | 9.3                                 | 29 ●         |
| 1.3 Business environment .....                                         | 59.6                                | 105          |
| 1.3.1 Ease of starting a business* .....                               | 78.9                                | 101          |
| 1.3.2 Ease of resolving insolvency* .....                              | 41.1                                | 97           |
| 1.3.3 Ease of paying taxes* .....                                      | 59.0                                | 114          |
| <b>2 Human capital &amp; research .....</b>                            | <b>12.9</b>                         | <b>133</b> ○ |
| 2.1 Education .....                                                    | 31.1                                | 116          |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 6.2                                 | 28 ●         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 16.2                                | 77           |
| 2.1.3 School life expectancy, years .....                              | 9.2                                 | 119          |
| 2.1.4 PISA scales in reading, maths, & science .....                   | n/a                                 | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary .....                             | 26.4                                | 99           |
| 2.2 Tertiary education .....                                           | 2.7                                 | 136 ○        |
| 2.2.1 Tertiary enrolment, % gross .....                                | 3.9                                 | 129 ○        |
| 2.2.2 Graduates in science & engineering, % .....                      | n/a                                 | n/a          |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....                  | 0.6                                 | 88           |
| 2.3 Research & development (R&D) .....                                 | 5.1                                 | 82           |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                      | 35.6                                | 99 ○         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.5                                 | 61           |
| 2.3.3 QS university ranking, average score top 3* .....                | 2.8                                 | 71 ●         |
| <b>3 Infrastructure .....</b>                                          | <b>23.8</b>                         | <b>120</b>   |
| 3.1 Information & communication technologies (ICTs) .....              | 23.8                                | 115          |
| 3.1.1 ICT access* .....                                                | 23.7                                | 129 ○        |
| 3.1.2 ICT use* .....                                                   | 2.4                                 | 129 ○        |
| 3.1.3 Government's online service* .....                               | 29.9                                | 106          |
| 3.1.4 E-participation* .....                                           | 39.2                                | 82           |
| 3.2 General infrastructure .....                                       | 27.6                                | 83           |
| 3.2.1 Electricity output, kWh/cap .....                                | 121.3                               | 120 ○        |
| 3.2.2 Logistics performance* .....                                     | 8.7                                 | 122 ○        |
| 3.2.3 Gross capital formation, % GDP .....                             | 31.5                                | 18 ●         |
| 3.3 Ecological sustainability .....                                    | 20.0                                | 134 ○        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | 3.1                                 | 114          |
| 3.3.2 Environmental performance* .....                                 | 36.2                                | 120          |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....          | 0.3                                 | 101          |
| <b>4 Market sophistication .....</b>                                   | <b>33.6</b>                         | <b>136</b> ○ |
| 4.1 Credit .....                                                       | 25.0                                | 88           |
| 4.1.1 Ease of getting credit* .....                                    | 25.0                                | 125          |
| 4.1.2 Domestic credit to private sector, % GDP .....                   | 17.2                                | 121          |
| 4.1.3 Microfinance gross loans, % GDP .....                            | 3.8                                 | 15 ●         |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 18.5 | 139 ○ |
| 4.2.1 Ease of protecting investors* .....               | 43.3 | 119   |
| 4.2.2 Market capitalization, % GDP .....                | 6.4  | 97    |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.1  | 99    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 56    |
| 4.3 Trade & competition .....                           | 57.4 | 133 ○ |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 11.5 | 127   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 55.3 | 118   |

|                                                                     |             |            |
|---------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                              | <b>25.8</b> | <b>120</b> |
| 5.1 Knowledge workers .....                                         | 13.4        | 133 ○      |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 2.6         | 115 ○      |
| 5.1.2 Firms offering formal training, % firms .....                 | 30.7        | 64         |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....               | 0.1         | 91 ○       |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 0.7         | 85 ○       |
| 5.2 Innovation linkages .....                                       | 38.8        | 45 ●       |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 39.5        | 80         |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 40.3        | 95         |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 42.0        | 10 ●       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 71         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a        |
| 5.3 Knowledge absorption .....                                      | 25.2        | 114        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.0         | 117        |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 6.8         | 68         |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 0.5         | 97         |
| 5.3.4 FDI net inflows, % GDP .....                                  | 5.6         | 28 ●       |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>17.4</b> | <b>117</b> |
| 6.1 Knowledge creation .....                                                  | 9.8         | 70         |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a         | n/a        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 6.8         | 83         |
| 6.1.5 Citable documents H index .....                                         | 102.0       | 70 ●       |
| 6.2 Knowledge impact .....                                                    | 38.4        | 64 ●       |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 3.7         | 18 ●       |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 0.5         | 126        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 0.1         | 101 ○      |
| 6.3 Knowledge diffusion .....                                                 | 4.2         | 132 ○      |
| 6.3.1 Royalty & license fees receipts, % total trade .....                    | n/a         | n/a        |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.5         | 77         |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.4         | 96         |
| 6.3.4 FDI net outflows, % GDP .....                                           | n/a         | n/a        |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>29.7</b> | <b>81</b> |
| 7.1 Intangible assets .....                                           | 44.9        | 71        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | n/a         | n/a       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 45.7        | 110       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 44.2        | 99        |
| 7.2 Creative goods & services .....                                   | 28.7        | 42        |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | n/a         | n/a       |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 3.4         | 9 ●       |
| 7.2.5 Creative goods exports, % total trade .....                     | 0.1         | 95        |
| 7.3 Online creativity .....                                           | 0.2         | 128       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 0.2         | 126       |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 0.1         | 117       |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 38.6        | 125       |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 2.1                 |
| GDP (US\$ billions) .....   | 11.3                |
| GDP per capita, PPP\$ ..... | 11,395.3            |
| Income group .....          | Upper-middle income |
| Region .....                | Europe              |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>38.0</b>                         | <b>56</b> |
| Innovation Output Sub-Index .....                 | 32.1                                | 55        |
| Innovation Input Sub-Index .....                  | 44.0                                | 56        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 64        |
| Global Innovation Index 2014 (out of 143) .....   | 36.9                                | 60        |

|                                                        |             |           |
|--------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                            | <b>67.7</b> | <b>55</b> |
| 1.1 Political environment .....                        | 47.3        | 77        |
| 1.1.1 Political stability* .....                       | 54.9        | 87        |
| 1.1.2 Government effectiveness* .....                  | 39.7        | 71        |
| 1.2 Regulatory environment .....                       | 69.8        | 55        |
| 1.2.1 Regulatory quality* .....                        | 56.4        | 59        |
| 1.2.2 Rule of law* .....                               | 42.3        | 70        |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 13.0        | 50        |
| 1.3 Business environment .....                         | 86.1        | 15 ●      |
| 1.3.1 Ease of starting a business* .....               | 98.1        | 3 ●       |
| 1.3.2 Ease of resolving insolvency* .....              | 65.9        | 33 ●      |
| 1.3.3 Ease of paying taxes* .....                      | 94.2        | 7 ●       |

|                                                           |             |           |
|-----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research .....</b>               | <b>32.7</b> | <b>55</b> |
| 2.1 Education .....                                       | 66.2        | 5         |
| 2.1.1 Expenditure on education, % GDP .....               | n/a         | n/a       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | n/a         | n/a       |
| 2.1.3 School life expectancy, years .....                 | 13.4        | 74        |
| 2.1.4 PISA scales in reading, maths, & science .....      | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 10.5        | 31        |
| 2.2 Tertiary education .....                              | 28.8        | 78        |
| 2.2.1 Tertiary enrolment, % gross .....                   | 38.5        | 67        |
| 2.2.2 Graduates in science & engineering, % .....         | 19.1        | 60        |
| 2.2.3 Tertiary inbound mobility, % .....                  | 2.2         | 65        |
| 2.3 Research & development (R&D) .....                    | 3.0         | 93        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓔ</sup> .....         | 331.1       | 65        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓔ</sup> .....  | 0.2         | 85 ○      |
| 2.3.3 QS university ranking, average score top 3* .....   | 0.0         | 73 ○      |

|                                                               |             |           |
|---------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure .....</b>                                 | <b>31.4</b> | <b>94</b> |
| 3.1 Information & communication technologies (ICTs) .....     | 38.4        | 88        |
| 3.1.1 ICT access* .....                                       | 65.5        | 56        |
| 3.1.2 ICT use* .....                                          | 42.2        | 54        |
| 3.1.3 Government's online service* .....                      | 24.4        | 113 ○     |
| 3.1.4 E-participation* .....                                  | 21.6        | 119 ○     |
| 3.2 General infrastructure .....                              | 16.3        | 126 ○     |
| 3.2.1 Electricity output, kWh/cap .....                       | 2967.8      | 63        |
| 3.2.2 Logistics performance* .....                            | 17.2        | 108 ○     |
| 3.2.3 Gross capital formation, % GDP .....                    | n/a         | n/a       |
| 3.3 Ecological sustainability .....                           | 39.6        | 60        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 6.6         | 76        |
| 3.3.2 Environmental performance* .....                        | 50.4        | 79        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 5.0         | 20 ●      |

|                                                      |             |           |
|------------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                 | <b>52.3</b> | <b>46</b> |
| 4.1 Credit .....                                     | 39.1        | 46        |
| 4.1.1 Ease of getting credit* .....                  | 65.0        | 34        |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 49.2        | 68        |
| 4.1.3 Microfinance gross loans, % GDP .....          | 3.1         | 17 ●      |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 34.2 | 75   |
| 4.2.1 Ease of protecting investors* .....               | 66.7 | 21 ● |
| 4.2.2 Market capitalization, % GDP .....                | 5.8  | 99 ○ |
| 4.2.3 Total value of stocks traded, % GDP .....         | 0.3  | 84 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a  |
| 4.3 Trade & competition .....                           | 83.4 | 35   |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 1.9  | 44   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 73.2 | 41   |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>35.9</b> | <b>62</b> |
| 5.1 Knowledge workers .....                                         | 40.0        | 64        |
| 5.1.1 Knowledge-intensive employment, % .....                       | 27.9        | 50        |
| 5.1.2 Firms offering formal training, % firms .....                 | 46.0        | 35        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓔ</sup> .....       | 0.0         | 75 ○      |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a       |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 11.4        | 56        |
| 5.2 Innovation linkages .....                                       | 31.8        | 66        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 45.2        | 58        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 41.0        | 92        |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 108 ○     |
| 5.3 Knowledge absorption .....                                      | 35.8        | 59        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.6         | 48        |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 6.1         | 80        |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 1.6         | 35        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 3.7         | 45        |

|                                                                  |             |           |
|------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>26.3</b> | <b>69</b> |
| 6.1 Knowledge creation .....                                     | 9.6         | 73        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 1.6         | 52        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.1         | 57        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 12.6        | 62        |
| 6.1.5 Citable documents H index .....                            | 67.0        | 98 ○      |
| 6.2 Knowledge impact .....                                       | 40.1        | 54        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 1.1         | 70        |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 3.6         | 33        |
| 6.2.3 Computer software spending, % GDP .....                    | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 15.2        | 25 ●      |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 19.6        | 58        |
| 6.3 Knowledge diffusion .....                                    | 29.0        | 63        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.1         | 47        |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 1.9         | 51        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.5         | 28 ●      |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.4         | 69        |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>37.9</b> | <b>46</b> |
| 7.1 Intangible assets .....                                     | 48.9        | 52        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | n/a         | n/a       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 0.6         | 38        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 60.1        | 50        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 54.9        | 60        |
| 7.2 Creative goods & services .....                             | 27.3        | 47        |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.7         | 30        |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 8.2         | 22 ●      |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % .....        | 2.6         | 16 ●      |
| 7.2.5 Creative goods exports, % total trade .....               | 0.2         | 80        |
| 7.3 Online creativity .....                                     | 26.5        | 50        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 7.2         | 52        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 1.9         | 72        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 3131.7      | 43        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 73.7        | 48        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Thailand

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 67.2                        |
| GDP (US\$ billions) .....   | 373.8                       |
| GDP per capita, PPP\$ ..... | 10,226.8                    |
| Income group .....          | Upper-middle income         |
| Region .....                | South East Asia and Oceania |

|                                                              | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b>             | <b>38.1</b>                         | <b>55</b> |
| Innovation Output Sub-Index .....                            | 33.0                                | 50        |
| Innovation Input Sub-Index .....                             | 43.2                                | 62        |
| Innovation Efficiency Ratio .....                            | 0.8                                 | 43        |
| Global Innovation Index 2014 (out of 143) .....              | 39.3                                | 48        |
| <b>1 Institutions.....</b>                                   | <b>53.6</b>                         | <b>92</b> |
| 1.1 Political environment.....                               | 39.3                                | 103       |
| 1.1.1 Political stability*.....                              | 31.5                                | 131 ○     |
| 1.1.2 Government effectiveness*.....                         | 47.1                                | 57        |
| 1.2 Regulatory environment .....                             | 46.7                                | 119 ○     |
| 1.2.1 Regulatory quality*.....                               | 53.5                                | 64        |
| 1.2.2 Rule of law*.....                                      | 44.1                                | 65        |
| 1.2.3 Cost of redundancy dismissal, salary weeks.....        | 36.0                                | 132 ○     |
| 1.3 Business environment.....                                | 74.9                                | 48        |
| 1.3.1 Ease of starting a business*.....                      | 88.0                                | 63        |
| 1.3.2 Ease of resolving insolvency*.....                     | 58.7                                | 43        |
| 1.3.3 Ease of paying taxes*.....                             | 78.0                                | 51        |
| <b>2 Human capital &amp; research.....</b>                   | <b>31.1</b>                         | <b>60</b> |
| 2.1 Education .....                                          | 51.1                                | 45        |
| 2.1.1 Expenditure on education, % GDP .....                  | 7.6                                 | 9 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap.....     | 37.4                                | 10 ●      |
| 2.1.3 School life expectancy, years.....                     | 13.5                                | 71        |
| 2.1.4 PISA scales in reading, maths, & science.....          | 437.3                               | 44        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....      | 19.9                                | 84        |
| 2.2 Tertiary education.....                                  | 23.5                                | 93        |
| 2.2.1 Tertiary enrolment, % gross.....                       | 51.2                                | 51        |
| 2.2.2 Graduates in science & engineering, % .....            | n/a                                 | n/a       |
| 2.2.3 Tertiary inbound mobility, %.....                      | 0.8                                 | 86        |
| 2.3 Research & development (R&D).....                        | 18.5                                | 48        |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....            | 546.1                               | 57        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....     | 0.4                                 | 70        |
| 2.3.3 QS university ranking, average score top 3*.....       | 40.2                                | 36        |
| <b>3 Infrastructure.....</b>                                 | <b>40.7</b>                         | <b>64</b> |
| 3.1 Information & communication technologies (ICTs).....     | 44.7                                | 73        |
| 3.1.1 ICT access*.....                                       | 48.8                                | 79        |
| 3.1.2 ICT use*.....                                          | 31.2                                | 66        |
| 3.1.3 Government's online service*.....                      | 44.1                                | 74        |
| 3.1.4 E-participation*.....                                  | 54.9                                | 54        |
| 3.2 General infrastructure.....                              | 39.8                                | 40        |
| 3.2.1 Electricity output, kWh/cap.....                       | 2494.7                              | 70        |
| 3.2.2 Logistics performance*.....                            | 64.7                                | 34        |
| 3.2.3 Gross capital formation, % GDP.....                    | 27.0                                | 36        |
| 3.3 Ecological sustainability .....                          | 37.5                                | 71        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 6.4                                 | 84        |
| 3.3.2 Environmental performance*.....                        | 52.8                                | 70        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 3.3                                 | 29        |
| <b>4 Market sophistication .....</b>                         | <b>53.3</b>                         | <b>41</b> |
| 4.1 Credit.....                                              | 31.9                                | 64        |
| 4.1.1 Ease of getting credit*.....                           | 45.0                                | 80        |
| 4.1.2 Domestic credit to private sector, % GDP.....          | 154.4                               | 14 ●      |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> .....     | 0.0                                 | 90 ○      |

|                                                                |       |      |
|----------------------------------------------------------------|-------|------|
| 4.2 Investment .....                                           | 49.6  | 30   |
| 4.2.1 Ease of protecting investors*.....                       | 65.8  | 25   |
| 4.2.2 Market capitalization, % GDP.....                        | 104.7 | 13   |
| 4.2.3 Total value of stocks traded, % GDP.....                 | 62.7  | 13 ● |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                  | 0.0   | 59 ○ |
| 4.3 Trade & competition .....                                  | 78.3  | 62   |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 4.9   | 81   |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 73.7  | 36   |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>37.3</b> | <b>54</b> |
| 5.1 Knowledge workers.....                                          | 47.3        | 39        |
| 5.1.1 Knowledge-intensive employment, %.....                        | 13.9        | 97 ○      |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 75.3        | 2 ●       |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.2         | 49        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....               | 51.7        | 17        |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 7.5         | 70 ○      |
| 5.2 Innovation linkages .....                                       | 25.6        | 96        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 49.2        | 44        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 53.3        | 37        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 2.5         | 77 ○      |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | 0.0         | 47        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                  | 0.0         | 90 ○      |
| 5.3 Knowledge absorption.....                                       | 38.9        | 44        |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 1.6         | 12 ●      |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 14.7        | 15 ●      |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 0.2         | 115 ○     |
| 5.3.4 FDI net inflows, % GDP.....                                   | 3.3         | 55        |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>30.3</b> | <b>48</b> |
| 6.1 Knowledge creation.....                                       | 15.6        | 57        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....              | 1.6         | 51        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                   | 0.1         | 67        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....            | 1.6         | 19        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....           | 6.7         | 85        |
| 6.1.5 Citable documents H index.....                              | 190.0       | 38        |
| 6.2 Knowledge impact.....                                         | 41.9        | 49        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                     | 2.5         | 37        |
| 6.2.2 New businesses/th pop. 15–64.....                           | 0.9         | 75        |
| 6.2.3 Computer software spending, % GDP.....                      | 0.3         | 26        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....             | 9.2         | 44        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 43.9        | 11 ●      |
| 6.3 Knowledge diffusion.....                                      | 33.3        | 45        |
| 6.3.1 Royalty & license fees receipts, % total trade.....         | 0.1         | 61        |
| 6.3.2 High-tech exports less re-exports, % total trade.....       | 13.2        | 14 ●      |
| 6.3.3 Comm., computer & info. services exp., % total trade.....   | 0.2         | 112 ○     |
| 6.3.4 FDI net outflows, % GDP.....                                | 1.7         | 37        |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>35.8</b> | <b>52</b> |
| 7.1 Intangible assets .....                                           | 43.0        | 83        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                    | 28.9        | 72        |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                 | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 61.2        | 44        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 52.7        | 66        |
| 7.2 Creative goods & services.....                                    | 35.6        | 25        |
| 7.2.1 Cultural & creative services exports, % total trade.....        | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 <sup>Ⓐ</sup> .....         | 1.0         | 76        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | 5.0         | 45        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.1         | 67        |
| 7.2.5 Creative goods exports, % total trade.....                      | 9.3         | 6 ●       |
| 7.3 Online creativity.....                                            | 21.6        | 62        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 6.4         | 55        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 0.5         | 102       |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 944.0       | 77        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | 72.5        | 54        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 7.0                |
| GDP (US\$ billions) .....   | 4.6                |
| GDP per capita, PPP\$ ..... | 1,136.5            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                   | Score 0–100<br>or value (hard data) | Rank         |
|---------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>18.4</b>                         | <b>140</b> ○ |
| Innovation Output Sub-Index .....                 | 7.2                                 | 141 ○        |
| Innovation Input Sub-Index .....                  | 29.6                                | 128          |
| Innovation Efficiency Ratio .....                 | 0.2                                 | 141 ○        |
| Global Innovation Index 2014 (out of 143) .....   | 17.6                                | 142          |

|                                                               |             |              |
|---------------------------------------------------------------|-------------|--------------|
| <b>1 Institutions .....</b>                                   | <b>47.1</b> | <b>115</b>   |
| 1.1 Political environment .....                               | 29.0        | 121          |
| 1.1.1 Political stability* .....                              | 53.6        | 91           |
| 1.1.2 Government effectiveness* .....                         | 4.3         | 139 ○        |
| 1.2 Regulatory environment .....                              | 55.8        | 100          |
| 1.2.1 Regulatory quality* .....                               | 22.5        | 127          |
| 1.2.2 Rule of law* .....                                      | 20.8        | 125          |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 13.1        | 55 ●         |
| 1.3 Business environment .....                                | 56.7        | 112          |
| 1.3.1 Ease of starting a business* .....                      | 76.1        | 109          |
| 1.3.2 Ease of resolving insolvency* .....                     | 43.1        | 87 ●         |
| 1.3.3 Ease of paying taxes* .....                             | 50.8        | 124          |
| <b>2 Human capital &amp; research .....</b>                   | <b>13.6</b> | <b>131</b>   |
| 2.1 Education .....                                           | 32.0        | 108          |
| 2.1.1 Expenditure on education, % GDP .....                   | 4.0         | 87           |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 15.4        | 85           |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....        | 12.2        | 91           |
| 2.1.4 PISA scales in reading, maths, & science .....          | n/a         | n/a          |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....       | 26.2        | 98           |
| 2.2 Tertiary education .....                                  | 7.0         | 130          |
| 2.2.1 Tertiary enrolment, % gross .....                       | 10.0        | 111          |
| 2.2.2 Graduates in science & engineering, % .....             | n/a         | n/a          |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....         | 1.4         | 75           |
| 2.3 Research & development (R&D) .....                        | 1.8         | 104          |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....             | 36.5        | 98           |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....      | 0.2         | 86           |
| 2.3.3 QS university ranking, average score top 3* .....       | 0.0         | 73 ○         |
| <b>3 Infrastructure .....</b>                                 | <b>13.8</b> | <b>140</b> ○ |
| 3.1 Information & communication technologies (ICTs) .....     | 10.4        | 137 ○        |
| 3.1.1 ICT access* .....                                       | n/a         | n/a          |
| 3.1.2 ICT use* .....                                          | n/a         | n/a          |
| 3.1.3 Government's online service* .....                      | 11.0        | 134 ○        |
| 3.1.4 E-participation* .....                                  | 9.8         | 133 ○        |
| 3.2 General infrastructure .....                              | 15.7        | 129          |
| 3.2.1 Electricity output, kWh/cap .....                       | 16.7        | 123 ○        |
| 3.2.2 Logistics performance* .....                            | 8.0         | 123          |
| 3.2.3 Gross capital formation, % GDP .....                    | 20.8        | 77 ●         |
| 3.3 Ecological sustainability .....                           | 15.3        | 140 ○        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 2.4         | 118 ○        |
| 3.3.2 Environmental performance* .....                        | 27.9        | 132 ○        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.2         | 113          |
| <b>4 Market sophistication .....</b>                          | <b>45.6</b> | <b>79</b> ●  |
| 4.1 Credit .....                                              | 29.8        | 77 ●         |
| 4.1.1 Ease of getting credit* .....                           | 30.0        | 113          |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 32.2        | 93           |
| 4.1.3 Microfinance gross loans, % GDP .....                   | 4.2         | 13 ●         |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.2 Investment .....                                    | 45.8 | 37  |
| 4.2.1 Ease of protecting investors* .....               | 45.8 | 107 |
| 4.2.2 Market capitalization, % GDP .....                | n/a  | n/a |
| 4.2.3 Total value of stocks traded, % GDP .....         | n/a  | n/a |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a |
| 4.3 Trade & competition .....                           | 61.0 | 126 |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 11.1 | 126 |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | n/a  | n/a |

**5 Business sophistication .....** **28.2** **104**

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                                   | 36.4 | 76    |
| 5.1.1 Knowledge-intensive employment, % .....                                 | n/a  | n/a   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 31.0 | 63 ●  |
| 5.1.3 GERD performed by business, % of GDP .....                              | n/a  | n/a   |
| 5.1.4 GERD financed by business, % .....                                      | n/a  | n/a   |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | n/a  | n/a   |
| 5.2 Innovation linkages .....                                                 | 15.2 | 135 ○ |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | n/a  | n/a   |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | n/a  | n/a   |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 12.1 | 38 ●  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a  | n/a   |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                           | n/a  | n/a   |
| 5.3 Knowledge absorption .....                                                | 32.9 | 69 ●  |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.1  | 100   |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 3.0  | 123 ○ |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 2.2  | 9 ●   |
| 5.3.4 FDI net inflows, % GDP .....                                            | 1.9  | 88    |

**6 Knowledge & technology outputs .....** **13.9** **126**

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation .....                                                  | 6.0  | 96    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a  | n/a   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | n/a  | n/a   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a  | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 6.7  | 84 ●  |
| 6.1.5 Citable documents H index .....                                         | 33.0 | 133   |
| 6.2 Knowledge impact .....                                                    | 2.2  | 139 ○ |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | n/a  | n/a   |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | 0.1  | 100   |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a  | n/a   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.8  | 95    |
| 6.2.5 High- & medium-high-tech manufactures, % .....                          | n/a  | n/a   |
| 6.3 Knowledge diffusion .....                                                 | 33.6 | 44 ●  |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0  | 109   |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.0  | 118   |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 3.8  | 13 ●  |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 2.4  | 28 ●  |

**7 Creative outputs .....** **0.5** **141** ○

|                                                                 |      |       |
|-----------------------------------------------------------------|------|-------|
| 7.1 Intangible assets .....                                     | n/a  | n/a   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | n/a  | n/a   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a  | n/a   |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | n/a  | n/a   |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | n/a  | n/a   |
| 7.2 Creative goods & services .....                             | 0.7  | 135 ○ |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a  | n/a   |
| 7.2.2 National feature films/mn pop. 15–69 .....                | n/a  | n/a   |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a  | n/a   |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a  | n/a   |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....  | 0.0  | 115   |
| 7.3 Online creativity .....                                     | 0.3  | 123   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 0.8  | 107   |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 0.0  | 141 ○ |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 13.6 | 136 ○ |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a  | n/a   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Trinidad and Tobago

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 1.3                             |
| GDP (US\$ billions) .....   | 28.8                            |
| GDP per capita, PPP\$ ..... | 21,096.2                        |
| Income group .....          | High income                     |
| Region .....                | Latin America and the Caribbean |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>32.2</b>                         | <b>80</b> |
| Innovation Output Sub-Index .....                 | 25.6                                | 88        |
| Innovation Input Sub-Index .....                  | 38.8                                | 86        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 92        |
| Global Innovation Index 2014 (out of 143) .....   | 31.6                                | 90        |

|                                                                |             |            |
|----------------------------------------------------------------|-------------|------------|
| <b>1 Institutions .....</b>                                    | <b>63.0</b> | <b>62</b>  |
| 1.1 Political environment .....                                | 58.7        | 52 ●       |
| 1.1.1 Political stability* .....                               | 66.7        | 59         |
| 1.1.2 Government effectiveness* .....                          | 50.8        | 52 ●       |
| 1.2 Regulatory environment .....                               | 61.6        | 83         |
| 1.2.1 Regulatory quality* .....                                | 54.3        | 61         |
| 1.2.2 Rule of law* .....                                       | 41.7        | 72         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 20.5        | 94         |
| 1.3 Business environment .....                                 | 68.8        | 71         |
| 1.3.1 Ease of starting a business* .....                       | 88.3        | 60         |
| 1.3.2 Ease of resolving insolvency* .....                      | 49.0        | 63         |
| 1.3.3 Ease of paying taxes* .....                              | 69.0        | 89         |
| <b>2 Human capital &amp; research .....</b>                    | <b>28.8</b> | <b>69</b>  |
| 2.1 Education .....                                            | 46.3        | 63         |
| 2.1.1 Expenditure on education, % GDP .....                    | n/a         | n/a        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | n/a         | n/a        |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....         | 12.3        | 89         |
| 2.1.4 PISA scales in reading, maths, & science .....           | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | n/a         | n/a        |
| 2.2 Tertiary education .....                                   | 39.7        | 46 ●       |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....           | 12.0        | 106        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 30.4        | 10 ●       |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....          | 5.8         | 30 ●       |
| 2.3 Research & development (R&D) .....                         | 0.4         | 119        |
| 2.3.1 Researchers, FTE/mn pop. ....                            | n/a         | n/a        |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.0         | 113 ○      |
| 2.3.3 QS university ranking, average score top 3* .....        | 0.0         | 73 ○       |
| <b>3 Infrastructure .....</b>                                  | <b>28.4</b> | <b>106</b> |
| 3.1 Information & communication technologies (ICTs) .....      | 41.0        | 82         |
| 3.1.1 ICT access* .....                                        | 63.6        | 59         |
| 3.1.2 ICT use* .....                                           | 36.0        | 60         |
| 3.1.3 Government's online service* .....                       | 33.1        | 93         |
| 3.1.4 E-participation* .....                                   | 31.4        | 101        |
| 3.2 General infrastructure .....                               | 20.2        | 118        |
| 3.2.1 Electricity output, kWh/cap .....                        | 6814.9      | 29 ●       |
| 3.2.2 Logistics performance* .....                             | n/a         | n/a        |
| 3.2.3 Gross capital formation, % GDP .....                     | 14.0        | 131 ○      |
| 3.3 Ecological sustainability .....                            | 24.0        | 123        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 1.8         | 122 ○      |
| 3.3.2 Environmental performance* .....                         | 52.3        | 71         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 0.3         | 104        |
| <b>4 Market sophistication .....</b>                           | <b>43.5</b> | <b>95</b>  |
| 4.1 Credit .....                                               | 24.6        | 90         |
| 4.1.1 Ease of getting credit* .....                            | 65.0        | 34 ●       |
| 4.1.2 Domestic credit to private sector, % GDP .....           | 31.1        | 97         |
| 4.1.3 Microfinance gross loans, % GDP .....                    | 0.0         | 88 ○       |

|                                                                |      |      |
|----------------------------------------------------------------|------|------|
| 4.2 Investment .....                                           | 38.8 | 57 ● |
| 4.2.1 Ease of protecting investors* .....                      | 57.5 | 60   |
| 4.2.2 Market capitalization, % GDP .....                       | 64.7 | 27 ● |
| 4.2.3 Total value of stocks traded, % GDP .....                | 0.5  | 78   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                 | n/a  | n/a  |
| 4.3 Trade & competition .....                                  | 67.0 | 106  |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 10.0 | 121  |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 69.2 | 60   |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                                        | <b>30.3</b> | <b>93</b> |
| 5.1 Knowledge workers .....                                                   | 31.0        | 91        |
| 5.1.1 Knowledge-intensive employment, % .....                                 | 27.0        | 51        |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 28.0        | 70        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....                 | 0.0         | 86 ○      |
| 5.1.4 GERD financed by business, % .....                                      | n/a         | n/a       |
| 5.1.5 Females employed w/advanced degrees, % total .....                      | n/a         | n/a       |
| 5.2 Innovation linkages .....                                                 | 31.6        | 68        |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 35.6        | 103       |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 42.6        | 81        |
| 5.2.3 GERD financed by abroad, % .....                                        | n/a         | n/a       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.0         | 68        |
| 5.3 Knowledge absorption .....                                                | 28.4        | 98        |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.3         | 68        |
| 5.3.2 High-tech imports less re-imports, % total trade .....                  | 4.9         | 101       |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.9         | 63        |
| 5.3.4 FDI net inflows, % GDP .....                                            | 7.0         | 19 ●      |

|                                                                               |             |           |
|-------------------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                             | <b>24.4</b> | <b>81</b> |
| 6.1 Knowledge creation .....                                                  | 3.8         | 115       |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                         | n/a         | n/a       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                              | 0.0         | 89 ○      |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a       |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....                      | 3.7         | 111       |
| 6.1.5 Citable documents H index .....                                         | 67.0        | 98        |
| 6.2 Knowledge impact .....                                                    | 42.4        | 48 ●      |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                                | 2.2         | 40 ●      |
| 6.2.2 New businesses/th pop. 15–64 .....                                      | n/a         | n/a       |
| 6.2.3 Computer software spending, % GDP .....                                 | n/a         | n/a       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 1.3         | 109       |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 24.1        | 48        |
| 6.3 Knowledge diffusion .....                                                 | 27.0        | 73        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 104 ○     |
| 6.3.2 High-tech exports less re-exports, % total trade .....                  | 0.0         | 120 ○     |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.1         | 119 ○     |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 4.5         | 11 ●      |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>26.7</b> | <b>90</b> |
| 7.1 Intangible assets .....                                           | 46.0        | 65        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | n/a         | n/a       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 44.6        | 113       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 47.4        | 91        |
| 7.2 Creative goods & services .....                                   | 9.2         | 99        |
| 7.2.1 Cultural & creative services exports, % total trade .....       | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | n/a         | n/a       |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | n/a         | n/a       |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.1         | 70        |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....        | 0.1         | 100       |
| 7.3 Online creativity .....                                           | 5.8         | 90        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 5.3         | 58 ●      |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 1.8         | 75        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 1399.1      | 70        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | n/a         | n/a       |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

**Key indicators**

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 11.1                             |
| GDP (US\$ billions) .....   | 48.6                             |
| GDP per capita, PPP\$ ..... | 10,252.6                         |
| Income group .....          | Upper-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>33.5</b>                         | <b>76</b> |
| Innovation Output Sub-Index .....                 | 27.9                                | 71        |
| Innovation Input Sub-Index .....                  | 39.1                                | 83        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 71        |
| Global Innovation Index 2014 (out of 143) .....   | 32.9                                | 78        |

|          |                                                                  |             |              |
|----------|------------------------------------------------------------------|-------------|--------------|
| <b>1</b> | <b>Institutions .....</b>                                        | <b>59.5</b> | <b>72</b>    |
| 1.1      | Political environment .....                                      | 41.5        | 95           |
| 1.1.1    | Political stability* .....                                       | 41.6        | 114 ○        |
| 1.1.2    | Government effectiveness* .....                                  | 41.4        | 68           |
| 1.2      | Regulatory environment .....                                     | 66.2        | 72           |
| 1.2.1    | Regulatory quality* .....                                        | 38.6        | 96           |
| 1.2.2    | Rule of law* .....                                               | 42.3        | 71           |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....                 | 12.1        | 47           |
| 1.3      | Business environment .....                                       | 70.8        | 61           |
| 1.3.1    | Ease of starting a business* .....                               | 83.6        | 81           |
| 1.3.2    | Ease of resolving insolvency* .....                              | 54.7        | 52           |
| 1.3.3    | Ease of paying taxes* .....                                      | 74.1        | 64           |
| <b>2</b> | <b>Human capital &amp; research .....</b>                        | <b>36.7</b> | <b>48</b>    |
| 2.1      | Education .....                                                  | 46.7        | 61           |
| 2.1.1    | Expenditure on education, % GDP .....                            | 6.2         | 27 ●         |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 24.4        | 41           |
| 2.1.3    | School life expectancy, years <sup>Ⓐ</sup> .....                 | 14.6        | 47           |
| 2.1.4    | PISA scales in reading, maths, & science .....                   | 396.6       | 56 ○         |
| 2.1.5    | Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 13.6        | 48           |
| 2.2      | Tertiary education .....                                         | 52.5        | 15 ●         |
| 2.2.1    | Tertiary enrolment, % gross .....                                | 35.2        | 70           |
| 2.2.2    | Graduates in science & engineering, % .....                      | 42.4        | 3 ●          |
| 2.2.3    | Tertiary inbound mobility, % .....                               | 0.5         | 93 ○         |
| 2.3      | Research & development (R&D) .....                               | 10.9        | 67           |
| 2.3.1    | Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                      | 1393.9      | 41           |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.7         | 50           |
| 2.3.3    | QS university ranking, average score top 3* .....                | 0.0         | 73 ○         |
| <b>3</b> | <b>Infrastructure .....</b>                                      | <b>38.4</b> | <b>73</b>    |
| 3.1      | Information & communication technologies (ICTs) .....            | 50.0        | 58           |
| 3.1.1    | ICT access* .....                                                | 45.6        | 87           |
| 3.1.2    | ICT use* .....                                                   | 25.9        | 80           |
| 3.1.3    | Government's online service* .....                               | 63.8        | 39 ●         |
| 3.1.4    | E-participation* .....                                           | 64.7        | 33 ●         |
| 3.2      | General infrastructure .....                                     | 20.5        | 117 ○        |
| 3.2.1    | Electricity output, kWh/cap .....                                | 1668.4      | 81           |
| 3.2.2    | Logistics performance* .....                                     | 19.9        | 102          |
| 3.2.3    | Gross capital formation, % GDP .....                             | 20.6        | 80           |
| 3.3      | Ecological sustainability .....                                  | 44.7        | 45 ●         |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....               | 10.3        | 21 ●         |
| 3.3.2    | Environmental performance* .....                                 | 59.0        | 49           |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP .....          | 1.7         | 52           |
| <b>4</b> | <b>Market sophistication .....</b>                               | <b>35.0</b> | <b>135 ○</b> |
| 4.1      | Credit .....                                                     | 20.5        | 113 ○        |
| 4.1.1    | Ease of getting credit* .....                                    | 35.0        | 102          |
| 4.1.2    | Domestic credit to private sector, % GDP .....                   | 75.7        | 41 ●         |
| 4.1.3    | Microfinance gross loans, % GDP .....                            | 0.2         | 56           |

|          |                                                                         |             |              |
|----------|-------------------------------------------------------------------------|-------------|--------------|
| 4.2      | Investment .....                                                        | 31.0        | 93           |
| 4.2.1    | Ease of protecting investors* .....                                     | 55.0        | 72           |
| 4.2.2    | Market capitalization, % GDP .....                                      | 19.6        | 70           |
| 4.2.3    | Total value of stocks traded, % GDP .....                               | 2.8         | 56           |
| 4.2.4    | Venture capital deals/tr PPP\$ GDP .....                                | n/a         | n/a          |
| 4.3      | Trade & competition .....                                               | 53.4        | 135 ○        |
| 4.3.1    | Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> .....                | 16.0        | 136 ○        |
| 4.3.2    | Intensity of local competition <sup>†</sup> .....                       | 62.9        | 89           |
| <b>5</b> | <b>Business sophistication .....</b>                                    | <b>25.9</b> | <b>119 ○</b> |
| 5.1      | Knowledge workers .....                                                 | 31.3        | 90           |
| 5.1.1    | Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                    | 20.9        | 70           |
| 5.1.2    | Firms offering formal training, % firms .....                           | n/a         | n/a          |
| 5.1.3    | GERD performed by business, % of GDP .....                              | n/a         | n/a          |
| 5.1.4    | GERD financed by business, % <sup>Ⓐ</sup> .....                         | 18.7        | 65           |
| 5.1.5    | Females employed w/advanced degrees, % total .....                      | n/a         | n/a          |
| 5.2      | Innovation linkages .....                                               | 21.7        | 117 ○        |
| 5.2.1    | University/industry research collaboration <sup>†</sup> .....           | 32.0        | 114 ○        |
| 5.2.2    | State of cluster development <sup>†</sup> .....                         | 41.8        | 85           |
| 5.2.3    | GERD financed by abroad, % <sup>Ⓐ</sup> .....                           | 4.4         | 68           |
| 5.2.4    | JV-strategic alliance deals/tr PPP\$ GDP .....                          | n/a         | n/a          |
| 5.2.5    | Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....              | 0.0         | 80           |
| 5.3      | Knowledge absorption .....                                              | 24.7        | 117 ○        |
| 5.3.1    | Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 110 ○        |
| 5.3.2    | High-tech imports less re-imports, % total trade .....                  | 8.1         | 54           |
| 5.3.3    | Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.4         | 102 ○        |
| 5.3.4    | FDI net inflows, % GDP .....                                            | 2.3         | 74           |
| <b>6</b> | <b>Knowledge &amp; technology outputs .....</b>                         | <b>23.3</b> | <b>87</b>    |
| 6.1      | Knowledge creation .....                                                | 13.8        | 62           |
| 6.1.1    | Domestic resident patent app/bn PPP\$ GDP .....                         | 0.9         | 63           |
| 6.1.2    | PCT resident patent app/bn PPP\$ GDP .....                              | 0.1         | 70           |
| 6.1.3    | Domestic res utility model app/bn PPP\$ GDP .....                       | n/a         | n/a          |
| 6.1.4    | Scientific & technical articles/bn PPP\$ GDP .....                      | 25.4        | 35 ●         |
| 6.1.5    | Citable documents H index .....                                         | 97.0        | 73           |
| 6.2      | Knowledge impact .....                                                  | 37.6        | 68           |
| 6.2.1    | Growth rate of PPP\$ GDP/worker, % .....                                | 2.1         | 42           |
| 6.2.2    | New businesses/th pop. 15–64 <sup>Ⓐ</sup> .....                         | 1.5         | 55           |
| 6.2.3    | Computer software spending, % GDP .....                                 | 0.3         | 36           |
| 6.2.4    | ISO 9001 quality certificates/bn PPP\$ GDP .....                        | 7.0         | 50           |
| 6.2.5    | High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....             | 32.4        | 33 ●         |
| 6.3      | Knowledge diffusion .....                                               | 18.5        | 116 ○        |
| 6.3.1    | Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> .....       | 0.1         | 55           |
| 6.3.2    | High-tech exports less re-exports, % total trade .....                  | 3.3         | 40 ●         |
| 6.3.3    | Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 1.6         | 56           |
| 6.3.4    | FDI net outflows, % GDP .....                                           | n/a         | n/a          |
| <b>7</b> | <b>Creative outputs .....</b>                                           | <b>32.4</b> | <b>71</b>    |
| 7.1      | Intangible assets .....                                                 | 45.1        | 69           |
| 7.1.1    | Domestic res trademark app/bn PPP\$ GDP .....                           | n/a         | n/a          |
| 7.1.2    | Madrid trademark app. holders/bn PPP\$ GDP .....                        | n/a         | n/a          |
| 7.1.3    | ICTs & business model creation <sup>†</sup> .....                       | 47.0        | 103          |
| 7.1.4    | ICTs & organizational model creation <sup>†</sup> .....                 | 43.2        | 102          |
| 7.2      | Creative goods & services .....                                         | 23.1        | 57           |
| 7.2.1    | Cultural & creative services exports, % total trade .....               | n/a         | n/a          |
| 7.2.2    | National feature films/mn pop. 15–69 .....                              | 1.0         | 75           |
| 7.2.3    | Global ent. & media output/th pop. 15–69 .....                          | n/a         | n/a          |
| 7.2.4    | Printing & publishing output manufactures, % <sup>Ⓐ</sup> .....         | 0.7         | 82 ○         |
| 7.2.5    | Creative goods exports, % total trade .....                             | 2.6         | 16 ●         |
| 7.3      | Online creativity .....                                                 | 16.5        | 70           |
| 7.3.1    | Generic top-level domains (TLDs)/th pop. 15–69 .....                    | 3.1         | 72           |
| 7.3.2    | Country-code TLDs/th pop. 15–69 .....                                   | 0.3         | 109          |
| 7.3.3    | Wikipedia edits/pop. 15–69 .....                                        | 499.9       | 92           |
| 7.3.4    | Video uploads on YouTube/pop. 15–69 .....                               | 58.9        | 63 ○         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Turkey

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 75.8                             |
| GDP (US\$ billions) .....   | 806.1                            |
| GDP per capita, PPP\$ ..... | 15,767.3                         |
| Income group .....          | Upper-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>37.8</b>                         | <b>58</b> |
| Innovation Output Sub-Index .....                | 33.9                                | 46        |
| Innovation Input Sub-Index .....                 | 41.7                                | 71        |
| Innovation Efficiency Ratio .....                | 0.8                                 | 23 ●      |
| Global Innovation Index 2014 (out of 143) .....  | 38.2                                | 54        |

|                                                       |             |           |
|-------------------------------------------------------|-------------|-----------|
| <b>1 Institutions.....</b>                            | <b>55.8</b> | <b>84</b> |
| 1.1 Political environment.....                        | 43.0        | 88        |
| 1.1.1 Political stability*.....                       | 34.6        | 125 ○     |
| 1.1.2 Government effectiveness*.....                  | 51.3        | 50        |
| 1.2 Regulatory environment .....                      | 55.7        | 101       |
| 1.2.1 Regulatory quality*.....                        | 59.1        | 55        |
| 1.2.2 Rule of law*.....                               | 49.8        | 59        |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 29.8        | 126 ○     |
| 1.3 Business environment.....                         | 68.9        | 67        |
| 1.3.1 Ease of starting a business*.....               | 86.9        | 67        |
| 1.3.2 Ease of resolving insolvency*.....              | 40.0        | 101       |
| 1.3.3 Ease of paying taxes*.....                      | 79.8        | 47        |

|                                                          |             |           |
|----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research.....</b>               | <b>35.9</b> | <b>50</b> |
| 2.1 Education .....                                      | 47.7        | 58        |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> ..... | 2.9         | 111 ○     |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | n/a         | n/a       |
| 2.1.3 School life expectancy, years.....                 | 14.5        | 49        |
| 2.1.4 PISA scales in reading, maths, & science.....      | 462.3       | 40        |
| 2.1.5 Pupil-teacher ratio, secondary .....               | 17.9        | 78        |
| 2.2 Tertiary education.....                              | 36.2        | 57        |
| 2.2.1 Tertiary enrolment, % gross.....                   | 69.4        | 26 ●      |
| 2.2.2 Graduates in science & engineering, % .....        | 20.9        | 49        |
| 2.2.3 Tertiary inbound mobility, %.....                  | 0.9         | 85        |
| 2.3 Research & development (R&D).....                    | 23.7        | 40        |
| 2.3.1 Researchers, FTE/mn pop. ....                      | 1188.7      | 45        |
| 2.3.2 Gross expenditure on R&D, % GDP.....               | 0.9         | 37        |
| 2.3.3 QS university ranking, average score top 3*.....   | 34.5        | 39        |

|                                                              |             |           |
|--------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure.....</b>                                 | <b>41.0</b> | <b>63</b> |
| 3.1 Information & communication technologies (ICTs).....     | 48.9        | 63        |
| 3.1.1 ICT access*.....                                       | 58.3        | 67        |
| 3.1.2 ICT use*.....                                          | 32.4        | 64        |
| 3.1.3 Government's online service*.....                      | 55.9        | 53        |
| 3.1.4 E-participation*.....                                  | 49.0        | 64        |
| 3.2 General infrastructure.....                              | 33.9        | 59        |
| 3.2.1 Electricity output, kWh/cap.....                       | 3179.4      | 59        |
| 3.2.2 Logistics performance*.....                            | 68.3        | 29 ●      |
| 3.2.3 Gross capital formation, % GDP.....                    | 19.9        | 85        |
| 3.3 Ecological sustainability .....                          | 40.1        | 57        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 9.1         | 38        |
| 3.3.2 Environmental performance*.....                        | 54.9        | 60        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 1.2         | 57        |

|                                                     |             |           |
|-----------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                | <b>49.5</b> | <b>58</b> |
| 4.1 Credit.....                                     | 22.4        | 104       |
| 4.1.1 Ease of getting credit*.....                  | 45.0        | 80        |
| 4.1.2 Domestic credit to private sector, % GDP..... | 70.2        | 48        |
| 4.1.3 Microfinance gross loans, % GDP .....         | 0.0         | 87 ○      |

|                                                                |      |      |
|----------------------------------------------------------------|------|------|
| 4.2 Investment .....                                           | 39.7 | 51   |
| 4.2.1 Ease of protecting investors*.....                       | 69.2 | 13 ● |
| 4.2.2 Market capitalization, % GDP.....                        | 39.1 | 50   |
| 4.2.3 Total value of stocks traded, % GDP.....                 | 44.2 | 18 ● |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                  | 0.0  | 69 ○ |
| 4.3 Trade & competition .....                                  | 86.4 | 18 ● |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 2.7  | 55   |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 82.2 | 9 ●  |

|                                                                     |             |            |
|---------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                              | <b>26.3</b> | <b>117</b> |
| 5.1 Knowledge workers.....                                          | 32.6        | 85         |
| 5.1.1 Knowledge-intensive employment, %.....                        | 19.2        | 76         |
| 5.1.2 Firms offering formal training, % firms.....                  | 28.4        | 67         |
| 5.1.3 GERD performed by business, % of GDP.....                     | 0.5         | 34         |
| 5.1.4 GERD financed by business, % .....                            | 48.9        | 21 ●       |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 7.4         | 71         |
| 5.2 Innovation linkages .....                                       | 23.2        | 110        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 44.8        | 59         |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 54.7        | 34         |
| 5.2.3 GERD financed by abroad, %.....                               | 0.8         | 91 ○       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 81 ○       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 81         |
| 5.3 Knowledge absorption.....                                       | 22.9        | 127 ○      |
| 5.3.1 Royalty & license fees payments, % total trade.....           | 0.3         | 70         |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 8.1         | 53         |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | 0.1         | 120 ○      |
| 5.3.4 FDI net inflows, % GDP.....                                   | 1.6         | 95         |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>27.2</b> | <b>60</b> |
| 6.1 Knowledge creation.....                                       | 26.0        | 36        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 3.0         | 31        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | 0.5         | 38        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....            | 2.4         | 13 ●      |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....           | 17.2        | 44        |
| 6.1.5 Citable documents H index.....                              | 237.0       | 36        |
| 6.2 Knowledge impact.....                                         | 35.3        | 83        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                     | -0.6        | 106 ○     |
| 6.2.2 New businesses/th pop. 15–64.....                           | 0.8         | 78        |
| 6.2.3 Computer software spending, % GDP.....                      | 0.7         | 8 ●       |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....             | 5.0         | 63        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 28.2        | 42        |
| 6.3 Knowledge diffusion.....                                      | 20.4        | 108       |
| 6.3.1 Royalty & license fees receipts, % total trade.....         | n/a         | n/a       |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 1.1         | 63        |
| 6.3.3 Comm., computer & info. services exp., % total trade.....   | 0.2         | 115 ○     |
| 6.3.4 FDI net outflows, % GDP .....                               | 0.4         | 70        |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>40.6</b> | <b>37</b> |
| 7.1 Intangible assets .....                                           | 57.7        | 17 ●      |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                    | 130.5       | 5 ●       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                 | 0.9         | 34        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 62.1        | 42        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 56.2        | 56        |
| 7.2 Creative goods & services.....                                    | 24.1        | 52        |
| 7.2.1 Cultural & creative services exports, % total trade.....        | 0.5         | 35        |
| 7.2.2 National feature films/mn pop. 15–69.....                       | 1.6         | 63        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | 5.9         | 42        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.1         | 68        |
| 7.2.5 Creative goods exports, % total trade.....                      | 2.6         | 17 ●      |
| 7.3 Online creativity.....                                            | 23.0        | 59        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 14.7        | 36        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 2.9         | 64        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 793.9       | 84        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | 68.6        | 58        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 38.8               |
| GDP (US\$ billions) .....   | 27.6               |
| GDP per capita, PPP\$ ..... | 1,551.2            |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                                | Score 0–100<br>or value (hard data) | Rank       |
|----------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b>              | <b>27.6</b>                         | <b>111</b> |
| Innovation Output Sub-Index .....                              | 20.1                                | 113        |
| Innovation Input Sub-Index .....                               | 35.2                                | 102        |
| Innovation Efficiency Ratio .....                              | 0.6                                 | 118        |
| Global Innovation Index 2014 (out of 143) .....                | 31.1                                | 91         |
| <b>1 Institutions .....</b>                                    | <b>54.3</b>                         | <b>90</b>  |
| 1.1 Political environment .....                                | 34.5                                | 114        |
| 1.1.1 Political stability* .....                               | 43.4                                | 112        |
| 1.1.2 Government effectiveness* .....                          | 25.7                                | 105        |
| 1.2 Regulatory environment .....                               | 69.3                                | 57         |
| 1.2.1 Regulatory quality* .....                                | 41.5                                | 88         |
| 1.2.2 Rule of law* .....                                       | 38.1                                | 81         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 8.7                                 | 24 ●       |
| 1.3 Business environment .....                                 | 59.0                                | 109        |
| 1.3.1 Ease of starting a business* .....                       | 63.4                                | 130        |
| 1.3.2 Ease of resolving insolvency* .....                      | 42.3                                | 92         |
| 1.3.3 Ease of paying taxes* .....                              | 71.3                                | 82         |
| <b>2 Human capital &amp; research .....</b>                    | <b>18.3</b>                         | <b>109</b> |
| 2.1 Education .....                                            | 30.5                                | 118        |
| 2.1.1 Expenditure on education, % GDP .....                    | 3.3                                 | 103        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | 23.4                                | 45 ●       |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....         | 9.8                                 | 117        |
| 2.1.4 PISA scales in reading, maths, & science .....           | n/a                                 | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary .....                     | 21.3                                | 88         |
| 2.2 Tertiary education .....                                   | 19.9                                | 102        |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....           | 4.4                                 | 126 ○      |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 9.5                                 | 98 ○       |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....          | 10.7                                | 15 ●       |
| 2.3 Research & development (R&D) .....                         | 4.5                                 | 84         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 37.2                                | 97         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....       | 0.6                                 | 57         |
| 2.3.3 QS university ranking, average score top 3* .....        | 0.0                                 | 73 ○       |
| <b>3 Infrastructure .....</b>                                  | <b>26.3</b>                         | <b>113</b> |
| 3.1 Information & communication technologies (ICTs) .....      | 14.7                                | 135 ○      |
| 3.1.1 ICT access* .....                                        | 21.8                                | 132 ○      |
| 3.1.2 ICT use* .....                                           | 8.3                                 | 114        |
| 3.1.3 Government's online service* .....                       | 15.0                                | 128        |
| 3.1.4 E-participation* .....                                   | 13.7                                | 129 ○      |
| 3.2 General infrastructure .....                               | 37.4                                | 51         |
| 3.2.1 Electricity output, kWh/cap .....                        | n/a                                 | n/a        |
| 3.2.2 Logistics performance* .....                             | n/a                                 | n/a        |
| 3.2.3 Gross capital formation, % GDP .....                     | 25.4                                | 42 ●       |
| 3.3 Ecological sustainability .....                            | 26.8                                | 112        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | n/a                                 | n/a        |
| 3.3.2 Environmental performance* .....                         | 39.2                                | 112        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 0.3                                 | 107        |
| <b>4 Market sophistication .....</b>                           | <b>38.9</b>                         | <b>116</b> |
| 4.1 Credit .....                                               | 18.3                                | 117        |
| 4.1.1 Ease of getting credit* .....                            | 30.0                                | 113        |
| 4.1.2 Domestic credit to private sector, % GDP .....           | 15.5                                | 127        |
| 4.1.3 Microfinance gross loans, % GDP .....                    | 1.8                                 | 29 ●       |

|                                                                     |             |             |
|---------------------------------------------------------------------|-------------|-------------|
| 4.2 Investment .....                                                | 24.7        | 127         |
| 4.2.1 Ease of protecting investors* .....                           | 47.5        | 97          |
| 4.2.2 Market capitalization, % GDP .....                            | 36.4        | 52          |
| 4.2.3 Total value of stocks traded, % GDP .....                     | 0.1         | 103 ○       |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                      | 0.1         | 39          |
| 4.3 Trade & competition .....                                       | 73.6        | 83          |
| 4.3.1 Applied tariff rate, weighted mean, % .....                   | 6.7         | 98          |
| 4.3.2 Intensity of local competition <sup>†</sup> .....             | 70.7        | 53 ●        |
| <b>5 Business sophistication .....</b>                              | <b>38.0</b> | <b>49 ●</b> |
| 5.1 Knowledge workers .....                                         | 17.8        | 126         |
| 5.1.1 Knowledge-intensive employment, % .....                       | 4.1         | 111 ○       |
| 5.1.2 Firms offering formal training, % firms .....                 | 34.3        | 54          |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.2         | 50          |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....               | 13.7        | 67          |
| 5.1.5 Females employed w/advanced degrees, % total .....            | 2.7         | 81 ○        |
| 5.2 Innovation linkages .....                                       | 55.1        | 8 ●         |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 44.7        | 60          |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 42.1        | 83          |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 57.3        | 3 ●         |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | n/a         | n/a         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a         | n/a         |
| 5.3 Knowledge absorption .....                                      | 41.3        | 36 ●        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | 0.2         | 82          |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 7.5         | 59          |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | 2.2         | 10 ●        |
| 5.3.4 FDI net inflows, % GDP .....                                  | 5.3         | 31 ●        |
| <b>6 Knowledge &amp; technology outputs .....</b>                   | <b>22.4</b> | <b>92</b>   |
| 6.1 Knowledge creation .....                                        | 7.3         | 87          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....               | 0.1         | 93          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                    | 0.1         | 77          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....             | n/a         | n/a         |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....            | 11.5        | 65          |
| 6.1.5 Citable documents H index .....                               | 111.0       | 66          |
| 6.2 Knowledge impact .....                                          | 33.9        | 90          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                      | 1.7         | 51          |
| 6.2.2 New businesses/th pop. 15–64 .....                            | 1.2         | 61          |
| 6.2.3 Computer software spending, % GDP .....                       | n/a         | n/a         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....              | 1.0         | 116         |
| 6.2.5 High- & medium-high-tech manufactures, % .....                | n/a         | n/a         |
| 6.3 Knowledge diffusion .....                                       | 26.0        | 80          |
| 6.3.1 Royalty & license fees receipts, % total trade .....          | 0.2         | 34 ●        |
| 6.3.2 High-tech exports less re-exports, % total trade .....        | 0.1         | 99          |
| 6.3.3 Comm., computer & info. services exp., % total trade .....    | 1.7         | 50          |
| 6.3.4 FDI net outflows, % GDP .....                                 | 0.3         | 77          |
| <b>7 Creative outputs .....</b>                                     | <b>17.9</b> | <b>126</b>  |
| 7.1 Intangible assets .....                                         | 33.6        | 120         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                 | 10.0        | 95          |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....              | n/a         | n/a         |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....             | 50.2        | 92          |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....       | 46.3        | 96          |
| 7.2 Creative goods & services .....                                 | 0.8         | 133 ○       |
| 7.2.1 Cultural & creative services exports, % total trade .....     | 0.0         | 83 ○        |
| 7.2.2 National feature films/mn pop. 15–69 .....                    | n/a         | n/a         |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                | n/a         | n/a         |
| 7.2.4 Printing & publishing output manufactures, % .....            | n/a         | n/a         |
| 7.2.5 Creative goods exports, % total trade .....                   | 0.0         | 110         |
| 7.3 Online creativity .....                                         | 3.5         | 98          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....          | 0.3         | 121         |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                         | 0.1         | 123         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                              | 46.5        | 123         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                     | 13.4        | 73 ○        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Ukraine

## Key indicators

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 44.9                |
| GDP (US\$ billions) .....   | 130.7               |
| GDP per capita, PPP\$ ..... | 7,552.4             |
| Income group .....          | Lower-middle income |
| Region .....                | Europe              |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>36.5</b>                         | <b>64</b> |
| Innovation Output Sub-Index .....                 | 33.9                                | 47        |
| Innovation Input Sub-Index .....                  | 39.1                                | 84        |
| Innovation Efficiency Ratio .....                 | 0.9                                 | 15 ●      |
| Global Innovation Index 2014 (out of 143) .....   | 36.3                                | 63        |

**1 Institutions .....** **52.2** **98**

|                                                        |      |       |
|--------------------------------------------------------|------|-------|
| 1.1 Political environment .....                        | 34.6 | 112   |
| 1.1.1 Political stability* .....                       | 45.4 | 110   |
| 1.1.2 Government effectiveness* .....                  | 23.8 | 109   |
| 1.2 Regulatory environment .....                       | 59.2 | 89    |
| 1.2.1 Regulatory quality* .....                        | 30.8 | 112   |
| 1.2.2 Rule of law* .....                               | 25.7 | 114 ○ |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 13.0 | 53    |
| 1.3 Business environment .....                         | 63.0 | 92    |
| 1.3.1 Ease of starting a business* .....               | 87.4 | 64    |
| 1.3.2 Ease of resolving insolvency* .....              | 31.2 | 121 ○ |
| 1.3.3 Ease of paying taxes* .....                      | 70.3 | 85    |

**2 Human capital & research .....** **40.4** **36**

|                                                           |        |      |
|-----------------------------------------------------------|--------|------|
| 2.1 Education .....                                       | 55.8   | 25 ● |
| 2.1.1 Expenditure on education, % GDP .....               | 6.7    | 18 ● |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 30.1   | 23   |
| 2.1.3 School life expectancy, years .....                 | 15.1   | 40   |
| 2.1.4 PISA scales in reading, maths, & science .....      | n/a    | n/a  |
| 2.1.5 Pupil-teacher ratio, secondary .....                | 9.3    | 20 ● |
| 2.2 Tertiary education .....                              | 45.0   | 31   |
| 2.2.1 Tertiary enrolment, % gross .....                   | 79.0   | 13 ● |
| 2.2.2 Graduates in science & engineering, % .....         | 25.6   | 20   |
| 2.2.3 Tertiary inbound mobility, % .....                  | 2.3    | 63   |
| 2.3 Research & development (R&D) .....                    | 20.4   | 45   |
| 2.3.1 Researchers, FTE/mn pop. ....                       | 1163.3 | 46   |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | 0.8    | 44   |
| 2.3.3 QS university ranking, average score top 3* .....   | 29.4   | 46   |

**3 Infrastructure .....** **26.3** **112**

|                                                               |        |       |
|---------------------------------------------------------------|--------|-------|
| 3.1 Information & communication technologies (ICTs) .....     | 38.2   | 89    |
| 3.1.1 ICT access* .....                                       | 61.6   | 63    |
| 3.1.2 ICT use* .....                                          | 21.1   | 89    |
| 3.1.3 Government's online service* .....                      | 26.8   | 112 ○ |
| 3.1.4 E-participation* .....                                  | 43.1   | 76    |
| 3.2 General infrastructure .....                              | 16.0   | 127 ○ |
| 3.2.1 Electricity output, kWh/cap .....                       | 4351.0 | 48    |
| 3.2.2 Logistics performance* .....                            | 41.6   | 59    |
| 3.2.3 Gross capital formation, % GDP .....                    | 8.2    | 140 ○ |
| 3.3 Ecological sustainability .....                           | 24.8   | 121 ○ |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 2.8    | 116 ○ |
| 3.3.2 Environmental performance* .....                        | 49.0   | 85    |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.5    | 82    |

**4 Market sophistication .....** **43.9** **89**

|                                                      |      |      |
|------------------------------------------------------|------|------|
| 4.1 Credit .....                                     | 33.3 | 60   |
| 4.1.1 Ease of getting credit* .....                  | 75.0 | 16 ● |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 74.0 | 42   |
| 4.1.3 Microfinance gross loans, % GDP .....          | 0.1  | 64   |

|                                                 |      |       |
|-------------------------------------------------|------|-------|
| 4.2 Investment .....                            | 21.4 | 136 ○ |
| 4.2.1 Ease of protecting investors* .....       | 48.3 | 96    |
| 4.2.2 Market capitalization, % GDP .....        | 11.7 | 86 ○  |
| 4.2.3 Total value of stocks traded, % GDP ..... | 0.7  | 75    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....  | 0.0  | 51    |

|                                                   |      |    |
|---------------------------------------------------|------|----|
| 4.3 Trade & competition .....                     | 77.1 | 66 |
| 4.3.1 Applied tariff rate, weighted mean, % ..... | 2.1  | 46 |
| 4.3.2 Intensity of local competition† .....       | 61.3 | 97 |

**5 Business sophistication .....** **32.4** **78**

|                                                                  |      |       |
|------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers .....                                      | 42.4 | 52    |
| 5.1.1 Knowledge-intensive employment, % .....                    | 33.7 | 39    |
| 5.1.2 Firms offering formal training, % firms .....              | 22.5 | 84    |
| 5.1.3 GERD performed by business, % of GDP .....                 | 0.4  | 36    |
| 5.1.4 GERD financed by business, % .....                         | 29.0 | 51    |
| 5.1.5 Females employed w/advanced degrees, % total .....         | 28.1 | 4 ●   |
| 5.2 Innovation linkages .....                                    | 24.1 | 105   |
| 5.2.1 University/industry research collaboration† .....          | 41.7 | 72    |
| 5.2.2 State of cluster development† .....                        | 33.3 | 122 ○ |
| 5.2.3 GERD financed by abroad, % .....                           | 21.6 | 17 ●  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....             | 0.0  | 80 ○  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....              | 0.0  | 88    |
| 5.3 Knowledge absorption .....                                   | 30.6 | 88    |
| 5.3.1 Royalty & license fees payments, % total trade .....       | 1.2  | 22 ●  |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 6.5  | 74    |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 0.8  | 68    |
| 5.3.4 FDI net inflows, % GDP .....                               | 2.1  | 78    |

**6 Knowledge & technology outputs .....** **36.4** **34**

|                                                                  |       |      |
|------------------------------------------------------------------|-------|------|
| 6.1 Knowledge creation .....                                     | 49.2  | 14 ● |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 7.3   | 12 ● |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.4   | 44   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 25.4  | 1 ●  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 13.2  | 58   |
| 6.1.5 Citable documents H index .....                            | 159.0 | 43   |
| 6.2 Knowledge impact .....                                       | 31.3  | 98   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 1.2   | 66   |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 0.9   | 70   |
| 6.2.3 Computer software spending, % GDP .....                    | 0.3   | 47   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 0.3   | 77   |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | 24.9  | 46   |
| 6.3 Knowledge diffusion .....                                    | 28.6  | 65   |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 0.2   | 40   |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 2.4   | 47   |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 2.2   | 36   |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.2   | 80   |

**7 Creative outputs .....** **31.3** **75**

|                                                                 |        |       |
|-----------------------------------------------------------------|--------|-------|
| 7.1 Intangible assets .....                                     | 43.0   | 82    |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 83.8   | 19 ●  |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 1.2    | 26    |
| 7.1.3 ICTs & business model creation† .....                     | 45.9   | 108 ○ |
| 7.1.4 ICTs & organizational model creation† .....               | 44.4   | 98    |
| 7.2 Creative goods & services .....                             | 13.5   | 87    |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 0.0    | 65    |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 0.4    | 99 ○  |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a    | n/a   |
| 7.2.4 Printing & publishing output manufactures, % .....        | 1.5    | 48    |
| 7.2.5 Creative goods exports, % total trade .....               | 0.6    | 55    |
| 7.3 Online creativity .....                                     | 25.7   | 51    |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 5.1    | 60    |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 8.1    | 46    |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 1472.1 | 66    |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 78.6   | 37    |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓢ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 9.4                              |
| GDP (US\$ billions) .....   | 401.6                            |
| GDP per capita, PPP\$ ..... | 30,984.6                         |
| Income group .....          | High income                      |
| Region .....                | Northern Africa and Western Asia |

|                                                   | Score 0–100<br>or value (hard data) | Rank      |
|---------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>40.1</b>                         | <b>47</b> |
| Innovation Output Sub-Index .....                 | 23.3                                | 99 ○      |
| Innovation Input Sub-Index .....                  | 56.9                                | 25        |
| Innovation Efficiency Ratio .....                 | 0.4                                 | 133 ○     |
| Global Innovation Index 2014 (out of 143) .....   | 43.2                                | 36        |

|                                                                   |             |           |
|-------------------------------------------------------------------|-------------|-----------|
| <b>1 Institutions .....</b>                                       | <b>80.3</b> | <b>26</b> |
| 1.1 Political environment .....                                   | 79.9        | 23        |
| 1.1.1 Political stability* .....                                  | 86.9        | 26        |
| 1.1.2 Government effectiveness* .....                             | 73.0        | 28        |
| 1.2 Regulatory environment .....                                  | 83.3        | 24        |
| 1.2.1 Regulatory quality* .....                                   | 68.5        | 37        |
| 1.2.2 Rule of law* .....                                          | 64.7        | 38        |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....            | 8.0         | 1 ●       |
| 1.3 Business environment .....                                    | 77.6        | 33        |
| 1.3.1 Ease of starting a business* .....                          | 90.0        | 49        |
| 1.3.2 Ease of resolving insolvency* .....                         | 43.5        | 86        |
| 1.3.3 Ease of paying taxes* .....                                 | 99.4        | 1 ●       |
| <b>2 Human capital &amp; research .....</b>                       | <b>53.9</b> | <b>15</b> |
| 2.1 Education .....                                               | 70.6        | 3         |
| 2.1.1 Expenditure on education, % GDP .....                       | n/a         | n/a       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....         | n/a         | n/a       |
| 2.1.3 School life expectancy, years .....                         | n/a         | n/a       |
| 2.1.4 PISA scales in reading, maths, & science .....              | 468.7       | 38        |
| 2.1.5 Pupil-teacher ratio, secondary .....                        | 11.5        | 39        |
| 2.2 Tertiary education .....                                      | 68.3        | 2 ●       |
| 2.2.1 Tertiary enrolment, % gross .....                           | n/a         | n/a       |
| 2.2.2 Graduates in science & engineering, % .....                 | 26.0        | 19        |
| 2.2.3 Tertiary inbound mobility, % .....                          | 44.6        | 1 ●       |
| 2.3 Research & development (R&D) .....                            | 22.9        | 42        |
| 2.3.1 Researchers, FTE/mn pop. ....                               | n/a         | n/a       |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....          | 0.5         | 63        |
| 2.3.3 QS university ranking, average score top 3* .....           | 34.5        | 40        |
| <b>3 Infrastructure .....</b>                                     | <b>56.7</b> | <b>19</b> |
| 3.1 Information & communication technologies (ICTs) .....         | 78.6        | 12 ●      |
| 3.1.1 ICT access* .....                                           | 76.7        | 31        |
| 3.1.2 ICT use* .....                                              | 65.1        | 21        |
| 3.1.3 Government's online service* .....                          | 88.2        | 12 ●      |
| 3.1.4 E-participation* .....                                      | 84.3        | 13 ●      |
| 3.2 General infrastructure .....                                  | 47.1        | 23        |
| 3.2.1 Electricity output, kWh/cap .....                           | 10958.4     | 10 ●      |
| 3.2.2 Logistics performance* .....                                | 70.3        | 26        |
| 3.2.3 Gross capital formation, % GDP .....                        | 22.3        | 63        |
| 3.3 Ecological sustainability .....                               | 44.5        | 48        |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....          | 6.9         | 68        |
| 3.3.2 Environmental performance* .....                            | 72.9        | 25        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....     | 2.0         | 47        |
| <b>4 Market sophistication .....</b>                              | <b>48.1</b> | <b>65</b> |
| 4.1 Credit .....                                                  | 31.7        | 65        |
| 4.1.1 Ease of getting credit* .....                               | 45.0        | 80        |
| 4.1.2 Domestic credit to private sector, % GDP <sup>Ⓐ</sup> ..... | 59.1        | 56        |
| 4.1.3 Microfinance gross loans, % GDP .....                       | n/a         | n/a       |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment .....                                    | 27.9 | 105 ○ |
| 4.2.1 Ease of protecting investors* .....               | 60.8 | 41    |
| 4.2.2 Market capitalization, % GDP .....                | 18.3 | 73 ○  |
| 4.2.3 Total value of stocks traded, % GDP .....         | 4.7  | 51    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....          | 0.0  | 48 ○  |
| 4.3 Trade & competition .....                           | 84.8 | 29    |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 3.8  | 62    |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 82.6 | 7 ●   |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>45.2</b> | <b>29</b> |
| 5.1 Knowledge workers .....                                         | 41.7        | 57        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....          | 36.1        | 31        |
| 5.1.2 Firms offering formal training, % firms .....                 | n/a         | n/a       |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.1         | 54        |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a       |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a       |
| 5.2 Innovation linkages .....                                       | 62.6        | 2 ●       |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 62.1        | 21        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 74.8        | 3 ●       |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.1         | 1 ●       |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 93 ○      |
| 5.3 Knowledge absorption .....                                      | 31.2        | 83        |
| 5.3.1 Royalty & license fees payments, % total trade .....          | n/a         | n/a       |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | 5.5         | 91 ○      |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a         | n/a       |
| 5.3.4 FDI net inflows, % GDP <sup>Ⓐ</sup> .....                     | 2.5         | 72        |

|                                                                  |             |              |
|------------------------------------------------------------------|-------------|--------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>12.0</b> | <b>134</b> ○ |
| 6.1 Knowledge creation .....                                     | 3.8         | 114 ○        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 0.0         | 109 ○        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.2         | 54           |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | n/a         | n/a          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 2.7         | 119 ○        |
| 6.1.5 Citable documents H index .....                            | 100.0       | 71           |
| 6.2 Knowledge impact .....                                       | 31.7        | 97 ○         |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 1.2         | 69           |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 1.4         | 57           |
| 6.2.3 Computer software spending, % GDP .....                    | 0.3         | 59 ○         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 6.8         | 52           |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | n/a         | n/a          |
| 6.3 Knowledge diffusion .....                                    | 0.4         | 137 ○        |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | n/a         | n/a          |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 0.1         | 114 ○        |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | n/a         | n/a          |
| 6.3.4 FDI net outflows, % GDP .....                              | n/a         | n/a          |

|                                                                 |             |           |
|-----------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                 | <b>34.6</b> | <b>61</b> |
| 7.1 Intangible assets .....                                     | 52.6        | 37        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 9.3         | 96 ○      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | n/a         | n/a       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 79.1        | 2 ●       |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 74.8        | 5 ●       |
| 7.2 Creative goods & services .....                             | 6.1         | 115 ○     |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69 .....                | n/a         | n/a       |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 14.1        | 30        |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a         | n/a       |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> .....  | 0.1         | 97 ○      |
| 7.3 Online creativity .....                                     | 27.1        | 48        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 12.6        | 40        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 6.0         | 50        |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 1889.2      | 55        |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | 75.9        | 44        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# United Kingdom

## Key indicators

|                             |             |
|-----------------------------|-------------|
| Population (millions) ..... | 63.5        |
| GDP (US\$ billions) .....   | 2,945.1     |
| GDP per capita, PPP\$ ..... | 38,710.5    |
| Income group .....          | High income |
| Region .....                | Europe      |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>62.4</b>                         | <b>2 ●</b> |
| Innovation Output Sub-Index .....                 | 57.7                                | 5 ●        |
| Innovation Input Sub-Index .....                  | 67.1                                | 6 ●        |
| Innovation Efficiency Ratio .....                 | 0.9                                 | 18         |
| Global Innovation Index 2014 (out of 143) .....   | 62.4                                | 2          |

## 1 Institutions ..... 87.3 14

|                                                        |      |      |
|--------------------------------------------------------|------|------|
| 1.1 Political environment .....                        | 78.6 | 24   |
| 1.1.1 Political stability* .....                       | 76.1 | 46 ○ |
| 1.1.2 Government effectiveness* .....                  | 81.2 | 19   |
| 1.2 Regulatory environment .....                       | 95.4 | 9    |
| 1.2.1 Regulatory quality* .....                        | 94.8 | 9    |
| 1.2.2 Rule of law* .....                               | 92.2 | 14   |
| 1.2.3 Cost of redundancy dismissal, salary weeks ..... | 9.3  | 29   |
| 1.3 Business environment .....                         | 87.9 | 10   |
| 1.3.1 Ease of starting a business* .....               | 91.2 | 39   |
| 1.3.2 Ease of resolving insolvency* .....              | 82.0 | 12   |
| 1.3.3 Ease of paying taxes* .....                      | 90.5 | 15   |

## 2 Human capital & research ..... 57.5 7

|                                                           |        |      |
|-----------------------------------------------------------|--------|------|
| 2.1 Education .....                                       | 56.2   | 23   |
| 2.1.1 Expenditure on education, % GDP .....               | 6.0    | 30   |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap ..... | 31.5   | 19   |
| 2.1.3 School life expectancy, years .....                 | 16.2   | 22   |
| 2.1.4 PISA scales in reading, maths, & science .....      | 502.5  | 17   |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....   | 14.3   | 56 ○ |
| 2.2 Tertiary education .....                              | 53.0   | 12   |
| 2.2.1 Tertiary enrolment, % gross .....                   | 61.9   | 36   |
| 2.2.2 Graduates in science & engineering, % .....         | 21.9   | 39 ○ |
| 2.2.3 Tertiary inbound mobility, % .....                  | 17.1   | 8    |
| 2.3 Research & development (R&D) .....                    | 63.2   | 11   |
| 2.3.1 Researchers, FTE/mn pop. ....                       | 4107.7 | 19   |
| 2.3.2 Gross expenditure on R&D, % GDP .....               | 1.7    | 21   |
| 2.3.3 QS university ranking, average score top 3* .....   | 99.3   | 1 ●  |

## 3 Infrastructure ..... 63.0 6 ●

|                                                               |        |       |
|---------------------------------------------------------------|--------|-------|
| 3.1 Information & communication technologies (ICTs) .....     | 89.1   | 3 ●   |
| 3.1.1 ICT access* .....                                       | 91.8   | 6     |
| 3.1.2 ICT use* .....                                          | 78.8   | 6     |
| 3.1.3 Government's online service* .....                      | 89.8   | 11    |
| 3.1.4 E-participation* .....                                  | 96.1   | 4 ●   |
| 3.2 General infrastructure .....                              | 38.2   | 48 ○  |
| 3.2.1 Electricity output, kWh/cap .....                       | 5519.5 | 35    |
| 3.2.2 Logistics performance* .....                            | 94.5   | 4 ●   |
| 3.2.3 Gross capital formation, % GDP .....                    | 15.0   | 122 ○ |
| 3.3 Ecological sustainability .....                           | 61.8   | 7     |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 11.1   | 19    |
| 3.3.2 Environmental performance* .....                        | 77.4   | 12    |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 6.9    | 14    |

## 4 Market sophistication ..... 74.3 3 ●

|                                                      |       |     |
|------------------------------------------------------|-------|-----|
| 4.1 Credit .....                                     | 63.0  | 8   |
| 4.1.1 Ease of getting credit* .....                  | 75.0  | 16  |
| 4.1.2 Domestic credit to private sector, % GDP ..... | 155.5 | 13  |
| 4.1.3 Microfinance gross loans, % GDP .....          | n/a   | n/a |

|                                                 |       |     |
|-------------------------------------------------|-------|-----|
| 4.2 Investment .....                            | 69.5  | 6 ● |
| 4.2.1 Ease of protecting investors* .....       | 78.3  | 4 ● |
| 4.2.2 Market capitalization, % GDP .....        | 115.5 | 9   |
| 4.2.3 Total value of stocks traded, % GDP ..... | 95.2  | 5   |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....  | 0.3   | 12  |

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.3 Trade & competition .....                           | 90.4 | 5 ● |
| 4.3.1 Applied tariff rate, weighted mean, % .....       | 1.0  | 9   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 84.2 | 4 ● |

## 5 Business sophistication ..... 53.6 13

|                                                          |      |     |
|----------------------------------------------------------|------|-----|
| 5.1 Knowledge workers .....                              | 63.8 | 13  |
| 5.1.1 Knowledge-intensive employment, % .....            | 47.7 | 6   |
| 5.1.2 Firms offering formal training, % firms .....      | n/a  | n/a |
| 5.1.3 GERD performed by business, % of GDP .....         | 1.1  | 20  |
| 5.1.4 GERD financed by business, % .....                 | 46.5 | 24  |
| 5.1.5 Females employed w/advanced degrees, % total ..... | 21.7 | 17  |

## 5.2 Innovation linkages ..... 53.4 9

|                                                                     |      |     |
|---------------------------------------------------------------------|------|-----|
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 77.8 | 4 ● |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 70.6 | 9   |
| 5.2.3 GERD financed by abroad, % .....                              | 20.6 | 20  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0  | 18  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.9  | 17  |

## 5.3 Knowledge absorption ..... 43.6 30

|                                                                  |      |      |
|------------------------------------------------------------------|------|------|
| 5.3.1 Royalty & license fees payments, % total trade .....       | 1.1  | 26   |
| 5.3.2 High-tech imports less re-imports, % total trade .....     | 11.2 | 26   |
| 5.3.3 Comm., computer & info. services imp., % total trade ..... | 1.7  | 30   |
| 5.3.4 FDI net inflows, % GDP .....                               | 1.9  | 89 ○ |

## 6 Knowledge & technology outputs ..... 54.9 8

|                                                          |       |      |
|----------------------------------------------------------|-------|------|
| 6.1 Knowledge creation .....                             | 58.6  | 7    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....    | 6.1   | 13   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....         | 2.1   | 22   |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....  | n/a   | n/a  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP ..... | 41.5  | 14   |
| 6.1.5 Citable documents H index .....                    | 934.0 | 1 ●  |
| 6.2 Knowledge impact .....                               | 58.7  | 2 ●  |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....           | 0.8   | 78 ○ |
| 6.2.2 New businesses/th pop. 15–64 .....                 | 11.0  | 10   |
| 6.2.3 Computer software spending, % GDP .....            | 0.7   | 5    |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....   | 18.2  | 21   |
| 6.2.5 High- & medium-high-tech manufactures, % .....     | 42.9  | 17   |

## 6.3 Knowledge diffusion ..... 47.5 23

|                                                                  |     |      |
|------------------------------------------------------------------|-----|------|
| 6.3.1 Royalty & license fees receipts, % total trade .....       | 1.7 | 11   |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | 9.4 | 23   |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | 3.5 | 14   |
| 6.3.4 FDI net outflows, % GDP .....                              | 0.3 | 78 ○ |

## 7 Creative outputs ..... 60.5 5 ●

|                                                                 |      |      |
|-----------------------------------------------------------------|------|------|
| 7.1 Intangible assets .....                                     | 54.5 | 31   |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 50.2 | 50 ○ |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 1.2  | 27 ○ |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | 75.7 | 8    |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | 74.3 | 8    |
| 7.2 Creative goods & services .....                             | 48.1 | 4 ●  |
| 7.2.1 Cultural & creative services exports, % total trade ..... | 1.6  | 3 ●  |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 5.4  | 37 ○ |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | 58.9 | 8    |
| 7.2.4 Printing & publishing output manufactures, % .....        | 2.2  | 25   |
| 7.2.5 Creative goods exports, % total trade .....               | 2.8  | 14   |

## 7.3 Online creativity ..... 84.7 3 ●

|                                                            |        |     |
|------------------------------------------------------------|--------|-----|
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 ..... | 72.9   | 12  |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                | 100.0  | 1 ● |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                     | 9652.4 | 4 ● |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....            | 94.7   | 4   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                  |
|-----------------------------|------------------|
| Population (millions) ..... | 322.6            |
| GDP (US\$ billions) .....   | 17,418.9         |
| GDP per capita, PPP\$ ..... | 54,979.9         |
| Income group .....          | High income      |
| Region .....                | Northern America |

|                                                               | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b>             | <b>60.1</b>                         | <b>5</b>   |
| Innovation Output Sub-Index .....                             | 52.9                                | 9          |
| Innovation Input Sub-Index .....                              | 67.3                                | 5          |
| Innovation Efficiency Ratio .....                             | 0.8                                 | 33         |
| Global Innovation Index 2014 (out of 143) .....               | 60.1                                | 6          |
| <b>1 Institutions .....</b>                                   | <b>86.8</b>                         | <b>16</b>  |
| 1.1 Political environment .....                               | 80.6                                | 22         |
| 1.1.1 Political stability* .....                              | 79.2                                | 40         |
| 1.1.2 Government effectiveness* .....                         | 82.0                                | 17         |
| 1.2 Regulatory environment .....                              | 92.4                                | 14         |
| 1.2.1 Regulatory quality* .....                               | 81.3                                | 21         |
| 1.2.2 Rule of law* .....                                      | 88.5                                | 18         |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....        | 8.0                                 | 1 ●        |
| 1.3 Business environment .....                                | 87.4                                | 11         |
| 1.3.1 Ease of starting a business* .....                      | 91.2                                | 40         |
| 1.3.2 Ease of resolving insolvency* .....                     | 90.1                                | 4 ●        |
| 1.3.3 Ease of paying taxes* .....                             | 80.8                                | 42         |
| <b>2 Human capital &amp; research .....</b>                   | <b>54.0</b>                         | <b>14</b>  |
| 2.1 Education .....                                           | 52.1                                | 42         |
| 2.1.1 Expenditure on education, % GDP .....                   | 5.2                                 | 47         |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....     | 23.9                                | 44         |
| 2.1.3 School life expectancy, years .....                     | 16.4                                | 16         |
| 2.1.4 PISA scales in reading, maths, & science .....          | 492.1                               | 25         |
| 2.1.5 Pupil-teacher ratio, secondary .....                    | 14.7                                | 61         |
| 2.2 Tertiary education .....                                  | 39.0                                | 49         |
| 2.2.1 Tertiary enrolment, % gross .....                       | 94.3                                | 3 ●        |
| 2.2.2 Graduates in science & engineering, % .....             | 16.0                                | 75 ○       |
| 2.2.3 Tertiary inbound mobility, % .....                      | 3.5                                 | 49         |
| 2.3 Research & development (R&D) .....                        | 71.1                                | 8          |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓔ</sup> .....             | 3978.7                              | 22         |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓔ</sup> .....      | 2.8                                 | 10         |
| 2.3.3 QS university ranking, average score top 3* .....       | 99.2                                | 2 ●        |
| <b>3 Infrastructure .....</b>                                 | <b>58.8</b>                         | <b>14</b>  |
| 3.1 Information & communication technologies (ICTs) .....     | 84.9                                | 8          |
| 3.1.1 ICT access* .....                                       | 77.8                                | 28         |
| 3.1.2 ICT use* .....                                          | 75.0                                | 10         |
| 3.1.3 Government's online service* .....                      | 94.5                                | 4          |
| 3.1.4 E-participation* .....                                  | 92.2                                | 9          |
| 3.2 General infrastructure .....                              | 52.4                                | 15         |
| 3.2.1 Electricity output, kWh/cap .....                       | 13492.7                             | 8          |
| 3.2.2 Logistics performance* .....                            | 89.6                                | 9          |
| 3.2.3 Gross capital formation, % GDP .....                    | 19.8                                | 89 ○       |
| 3.3 Ecological sustainability .....                           | 39.2                                | 62         |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 6.6                                 | 76 ○       |
| 3.3.2 Environmental performance* .....                        | 67.5                                | 33         |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.4                                 | 96 ○       |
| <b>4 Market sophistication .....</b>                          | <b>81.5</b>                         | <b>1 ●</b> |
| 4.1 Credit .....                                              | 79.2                                | 1 ●        |
| 4.1.1 Ease of getting credit* .....                           | 95.0                                | 2 ●        |
| 4.1.2 Domestic credit to private sector, % GDP .....          | 192.3                               | 4 ●        |
| 4.1.3 Microfinance gross loans, % GDP .....                   | n/a                                 | n/a        |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| 4.2 Investment .....                                                  | 76.7        | 2 ●        |
| 4.2.1 Ease of protecting investors* .....                             | 65.8        | 25         |
| 4.2.2 Market capitalization, % GDP .....                              | 115.5       | 8          |
| 4.2.3 Total value of stocks traded, % GDP .....                       | 132.2       | 1 ●        |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....                        | 0.7         | 6          |
| 4.3 Trade & competition .....                                         | 88.5        | 11         |
| 4.3.1 Applied tariff rate, weighted mean, % .....                     | 1.5         | 41         |
| 4.3.2 Intensity of local competition <sup>†</sup> .....               | 82.3        | 8          |
| <b>5 Business sophistication .....</b>                                | <b>55.4</b> | <b>9</b>   |
| 5.1 Knowledge workers .....                                           | 65.5        | 11         |
| 5.1.1 Knowledge-intensive employment, % .....                         | 38.0        | 26         |
| 5.1.2 Firms offering formal training, % firms .....                   | n/a         | n/a        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓔ</sup> .....         | 1.9         | 11         |
| 5.1.4 GERD financed by business, % <sup>Ⓔ</sup> .....                 | 59.1        | 14         |
| 5.1.5 Females employed w/advanced degrees, % total .....              | n/a         | n/a        |
| 5.2 Innovation linkages .....                                         | 51.0        | 12         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....   | 80.8        | 2 ●        |
| 5.2.2 State of cluster development <sup>†</sup> .....                 | 73.6        | 4          |
| 5.2.3 GERD financed by abroad, % <sup>Ⓔ</sup> .....                   | 3.8         | 72 ○       |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                  | 0.0         | 16         |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                   | 1.5         | 11         |
| 5.3 Knowledge absorption .....                                        | 49.6        | 15         |
| 5.3.1 Royalty & license fees payments, % total trade .....            | 1.6         | 14         |
| 5.3.2 High-tech imports less re-imports, % total trade .....          | 16.1        | 10         |
| 5.3.3 Comm., computer & info. services imp., % total trade .....      | 1.4         | 41         |
| 5.3.4 FDI net inflows, % GDP .....                                    | 1.4         | 101 ○      |
| <b>6 Knowledge &amp; technology outputs .....</b>                     | <b>58.0</b> | <b>4 ●</b> |
| 6.1 Knowledge creation .....                                          | 68.5        | 4 ●        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....                 | 17.2        | 1 ●        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                      | 3.5         | 13         |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....               | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....              | 20.6        | 39         |
| 6.1.5 Citable documents H index .....                                 | 1518.0      | 1 ●        |
| 6.2 Knowledge impact .....                                            | 56.0        | 8          |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                        | 0.8         | 79 ○       |
| 6.2.2 New businesses/th pop. 15–64 .....                              | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP .....                         | 1.0         | 1 ●        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....                | 2.1         | 90 ○       |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓔ</sup> .....     | 43.3        | 14         |
| 6.3 Knowledge diffusion .....                                         | 49.5        | 18         |
| 6.3.1 Royalty & license fees receipts, % total trade .....            | 5.1         | 3 ●        |
| 6.3.2 High-tech exports less re-exports, % total trade .....          | 6.8         | 26         |
| 6.3.3 Comm., computer & info. services exp., % total trade .....      | 1.3         | 67         |
| 6.3.4 FDI net outflows, % GDP .....                                   | 2.4         | 27         |
| <b>7 Creative outputs .....</b>                                       | <b>47.8</b> | <b>23</b>  |
| 7.1 Intangible assets .....                                           | 45.6        | 66         |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 20.3        | 82 ○       |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.4         | 46 ○       |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 71.1        | 18         |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 74.0        | 9          |
| 7.2 Creative goods & services .....                                   | 39.7        | 18         |
| 7.2.1 Cultural & creative services exports, % total trade .....       | 1.2         | 10         |
| 7.2.2 National feature films/mn pop. 15–69 .....                      | 3.2         | 48         |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....                  | 67.7        | 4          |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓔ</sup> ..... | 1.9         | 30         |
| 7.2.5 Creative goods exports, % total trade .....                     | 1.7         | 29         |
| 7.3 Online creativity .....                                           | 60.3        | 17         |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....            | 100.0       | 1 ●        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                           | 3.3         | 63         |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                                | 5148.4      | 25         |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                       | 100.0       | 1 ●        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓔ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



## Uruguay

## Key indicators

|                             |                                 |
|-----------------------------|---------------------------------|
| Population (millions) ..... | 3.4                             |
| GDP (US\$ billions) .....   | 55.1                            |
| GDP per capita, PPP\$ ..... | 17,390.7                        |
| Income group .....          | High income                     |
| Region .....                | Latin America and the Caribbean |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>35.8</b>                         | <b>68</b> |
| Innovation Output Sub-Index .....                | 28.4                                | 66        |
| Innovation Input Sub-Index .....                 | 43.1                                | 63        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 91        |
| Global Innovation Index 2014 (out of 143) .....  | 34.8                                | 72        |

**1 Institutions.....68.2 50**

|                                                       |      |      |
|-------------------------------------------------------|------|------|
| 1.1 Political environment.....                        | 68.3 | 43   |
| 1.1.1 Political stability*.....                       | 84.2 | 32 ● |
| 1.1.2 Government effectiveness*.....                  | 52.3 | 49   |
| 1.2 Regulatory environment .....                      | 68.0 | 63   |
| 1.2.1 Regulatory quality*.....                        | 61.7 | 48   |
| 1.2.2 Rule of law*.....                               | 61.0 | 42   |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 20.8 | 96   |
| 1.3 Business environment.....                         | 68.5 | 74   |
| 1.3.1 Ease of starting a business*.....               | 89.7 | 51   |
| 1.3.2 Ease of resolving insolvency*.....              | 53.5 | 55   |
| 1.3.3 Ease of paying taxes*.....                      | 62.3 | 107  |

**2 Human capital & research.....29.3 67**

|                                                                        |       |      |
|------------------------------------------------------------------------|-------|------|
| 2.1 Education .....                                                    | 42.1  | 80   |
| 2.1.1 Expenditure on education, % GDP .....                            | 4.4   | 74   |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 10.7  | 96 ○ |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 15.5  | 32 ● |
| 2.1.4 PISA scales in reading, maths, & science.....                    | 412.2 | 52 ○ |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....                | 11.3  | 35   |
| 2.2 Tertiary education.....                                            | 37.3  | 53   |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 63.2  | 32 ● |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> .....         | 15.6  | 81 ○ |
| 2.2.3 Tertiary inbound mobility, %.....                                | n/a   | n/a  |
| 2.3 Research & development (R&D).....                                  | 8.6   | 73   |
| 2.3.1 Researchers, FTE/mn pop. ....                                    | 529.2 | 59   |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....               | 0.2   | 82   |
| 2.3.3 QS university ranking, average score top 3*.....                 | 14.0  | 60   |

**3 Infrastructure.....49.1 38 ●**

|                                                              |        |      |
|--------------------------------------------------------------|--------|------|
| 3.1 Information & communication technologies (ICTs).....     | 74.8   | 20 ● |
| 3.1.1 ICT access*.....                                       | 70.5   | 43   |
| 3.1.2 ICT use*.....                                          | 45.6   | 47   |
| 3.1.3 Government's online service*.....                      | 85.0   | 14 ● |
| 3.1.4 E-participation*.....                                  | 98.0   | 3 ●  |
| 3.2 General infrastructure.....                              | 26.8   | 89   |
| 3.2.1 Electricity output, kWh/cap.....                       | 3117.6 | 60   |
| 3.2.2 Logistics performance*.....                            | 26.4   | 86   |
| 3.2.3 Gross capital formation, % GDP.....                    | 23.1   | 56   |
| 3.3 Ecological sustainability .....                          | 45.8   | 42   |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 11.8   | 17 ● |
| 3.3.2 Environmental performance*.....                        | 53.6   | 63   |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 2.0    | 46   |

**4 Market sophistication.....38.9 117 ○**

|                                                          |      |      |
|----------------------------------------------------------|------|------|
| 4.1 Credit.....                                          | 22.6 | 103  |
| 4.1.1 Ease of getting credit*.....                       | 60.0 | 48   |
| 4.1.2 Domestic credit to private sector, % GDP.....      | 26.8 | 104  |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> ..... | 0.0  | 78 ○ |

|                                                |      |       |
|------------------------------------------------|------|-------|
| 4.2 Investment .....                           | 20.7 | 137 ○ |
| 4.2.1 Ease of protecting investors*.....       | 47.5 | 97    |
| 4.2.2 Market capitalization, % GDP.....        | 0.4  | 108 ○ |
| 4.2.3 Total value of stocks traded, % GDP..... | 0.0  | 108 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....  | 0.1  | 32    |

**4.3 Trade & competition.....73.3 85**

|                                                         |      |    |
|---------------------------------------------------------|------|----|
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 4.1  | 69 |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 61.0 | 99 |

**5 Business sophistication.....29.7 96**

|                                                                  |      |      |
|------------------------------------------------------------------|------|------|
| 5.1 Knowledge workers.....                                       | 36.7 | 75   |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....       | 23.1 | 65   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> ..... | 48.6 | 30 ● |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....    | 0.0  | 73 ○ |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....            | 15.0 | 66   |
| 5.1.5 Females employed w/advanced degrees, % total.....          | 13.6 | 46   |

**5.2 Innovation linkages.....24.7 103**

|                                                                     |      |     |
|---------------------------------------------------------------------|------|-----|
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 43.2 | 68  |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 41.1 | 90  |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 7.6  | 52  |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                 | n/a  | n/a |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                  | 0.0  | 82  |

**5.3 Knowledge absorption.....27.8 103**

|                                                                 |     |       |
|-----------------------------------------------------------------|-----|-------|
| 5.3.1 Royalty & license fees payments, % total trade.....       | 0.2 | 81    |
| 5.3.2 High-tech imports less re-imports, % total trade.....     | 8.9 | 50    |
| 5.3.3 Comm., computer & info. services imp., % total trade..... | 0.4 | 107 ○ |
| 5.3.4 FDI net inflows, % GDP.....                               | 5.1 | 33 ●  |

**6 Knowledge & technology outputs.....22.3 94**

|                                                                      |       |      |
|----------------------------------------------------------------------|-------|------|
| 6.1 Knowledge creation.....                                          | 10.2  | 68   |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....   | 0.3   | 81   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                      | n/a   | n/a  |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 0.6   | 36   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....              | 12.6  | 61   |
| 6.1.5 Citable documents H index.....                                 | 114.0 | 63   |
| 6.2 Knowledge impact.....                                            | 36.3  | 77   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                        | 2.8   | 34   |
| 6.2.2 New businesses/th pop. 15–64.....                              | 3.0   | 35   |
| 6.2.3 Computer software spending, % GDP.....                         | 0.3   | 61 ○ |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                | 12.5  | 32 ● |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....    | 10.9  | 75   |

**6.3 Knowledge diffusion.....20.3 110**

|                                                                 |     |       |
|-----------------------------------------------------------------|-----|-------|
| 6.3.1 Royalty & license fees receipts, % total trade.....       | 0.0 | 100 ○ |
| 6.3.2 High-tech exports less re-exports, % total trade.....     | 1.4 | 57    |
| 6.3.3 Comm., computer & info. services exp., % total trade..... | 1.5 | 59    |
| 6.3.4 FDI net outflows, % GDP.....                              | 0.0 | 97    |

**7 Creative outputs.....34.6 59**

|                                                               |      |     |
|---------------------------------------------------------------|------|-----|
| 7.1 Intangible assets.....                                    | 52.4 | 38  |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....            | 66.7 | 29  |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....         | n/a  | n/a |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....       | 60.8 | 46  |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> ..... | 59.7 | 43  |

**7.2 Creative goods & services.....12.1 92**

|                                                                       |     |     |
|-----------------------------------------------------------------------|-----|-----|
| 7.2.1 Cultural & creative services exports, % total trade.....        | n/a | n/a |
| 7.2.2 National feature films/mn pop. 15–69.....                       | 5.2 | 39  |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | n/a | n/a |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.2 | 65  |
| 7.2.5 Creative goods exports, % total trade.....                      | 0.1 | 94  |

**7.3 Online creativity.....21.6 63**

|                                                           |        |      |
|-----------------------------------------------------------|--------|------|
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69..... | 7.5    | 51   |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                | 12.9   | 39   |
| 7.3.3 Wikipedia edits/pop. 15–69.....                     | 6005.2 | 18 ● |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....            | n/a    | n/a  |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                           |
|-----------------------------|---------------------------|
| Population (millions) ..... | 29.3                      |
| GDP (US\$ billions) .....   | 62.6                      |
| GDP per capita, PPP\$ ..... | 4,037.9                   |
| Income group .....          | Lower-middle income       |
| Region .....                | Central and Southern Asia |

|                                                                | Score 0–100<br>or value (hard data) | Rank       |
|----------------------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b>              | <b>25.9</b>                         | <b>122</b> |
| Innovation Output Sub-Index .....                              | 17.9                                | 127        |
| Innovation Input Sub-Index .....                               | 33.9                                | 112        |
| Innovation Efficiency Ratio .....                              | 0.5                                 | 123        |
| Global Innovation Index 2014 (out of 143) .....                | 25.2                                | 128        |
| <b>1 Institutions .....</b>                                    | <b>49.0</b>                         | <b>106</b> |
| 1.1 Political environment .....                                | 33.3                                | 115        |
| 1.1.1 Political stability* .....                               | 50.6                                | 100        |
| 1.1.2 Government effectiveness* .....                          | 16.1                                | 126        |
| 1.2 Regulatory environment .....                               | 45.7                                | 121        |
| 1.2.1 Regulatory quality* .....                                | 4.4                                 | 139 ○      |
| 1.2.2 Rule of law* .....                                       | 15.6                                | 133 ○      |
| 1.2.3 Cost of redundancy dismissal, salary weeks .....         | 17.4                                | 81         |
| 1.3 Business environment .....                                 | 67.9                                | 76         |
| 1.3.1 Ease of starting a business* .....                       | 89.0                                | 55 ●       |
| 1.3.2 Ease of resolving insolvency* .....                      | 46.5                                | 72 ●       |
| 1.3.3 Ease of paying taxes* .....                              | 68.3                                | 92         |
| <b>2 Human capital &amp; research .....</b>                    | <b>27.0</b>                         | <b>76</b>  |
| 2.1 Education .....                                            | 55.2                                | 29         |
| 2.1.1 Expenditure on education, % GDP .....                    | n/a                                 | n/a        |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap .....      | n/a                                 | n/a        |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....         | 11.5                                | 97         |
| 2.1.4 PISA scales in reading, maths, & science .....           | n/a                                 | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....        | 13.3                                | 47 ●       |
| 2.2 Tertiary education .....                                   | 22.6                                | 95         |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....           | 8.9                                 | 117        |
| 2.2.2 Graduates in science & engineering, % <sup>Ⓐ</sup> ..... | 21.1                                | 47 ●       |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....          | 0.1                                 | 107 ○      |
| 2.3 Research & development (R&D) .....                         | 3.2                                 | 92         |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....              | 533.9                               | 58         |
| 2.3.2 Gross expenditure on R&D, % GDP .....                    | n/a                                 | n/a        |
| 2.3.3 QS university ranking, average score top 3* .....        | 0.0                                 | 73 ○       |
| <b>3 Infrastructure .....</b>                                  | <b>29.0</b>                         | <b>101</b> |
| 3.1 Information & communication technologies (ICTs) .....      | 35.6                                | 93         |
| 3.1.1 ICT access* .....                                        | 29.5                                | 119        |
| 3.1.2 ICT use* .....                                           | 20.9                                | 90         |
| 3.1.3 Government's online service* .....                       | 44.9                                | 72         |
| 3.1.4 E-participation* .....                                   | 47.1                                | 70         |
| 3.2 General infrastructure .....                               | 29.8                                | 73         |
| 3.2.1 Electricity output, kWh/cap .....                        | 1762.9                              | 79         |
| 3.2.2 Logistics performance* .....                             | 11.9                                | 116        |
| 3.2.3 Gross capital formation, % GDP .....                     | 30.8                                | 19 ●       |
| 3.3 Ecological sustainability .....                            | 21.5                                | 132 ○      |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq .....       | 2.6                                 | 117 ○      |
| 3.3.2 Environmental performance* .....                         | 43.2                                | 101        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP .....  | 0.1                                 | 129 ○      |
| <b>4 Market sophistication .....</b>                           | <b>44.4</b>                         | <b>85</b>  |
| 4.1 Credit .....                                               | 25.2                                | 87         |
| 4.1.1 Ease of getting credit* .....                            | 40.0                                | 93         |
| 4.1.2 Domestic credit to private sector, % GDP .....           | n/a                                 | n/a        |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> .....       | 0.9                                 | 39 ●       |

|                                                              |      |       |
|--------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                         | 26.0 | 115   |
| 4.2.1 Ease of protecting investors* .....                    | 50.8 | 88    |
| 4.2.2 Market capitalization, % GDP <sup>Ⓐ</sup> .....        | 4.2  | 103 ○ |
| 4.2.3 Total value of stocks traded, % GDP <sup>Ⓐ</sup> ..... | 0.2  | 92    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP .....               | n/a  | n/a   |
| 4.3 Trade & competition .....                                | 82.1 | 42    |
| 4.3.1 Applied tariff rate, weighted mean, % .....            | 5.1  | 83    |
| 4.3.2 Intensity of local competition <sup>†</sup> .....      | n/a  | n/a   |

|                                                                     |             |              |
|---------------------------------------------------------------------|-------------|--------------|
| <b>5 Business sophistication .....</b>                              | <b>20.0</b> | <b>138</b> ○ |
| 5.1 Knowledge workers .....                                         | 9.9         | 135 ○        |
| 5.1.1 Knowledge-intensive employment, % .....                       | n/a         | n/a          |
| 5.1.2 Firms offering formal training, % firms .....                 | 10.9        | 105 ○        |
| 5.1.3 GERD performed by business, % of GDP .....                    | n/a         | n/a          |
| 5.1.4 GERD financed by business, % .....                            | n/a         | n/a          |
| 5.1.5 Females employed w/advanced degrees, % total .....            | n/a         | n/a          |
| 5.2 Innovation linkages .....                                       | 5.3         | 138 ○        |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | n/a         | n/a          |
| 5.2.2 State of cluster development <sup>†</sup> .....               | n/a         | n/a          |
| 5.2.3 GERD financed by abroad, % .....                              | n/a         | n/a          |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 60           |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP <sup>Ⓐ</sup> .....    | 0.0         | 89           |
| 5.3 Knowledge absorption .....                                      | 44.9        | 27           |
| 5.3.1 Royalty & license fees payments, % total trade .....          | n/a         | n/a          |
| 5.3.2 High-tech imports less re-imports, % total trade .....        | n/a         | n/a          |
| 5.3.3 Comm., computer & info. services imp., % total trade .....    | n/a         | n/a          |
| 5.3.4 FDI net inflows, % GDP .....                                  | 1.9         | 90           |

|                                                                  |             |             |
|------------------------------------------------------------------|-------------|-------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                | <b>27.2</b> | <b>61</b> ● |
| 6.1 Knowledge creation .....                                     | 9.4         | 75          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....            | 1.9         | 48 ●        |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                 | 0.0         | 83          |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....          | 1.1         | 24 ●        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....         | 1.9         | 129         |
| 6.1.5 Citable documents H index .....                            | 58.0        | 109         |
| 6.2 Knowledge impact .....                                       | 45.0        | 38 ●        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                   | 5.3         | 6 ●         |
| 6.2.2 New businesses/th pop. 15–64 .....                         | 0.6         | 83          |
| 6.2.3 Computer software spending, % GDP .....                    | n/a         | n/a         |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....           | 0.4         | 130 ○       |
| 6.2.5 High- & medium-high-tech manufactures, % .....             | n/a         | n/a         |
| 6.3 Knowledge diffusion .....                                    | n/a         | n/a         |
| 6.3.1 Royalty & license fees receipts, % total trade .....       | n/a         | n/a         |
| 6.3.2 High-tech exports less re-exports, % total trade .....     | n/a         | n/a         |
| 6.3.3 Comm., computer & info. services exp., % total trade ..... | n/a         | n/a         |
| 6.3.4 FDI net outflows, % GDP .....                              | n/a         | n/a         |

|                                                                 |            |              |
|-----------------------------------------------------------------|------------|--------------|
| <b>7 Creative outputs .....</b>                                 | <b>8.5</b> | <b>138</b> ○ |
| 7.1 Intangible assets .....                                     | 11.0       | 136 ○        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....             | 31.1       | 69           |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....          | 0.0        | 67 ○         |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....         | n/a        | n/a          |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....   | n/a        | n/a          |
| 7.2 Creative goods & services .....                             | 12.0       | 93           |
| 7.2.1 Cultural & creative services exports, % total trade ..... | n/a        | n/a          |
| 7.2.2 National feature films/mn pop. 15–69 .....                | 3.1        | 49 ●         |
| 7.2.3 Global ent. & media output/th pop. 15–69 .....            | n/a        | n/a          |
| 7.2.4 Printing & publishing output manufactures, % .....        | n/a        | n/a          |
| 7.2.5 Creative goods exports, % total trade .....               | n/a        | n/a          |
| 7.3 Online creativity .....                                     | 0.2        | 126          |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69 .....      | 0.0        | 141 ○        |
| 7.3.2 Country-code TLDs/th pop. 15–69 .....                     | 0.4        | 105          |
| 7.3.3 Wikipedia edits/pop. 15–69 .....                          | 50.0       | 120          |
| 7.3.4 Video uploads on YouTube/pop. 15–69 .....                 | n/a        | n/a          |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

# Venezuela, Bolivarian Republic of

## Key indicators

|                            |                                 |
|----------------------------|---------------------------------|
| Population (millions)..... | 30.9                            |
| GDP (US\$ billions).....   | 205.8                           |
| GDP per capita, PPP\$..... | 13,530.5                        |
| Income group.....          | Upper-middle income             |
| Region.....                | Latin America and the Caribbean |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>22.8</b>                         | <b>132</b> |
| Innovation Output Sub-Index.....                 | 18.4                                | 121        |
| Innovation Input Sub-Index.....                  | 27.1                                | 133        |
| Innovation Efficiency Ratio.....                 | 0.7                                 | 84         |
| Global Innovation Index 2014 (out of 143).....   | 25.7                                | 122        |

## 1 Institutions..... 17.0 141 ○

|                                                                     |      |       |
|---------------------------------------------------------------------|------|-------|
| 1.1 Political environment.....                                      | 24.1 | 131   |
| 1.1.1 Political stability*.....                                     | 37.5 | 117   |
| 1.1.2 Government effectiveness*.....                                | 10.7 | 134   |
| 1.2 Regulatory environment.....                                     | 1.0  | 141 ○ |
| 1.2.1 Regulatory quality*.....                                      | 4.1  | 140 ○ |
| 1.2.2 Rule of law*.....                                             | 0.0  | 141 ○ |
| 1.2.3 Cost of redundancy dismissal, salary weeks <sup>Ⓐ</sup> ..... | 82.3 | 138 ○ |
| 1.3 Business environment.....                                       | 25.9 | 141 ○ |
| 1.3.1 Ease of starting a business*.....                             | 45.2 | 139 ○ |
| 1.3.2 Ease of resolving insolvency*.....                            | 19.2 | 137   |
| 1.3.3 Ease of paying taxes*.....                                    | 13.4 | 140 ○ |

## 2 Human capital & research..... 29.7 65

|                                                                        |       |      |
|------------------------------------------------------------------------|-------|------|
| 2.1 Education.....                                                     | 40.5  | 84   |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> .....               | 6.9   | 13 ● |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap <sup>Ⓐ</sup> ..... | 16.6  | 76   |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....                 | 14.2  | 53 ● |
| 2.1.4 PISA scales in reading, maths, & science <sup>Ⓐ</sup> .....      | 413.4 | 50   |
| 2.1.5 Pupil-teacher ratio, secondary.....                              | n/a   | n/a  |
| 2.2 Tertiary education.....                                            | 33.4  | 64   |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....                   | 77.9  | 14 ● |
| 2.2.2 Graduates in science & engineering, %.....                       | n/a   | n/a  |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....                  | 0.1   | 113  |
| 2.3 Research & development (R&D).....                                  | 15.0  | 56 ● |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....                      | 290.0 | 66   |
| 2.3.2 Gross expenditure on R&D, % GDP.....                             | n/a   | n/a  |
| 2.3.3 QS university ranking, average score top 3*.....                 | 26.6  | 48 ● |

## 3 Infrastructure..... 30.7 97

|                                                              |        |      |
|--------------------------------------------------------------|--------|------|
| 3.1 Information & communication technologies (ICTs).....     | 47.3   | 70   |
| 3.1.1 ICT access*.....                                       | 53.6   | 75   |
| 3.1.2 ICT use*.....                                          | 23.6   | 86   |
| 3.1.3 Government's online service*.....                      | 55.1   | 55 ● |
| 3.1.4 E-participation*.....                                  | 56.9   | 51 ● |
| 3.2 General infrastructure.....                              | 26.4   | 93   |
| 3.2.1 Electricity output, kWh/cap.....                       | 4222.8 | 51   |
| 3.2.2 Logistics performance*.....                            | 33.0   | 73   |
| 3.2.3 Gross capital formation, % GDP.....                    | 19.9   | 87   |
| 3.3 Ecological sustainability.....                           | 18.4   | 137  |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 6.2    | 88   |
| 3.3.2 Environmental performance*.....                        | n/a    | n/a  |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.2    | 121  |

## 4 Market sophistication..... 27.3 141 ○

|                                                          |      |     |
|----------------------------------------------------------|------|-----|
| 4.1 Credit.....                                          | 15.8 | 122 |
| 4.1.1 Ease of getting credit*.....                       | 40.0 | 93  |
| 4.1.2 Domestic credit to private sector, % GDP.....      | 25.3 | 108 |
| 4.1.3 Microfinance gross loans, % GDP <sup>Ⓐ</sup> ..... | 0.0  | 73  |

|                                                         |      |       |
|---------------------------------------------------------|------|-------|
| 4.2 Investment.....                                     | 15.6 | 140 ○ |
| 4.2.1 Ease of protecting investors*.....                | 29.2 | 139 ○ |
| 4.2.2 Market capitalization, % GDP.....                 | 6.6  | 96    |
| 4.2.3 Total value of stocks traded, % GDP.....          | 0.0  | 107 ○ |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a   |
| 4.3 Trade & competition.....                            | 50.4 | 136   |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 8.6  | 114   |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 31.2 | 132 ○ |

## 5 Business sophistication..... 31.1 88

|                                                                               |      |       |
|-------------------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers.....                                                    | 50.2 | 35 ●  |
| 5.1.1 Knowledge-intensive employment, %.....                                  | 19.2 | 75    |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 56.0 | 16 ●  |
| 5.1.3 GERD performed by business, % of GDP.....                               | n/a  | n/a   |
| 5.1.4 GERD financed by business, %.....                                       | n/a  | n/a   |
| 5.1.5 Females employed w/advanced degrees, % total <sup>Ⓐ</sup> .....         | 16.7 | 32 ●  |
| 5.2 Innovation linkages.....                                                  | 16.7 | 134   |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 35.4 | 104   |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 23.3 | 132 ○ |
| 5.2.3 GERD financed by abroad, %.....                                         | n/a  | n/a   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                           | 0.0  | 88 ○  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                            | 0.0  | 100   |
| 5.3 Knowledge absorption.....                                                 | 26.2 | 109   |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.5  | 59    |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | n/a  | n/a   |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.5  | 88    |
| 5.3.4 FDI net inflows, % GDP.....                                             | 1.6  | 94    |

## 6 Knowledge & technology outputs..... 19.3 106

|                                                                               |       |      |
|-------------------------------------------------------------------------------|-------|------|
| 6.1 Knowledge creation.....                                                   | 5.4   | 101  |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....            | 0.1   | 105  |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                               | n/a   | n/a  |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                        | n/a   | n/a  |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                       | 1.5   | 132  |
| 6.1.5 Citable documents H index.....                                          | 141.0 | 53 ● |
| 6.2 Knowledge impact.....                                                     | 26.7  | 115  |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                                 | -0.9  | 109  |
| 6.2.2 New businesses/th pop. 15–64.....                                       | n/a   | n/a  |
| 6.2.3 Computer software spending, % GDP.....                                  | 0.2   | 69   |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                         | 1.1   | 110  |
| 6.2.5 High- & medium-high-tech manufactures, %.....                           | n/a   | n/a  |
| 6.3 Knowledge diffusion.....                                                  | 25.7  | 83   |
| 6.3.1 Royalty & license fees receipts, % total trade.....                     | n/a   | n/a  |
| 6.3.2 High-tech exports less re-exports, % total trade.....                   | n/a   | n/a  |
| 6.3.3 Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.2   | 113  |
| 6.3.4 FDI net outflows, % GDP <sup>Ⓐ</sup> .....                              | 0.4   | 71   |

## 7 Creative outputs..... 17.5 129

|                                                                  |        |      |
|------------------------------------------------------------------|--------|------|
| 7.1 Intangible assets.....                                       | 30.1   | 128  |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 22.1   | 78   |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....            | n/a    | n/a  |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....          | 38.2   | 126  |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....    | 40.9   | 114  |
| 7.2 Creative goods & services.....                               | 3.5    | 118  |
| 7.2.1 Cultural & creative services exports, % total trade.....   | 0.0    | 79   |
| 7.2.2 National feature films/mn pop. 15–69.....                  | 1.0    | 73   |
| 7.2.3 Global ent. & media output/th pop. 15–69.....              | 5.9    | 43   |
| 7.2.4 Printing & publishing output manufactures, %.....          | n/a    | n/a  |
| 7.2.5 Creative goods exports, % total trade.....                 | n/a    | n/a  |
| 7.3 Online creativity.....                                       | 6.6    | 88   |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....        | 2.3    | 83   |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                       | 5.5    | 51 ● |
| 7.3.3 Wikipedia edits/pop. 15–69.....                            | 1623.9 | 61   |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                   | n/a    | n/a  |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Key indicators

|                             |                             |
|-----------------------------|-----------------------------|
| Population (millions) ..... | 92.5                        |
| GDP (US\$ billions) .....   | 186.0                       |
| GDP per capita, PPP\$ ..... | 4,256.3                     |
| Income group .....          | Lower-middle income         |
| Region .....                | South East Asia and Oceania |

|                                                  | Score 0–100<br>or value (hard data) | Rank      |
|--------------------------------------------------|-------------------------------------|-----------|
| <b>Global Innovation Index (out of 141).....</b> | <b>38.3</b>                         | <b>52</b> |
| Innovation Output Sub-Index .....                | 36.7                                | 39        |
| Innovation Input Sub-Index .....                 | 40.0                                | 78        |
| Innovation Efficiency Ratio .....                | 0.9                                 | 9 ●       |
| Global Innovation Index 2014 (out of 143) .....  | 34.9                                | 71        |

|                                                       |             |            |
|-------------------------------------------------------|-------------|------------|
| <b>1 Institutions.....</b>                            | <b>51.8</b> | <b>101</b> |
| 1.1 Political environment.....                        | 51.5        | 67         |
| 1.1.1 Political stability*.....                       | 69.7        | 53         |
| 1.1.2 Government effectiveness*.....                  | 33.3        | 86         |
| 1.2 Regulatory environment .....                      | 49.8        | 113        |
| 1.2.1 Regulatory quality*.....                        | 30.4        | 113        |
| 1.2.2 Rule of law*.....                               | 34.7        | 89         |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 24.6        | 109        |
| 1.3 Business environment.....                         | 54.2        | 121 ○      |
| 1.3.1 Ease of starting a business*.....               | 77.7        | 102        |
| 1.3.2 Ease of resolving insolvency*.....              | 41.3        | 96         |
| 1.3.3 Ease of paying taxes*.....                      | 43.6        | 131 ○      |

|                                                          |             |           |
|----------------------------------------------------------|-------------|-----------|
| <b>2 Human capital &amp; research.....</b>               | <b>26.6</b> | <b>78</b> |
| 2.1 Education .....                                      | 48.3        | 56        |
| 2.1.1 Expenditure on education, % GDP .....              | 6.3         | 24 ●      |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | n/a         | n/a       |
| 2.1.3 School life expectancy, years.....                 | n/a         | n/a       |
| 2.1.4 PISA scales in reading, maths, & science.....      | n/a         | n/a       |
| 2.1.5 Pupil-teacher ratio, secondary .....               | n/a         | n/a       |
| 2.2 Tertiary education.....                              | 29.3        | 75        |
| 2.2.1 Tertiary enrolment, % gross.....                   | 24.6        | 86        |
| 2.2.2 Graduates in science & engineering, % .....        | 24.0        | 29        |
| 2.2.3 Tertiary inbound mobility, %.....                  | 0.2         | 105 ○     |
| 2.3 Research & development (R&D).....                    | 2.1         | 100       |
| 2.3.1 Researchers, FTE/mn pop. ....                      | n/a         | n/a       |
| 2.3.2 Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> ..... | 0.2         | 90        |
| 2.3.3 QS university ranking, average score top 3*.....   | 0.0         | 73 ○      |

|                                                              |             |           |
|--------------------------------------------------------------|-------------|-----------|
| <b>3 Infrastructure.....</b>                                 | <b>33.9</b> | <b>88</b> |
| 3.1 Information & communication technologies (ICTs).....     | 40.1        | 84        |
| 3.1.1 ICT access*.....                                       | 44.8        | 91        |
| 3.1.2 ICT use*.....                                          | 25.0        | 83        |
| 3.1.3 Government's online service*.....                      | 41.7        | 79        |
| 3.1.4 E-participation*.....                                  | 49.0        | 64        |
| 3.2 General infrastructure.....                              | 32.9        | 62        |
| 3.2.1 Electricity output, kWh/cap.....                       | 1383.9      | 89        |
| 3.2.2 Logistics performance*.....                            | 50.7        | 46        |
| 3.2.3 Gross capital formation, % GDP.....                    | 25.2        | 43        |
| 3.3 Ecological sustainability .....                          | 28.7        | 101       |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 6.0         | 91        |
| 3.3.2 Environmental performance*.....                        | 38.2        | 113 ○     |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 1.9         | 48        |

|                                                     |             |           |
|-----------------------------------------------------|-------------|-----------|
| <b>4 Market sophistication .....</b>                | <b>47.4</b> | <b>67</b> |
| 4.1 Credit.....                                     | 45.8        | 31 ●      |
| 4.1.1 Ease of getting credit*.....                  | 65.0        | 34        |
| 4.1.2 Domestic credit to private sector, % GDP..... | 96.8        | 32 ●      |
| 4.1.3 Microfinance gross loans, % GDP .....         | 3.4         | 16 ●      |

|                                                                |      |       |
|----------------------------------------------------------------|------|-------|
| 4.2 Investment .....                                           | 21.9 | 135 ○ |
| 4.2.1 Ease of protecting investors*.....                       | 46.7 | 102   |
| 4.2.2 Market capitalization, % GDP.....                        | 21.1 | 68    |
| 4.2.3 Total value of stocks traded, % GDP.....                 | 2.2  | 59    |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....                  | 0.0  | 60 ○  |
| 4.3 Trade & competition .....                                  | 74.5 | 80    |
| 4.3.1 Applied tariff rate, weighted mean, % <sup>Ⓐ</sup> ..... | 5.7  | 88    |
| 4.3.2 Intensity of local competition <sup>†</sup> .....        | 68.7 | 63    |

|                                                                     |             |           |
|---------------------------------------------------------------------|-------------|-----------|
| <b>5 Business sophistication .....</b>                              | <b>40.5</b> | <b>40</b> |
| 5.1 Knowledge workers.....                                          | 27.8        | 98        |
| 5.1.1 Knowledge-intensive employment, %.....                        | 10.0        | 101 ○     |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....    | 43.5        | 38        |
| 5.1.3 GERD performed by business, % of GDP <sup>Ⓐ</sup> .....       | 0.0         | 71        |
| 5.1.4 GERD financed by business, % <sup>Ⓐ</sup> .....               | 28.4        | 53        |
| 5.1.5 Females employed w/advanced degrees, % total.....             | 6.2         | 73 ○      |
| 5.2 Innovation linkages .....                                       | 21.0        | 120 ○     |
| 5.2.1 University/industry research collaboration <sup>†</sup> ..... | 37.8        | 89        |
| 5.2.2 State of cluster development <sup>†</sup> .....               | 46.0        | 72        |
| 5.2.3 GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 4.0         | 71        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0         | 67        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP .....                 | 0.0         | 96 ○      |
| 5.3 Knowledge absorption.....                                       | 72.7        | 1         |
| 5.3.1 Royalty & license fees payments, % total trade.....           | n/a         | n/a       |
| 5.3.2 High-tech imports less re-imports, % total trade.....         | 22.0        | 4 ●       |
| 5.3.3 Comm., computer & info. services imp., % total trade.....     | n/a         | n/a       |
| 5.3.4 FDI net inflows, % GDP.....                                   | 5.2         | 32 ●      |

|                                                                   |             |             |
|-------------------------------------------------------------------|-------------|-------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                 | <b>39.0</b> | <b>28 ●</b> |
| 6.1 Knowledge creation.....                                       | 6.7         | 89          |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP .....             | 0.9         | 65          |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP .....                  | 0.0         | 94 ○        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP .....           | 0.5         | 37          |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP .....          | 4.7         | 99          |
| 6.1.5 Citable documents H index.....                              | 122.0       | 58          |
| 6.2 Knowledge impact.....                                         | 48.3        | 25 ●        |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                     | 3.8         | 17 ●        |
| 6.2.2 New businesses/th pop. 15–64.....                           | n/a         | n/a         |
| 6.2.3 Computer software spending, % GDP.....                      | 0.3         | 31          |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP .....            | 12.0        | 33 ●        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> ..... | 26.2        | 44          |
| 6.3 Knowledge diffusion.....                                      | 62.1        | 7           |
| 6.3.1 Royalty & license fees receipts, % total trade.....         | n/a         | n/a         |
| 6.3.2 High-tech exports less re-exports, % total trade .....      | 23.6        | 1 ●         |
| 6.3.3 Comm., computer & info. services exp., % total trade.....   | n/a         | n/a         |
| 6.3.4 FDI net outflows, % GDP .....                               | 1.1         | 50          |

|                                                                       |             |           |
|-----------------------------------------------------------------------|-------------|-----------|
| <b>7 Creative outputs .....</b>                                       | <b>34.3</b> | <b>62</b> |
| 7.1 Intangible assets .....                                           | 44.4        | 74        |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP .....                   | 76.3        | 22 ●      |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP .....                | 0.1         | 53        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 59.4        | 52        |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 52.2        | 69        |
| 7.2 Creative goods & services.....                                    | 29.1        | 40        |
| 7.2.1 Cultural & creative services exports, % total trade.....        | n/a         | n/a       |
| 7.2.2 National feature films/mn pop. 15–69.....                       | 1.3         | 68        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | 0.2         | 57 ○      |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 1.3         | 59        |
| 7.2.5 Creative goods exports, % total trade.....                      | 5.0         | 9 ●       |
| 7.3 Online creativity.....                                            | 19.3        | 67        |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 2.9         | 74        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 3.5         | 61        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 267.7       | 101       |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | 68.9        | 57        |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Yemen

## Key indicators

|                             |                                  |
|-----------------------------|----------------------------------|
| Population (millions) ..... | 25.0                             |
| GDP (US\$ billions) .....   | 43.2                             |
| GDP per capita, PPP\$ ..... | 2,399.1                          |
| Income group .....          | Lower-middle income              |
| Region .....                | Northern Africa and Western Asia |

|                                                  | Score 0–100<br>or value (hard data) | Rank         |
|--------------------------------------------------|-------------------------------------|--------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>20.8</b>                         | <b>137</b> ○ |
| Innovation Output Sub-Index .....                | 16.4                                | 131          |
| Innovation Input Sub-Index .....                 | 25.2                                | 138 ○        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 97 ●         |
| Global Innovation Index 2014 (out of 143) .....  | 19.5                                | 141          |

|                                                       |             |              |
|-------------------------------------------------------|-------------|--------------|
| <b>1 Institutions.....</b>                            | <b>34.9</b> | <b>136</b> ○ |
| 1.1 Political environment.....                        | 7.5         | 140 ○        |
| 1.1.1 Political stability*.....                       | 6.1         | 140 ○        |
| 1.1.2 Government effectiveness*.....                  | 8.9         | 136 ○        |
| 1.2 Regulatory environment .....                      | 42.0        | 127          |
| 1.2.1 Regulatory quality*.....                        | 28.2        | 120          |
| 1.2.2 Rule of law*.....                               | 16.8        | 132          |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 27.4        | 118          |
| 1.3 Business environment.....                         | 55.2        | 115          |
| 1.3.1 Ease of starting a business*.....               | 74.4        | 113          |
| 1.3.2 Ease of resolving insolvency*.....              | 27.5        | 129          |
| 1.3.3 Ease of paying taxes*.....                      | 63.6        | 103 ●        |

|                                                          |             |            |
|----------------------------------------------------------|-------------|------------|
| <b>2 Human capital &amp; research.....</b>               | <b>14.5</b> | <b>127</b> |
| 2.1 Education .....                                      | 30.4        | 119        |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> ..... | 4.6         | 70 ●       |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | 12.1        | 92         |
| 2.1.3 School life expectancy, years <sup>Ⓐ</sup> .....   | 9.2         | 120        |
| 2.1.4 PISA scales in reading, maths, & science.....      | n/a         | n/a        |
| 2.1.5 Pupil-teacher ratio, secondary <sup>Ⓐ</sup> .....  | 16.1        | 70 ●       |
| 2.2 Tertiary education.....                              | 13.1        | 117        |
| 2.2.1 Tertiary enrolment, % gross <sup>Ⓐ</sup> .....     | 10.3        | 110        |
| 2.2.2 Graduates in science & engineering, % .....        | n/a         | n/a        |
| 2.2.3 Tertiary inbound mobility, % <sup>Ⓐ</sup> .....    | 4.3         | 41 ●       |
| 2.3 Research & development (R&D).....                    | 0.0         | 128 ○      |
| 2.3.1 Researchers, FTE/mn pop. ....                      | n/a         | n/a        |
| 2.3.2 Gross expenditure on R&D, % GDP.....               | n/a         | n/a        |
| 2.3.3 QS university ranking, average score top 3*.....   | 0.0         | 73 ○       |

|                                                              |             |            |
|--------------------------------------------------------------|-------------|------------|
| <b>3 Infrastructure.....</b>                                 | <b>19.4</b> | <b>134</b> |
| 3.1 Information & communication technologies (ICTs).....     | 23.0        | 117        |
| 3.1.1 ICT access*.....                                       | 26.6        | 123        |
| 3.1.2 ICT use*.....                                          | 7.3         | 115        |
| 3.1.3 Government's online service*.....                      | 30.7        | 101        |
| 3.1.4 E-participation*.....                                  | 27.5        | 108        |
| 3.2 General infrastructure.....                              | 0.8         | 141 ○      |
| 3.2.1 Electricity output, kWh/cap.....                       | 275.8       | 111        |
| 3.2.2 Logistics performance*.....                            | 1.2         | 130 ○      |
| 3.2.3 Gross capital formation, % GDP.....                    | 8.4         | 139 ○      |
| 3.3 Ecological sustainability .....                          | 34.5        | 84 ●       |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 12.3        | 10 ●       |
| 3.3.2 Environmental performance*.....                        | 30.2        | 127        |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 0.0         | 137 ○      |

|                                                     |             |            |
|-----------------------------------------------------|-------------|------------|
| <b>4 Market sophistication .....</b>                | <b>35.3</b> | <b>133</b> |
| 4.1 Credit.....                                     | 0.3         | 141 ○      |
| 4.1.1 Ease of getting credit*.....                  | 0.0         | 140 ○      |
| 4.1.2 Domestic credit to private sector, % GDP..... | 6.3         | 138 ○      |
| 4.1.3 Microfinance gross loans, % GDP.....          | 0.0         | 77         |

|                                                         |      |      |
|---------------------------------------------------------|------|------|
| 4.2 Investment .....                                    | 39.2 | 52   |
| 4.2.1 Ease of protecting investors*.....                | 39.2 | 129  |
| 4.2.2 Market capitalization, % GDP.....                 | n/a  | n/a  |
| 4.2.3 Total value of stocks traded, % GDP.....          | n/a  | n/a  |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....           | n/a  | n/a  |
| 4.3 Trade & competition .....                           | 66.3 | 109  |
| 4.3.1 Applied tariff rate, weighted mean, %.....        | 6.2  | 92 ● |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 54.5 | 119  |

|                                                                               |             |            |
|-------------------------------------------------------------------------------|-------------|------------|
| <b>5 Business sophistication .....</b>                                        | <b>21.9</b> | <b>133</b> |
| 5.1 Knowledge workers.....                                                    | 20.2        | 123        |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....                    | 17.0        | 85 ●       |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....              | 12.9        | 102        |
| 5.1.3 GERD performed by business, % of GDP.....                               | n/a         | n/a        |
| 5.1.4 GERD financed by business, % .....                                      | n/a         | n/a        |
| 5.1.5 Females employed w/advanced degrees, % total.....                       | n/a         | n/a        |
| 5.2 Innovation linkages .....                                                 | 30.1        | 80         |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....           | 15.9        | 133 ○      |
| 5.2.2 State of cluster development <sup>†</sup> .....                         | 37.1        | 108        |
| 5.2.3 GERD financed by abroad, % .....                                        | n/a         | n/a        |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                           | n/a         | n/a        |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                            | n/a         | n/a        |
| 5.3 Knowledge absorption.....                                                 | 15.5        | 140 ○      |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.0         | 112        |
| 5.3.2 High-tech imports less re-imports, % total trade.....                   | 3.2         | 120        |
| 5.3.3 Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.3         | 113        |
| 5.3.4 FDI net inflows, % GDP.....                                             | -0.4        | 129        |

|                                                                         |             |            |
|-------------------------------------------------------------------------|-------------|------------|
| <b>6 Knowledge &amp; technology outputs .....</b>                       | <b>18.3</b> | <b>112</b> |
| 6.1 Knowledge creation.....                                             | 2.9         | 125        |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                    | 0.4         | 77 ●       |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP.....                         | n/a         | n/a        |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                  | n/a         | n/a        |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                 | 2.0         | 128        |
| 6.1.5 Citable documents H index.....                                    | 42.0        | 125        |
| 6.2 Knowledge impact.....                                               | 33.3        | 93 ●       |
| 6.2.1 Growth rate of PPP\$ GDP/worker, % .....                          | 2.0         | 45 ●       |
| 6.2.2 New businesses/th pop. 15–64.....                                 | n/a         | n/a        |
| 6.2.3 Computer software spending, % GDP.....                            | n/a         | n/a        |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                   | 0.4         | 129        |
| 6.2.5 High- & medium-high-tech manufactures, % <sup>Ⓐ</sup> .....       | 1.9         | 96         |
| 6.3 Knowledge diffusion.....                                            | 18.7        | 115        |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> ..... | 0.4         | 25 ●       |
| 6.3.2 High-tech exports less re-exports, % total trade .....            | 0.0         | 121        |
| 6.3.3 Comm., computer & info. services exp., % total trade.....         | n/a         | n/a        |
| 6.3.4 FDI net outflows, % GDP.....                                      | n/a         | n/a        |

|                                                                       |             |            |
|-----------------------------------------------------------------------|-------------|------------|
| <b>7 Creative outputs .....</b>                                       | <b>14.5</b> | <b>134</b> |
| 7.1 Intangible assets .....                                           | 23.2        | 134 ○      |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....                    | 18.3        | 86         |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....                 | n/a         | n/a        |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....               | 28.5        | 133 ○      |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....         | 32.1        | 128        |
| 7.2 Creative goods & services.....                                    | 2.1         | 125        |
| 7.2.1 Cultural & creative services exports, % total trade.....        | n/a         | n/a        |
| 7.2.2 National feature films/mn pop. 15–69.....                       | n/a         | n/a        |
| 7.2.3 Global ent. & media output/th pop. 15–69.....                   | n/a         | n/a        |
| 7.2.4 Printing & publishing output manufactures, % <sup>Ⓐ</sup> ..... | 0.4         | 94         |
| 7.2.5 Creative goods exports, % total trade.....                      | 0.0         | 122        |
| 7.3 Online creativity.....                                            | 9.5         | 80 ●       |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....             | 0.5         | 118        |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                            | 0.0         | 131        |
| 7.3.3 Wikipedia edits/pop. 15–69.....                                 | 117.5       | 112        |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                        | 36.5        | 70         |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.



**Key indicators**

|                             |                     |
|-----------------------------|---------------------|
| Population (millions) ..... | 15.0                |
| GDP (US\$ billions) .....   | 26.8                |
| GDP per capita, PPP\$ ..... | 1,849.7             |
| Income group .....          | Lower-middle income |
| Region .....                | Sub-Saharan Africa  |

|                                                   | Score 0–100<br>or value (hard data) | Rank       |
|---------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141) .....</b> | <b>24.6</b>                         | <b>124</b> |
| Innovation Output Sub-Index .....                 | 20.0                                | 115        |
| Innovation Input Sub-Index .....                  | 29.3                                | 130        |
| Innovation Efficiency Ratio .....                 | 0.7                                 | 81         |
| Global Innovation Index 2014 (out of 143) .....   | 25.8                                | 121        |

|          |                                                         |             |              |
|----------|---------------------------------------------------------|-------------|--------------|
| <b>1</b> | <b>Institutions .....</b>                               | <b>48.8</b> | <b>107</b>   |
| 1.1      | Political environment .....                             | 51.2        | 68           |
| 1.1.1    | Political stability* .....                              | 73.8        | 49 ●         |
| 1.1.2    | Government effectiveness* .....                         | 28.5        | 96           |
| 1.2      | Regulatory environment .....                            | 26.6        | 136 ○        |
| 1.2.1    | Regulatory quality* .....                               | 35.4        | 106          |
| 1.2.2    | Rule of law* .....                                      | 39.5        | 78           |
| 1.2.3    | Cost of redundancy dismissal, salary weeks .....        | 50.5        | 136 ○        |
| 1.3      | Business environment .....                              | 68.7        | 72           |
| 1.3.1    | Ease of starting a business* .....                      | 88.6        | 58 ●         |
| 1.3.2    | Ease of resolving insolvency* .....                     | 43.0        | 89           |
| 1.3.3    | Ease of paying taxes* .....                             | 74.5        | 61 ●         |
| <b>2</b> | <b>Human capital &amp; research .....</b>               | <b>6.3</b>  | <b>141</b> ○ |
| 2.1      | Education .....                                         | 9.9         | 141 ○        |
| 2.1.1    | Expenditure on education, % GDP <sup>Ⓐ</sup> .....      | 1.3         | 128 ○        |
| 2.1.2    | Gov't expenditure/pupil, secondary, % GDP/cap .....     | n/a         | n/a          |
| 2.1.3    | School life expectancy, years .....                     | n/a         | n/a          |
| 2.1.4    | PISA scales in reading, maths, & science .....          | n/a         | n/a          |
| 2.1.5    | Pupil-teacher ratio, secondary .....                    | n/a         | n/a          |
| 2.2      | Tertiary education .....                                | n/a         | n/a          |
| 2.2.1    | Tertiary enrolment, % gross .....                       | n/a         | n/a          |
| 2.2.2    | Graduates in science & engineering, % .....             | n/a         | n/a          |
| 2.2.3    | Tertiary inbound mobility, % .....                      | n/a         | n/a          |
| 2.3      | Research & development (R&D) .....                      | 2.8         | 97           |
| 2.3.1    | Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....             | 43.0        | 93           |
| 2.3.2    | Gross expenditure on R&D, % GDP <sup>Ⓐ</sup> .....      | 0.3         | 75           |
| 2.3.3    | QS university ranking, average score top 3* .....       | 0.0         | 73 ○         |
| <b>3</b> | <b>Infrastructure .....</b>                             | <b>23.6</b> | <b>121</b>   |
| 3.1      | Information & communication technologies (ICTs) .....   | 16.0        | 133 ○        |
| 3.1.1    | ICT access* .....                                       | 26.8        | 122          |
| 3.1.2    | ICT use* .....                                          | 5.4         | 121          |
| 3.1.3    | Government's online service* .....                      | 14.2        | 130 ○        |
| 3.1.4    | E-participation* .....                                  | 17.6        | 124          |
| 3.2      | General infrastructure .....                            | 30.6        | 69           |
| 3.2.1    | Electricity output, kWh/cap .....                       | 841.6       | 95           |
| 3.2.2    | Logistics performance* .....                            | 15.4        | 113          |
| 3.2.3    | Gross capital formation, % GDP .....                    | 31.9        | 17 ●         |
| 3.3      | Ecological sustainability .....                         | 24.2        | 122          |
| 3.3.1    | GDP/unit of energy use, 2005 PPP\$/kg oil eq .....      | 4.1         | 107          |
| 3.3.2    | Environmental performance* .....                        | 41.7        | 103          |
| 3.3.3    | ISO 14001 environmental certificates/bn PPP\$ GDP ..... | 0.4         | 94           |
| <b>4</b> | <b>Market sophistication .....</b>                      | <b>45.0</b> | <b>83</b>    |
| 4.1      | Credit .....                                            | 24.7        | 89           |
| 4.1.1    | Ease of getting credit* .....                           | 70.0        | 22 ●         |
| 4.1.2    | Domestic credit to private sector, % GDP .....          | 16.5        | 124          |
| 4.1.3    | Microfinance gross loans, % GDP .....                   | 0.0         | 84 ○         |

|       |                                                   |      |      |
|-------|---------------------------------------------------|------|------|
| 4.2   | Investment .....                                  | 29.1 | 102  |
| 4.2.1 | Ease of protecting investors* .....               | 54.2 | 75   |
| 4.2.2 | Market capitalization, % GDP .....                | 12.0 | 84   |
| 4.2.3 | Total value of stocks traded, % GDP .....         | 0.8  | 71   |
| 4.2.4 | Venture capital deals/tr PPP\$ GDP .....          | n/a  | n/a  |
| 4.3   | Trade & competition .....                         | 81.1 | 47 ● |
| 4.3.1 | Applied tariff rate, weighted mean, % .....       | 4.1  | 67   |
| 4.3.2 | Intensity of local competition <sup>†</sup> ..... | 76.6 | 23 ● |

**5 Business sophistication .....** **22.6** **129**

|       |                                                         |      |       |
|-------|---------------------------------------------------------|------|-------|
| 5.1   | Knowledge workers .....                                 | 15.4 | 130 ○ |
| 5.1.1 | Knowledge-intensive employment, % <sup>Ⓐ</sup> .....    | 7.3  | 105   |
| 5.1.2 | Firms offering formal training, % firms .....           | 28.2 | 69    |
| 5.1.3 | GERD performed by business, % of GDP <sup>Ⓐ</sup> ..... | 0.0  | 83 ○  |
| 5.1.4 | GERD financed by business, % <sup>Ⓐ</sup> .....         | 3.2  | 80    |
| 5.1.5 | Females employed w/advanced degrees, % total .....      | n/a  | n/a   |

**5.2 Innovation linkages .....** **31.0** **72**

|       |                                                               |      |      |
|-------|---------------------------------------------------------------|------|------|
| 5.2.1 | University/industry research collaboration <sup>†</sup> ..... | 41.4 | 73   |
| 5.2.2 | State of cluster development <sup>†</sup> .....               | 51.9 | 43 ● |
| 5.2.3 | GERD financed by abroad, % <sup>Ⓐ</sup> .....                 | 1.6  | 83   |
| 5.2.4 | JV-strategic alliance deals/tr PPP\$ GDP .....                | 0.0  | 22 ● |
| 5.2.5 | Patent families 3+ offices/bn PPP\$ GDP .....                 | n/a  | n/a  |

**5.3 Knowledge absorption .....** **21.3** **133** ○

|       |                                                                         |     |       |
|-------|-------------------------------------------------------------------------|-----|-------|
| 5.3.1 | Royalty & license fees payments, % total trade <sup>Ⓐ</sup> .....       | 0.0 | 121 ○ |
| 5.3.2 | High-tech imports less re-imports, % total trade .....                  | 4.5 | 106   |
| 5.3.3 | Comm., computer & info. services imp., % total trade <sup>Ⓐ</sup> ..... | 0.2 | 117 ○ |
| 5.3.4 | FDI net inflows, % GDP .....                                            | 8.1 | 15 ●  |

**6 Knowledge & technology outputs .....** **21.6** **98**

|       |                                                              |      |     |
|-------|--------------------------------------------------------------|------|-----|
| 6.1   | Knowledge creation .....                                     | 4.7  | 107 |
| 6.1.1 | Domestic resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> ..... | 0.1  | 94  |
| 6.1.2 | PCT resident patent app/bn PPP\$ GDP .....                   | n/a  | n/a |
| 6.1.3 | Domestic res utility model app/bn PPP\$ GDP .....            | n/a  | n/a |
| 6.1.4 | Scientific & technical articles/bn PPP\$ GDP .....           | 4.6  | 102 |
| 6.1.5 | Citable documents H index .....                              | 75.0 | 92  |

**6.2 Knowledge impact .....** **38.0** **65**

|       |                                                  |     |      |
|-------|--------------------------------------------------|-----|------|
| 6.2.1 | Growth rate of PPP\$ GDP/worker, % .....         | 2.9 | 32 ● |
| 6.2.2 | New businesses/th pop. 15–64 .....               | 1.4 | 58   |
| 6.2.3 | Computer software spending, % GDP .....          | n/a | n/a  |
| 6.2.4 | ISO 9001 quality certificates/bn PPP\$ GDP ..... | 0.8 | 117  |
| 6.2.5 | High- & medium-high-tech manufactures, % .....   | n/a | n/a  |

**6.3 Knowledge diffusion .....** **22.1** **104**

|       |                                                                         |     |     |
|-------|-------------------------------------------------------------------------|-----|-----|
| 6.3.1 | Royalty & license fees receipts, % total trade .....                    | n/a | n/a |
| 6.3.2 | High-tech exports less re-exports, % total trade .....                  | 0.6 | 73  |
| 6.3.3 | Comm., computer & info. services exp., % total trade <sup>Ⓐ</sup> ..... | 0.4 | 94  |
| 6.3.4 | FDI net outflows, % GDP .....                                           | 0.7 | 60  |

**7 Creative outputs .....** **18.4** **123**

|       |                                                         |      |      |
|-------|---------------------------------------------------------|------|------|
| 7.1   | Intangible assets .....                                 | 35.9 | 111  |
| 7.1.1 | Domestic res trademark app/bn PPP\$ GDP .....           | 7.3  | 98 ○ |
| 7.1.2 | Madrid trademark app. holders/bn PPP\$ GDP .....        | n/a  | n/a  |
| 7.1.3 | ICTs & business model creation <sup>†</sup> .....       | 55.7 | 70   |
| 7.1.4 | ICTs & organizational model creation <sup>†</sup> ..... | 49.2 | 78   |

**7.2 Creative goods & services .....** **1.9** **126**

|       |                                                           |     |     |
|-------|-----------------------------------------------------------|-----|-----|
| 7.2.1 | Cultural & creative services exports, % total trade ..... | n/a | n/a |
| 7.2.2 | National feature films/mn pop. 15–69 .....                | n/a | n/a |
| 7.2.3 | Global ent. & media output/th pop. 15–69 .....            | n/a | n/a |
| 7.2.4 | Printing & publishing output manufactures, % .....        | n/a | n/a |
| 7.2.5 | Creative goods exports, % total trade <sup>Ⓐ</sup> .....  | 0.1 | 101 |

**7.3 Online creativity .....** **0.1** **130**

|       |                                                      |      |       |
|-------|------------------------------------------------------|------|-------|
| 7.3.1 | Generic top-level domains (TLDs)/th pop. 15–69 ..... | 0.1  | 130   |
| 7.3.2 | Country-code TLDs/th pop. 15–69 .....                | 0.0  | 138 ○ |
| 7.3.3 | Wikipedia edits/pop. 15–69 .....                     | 44.3 | 124   |
| 7.3.4 | Video uploads on YouTube/pop. 15–69 .....            | n/a  | n/a   |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

Ⓐ indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

## Zimbabwe

## Key indicators

|                             |                    |
|-----------------------------|--------------------|
| Population (millions) ..... | 14.6               |
| GDP (US\$ billions) .....   | 13.7               |
| GDP per capita, PPP\$ ..... | 824.6              |
| Income group .....          | Low income         |
| Region .....                | Sub-Saharan Africa |

|                                                  | Score 0–100<br>or value (hard data) | Rank       |
|--------------------------------------------------|-------------------------------------|------------|
| <b>Global Innovation Index (out of 141).....</b> | <b>22.5</b>                         | <b>133</b> |
| Innovation Output Sub-Index .....                | 18.4                                | 120        |
| Innovation Input Sub-Index .....                 | 26.6                                | 134        |
| Innovation Efficiency Ratio .....                | 0.7                                 | 77         |
| Global Innovation Index 2014 (out of 143) .....  | 24.3                                | 130        |

**1 Institutions..... 25.9 140 ○**

|                                                       |      |       |
|-------------------------------------------------------|------|-------|
| 1.1 Political environment.....                        | 28.9 | 122   |
| 1.1.1 Political stability*.....                       | 47.1 | 104   |
| 1.1.2 Government effectiveness*.....                  | 10.6 | 135 ○ |
| 1.2 Regulatory environment .....                      | 1.5  | 140 ○ |
| 1.2.1 Regulatory quality*.....                        | 0.0  | 141 ○ |
| 1.2.2 Rule of law*.....                               | 5.9  | 140 ○ |
| 1.2.3 Cost of redundancy dismissal, salary weeks..... | 82.3 | 138 ○ |
| 1.3 Business environment.....                         | 47.4 | 136 ○ |
| 1.3.1 Ease of starting a business*.....               | 51.4 | 138 ○ |
| 1.3.2 Ease of resolving insolvency*.....              | 29.3 | 125   |
| 1.3.3 Ease of paying taxes*.....                      | 61.4 | 109   |

**2 Human capital & research..... 19.0 104**

|                                                          |      |       |
|----------------------------------------------------------|------|-------|
| 2.1 Education .....                                      | 31.9 | 110   |
| 2.1.1 Expenditure on education, % GDP <sup>Ⓐ</sup> ..... | 2.0  | 126 ○ |
| 2.1.2 Gov't expenditure/pupil, secondary, % GDP/cap..... | n/a  | n/a   |
| 2.1.3 School life expectancy, years.....                 | 10.9 | 108   |
| 2.1.4 PISA scales in reading, maths, & science.....      | n/a  | n/a   |
| 2.1.5 Pupil-teacher ratio, secondary .....               | 22.4 | 90    |
| 2.2 Tertiary education.....                              | 24.6 | 87    |
| 2.2.1 Tertiary enrolment, % gross.....                   | 5.8  | 122   |
| 2.2.2 Graduates in science & engineering, % .....        | 23.3 | 33 ●  |
| 2.2.3 Tertiary inbound mobility, %.....                  | 0.4  | 99    |
| 2.3 Research & development (R&D).....                    | 0.5  | 118   |
| 2.3.1 Researchers, FTE/mn pop. <sup>Ⓐ</sup> .....        | 95.1 | 83    |
| 2.3.2 Gross expenditure on R&D, % GDP.....               | n/a  | n/a   |
| 2.3.3 QS university ranking, average score top 3*.....   | 0.0  | 73 ○  |

**3 Infrastructure..... 20.8 129**

|                                                              |       |       |
|--------------------------------------------------------------|-------|-------|
| 3.1 Information & communication technologies (ICTs).....     | 31.6  | 101   |
| 3.1.1 ICT access*.....                                       | 31.2  | 114   |
| 3.1.2 ICT use*.....                                          | 19.2  | 91    |
| 3.1.3 Government's online service*.....                      | 30.7  | 101   |
| 3.1.4 E-participation*.....                                  | 45.1  | 74    |
| 3.2 General infrastructure.....                              | 9.1   | 139 ○ |
| 3.2.1 Electricity output, kWh/cap.....                       | 662.4 | 102   |
| 3.2.2 Logistics performance*.....                            | 9.1   | 121   |
| 3.2.3 Gross capital formation, % GDP.....                    | 13.7  | 134   |
| 3.3 Ecological sustainability .....                          | 21.7  | 131   |
| 3.3.1 GDP/unit of energy use, 2005 PPP\$/kg oil eq.....      | 0.4   | 123 ○ |
| 3.3.2 Environmental performance*.....                        | 49.5  | 84    |
| 3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP..... | 1.2   | 56 ●  |

**4 Market sophistication..... 40.7 109**

|                                                     |      |     |
|-----------------------------------------------------|------|-----|
| 4.1 Credit.....                                     | 20.5 | 114 |
| 4.1.1 Ease of getting credit*.....                  | 40.0 | 93  |
| 4.1.2 Domestic credit to private sector, % GDP..... | n/a  | n/a |
| 4.1.3 Microfinance gross loans, % GDP.....          | 0.1  | 68  |

|                                                |      |      |
|------------------------------------------------|------|------|
| 4.2 Investment .....                           | 36.0 | 64 ● |
| 4.2.1 Ease of protecting investors*.....       | 53.3 | 79   |
| 4.2.2 Market capitalization, % GDP.....        | 94.7 | 16 ● |
| 4.2.3 Total value of stocks traded, % GDP..... | 12.9 | 35 ● |
| 4.2.4 Venture capital deals/tr PPP\$ GDP.....  | 0.0  | 41   |

**4.3 Trade & competition..... 65.6 114**

|                                                         |      |     |
|---------------------------------------------------------|------|-----|
| 4.3.1 Applied tariff rate, weighted mean, %.....        | n/a  | n/a |
| 4.3.2 Intensity of local competition <sup>†</sup> ..... | 65.6 | 74  |

**5 Business sophistication..... 26.7 115**

|                                                                         |      |       |
|-------------------------------------------------------------------------|------|-------|
| 5.1 Knowledge workers.....                                              | 23.4 | 112   |
| 5.1.1 Knowledge-intensive employment, % <sup>Ⓐ</sup> .....              | 6.6  | 108   |
| 5.1.2 Firms offering formal training, % firms <sup>Ⓐ</sup> .....        | 31.2 | 61    |
| 5.1.3 GERD performed by business, % of GDP.....                         | n/a  | n/a   |
| 5.1.4 GERD financed by business, %.....                                 | n/a  | n/a   |
| 5.1.5 Females employed w/advanced degrees, % total.....                 | n/a  | n/a   |
| 5.2 Innovation linkages .....                                           | 24.6 | 104   |
| 5.2.1 University/industry research collaboration <sup>†</sup> .....     | 30.4 | 117   |
| 5.2.2 State of cluster development <sup>†</sup> .....                   | 32.4 | 125   |
| 5.2.3 GERD financed by abroad, %.....                                   | n/a  | n/a   |
| 5.2.4 JV-strategic alliance deals/tr PPP\$ GDP.....                     | 0.0  | 32 ●  |
| 5.2.5 Patent families 3+ offices/bn PPP\$ GDP.....                      | 0.0  | 108 ○ |
| 5.3 Knowledge absorption.....                                           | 32.0 | 76    |
| 5.3.1 Royalty & license fees payments, % total trade <sup>Ⓐ</sup> ..... | 0.3  | 69    |
| 5.3.2 High-tech imports less re-imports, % total trade.....             | 7.9  | 56 ●  |
| 5.3.3 Comm., computer & info. services imp., % total trade.....         | n/a  | n/a   |
| 5.3.4 FDI net inflows, % GDP.....                                       | 3.1  | 62 ●  |

**6 Knowledge & technology outputs..... 12.3 130**

|                                                                         |      |       |
|-------------------------------------------------------------------------|------|-------|
| 6.1 Knowledge creation.....                                             | 9.5  | 74    |
| 6.1.1 Domestic resident patent app/bn PPP\$ GDP.....                    | n/a  | n/a   |
| 6.1.2 PCT resident patent app/bn PPP\$ GDP <sup>Ⓐ</sup> .....           | 0.1  | 62    |
| 6.1.3 Domestic res utility model app/bn PPP\$ GDP.....                  | n/a  | n/a   |
| 6.1.4 Scientific & technical articles/bn PPP\$ GDP.....                 | 13.3 | 57 ●  |
| 6.1.5 Citable documents H index.....                                    | 81.0 | 88    |
| 6.2 Knowledge impact.....                                               | 23.9 | 121   |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %.....                           | -3.4 | 115 ○ |
| 6.2.2 New businesses/th pop. 15–64.....                                 | n/a  | n/a   |
| 6.2.3 Computer software spending, % GDP.....                            | 0.4  | 22 ●  |
| 6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....                   | 4.4  | 68 ●  |
| 6.2.5 High- & medium-high-tech manufactures, %.....                     | n/a  | n/a   |
| 6.3 Knowledge diffusion.....                                            | 3.6  | 133   |
| 6.3.1 Royalty & license fees receipts, % total trade <sup>Ⓐ</sup> ..... | 0.0  | 79    |
| 6.3.2 High-tech exports less re-exports, % total trade.....             | 0.4  | 80    |
| 6.3.3 Comm., computer & info. services exp., % total trade.....         | n/a  | n/a   |
| 6.3.4 FDI net outflows, % GDP.....                                      | n/a  | n/a   |

**7 Creative outputs..... 24.5 103**

|                                                                |      |     |
|----------------------------------------------------------------|------|-----|
| 7.1 Intangible assets .....                                    | 44.0 | 76  |
| 7.1.1 Domestic res trademark app/bn PPP\$ GDP.....             | n/a  | n/a |
| 7.1.2 Madrid trademark app. holders/bn PPP\$ GDP.....          | n/a  | n/a |
| 7.1.3 ICTs & business model creation <sup>†</sup> .....        | 47.1 | 102 |
| 7.1.4 ICTs & organizational model creation <sup>†</sup> .....  | 40.9 | 113 |
| 7.2 Creative goods & services.....                             | 9.6  | 97  |
| 7.2.1 Cultural & creative services exports, % total trade..... | n/a  | n/a |
| 7.2.2 National feature films/mn pop. 15–69.....                | n/a  | n/a |
| 7.2.3 Global ent. & media output/th pop. 15–69.....            | n/a  | n/a |
| 7.2.4 Printing & publishing output manufactures, %.....        | n/a  | n/a |
| 7.2.5 Creative goods exports, % total trade <sup>Ⓐ</sup> ..... | 0.3  | 68  |
| 7.3 Online creativity.....                                     | 0.4  | 120 |
| 7.3.1 Generic top-level domains (TLDs)/th pop. 15–69.....      | 0.5  | 117 |
| 7.3.2 Country-code TLDs/th pop. 15–69.....                     | 0.1  | 125 |
| 7.3.3 Wikipedia edits/pop. 15–69.....                          | 86.2 | 116 |
| 7.3.4 Video uploads on YouTube/pop. 15–69.....                 | n/a  | n/a |

NOTES: ● indicates a strength; ○ a weakness; \* an index; † a survey question.

<sup>Ⓐ</sup> indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.