Patents

Highlights

Patent applications worldwide grew by 5.2% in 2018

Applicants around the world filed 3.3 million patent applications in 2018. This represents a 5.2% increase on the previous year (figure 1.1). Driving such strong growth was an exceptional number of filings in China, which received about 160,400 more filings in 2018 than it had in 2017. The next largest contributors were the European Patent Office (EPO) (7,812 additional filings) and the offices of the Republic of Korea (5,217) and India (3,473).

The long-term trend shows patent applications growing worldwide every year since 2004, with the sole exception of 2009 when they decreased by 3.8% due to the financial crisis.

Of the 3.3 million applications filed worldwide in 2018, resident applicants filed 2.4 million (71.5% of the total), while non-resident applicant filed the remaining 0.9 million (28.5%). Resident share increased from 61.6% in 2004 to 71.5% in 2018. In addition, the proportion of resident versus non-resident filings varies greatly across offices. For example, more than half of all applications filed in the United States of America (U.S.) were non-resident applications, whereas non-resident share was less than a one-tenth of all applications filed in China.

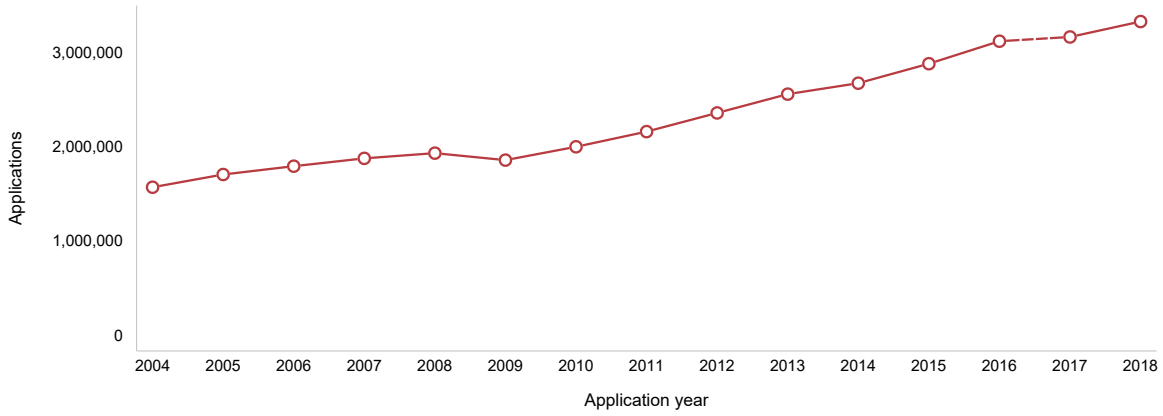
China received 1.5 million patent applications

The National Intellectual Property Administration of the People's Republic of China received 1.5 million patent applications in 2018, an amount similar in magnitude to the combined total of the offices ranked from 2 to 11. The United States Patent and Trademark Office (USPTO) ranked second, with 597,141 applications. It was followed by the Japan Patent Office (JPO), with 313,567 applications, the Korean Intellectual Property Office (KIPO), with 209,992 applications, and the EPO, with 174,397 applications. Together, the top five offices accounted for 85.3% of the world total in 2018, which is 10 percentage points higher than their combined 2008 share. China's share of the world total increased from 15% in 2008 to 46.4% in 2018, whereas that of the other four offices declined over the same period.

The composition and the ranking of the top 10 offices have both remained relatively stable since 2008. The composition of the top 10 offices has remained the same, except that in some years Australia has been among the top 10 offices, while in others it has lost its place in the list to Brazil. In addition, China moved up from third position in 2008 to take the top spot in 2011 and has continued to head the ranking for the past eight years. Figure 1.2 shows the patent applications received by the top 10 offices, broken down by resident and non-resident filings. The intellectual property (IP) offices of China (90.4%), Germany (68.7%), Japan (80.9%), the Republic of Korea (77.4%) and the Russian Federation (65.7%) received the bulk of their applications from resident applicants. In contrast, Australia (90.8%), Canada (88%) and India (67.5%) reported a high share of non-resident filings.

Patent applications filed worldwide reached 3.3 million

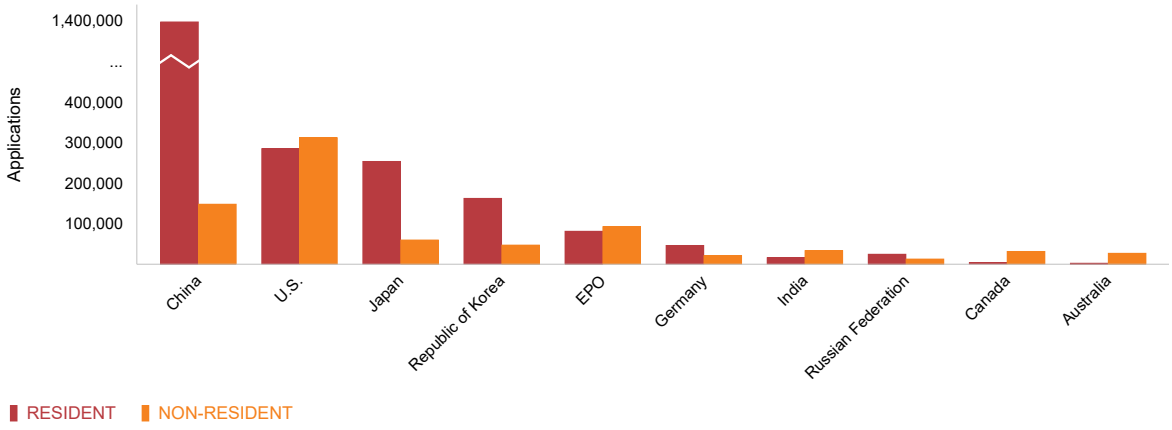
1.1. Patent applications worldwide, 2004–2018



Source: Figure A1.

China received 46.4% of all patent applications filed worldwide

1.2. Patent applications at the top 10 offices, 2018



Source: Figure A8.

Among the top five offices, China (+11.6%), the EPO (+4.7%) and the Republic of Korea (+2.5%) recorded growth in applications in 2018; in contrast, both Japan (–1.5%) and the U.S. (–1.6%) saw small declines.

The long-term trend shows that the office of China has recorded year-on-year growth for the past 23 years. The EPO saw a second consecutive year of growth in 2018, while the Republic of Korea's office returned to growth following two years of decline in applications. The patent office of Japan has experienced either a fall in applications or negligible growth since 2005, mainly as a result of a persistent fall in resident applications. The U.S. office saw its first decline in applications for nine years in 2018.

Among the top 20 offices, 13 had a greater number of patent applications in 2018 than in 2017 (figure A9). The largest increases were in China, Hong Kong SAR (+20.2%), China (+11.6%), Singapore (+8.4%) and India (+7.5%). The increases in number of applications filed at three of these four offices were driven primarily by growth in non-resident applications. The exception was China, where a strong growth in resident applications was the main driver of total growth.

Of the seven offices among the top 20 to have received fewer applications in 2018 than in 2017, the Islamic Republic of Iran (–21.1%) reported the steepest decline, due mainly to a fall in resident applications. The United Kingdom (U.K.) (–5.1%), Mexico (–4.4%) and Brazil (–3.1%) likewise recorded considerable annual drops. Applications in Brazil fell for a fifth consecutive year, while Mexico reported a third successive year of declining numbers of applications.

Looking outside the top 20 offices to selected offices of low- and middle-income countries shows that Pakistan (+27.8%), Philippines (+26.7%), Uzbekistan (+17.5%), Morocco (+14.1%) and Vietnam (+12.8%) recorded particularly rapid growth in 2018. An increase in non-resident applications was the main driver of total growth in Morocco, the Philippines and Vietnam, whereas resident applications were the primary driver in Pakistan and Uzbekistan (figure A11). The three regional offices – the African Intellectual Property Organization (OAPI), the African Regional Intellectual Property Organization (ARIPO) and the Eurasian Patent Organization (EAPO) – likewise reported strong growth in applications in 2018. Among the three, ARIPO (+11.2%) had the largest increase, followed by OAPI (+6.2%) and EAPO (+5.6%). At most of the offices of low- and middle-income countries, the bulk of applications are filed by non-resident applicants. As a result, overall increases or decreases in applications received by these offices are determined mainly by the filing behavior of non-resident applicants.

Offices located in Asia received two-thirds of all applications filed worldwide in 2018

Of the top 20 offices, nine were located in Asia, six in Europe, two each in North America and Latin America and the Caribbean (LAC), and one in Oceania. South Africa is the highest ranked African office, in 24th place. Offices located in Asia received over 2.2 million applications in 2018, representing 66.8% of the world total (figure 1.3). The combined total of Europe and North America was just below the 1 million mark. Asia's share of all applications filed worldwide increased from 50.8% in 2008 to 66.8% in 2018. This was primarily driven by strong growth in filings in China, which accounted for close to 70% of all applications filed in the region. Offices in North America accounted for just under one-fifth of the 2018 world total, while those in Europe accounted for just over one-tenth. The combined share for Africa, LAC and Oceania was 3.3%. The shares of all the world's regions except Asia have gradually declined over the past decade due to the rapid growth in applications filed in China.

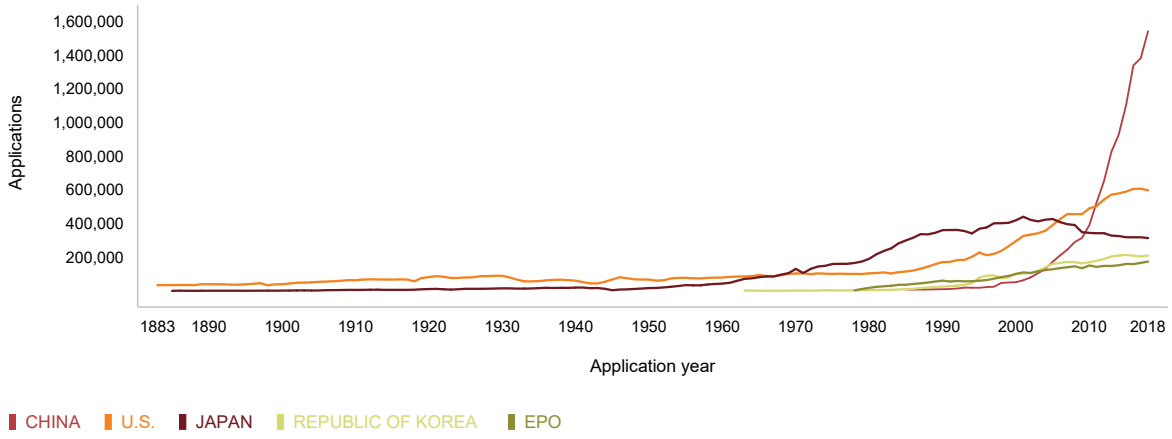
Included among the top 20 list were 12 offices located in high-income, six in upper middle-income and two in lower middle-income countries.

The distribution of applications by income group shows that – for the first time – offices of upper middle-income countries received more than half of all applications filed worldwide in 2018, while offices of high-income countries accounted for 46.8% of the total (table A5). Over the past 15 years there has been a sizeable shift in the distribution of applications toward the upper middle-income group, which is largely explained by the strong growth in filings in China and a decline in Japan. The share for offices of upper middle-income countries rose from 22.6% in 2008 to 50.6% in 2018; however, excluding China from the upper middle-income group shows the share of this income group to have remained stable at around 8% over the 2008–2018 period.

Patent filings since 1883

From 1883 to 1963, the patent office of the U.S. was the leading office for world filings. Application numbers in Japan and the U.S. were stable until the early 1970s, when Japan began to see rapid growth – a pattern also observed for the U.S. from the 1980s onward. Among the top five offices, Japan surpassed the U.S. in 1968 and maintained the top position until 2005. Since the early 2000s, however, the number of applications filed in Japan has followed a downward trend. Both the EPO and the Republic of Korea have seen increases each year since the early 1980s, as has China since 1995. China surpassed the EPO and the Republic of Korea in 2005, Japan in 2010 and the U.S. in 2011 – and it now receives the largest number of applications worldwide. There has been a gradual upward trend in the combined share of the top five offices in the world total – from 75.3% in 2008 to 85.3% in 2018.

Trend in patent applications for the top five offices, 1883–2018

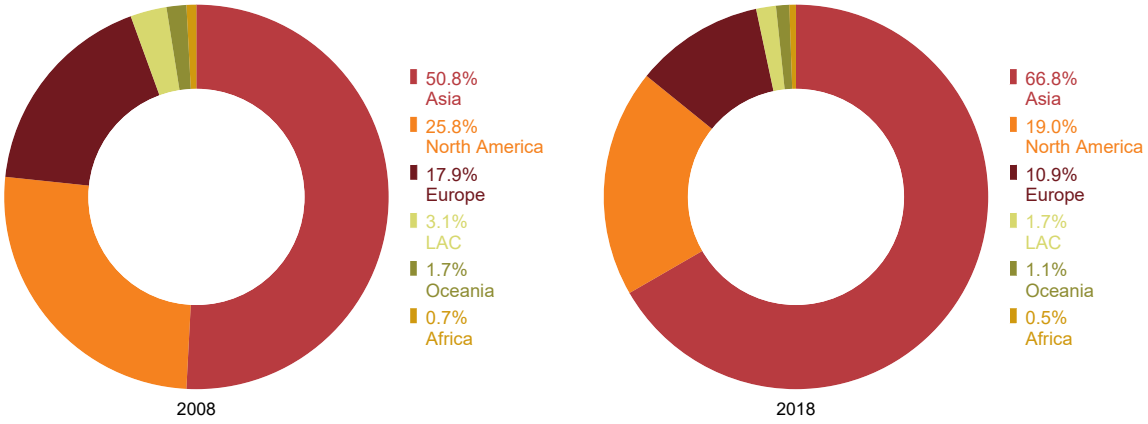


Note: The IP office of the Soviet Union, not represented in this figure, was the leading office in the world in terms of filings from 1964 to 1969. Like Japan and the U.S., the office of the Soviet Union saw stable application numbers until the early 1960s, after which it recorded rapid growth in the number of applications filed.

Source: Figure A7.

Offices located in Asia received 66.8% of all patent applications filed worldwide

1.3. Patent applications by region, 2008 and 2018



Source: Table A6.

Equivalent application count

Applications at regional IP offices are equivalent to multiple applications in the countries that are members of the organizations establishing those offices. In particular, to calculate the number of equivalent applications for the African Intellectual Property Organization (OAPI), the Eurasian Patent Organization (EAPO) and the Patent Office of the Cooperation Council for the Arab States of the Gulf (GCC Patent Office), each application is multiplied by the corresponding number of member states. For African Regional Intellectual Property Organization (ARIPO) and the European Patent Office (EPO) data, each application is counted as one application abroad if the applicant does not reside in a member state or as one resident application and one application abroad if the applicant resides in a member state. The equivalent application concept is used for reporting data by origin.

U.S. applicants filed around 230,000 patent applications abroad

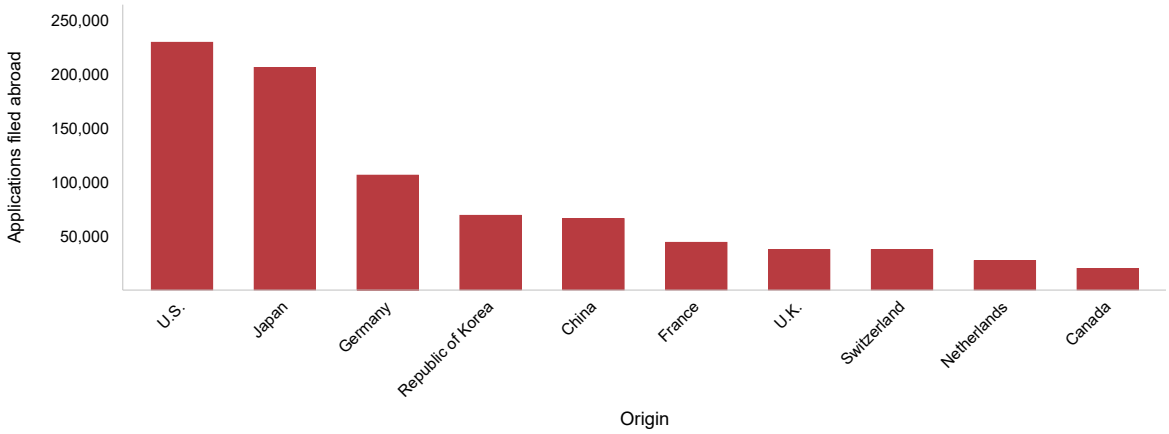
Applications received by offices from resident and non-resident applicants are referred to as office data, whereas applications filed by applicants at a national/regional office (resident applications) or at foreign offices (applications abroad) are referred to as origin data. Here, patent statistics based on the origin of residence of the first named applicant are reported in order to complement the picture of patent activity worldwide.

Applicants from China filed around 1.46 million equivalent patent applications in 2018, followed by the U.S. (515,180), Japan (460,369), the Republic of Korea (232,020) and Germany (180,086) (figure A18). However, the distribution between resident and abroad filings differs considerably. For example, only 4.5% of all applications from China are filed abroad. In contrast, abroad filings constitute 59.3% of total applications from Germany. Among the top 20 origins, applications filed abroad made up more than 80% of the totals for Canada (82.2%), Israel (90.3%) and Switzerland (80.3%), whereas less than a fifth of total applications originating from China (4.5%), the Islamic Republic of Iran (1.4%) and the Russian Federation (17.5%) were filed abroad.

U.S. applicants filed the largest number of equivalent applications abroad (230,085) in 2018, followed by Japan (206,739), Germany (106,753), the Republic of Korea (69,459) and China (66,429) (figure 1.4). Filing abroad for Canada, France, the Netherlands, the U.K. and Switzerland ranged from around 20,000 to 44,000. Among the 10 origins reported in figure 1.4, China (+21.2%), the Republic of Korea (+4.1%), the U.K. (+2.4%) and Switzerland (+2.4%) saw a strong average annual growth in applications abroad between 2008 and 2018. For all other origins, except the Netherlands, growth ranged from 1.1% to 1.5% over the same period.

U.S. applicants filed the largest number of applications abroad

1.4. Patent applications filed abroad by the top 10 origins, 2018



Source: Figure A18.

The flow of non-resident applications between origins and offices shows U.S. applicants accounting for a high proportion of non-resident filings in Australia (49.2%), Canada (51.8%), the EPO (47.1%) and Mexico (48.2%). Applicants residing in Japan accounted for at least a third of all non-resident applications filed in Germany (37.7%), Thailand (42.2%) and the Republic of Korea (32.9%) (table A19).

The Republic of Korea continues to file the highest number of patents per unit of GDP

Variations in patenting activity across countries reflect differences in their size and the structure of their economies. It is therefore informative to examine resident patent activity with regard to population, research and development spending, gross domestic product (GDP) and other variables.

With 8,561 resident patent applications per unit of USD 100 billion GDP, the Republic of Korea continued to file the greatest number of patent applications (figure 1.5). China (6,183) had the second highest ratio in 2018, followed by Japan (5,101), Germany (1,924) and Switzerland (1,831). However, over the past 11 years, the gap between the Republic of Korea and China has narrowed considerably, reflecting the strong growth in resident applications in China, with resident applications per unit of GDP increasing from 1,854 in 2008 to 6,183 in 2018. In contrast, the Republic of Korea's ratio fell from 9,064 in 2008 to 8,651 in 2018. Similarly, third-ranked Japan has seen its ratio fall from 7,105 to 5,101 over the same period.

A number of countries with a low number of resident patent applications, such as Denmark, Finland and New Zealand, rank among the top 20 origins when resident patent applications are adjusted by GDP (figure A37). The list of top 20 origins is predominantly comprised of high-income countries; however, three middle-income countries – China, the Russian Federation and Ukraine – also feature. Among large middle-income origins, Turkey's resident patent application to GDP ratio (371) is far higher than that of India (175), Brazil (166), Malaysia (126) and South Africa (94). India moved above Brazil in ranking in 2018, due to a rise in resident applications, whereas contrariwise, Brazil experienced a decline in resident applications.

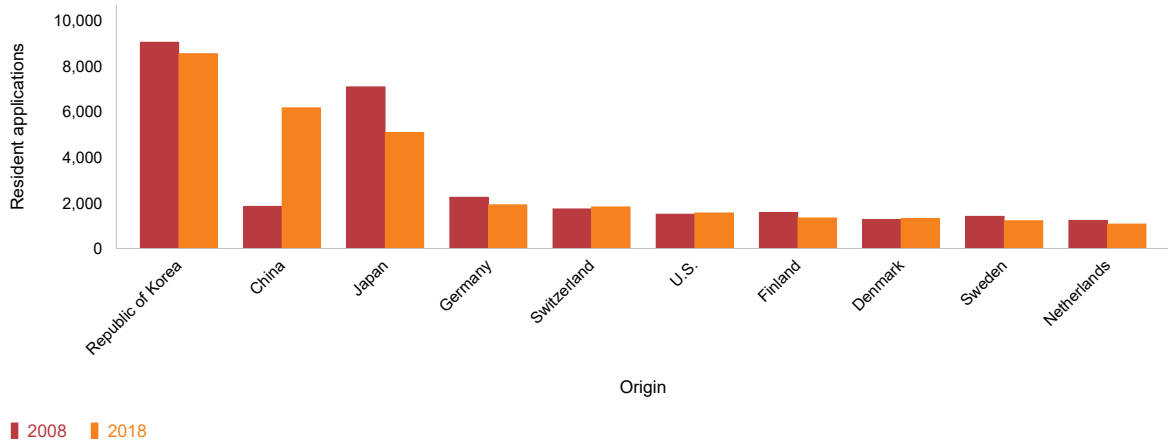
The profile of resident applications per million population is similar to that adjusted by GDP, but shows some subtle differences. The list of top 10 origins for resident applications per GDP and population is the same, albeit with a different ranking. The Republic of Korea retains its lead when resident applications are expressed per population, Japan ranks second and Switzerland third, ahead of China and Germany (figure A38).

A second consecutive year of double-digit growth for filings for unique inventions

Patent applicants traditionally file at their national offices and then subsequently abroad. This means that some inventions are recorded more than once. To take this into account, WIPO has developed indicators for patent families, and the trend in patent families mirrors that for patent applications.

The Republic of Korea had the highest number of patent applications per unit of GDP

1.5 Resident patent applications per USD 100 billion GDP for the top 10 origins, 2008 and 2018



Source: Figure A37.

Patent families worldwide grew by 12.1% in 2016, following a 10.1% growth in 2015. The total number of patent families worldwide amounted to 1.8 million in 2016, which is more than double the number reported in 2002 (figure 1.6). Applicants from China accounted for close to three-fifths of all patent families (58.2%) in 2016, followed by Japan (13%), the U.S. (9%) and the Republic of Korea (7.7%). However, for foreign-oriented patent families, the U.S. (147,964) and Japan (144,114) created by far the largest number of such families for the period 2014–2015 (figure A26), and far above that of China (40,303).

The size of a patent family (i.e., the number of offices where a patent is filed) reflects its geographical coverage. Around 83% of patent families created worldwide between 2014 and 2016 were filed at a single office (figure A24). There is considerable variation among top origins, however. For example, more than 63% of total patent families originating from the Netherlands, Sweden and Switzerland cover two or more offices, whereas only around 2% of all families for China and the Russian Federation cover two or more offices.

Patent families

A patent family is a set of interrelated patent applications filed in one or more offices to protect the same invention. The patent applications in a family are interlinked by one or more of the following: priority claim, Patent Cooperation Treaty (PCT) national phase entry, continuation, continuation-in-part, internal priority and addition or division. A special subset comprises foreign-oriented patent families – that is, those patent families that have at least one filing office which differs from the office of the applicant's country of origin. Some foreign-related patent families include only one filing office because applicants may choose to file only with a foreign office. For example, if a Canadian applicant files a patent application directly with the United States Patent and Trademark Office (USPTO) without having previously filed with the patent office of Canada, that patent family will constitute a foreign-oriented patent family with just one office.

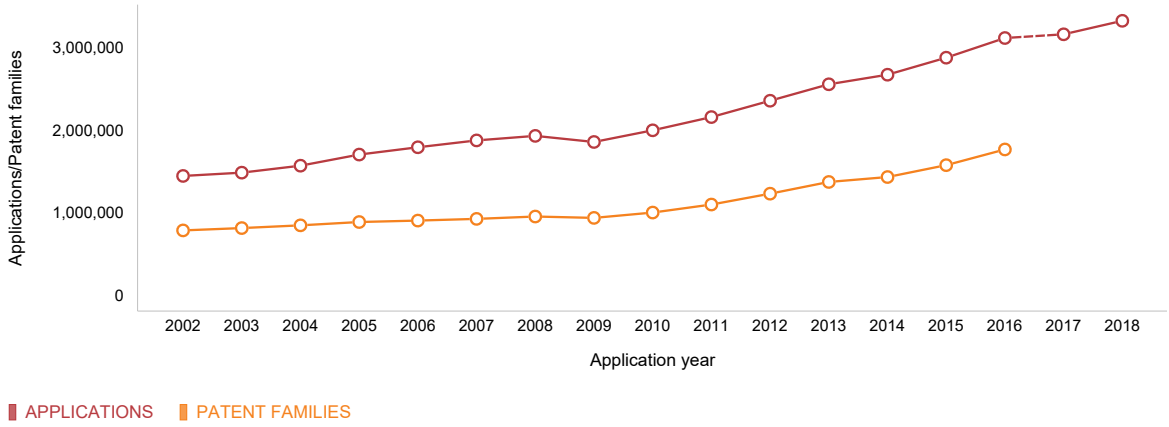
Worldwide patent applications relating to computer technology accounted for 7.8% of all published applications worldwide in 2017

In 2017 – the latest year for which complete data are available due to the delay between application and publication – computer technology was the most frequently featured technology in published patent applications worldwide, with 229,269 published applications (table A29). It was followed by electrical machinery (197,645), measurement (148,809), digital communication (144,669) and medical technology (132,863). Together, these five fields accounted for 28.9% of all published applications worldwide, similar to their share for each of the previous six years.

Among the top 20 technology fields, food chemistry (+13.4%), other special machines (+10.1%), machine tools (+9.2%) and basic materials chemistry (+9.2%) witnessed the fastest average annual growth between 2007 and 2017. All the top 20 technology fields saw growth in published applications between 2007 and 2017, with the exceptions of audio-visual technology (–1.2%) and optics (–0.6%), both of which saw a slight decline. Among the top 10 origins in the period from 2015 to

Strong growth in patent filings for unique inventions

1.6. Patent applications and patent families worldwide, 2002–2018



Sources: Figures A1 and A23.

2017, China and the U.S. filed most heavily in computer technology (figure A30); Japan and the Republic of Korea in electrical machinery; France and Germany in transport; Switzerland and the U.K. in pharmaceuticals; the Netherlands in medical technology; and the Russian Federation in food chemistry.

Among the large middle-income countries in the period from 2015 to 2017, applicants residing in India (16.8% of total published applications) and Mexico (10%) filed most heavily in pharmaceuticals; Argentina (10.3%) and Brazil (6.8%) in other special machines; Malaysia (8.8%) and Philippines (5.7%) in computer technology; Thailand (13.7%) in optics; and Turkey (9.7%) in other consumer goods.

The European Patent Office granted 20% more patents in 2018 than in 2017

Offices carry out a formal and substantive examination to decide whether to issue a patent. The procedure for granting a patent varies between offices, and differences in the numbers of granted patents among offices depend on factors such as examination capacity and procedural delays. For this reason, application data for a given year should not be compared with grant data from the same year.

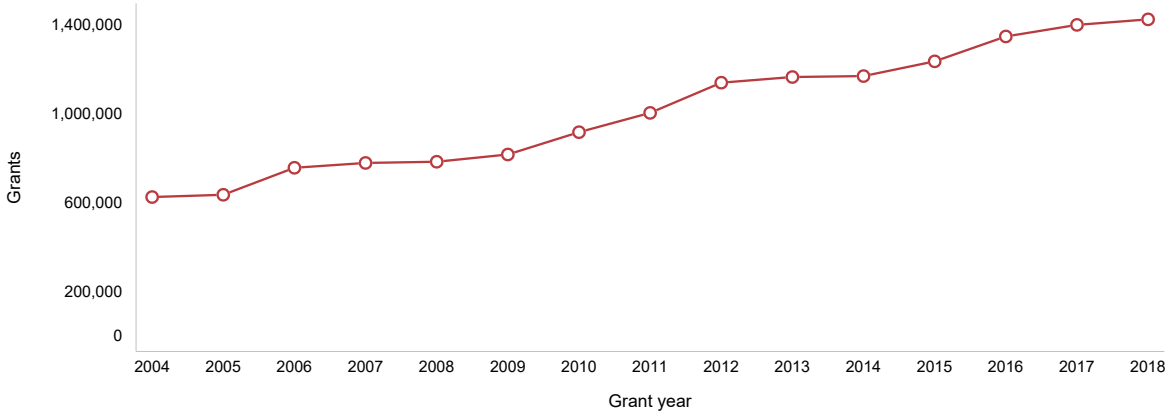
In 2018, an estimated 1.42 million patents were granted worldwide, up 1.8% on 2017 figures (figure 1.7). China (432,147) issued the largest number of patents in 2018, followed by the U.S. (307,759), Japan (194,525), the EPO (127,603) and the Republic of Korea (119,012) (figure A15). Among the top 10 offices, the EPO granted 20.8% more patents in 2018 than in 2017, while the office of India granted 12.3% more patents in 2018. For both the EPO and India, this was the third successive year of double-digit growth. Strong growth moved the EPO up one spot to fourth position in the ranking, while India remained in tenth position. The offices of the U.S. (–3.5%) and Japan (–2.5%), were second and third in the ranking, having issued fewer patents in 2018 than in 2017. However, Australia (–25%) was the office that saw the largest fall in the number of patents granted in 2018.

Looking beyond the top 10 offices to the top 20 list, France granted 12,249 patents in 2018. Brazil (9,966), China, Hong Kong SAR (9,651) and Mexico (8,921) each issued more than 8,900 patents (figure A15). The offices of Indonesia (+176.1%) and Brazil (+82.9%) recorded the fastest growth among the top 20 offices in 2018. In contrast, Malaysia (–15.3%), Singapore (–16.8%) and South Africa (–14.3%) all had double-digit declines.

Asia's share of worldwide patent grants was 57.1% in 2018. This is 4.7 percentage points above its 2008 share. Offices located in North America accounted for 23.3% of patent grants worldwide in 2018, while offices in Europe accounted for 15.9% of the world total. The combined share for Africa, LAC and Oceania was 3.6%.

Patents granted worldwide reached 1.42 million in 2018

1.7. Patent grants worldwide, 2004–2018



Source: Figure A3.

More than 3 million patents were in force in the U.S. in 2018

Patent rights generally last for up to 20 years from the date an application was filed. An estimated 14 million patents were in force across 125 jurisdictions in 2018, representing an increase of 6.7% on 2017 figures. In 2018, the largest number of patents in force was recorded in the U.S. (3.1 million). China (2.4 million) and Japan (2.1 million) each had around 2 million patents and the Republic of Korea had 1 million. Germany with 703,606 patents in force ranked in fifth position (figure 1.8). Half of all patents in force in the U.S. originated from non-resident applicants, while resident applicants accounted for around 70% of all patents in force in China. Non-resident applicants accounted for more than half of all patents in force in each of the top 20 offices, except for China, the Republic of Korea and the Russian Federation (figure A40).

Holders must pay maintenance/renewal fees to maintain the validity of their patents, and may opt to let a patent lapse before the end of its full term. For the 78 offices that reported their in-force data broken down by year of filing, between 42% and 44% of patents granted remained in force for at least six to nine years after the filing date, and about one-fifth lasted for the full 20 years (figure A41).

Although patents can be maintained for 20 years, the average age of patents varied across offices. For example, the average age of all patents in force in 2018 in Thailand was 13.4 years, while in the U.K. and China it was 7.7 and 7.4 years, respectively. Along with Thailand, India (12.9 years), Viet Nam (12.1), Chile (11.8) and Germany (11.3) also had a high average age of patents in force (figure A42).

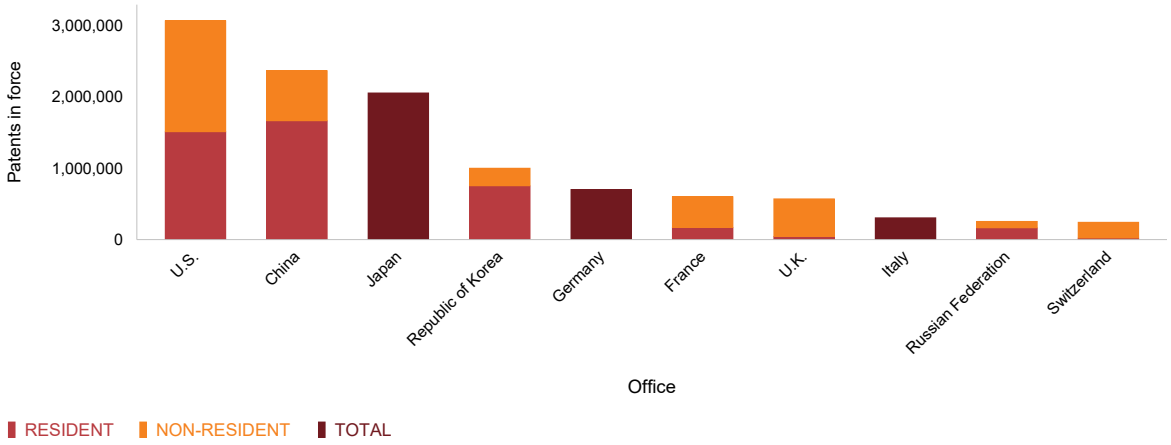
Patent examination outcomes vary greatly across offices

Patent offices examine applications and decide whether to grant patent rights. Examination processes differ across offices, which makes cross-country comparisons difficult. However, every effort has been made to compile examination outcome data based on common definitions and concepts.

The share of withdrawn or abandoned applications was highest in Argentina (60.8%), India (66.2%) and Thailand (59.3%) in 2018. More than 84% of applications examined in 2018 resulted in patents being granted at the offices of Spain and Turkey. Japan and the Russian Federation also had a high share of patents granted for applications processed. Among 10 selected offices, India, the U.K. and the U.S. granted patents for fewer than 35% of all applications processed in 2018 (figure 1.9). The shares of rejected applications were highest in the U.K. and the U.S.

3.1 million patents were in force in the U.S.

1.8. Patents in force at the top 10 offices, 2018



Source: Figure A40.

The offices of China and the U.S. each had around 1 million pending patent applications in 2018

Patent offices must assess whether the claims in applications meet the standards of novelty, non-obviousness and industrial applicability defined in national laws. Processing patents therefore consumes time and resources. The total number of potentially pending applications worldwide stood at 5.7 million in 2018. This estimate is based on data from 108 offices.

The USPTO had the largest number of pending applications (1.1 million) in 2018 (figure A44). It was followed by China (971,434), Japan (923,093), the EPO (621,516) and the Republic of Korea (519,965). Among these five offices, the Republic of Korea (+0.1%) had an increase in the number of pending applications in 2018 compared to 2017, whereas China (–12.4%), the EPO (–4.7%), Japan (–1.2%) and the U.S. (–0.1%) all managed to reduce their pending applications. Among selected middle-income countries, Brazil (196,354) and India (169,971) had a substantial number of pending applications. However, India reduced the number of pending applications by 25% in 2018 compared with a year earlier, while Brazil saw a 6.8% reduction.

Pending applications

Pending applications include all patent applications, at any stage in the process, awaiting a final decision by a patent office, including those applications for which applicants have not filed a request for examination (where applicable).

U.S.-based inventors filed the greatest number of PCT patent applications in 2018

An international treaty administered by WIPO, the Patent Cooperation Treaty (PCT) allows applicants to seek patent protection for an invention simultaneously in a large number of countries by filing a single PCT international application. The granting of patents remains under the control of national and regional patent offices and is carried out in what is called the "national phase" or "regional phase."

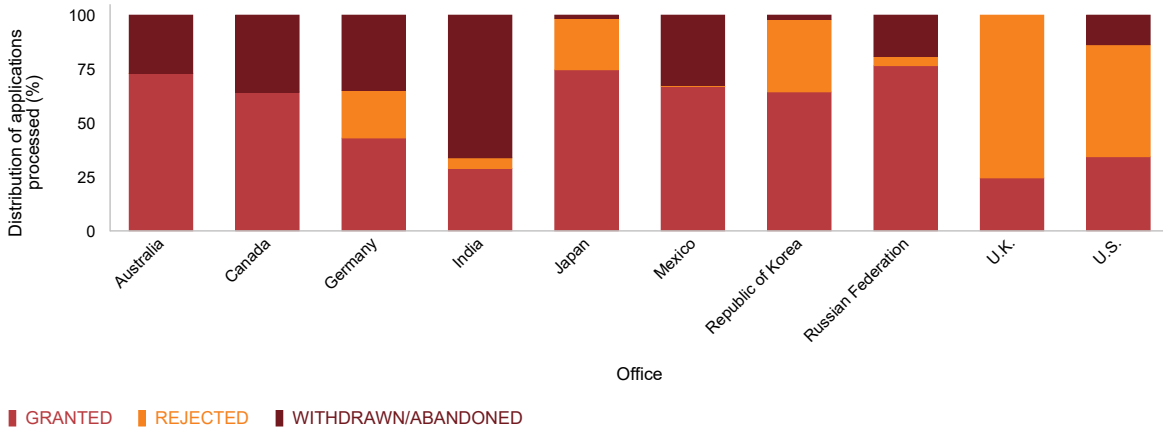
WIPO's PCT passed the record-breaking quarter-million (253,000) filing mark in 2018, a 3.9% increase over 2017. U.S.-based inventors (56,142) filed the greatest number of PCT patent applications in 2018, followed closely by applicants from China (53,345) and Japan (49,702). Germany and the Republic of Korea ranked fourth and fifth, respectively, with 19,883 and 17,014 applications (figure A50). China, India (2,013) and Turkey (1,578) are the only three middle-income countries in the top 20 origins of PCT applications.

Among the top 20 origins, India (+27.2%), Turkey (+26.1%) and Finland (+14.7%) are the only three to record double-digit annual growth in 2018. China (+9.1%) and the Republic of Korea (+8%) also saw strong growth.

More than half of all PCT applications filed in 2018 came from Asia (50.5%), with Europe (24.5%) and North America (23.2%) accounting for about a quarter each.

The shares of withdrawn applications were highest in India

1.9. Distribution of patent examination outcomes for selected offices, 2018



Source: Figure A43.

Women inventors accounted for only 17.1% of all inventors listed in PCT applications in 2018

In 2018, women accounted for 17.1% of all inventors listed in PCT applications and men the remaining 82.9% (figure A33). The share of women inventors increased from 12% in 2004 to 17.1% in 2018. About 94% of PCT applications named at least one man as inventor in 2018, and 32.6% named at least one woman as inventor (figure A34).

The gender gap among PCT inventors varies considerably across countries. Within the top 20 origins, China (28.9%), the Republic of Korea (26.8%) and Spain (24.4%) had the highest shares of inventors who were women in 2018 (figure A35). Conversely, Germany (10.3%), Japan (10.1%) and Austria (9.4%) had the lowest shares. Fields of technology related to the life sciences had comparatively high shares of PCT applications with women inventors in 2018. Women represented more than a quarter of inventors listed in published PCT applications in the fields of biotechnology (29.9%), pharmaceuticals (29.2%), food chemistry (28.7%), analysis of biological materials (26.7%) and organic fine chemistry (26.1%) (figure A36).

Utility model applications filed worldwide grew by 21.8% in 2018

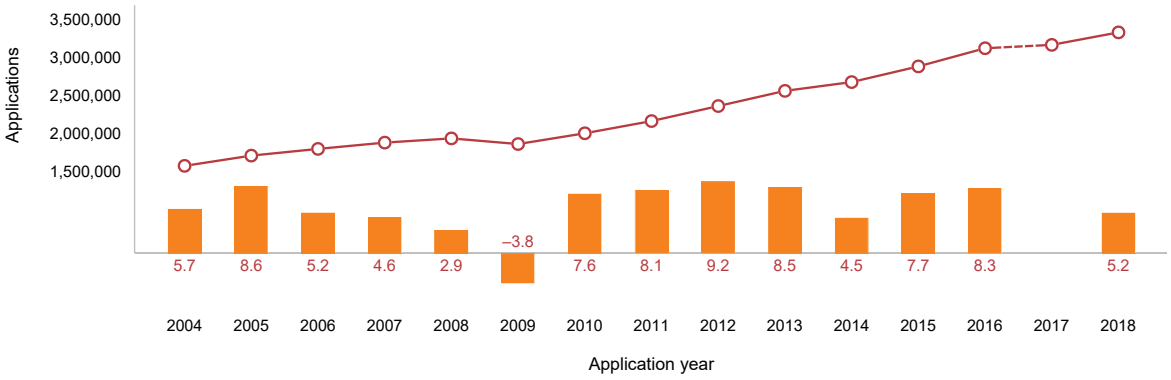
A utility model is a special form of patent right granted by a state or jurisdiction to an inventor or the inventor's assignee for a fixed period of time. The terms and conditions for granting a utility model differ slightly from those for normal patents, including a shorter term of protection and less stringent eligibility requirements.

In 2018, the total number of utility model applications worldwide reached 2.15 million, up by over a fifth (21.8%) on 2017 (figure A53). The IP office of China received 96.6% of the world total – the other 74 offices accounted for just 3.4%. The IP office of China received 2.07 million applications in 2018, followed by Germany (12,307), the Russian Federation (9,747), Ukraine (9,120) and the Republic of Korea (6,232) (figure A54). The long-term trend shows utility model applications at the offices of Germany, Japan and the Republic of Korea declined substantially between 2008 and 2018. For example, applications at the office of Germany decreased from 17,067 in 2008 to 12,307 in 2018, while in the Republic of Korea applications declined from 17,405 in 2008 to 6,232 in 2018. In contrast, China had enormous growth over the same period – increasing from 225,586 in 2008 to 2.07 million by 2018.

Patent statistics

Patent applications and grants worldwide

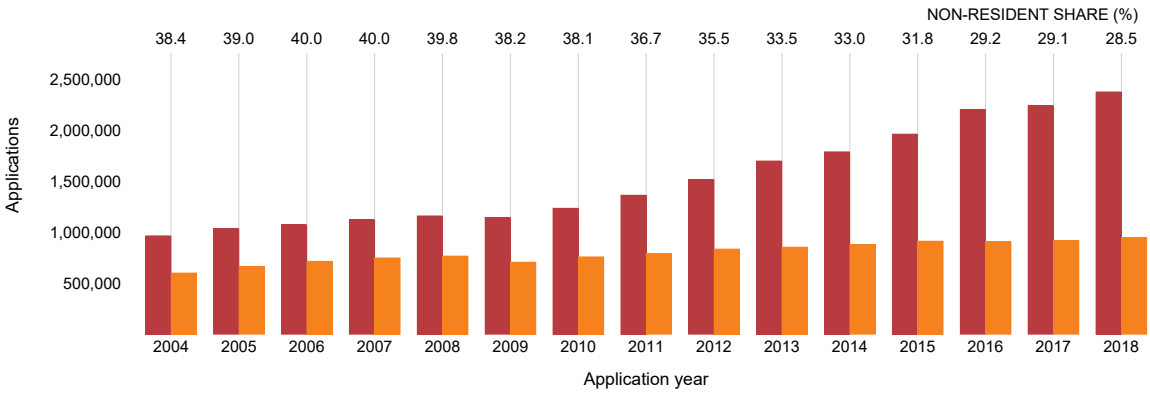
A1. Trend in patent applications worldwide, 2004–2018



Note: World totals are WIPO estimates using data covering 160 patent offices. These totals include applications filed directly with national and regional offices and applications entering offices through the Patent Cooperation Treaty national phase (where applicable). China's pre-2017 data are not comparable due to a change in methodology. Due to this break in the data series, and to the large number of filings in China, it is not possible to report an accurate 2017 growth rate at world level (see the data description section in Additional information for details).

Source: WIPO Statistics Database, August 2019.

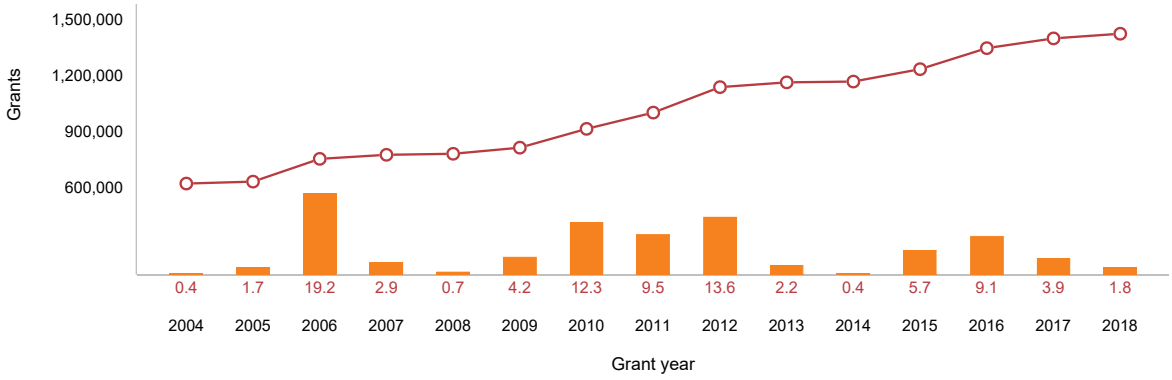
A2. Resident and non-resident patent applications worldwide, 2004–2018



Note: World totals are WIPO estimates using data covering 160 patent offices. These totals include applications filed directly with national and regional offices and applications entering offices through the Patent Cooperation Treaty national phase (where applicable). See the glossary for definitions of resident and non-resident.

Source: WIPO Statistics Database, August 2019.

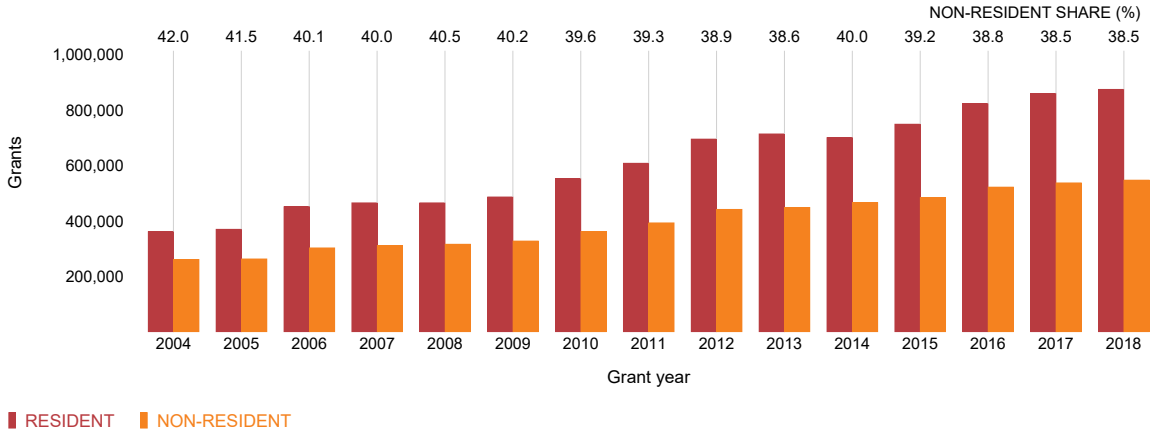
A3. Trend in patent grants worldwide, 2004–2018



Note: World totals are WIPO estimates using data covering 158 patent offices. These totals include patent grants based on applications filed directly with national and regional offices and patents granted by offices on the basis of the Patent Cooperation Treaty national phase (where applicable).

Source: WIPO Statistics Database, August 2019.

A4. Resident and non-resident patent grants worldwide, 2004–2018



Note: World totals are WIPO estimates using data covering 158 patent offices. These totals include patent grants based on applications filed directly with national and regional offices and patents granted by offices on the basis of the Patent Cooperation Treaty national phase (where applicable). See the glossary for definitions of resident and non-resident.

Source: WIPO Statistics Database, August 2019.

Patent applications and grants by office

A5. Patent applications by income group, 2008 and 2018

	Number of applications		Resident share (%)		Share of world total (%)		Average growth (%)
Income group	2008	2018	2008	2018	2008	2018	2008–2018
High-income	1,422,600	1,556,000	62.4	57.9	73.7	46.8	0.9
Upper middle-income	436,100	1,683,100	58.4	86.3	22.6	50.6	14.5
Lower middle-income	62,400	84,900	19.7	28.6	3.2	2.6	3.1
Low-income	8,900	2,300	87.9	16.5	0.5	0.1	–12.7
World	**1,930,000**	**3,326,300**	**60.2**	**71.5**	**100.0**	**100.0**	**5.6**

Note: Totals by income group are WIPO estimates using data covering 160 offices. Each category includes the following number of offices: high-income countries/economies (60), upper middle-income (50), lower middle-income (32) and low-income (18). European Patent Office data are allocated to the high-income group because most of its member states are high-income countries. For a similar reason, data for the African Regional Intellectual Property Organization and the African Intellectual Property Organization are allocated to the low-income group, while those for the Eurasian Patent Organization are allocated to the lower middle-income group. For information on income group classification, see the data description section in Additional information.

Source: WIPO Statistics Database, August 2019.

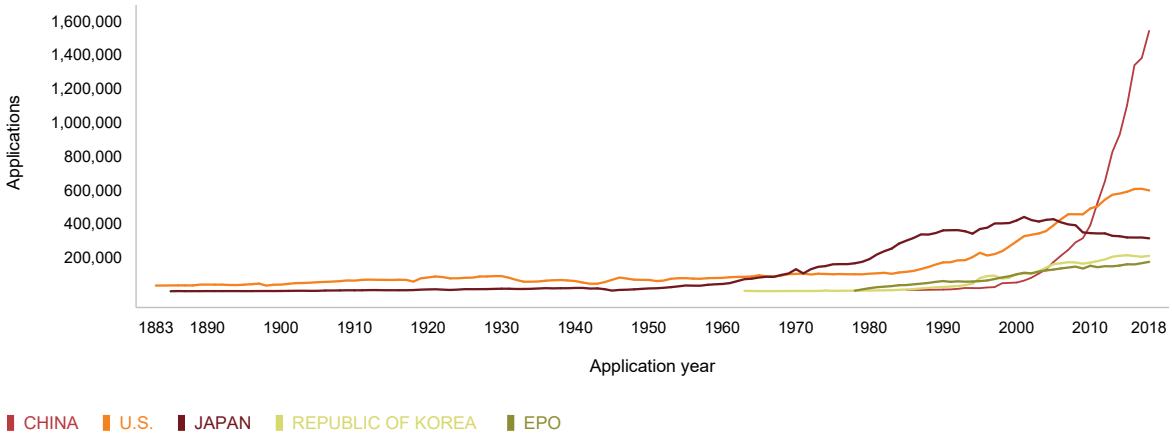
A6. Patent applications by region, 2008 and 2018

	Number of applications		Resident share (%)		Share of world total (%)		Average growth (%)
Region	2008	2018	2008	2018	2008	2018	2008–2018
Africa	14,100	17,000	15.8	18.4	0.7	0.5	1.9
Asia	980,000	2,221,800	70.6	83.7	50.8	66.8	8.5
Europe	345,900	362,000	63.7	59.4	17.9	10.9	0.5
Latin America and the Caribbean	59,500	56,000	11.3	14.9	3.1	1.7	–0.6
North America	498,400	633,300	47.5	45.7	25.8	19.0	2.4
Oceania	32,100	36,200	12.7	10.4	1.7	1.1	1.2
World	**1,930,000**	**3,326,300**	**60.2**	**71.5**	**100.0**	**100.0**	**5.6**

Note: Totals by geographical region are WIPO estimates using data covering 160 offices. Each region includes the following number of offices: Africa (32), Asia (45), Europe (45), Latin America and the Caribbean (32), North America (2) and Oceania (4).

Source: WIPO Statistics Database, August 2019.

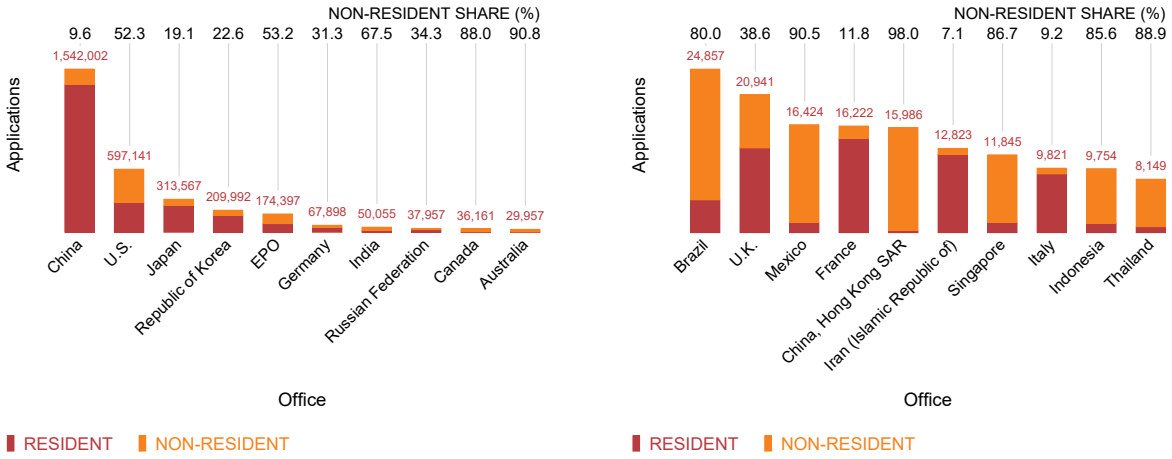
A7. Trend in patent applications for the top five offices, 1883–2018



Note: EPO is the European Patent Office. The top five offices were selected based on their 2018 totals.

Source: WIPO Statistics Database, August 2019.

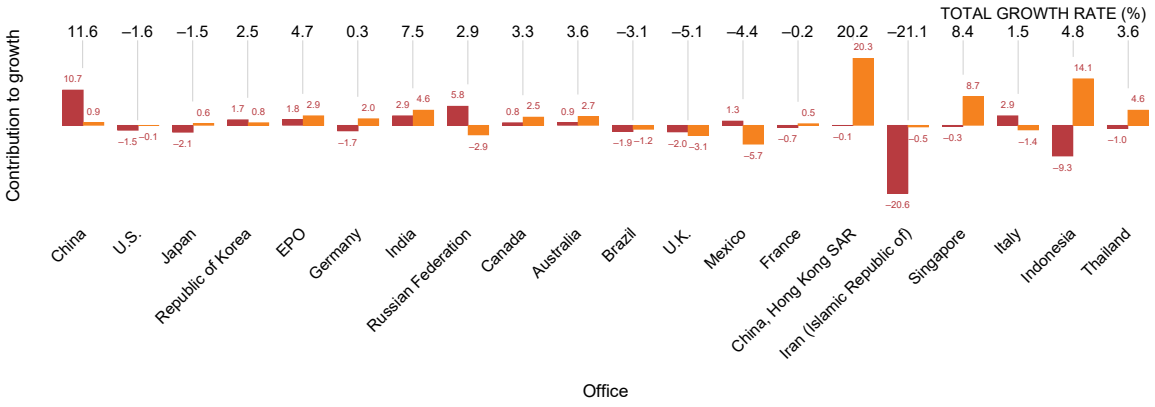
A8. Patent applications at the top 20 offices, 2018



Note: EPO is the European Patent Office. In general, national offices of the EPO member states receive lower volumes of applications because applicants may apply via the EPO to seek protection within any EPO member state.

Source: WIPO Statistics Database, August 2019.

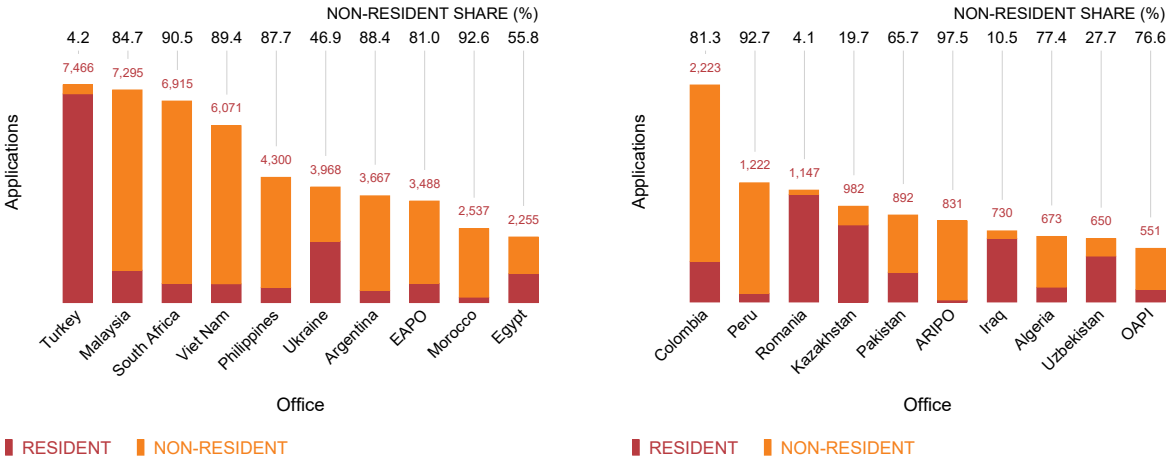
A9. Contribution of resident and non-resident applications to total growth for the top 20 offices, 2017–2018



Note: EPO is the European Patent Office. This figure shows the total growth or decrease in applications at each office, broken down by the respective contributions of resident and non-resident applications. For example, applications filed at the IP office of China grew by 11.6%. Growth in resident applications accounted for 10.7 percentage points of this increase, while the remaining 0.9 percentage point reflected growth in non-resident applications.

Source: WIPO Statistics Database, August 2019.

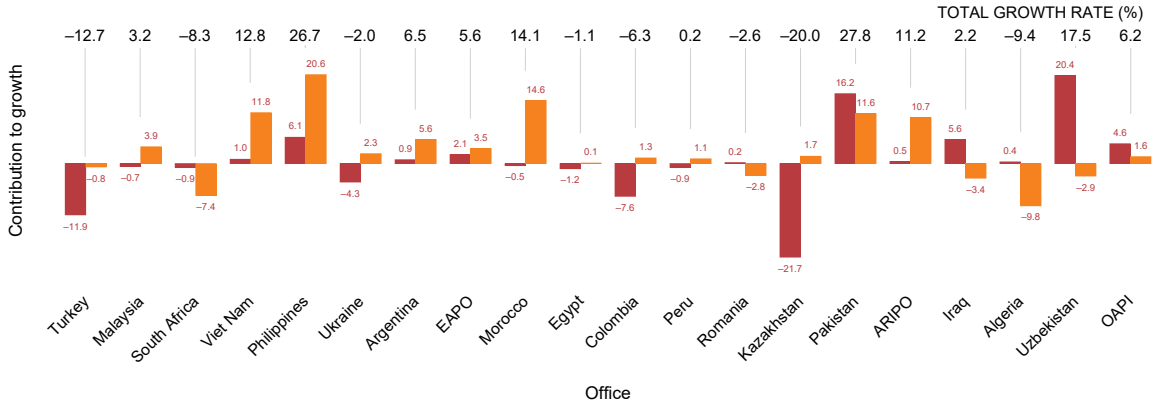
A10. Patent applications at offices of selected low- and middle-income countries, 2018



Note: ARIPO is the African Regional Intellectual Property Organization, EAPO is the Eurasian Patent Organization and OAPI is the African Intellectual Property Organization. The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are presented in table A58.

Source: WIPO Statistics Database, August 2019.

A11. Contribution of resident and non-resident applications to total growth for offices of selected low- and middle-income countries, 2017–2018



Note: ARIPO is the African Regional Intellectual Property Organization, EAPO is the Eurasian Patent Organization and OAPI is the African Intellectual Property Organization. The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). This figure shows the total growth or decrease in applications at each office, broken down by the respective contributions of resident and non-resident applications. For example, applications filed in Viet Nam grew by 12.8%. Growth in resident applications accounted for 1.0 percentage points of this increase, while the remaining 11.8 percentage points came from growth in non-resident applications.

Source: WIPO Statistics Database, August 2019.

A12. Patent grants by income group, 2008 and 2018

	Number of grants		Resident share (%)		Share of world total (%)		Average growth (%)
Income group	**2008**	**2018**	**2008**	**2018**	**2008**	**2018**	**2008–2018**
High-income	586,600	872,800	62.8	56.3	75.0	61.3	4.1
Upper middle-income	161,800	516,500	52.8	73.2	20.7	36.3	12.3
Lower middle-income	27,300	32,300	22.7	16.7	3.5	2.3	1.7
Low-income	6,000	1,200	88.3	16.7	0.8	0.1	–14.9
World	**781,700**	**1,422,800**	**59.5**	**61.5**	**100.0**	**100.0**	**6.2**

Note: Totals by income group are WIPO estimates using data covering 158 offices. Each category includes the following number of offices: high-income countries/economies (59), upper middle-income (48), lower middle-income (33) and low-income (18). European Patent Office data are allocated to the high-income group because most of its member states are high-income countries. For similar a reason, data for the African Regional Intellectual Property Organization and the African Intellectual Property Organization are allocated to the low-income group, while those for the Eurasian Patent Organization are allocated to the lower middle-income group. For information on income group classification, see the data description section in Additional information.

Source: WIPO Statistics Database, August 2019.

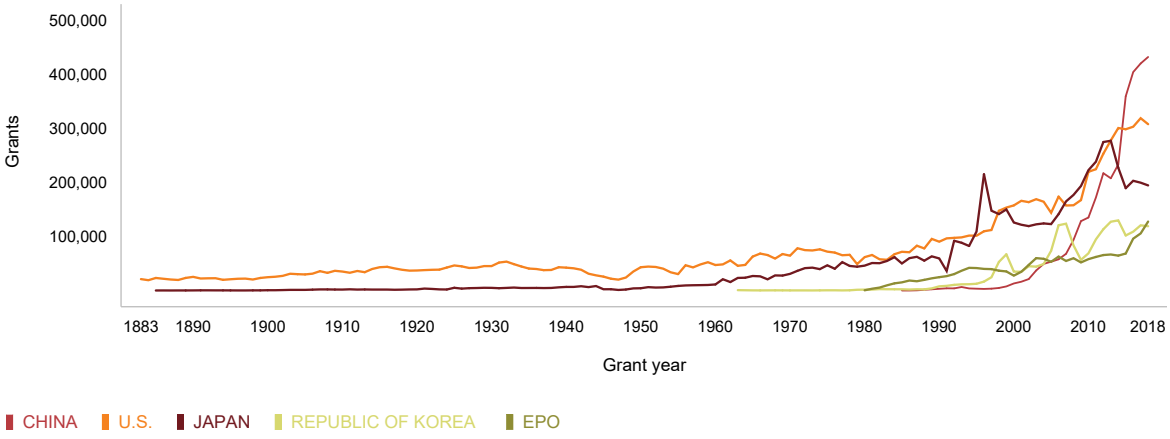
A13. Patent grants by region, 2008 and 2018

	Number of grants		Resident share (%)		Share of world total (%)		Average growth (%)
Region	2008	2018	2008	2018	2008	2018	2008–2018
Africa	5,300	8,700	28.3	16.1	0.7	0.6	5.1
Asia	409,600	812,000	68.7	73.9	52.4	57.1	7.1
Europe	157,900	226,900	63.9	54.6	20.2	15.9	3.7
Latin America and the Caribbean	17,300	24,700	5.2	8.5	2.2	1.7	3.6
North America	176,500	331,300	45.0	44.2	22.6	23.3	6.5
Oceania	15,100	19,200	9.3	5.2	1.9	1.3	2.4
World	**781,700**	**1,422,800**	**59.5**	**61.5**	**100.0**	**100.0**	**6.2**

Note: Totals by geographical region are WIPO estimates using data covering 158 offices. Each region includes the following number of offices: Africa (32), Asia (43), Europe (45), Latin America and the Caribbean (31), North America (2) and Oceania (5).

Source: WIPO Statistics Database, August 2019.

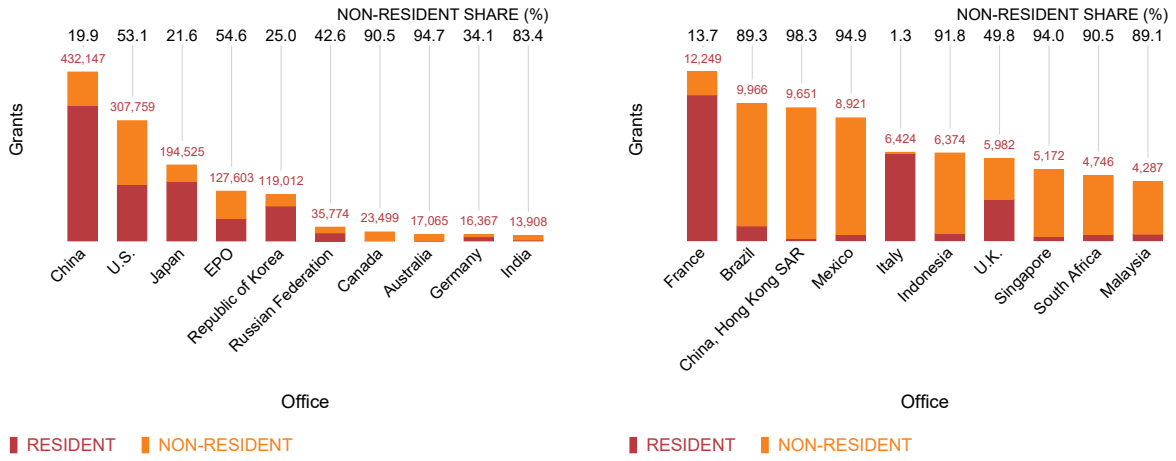
A14. Trend in patent grants for the top five offices, 1883–2018



Note: EPO is the European Patent Office. The top five offices were selected based on their 2018 totals.

Source: WIPO Statistics Database, August 2019.

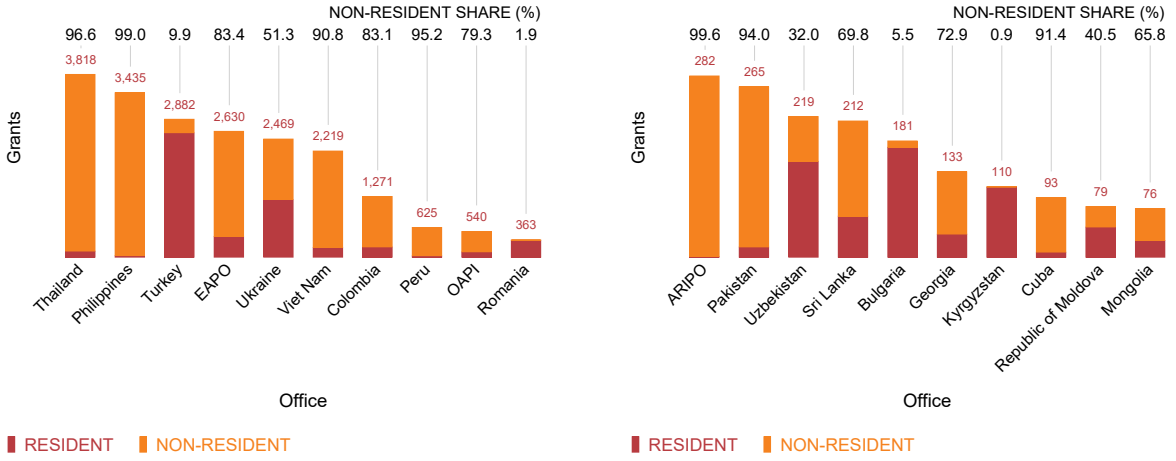
A15. Patent grants for the top 20 offices, 2018



Note: EPO is the European Patent Office. The procedure for issuing patents varies between offices, and differences in the numbers of patents granted among offices depend on factors such as examination capacity and procedural delays. The examination process can also be lengthy therefore there is a time lag between application and grant dates. For this reason, data on applications for a given year should not be compared with data on grants for the same year.

Source: WIPO Statistics Database, August 2019.

A16. Patent grants for offices of selected low- and middle-income countries, 2018

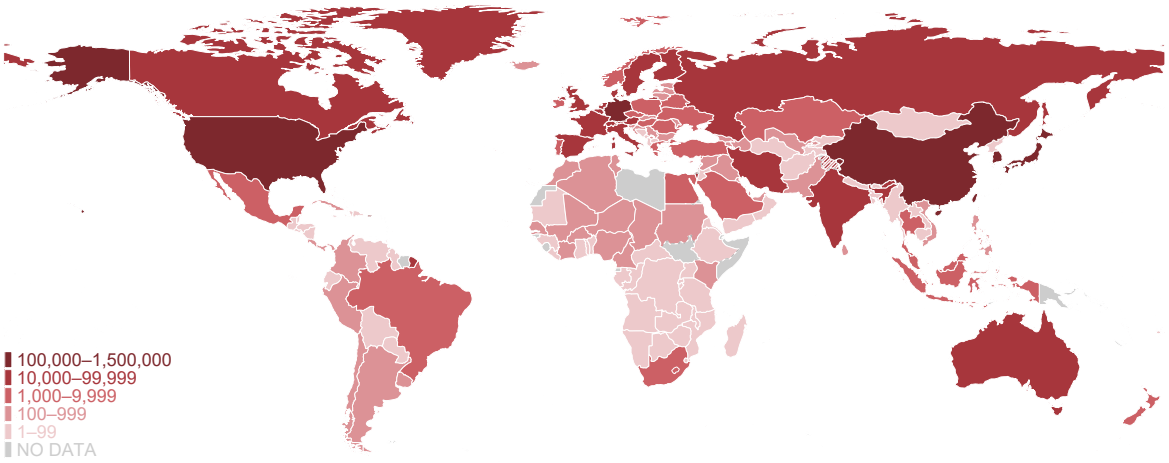


Note: ARIPO is the African Regional Intellectual Property Organization, EAPO is the Eurasian Patent Organization and OAPI is the African Intellectual Property Organization. The selected offices are from different world regions and income groups (low-income, lower middle-income and upper middle-income). Where available, data for all offices are presented in table A59.

Source: WIPO Statistics Database, August 2019.

Patent applications and grants by origin

A17. Equivalent patent applications by origin, 2018



Note: Patent filing activity by origin includes resident applications and applications filed abroad. The origin of a patent application is determined by the residence of the first named applicant. Applications filed at regional offices are considered equivalent to multiple applications in the relevant member states. See the glossary for the definition of equivalent application.

Source: WIPO Statistics Database, August 2019.

A18. Equivalent patent applications for the top 20 origins, 2018

Note: Patent activity by origin includes resident applications and applications filed abroad. The origin of a patent application is determined by the residence of the first named applicant. Applications filed at regional offices are considered equivalent to multiple applications in the relevant member states. See the glossary for the definition of equivalent application.

Source: WIPO Statistics Database, August 2019.

A19. Patent applications for the top 20 offices and origins, 2018

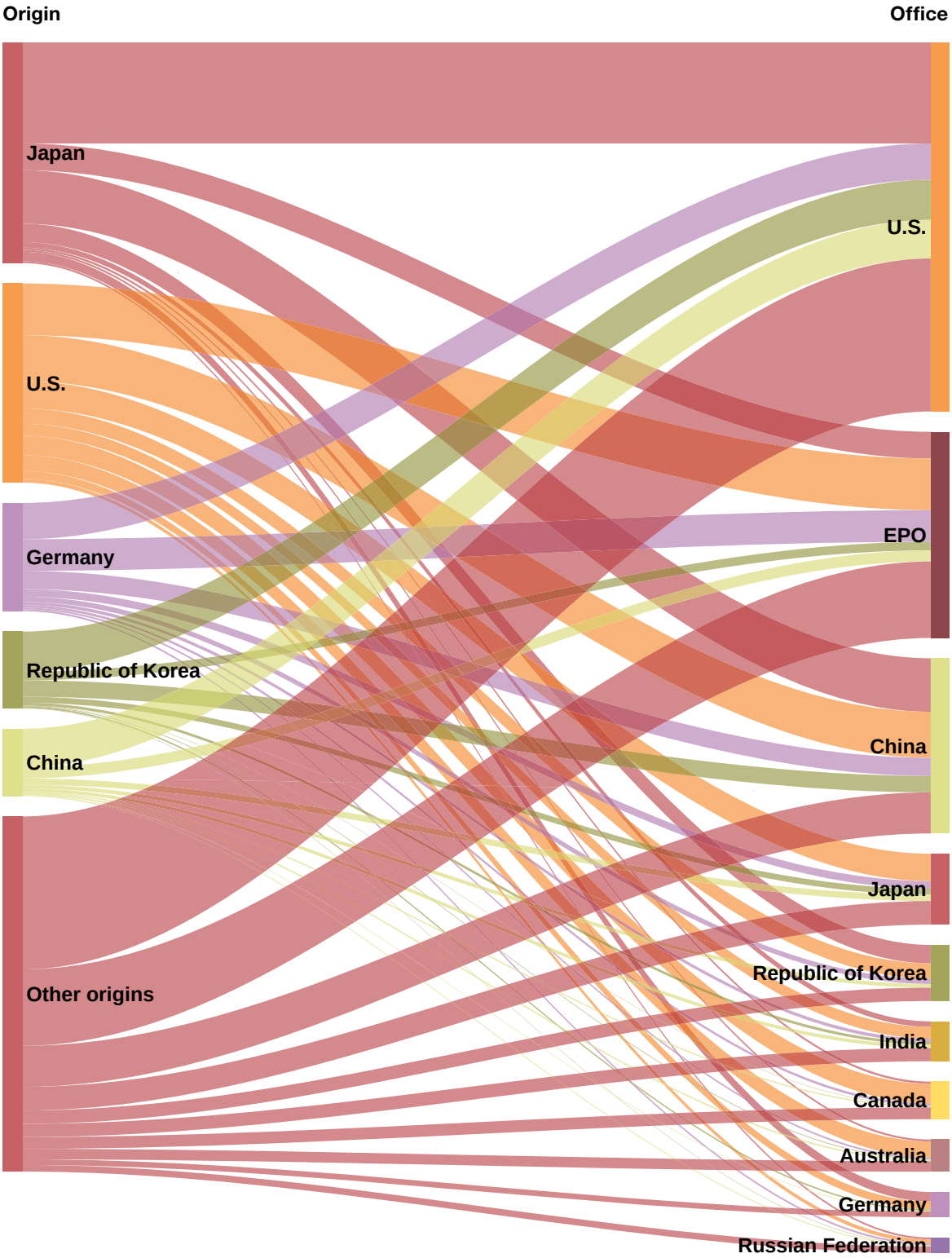
	Office									
Origin	Australia	Brazil	Canada	China	China, Hong Kong SAR	EPO	France	Germany	India	Indonesia
Australia	2,757	141	464	700	184	971	14	23	281	68
Austria	199	205	299	1,029	65	2,288	9	777	281	37
Belgium	293	301	377	831	125	2,359	91	53	316	88
Canada	548	187	4,349	1,105	274	1,579	10	111	315	46
China	1,245	648	1,091	1,393,815	1,597	9,416	104	491	2,859	546
Denmark	240	234	311	935	91	2,386	11	49	370	60
France	685	1,214	1,424	4,784	338	10,438	14,303	346	1,192	236
Germany	1,462	1,970	2,147	15,427	856	26,716	475	46,617	2,728	445
India	211	155	159	327	40	701	5	17	16,289	120
Iran (Islamic Republic of)				6		7		1	1	
Israel	483	190	480	977	155	1,444	6	25	334	15
Italy	373	604	588	1,827	221	4,402	91	114	601	72
Japan	1,671	1,688	1,851	45,284	1,387	22,569		8,013	4,676	2,592
Netherlands	522	833	530	3,412	207	7,142	30	152	1,193	317
Republic of Korea	582	249	286	13,875	276	7,280	11	1,313	2,321	579
Russian Federation	27	41	72	195	16	226	1	24	76	25
Sweden	471	494	439	2,090	186	4,051	48	393	976	119
Switzerland	1,182	1,104	1,362	3,768	922	7,921	92	813	1,338	370
U.K.	1,345	741	1,349	2,836	683	5,734	57	371	1,168	218
U.S.	13,385	7,578	16,465	38,859	5,837	43,740	249	6,669	10,023	1,667
Others/Unknown	2,276	6,280	2,118	9,920	2,526	13,027	615	1,526	2,717	2,134
Total	**29,957**	**24,857**	**36,161**	**1,542,002**	**15,986**	**174,397**	**16,222**	**67,898**	**50,055**	**9,754**

	Office									
Origin	Iran (Islamic Republic of)	Italy	Japan	Mexico	Republic of Korea	Russian Federation	Singapore	Turkey	U.K.	U.S.
Australia	10	5	452	113	199	88	192	29	122	3,569
Austria	27	9	424	130	304	186	79	28	37	2,598
Belgium	19	43	570	166	311	155	97	45	165	2,614
Canada	12	3	608	234	417	93	81	15	183	13,045
China	46	28	5,325	278	3,140	763	870	271	1,007	32,615
Denmark	37	10	430	136	186	156	60	39	35	2,167
France	136	61	2,727	520	1,701	727	335	216	184	12,290
Germany	99	320	6,431	1,155	4,381	1,596	552	300	470	30,691
India	12	1	260	103	129	66	101	62	41	9,860
Iran (Islamic Republic of)	11,908		1		2				3	142
Israel		10	706	123	288	146	100	24	73	8,000
Italy	63	8,921	938	307	515	478	72	57	43	5,406
Japan	40	41	253,630	1,191	15,595	1,562	1,828	3,055	637	85,322
Netherlands	20	4	2,003	353	974	607	154	151	153	5,057
Republic of Korea	41	1	5,070	218	162,561	362	354	182	183	33,961
Russian Federation	35	1	104	16	77	24,926	13	3	7	1,100
Sweden	13	34	1,041	279	713	367	106	61	149	5,041
Switzerland	46	144	2,751	905	1,307	944	496	238	275	5,425
U.K.	29	22	1,890	423	1,228	509	412	80	12,865	13,681
U.S.	79	56	23,121	7,173	13,035	3,191	3,469	823	2,479	285,095
Others/Unknown	151	107	5,085	2,601	2,929	1,035	2,474	2,470	1,830	39,462
Total	**12,823**	**9,821**	**313,567**	**16,424**	**209,992**	**37,957**	**11,845**	**8,149**	**20,941**	**597,141**

Note: EPO is the European Patent Office. Origin data are based on absolute counts, not equivalent counts. The top 20 offices and origins are selected based on the available 2018 data, broken down by country of origin.

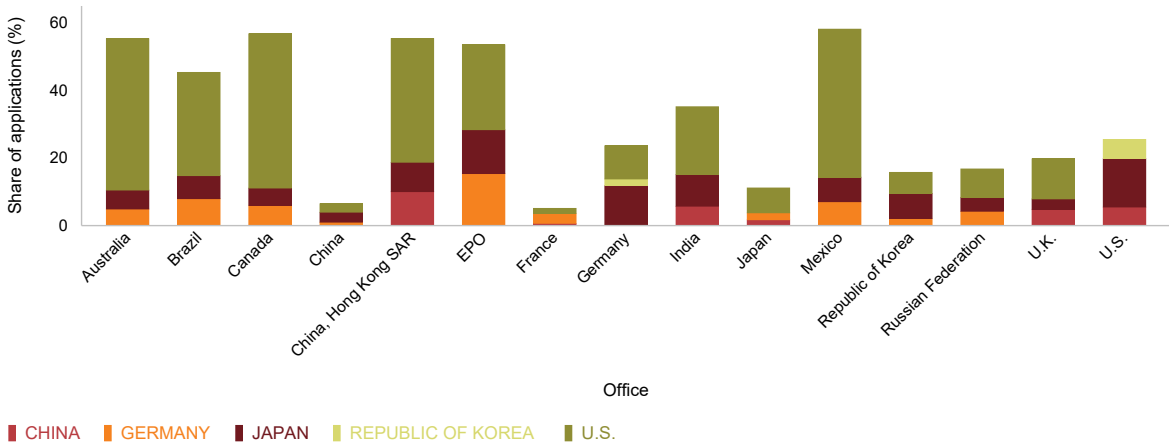
Source: WIPO Statistics Database, August 2019.

A20. Flows of non-resident patent applications between the top five origins and the top 10 offices, 2018



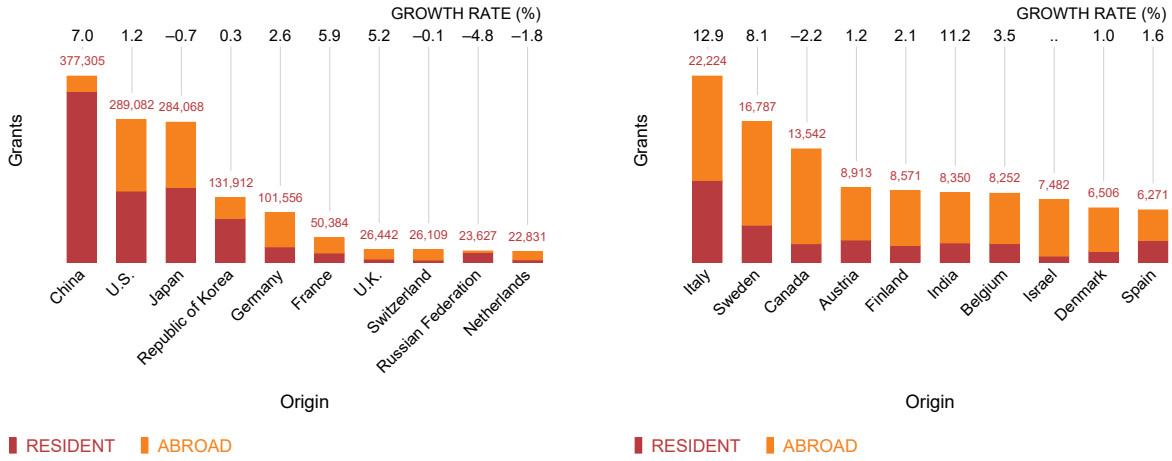
Note: EPO is the European Patent Office. Origin data are based on absolute counts, not equivalent counts.
Source: WIPO Statistics Database, August 2019.

A21. Distribution of patent applications for the top 15 offices and selected origins, 2018



Note: EPO is the European Patent Office. Origin data are based on absolute counts, not equivalent counts.
Source: WIPO Statistics Database, August 2019.

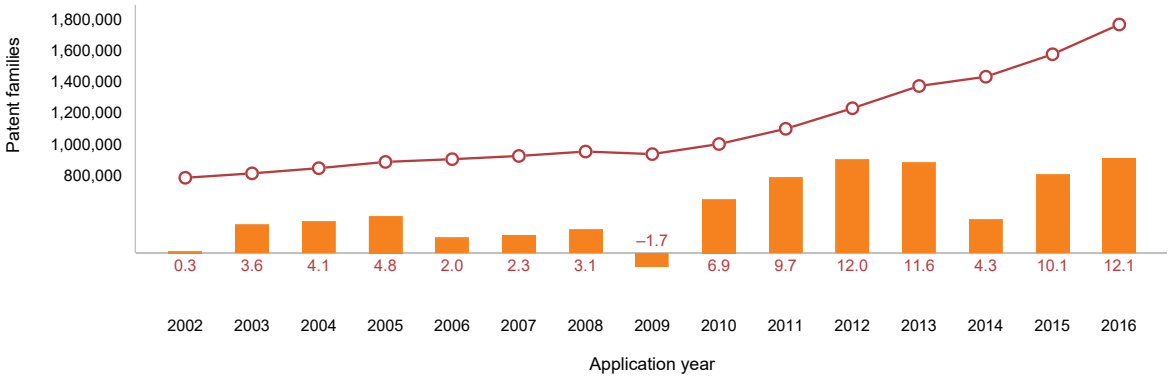
A22. Equivalent patent grants for the top 20 origins, 2018



Note: See the glossary for the definition of equivalent grant.
.. indicates not available.
Source: WIPO Statistics Database, August 2019.

Patent families

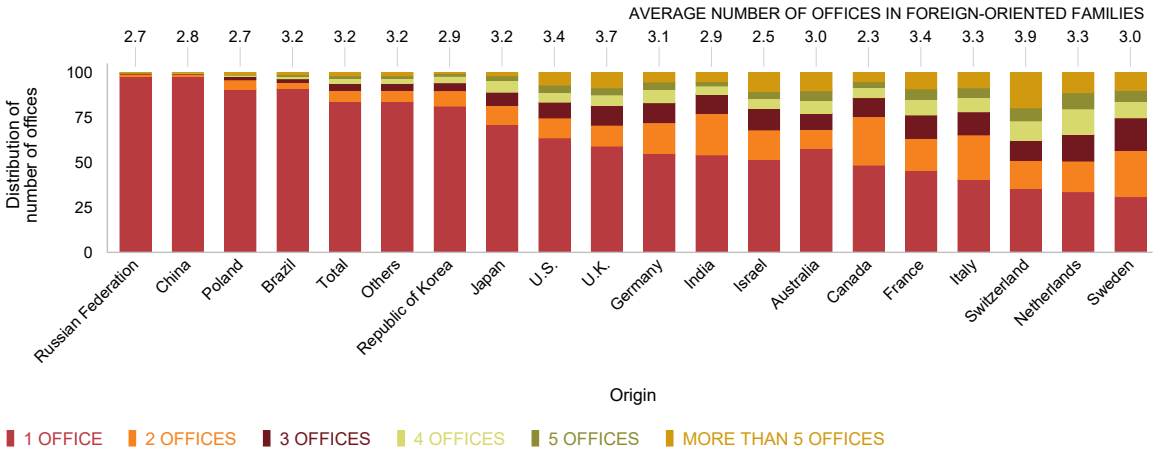
A23. Trend in patent families worldwide, 2002–2016



Note: Applicants often file patent applications in multiple jurisdictions therefore some inventions are recorded more than once. To take this into account, WIPO has indicators related to patent families, defined as patent applications interlinked by one or more of the following: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications.

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

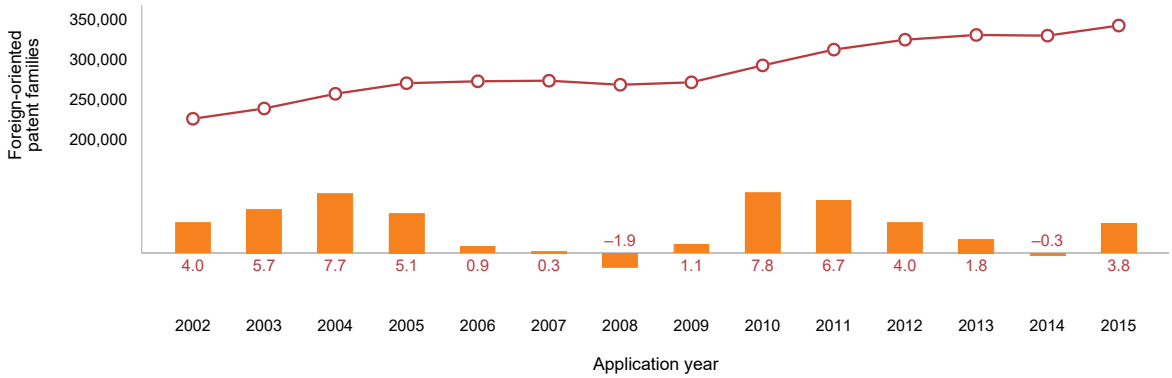
A24. Distribution of patent families by number of offices for the top 20 origins, 2014–2016



Note: A patent family is defined as patent applications interlinked by one or more of the following: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families here include only those associated with patent applications for inventions and exclude patent families associated with utility model applications.

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

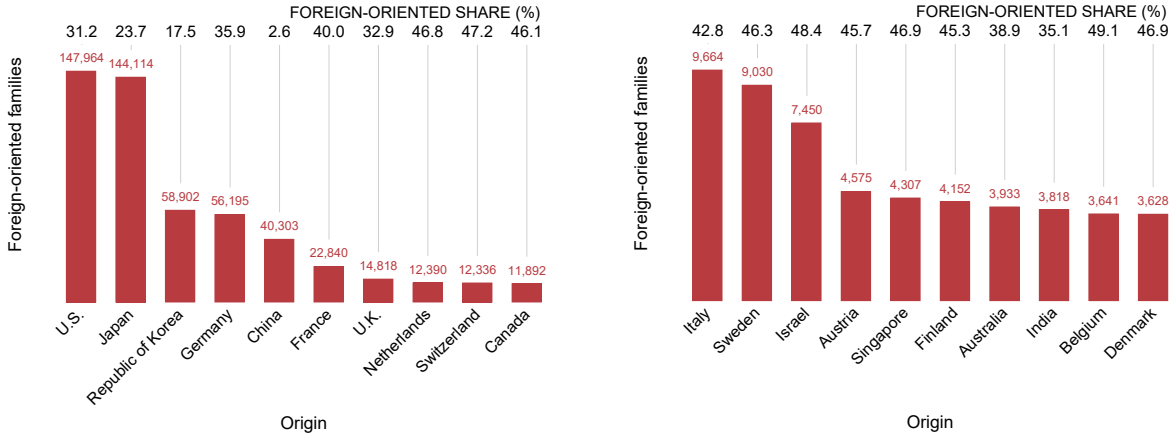
A25. Trend in foreign-oriented patent families worldwide, 2002–2015



Note: A special subset of patent families comprises foreign-oriented patent families: this includes only patent families that have at least one filing office different from the office of the applicant's country of origin. Some foreign-oriented patent families include only one filing office, because applicants may choose to file directly with a foreign office. For example, if a Canadian applicant files a patent application directly with the United States Patent and Trademark Office (USPTO) without having previously filed with the patent office of Canada, that application and applications filed subsequently with the USPTO will form a foreign-oriented patent family.

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

A26. Foreign-oriented patent families for the top 20 origins, 2014–2015



Note: A special subset of patent families comprises foreign-oriented patent families: this includes only patent families that have at least one filing office different from the office of the applicant's country of origin. Some foreign-oriented patent families include only one filing office, because applicants may choose to file directly with a foreign office. For example, if a Canadian applicant files a patent application directly with the United States Patent and Trademark Office (USPTO) without having previously filed with the patent office of Canada, that application and applications filed subsequently with the USPTO will form a foreign-oriented patent family.

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

A27. Distribution of technology fields for selected applicants based on patent families, 2014–2016

Field of technology	Applicant									
	Canon Inc	Samsung Electronics	State Grid Corp of China	Mitsubishi Electric Corp	IBM	Toyota Jidosha KK	Huawei Technologies	Toshiba KK	LG Electronics Inc	Robert Bosch Gmbh
Electrical machinery, apparatus, energy	2.8	4.9	28.7	19.6	1.1	25.7	1.7	13.8	3.4	16.4
Audio-visual technology	16.7	9.4	1.9	4.8	2.8	0.9	3.3	5.5	6.4	2.7
Telecommunications	6.3	7.3	2.4	4.3	1.3	0.2	11.5	4.2	14.5	0.9
Digital communication	2.8	16.8	4.1	4.1	14.5	0.6	57.4	4.1	40.6	2.4
Basic communication processes	0.3	1.7	0.2	1.6	1.0	0.2	1.7	2.2	0.4	0.6
Computer technology	14.1	25.0	7.3	6.6	51.0	2.0	17.9	14.0	8.0	3.4
IT methods for management	0.5	1.4	11.1	1.1	5.8	0.2	0.8	2.1	0.9	0.4
Semiconductors	2.8	12.9	0.2	6.7	11.6	3.5	0.6	15.6	2.6	1.9
Optics	29.2	3.4	0.5	3.2	0.8	0.2	1.6	3.1	2.1	1.0
Measurement	2.6	3.1	20.4	6.2	2.8	3.9	1.3	6.2	1.5	10.7
Analysis of biological materials	0.0	0.2	0.3	0.0	0.2	0.0	0.0	0.2	0.1	0.3
Control	0.5	1.0	5.2	4.9	2.4	3.0	0.4	4.3	0.8	4.7
Medical technology	3.9	2.9	0.1	0.5	0.7	0.7	0.2	3.1	0.6	0.6
Organic fine chemistry	0.1	0.3	0.1	0.0	0.2	0.0	0.0	0.1	0.0	0.0
Biotechnology	0.0	0.4	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1
Pharmaceuticals	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Macromolecular chemistry, polymers	0.4	0.3	0.4	0.1	0.4	0.1	0.0	0.1	0.0	0.1
Food chemistry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Basic materials chemistry	1.0	0.6	0.5	0.2	0.2	0.2	0.3	0.3	0.1	0.1
Materials, metallurgy	0.1	0.3	0.4	0.2	0.1	1.8	0.1	1.0	0.1	0.6
Surface technology, coating	0.4	0.5	0.4	0.5	0.3	1.3	0.1	1.4	0.2	0.5
Micro-structural and nano-technology	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.0	1.4
Chemical engineering	0.2	0.5	0.8	0.5	0.3	1.0	0.0	1.3	0.7	0.7
Environmental technology	0.6	0.2	0.7	0.6	0.1	2.6	0.0	2.3	0.4	2.3
Handling	3.1	0.4	2.1	5.6	0.1	1.0	0.1	1.4	0.7	1.3
Machine tools	0.2	0.2	2.4	1.6	0.2	2.3	0.0	1.0	0.1	4.7
Engines, pumps, turbines	0.1	0.2	0.7	3.5	0.1	13.3	0.0	4.9	1.4	16.1
Textile and paper machines	9.0	0.1	0.0	0.4	0.0	0.0	0.0	0.9	0.1	0.1
Other special machines	1.4	0.4	1.0	0.5	0.3	1.3	0.0	0.5	0.3	1.3
Thermal processes and apparatus	0.0	1.4	0.7	13.2	0.2	0.4	0.1	1.5	4.4	1.3
Mechanical elements	0.5	0.3	1.1	1.3	0.1	9.9	0.1	0.8	0.4	6.7
Transport	0.1	0.3	0.9	3.8	0.6	23.1	0.2	1.6	1.2	15.6
Furniture, games	0.0	0.9	0.4	2.3	0.2	0.3	0.0	0.4	2.0	0.2
Other consumer goods	0.1	2.0	1.1	1.4	0.1	0.1	0.2	1.5	5.3	0.4
Civil engineering	0.0	0.2	3.4	0.4	0.1	0.2	0.0	0.4	0.2	0.5

Note: WIPO's International Patent Classification (IPC) technology concordance table was used to convert IPC symbols into 35 corresponding fields of technology. For an electronic version of the IPC technology concordance table, visit *www.wipo.int/ipstats*.

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

A28. Distribution of technology fields for selected universities and PROs based on patent families, 2014–2016

	Applicant											
Field of technology	Zhejiang University	Harbin Institute of Technology	CEA	CNRS	Fraunhofer Ges Forschung	DLR	AIST	Tokyo University	Korea Electronics Telecomm	KAIST	University of California	MIT
Electrical machinery, apparatus, energy	5.7	10.0	12.6	4.5	6.3	5.6	8.6	11.1	2.6	8.2	4.1	6.3
Audio-visual technology	0.7	1.3	1.8	0.9	5.2	0.8	1.1	1.9	7.1	3.4	0.6	2.0
Telecommunications	1.2	3.1	2.3	1.3	3.3	3.3	0.9	1.0	11.2	6.5	1.3	2.8
Digital communication	1.8	3.8	1.9	0.2	4.1	3.3	0.5	0.9	31.8	9.3	0.8	1.6
Basic communication processes	0.3	0.6	2.1	1.5	1.4	3.4	0.8	0.3	2.3	1.9	0.8	1.0
Computer technology	10.3	9.1	7.7	4.2	8.9	2.0	2.1	4.9	20.6	16.7	4.3	6.5
IT methods for management	1.7	0.6	0.2	0.0	0.2	0.7	0.6	0.6	4.2	2.4	0.3	0.4
Semiconductors	1.6	0.7	18.8	5.1	5.1	0.8	10.3	3.1	3.5	5.8	4.3	5.4
Optics	1.4	3.3	4.2	6.0	5.5	2.6	3.8	2.8	3.6	4.8	2.4	3.6
Measurement	13.1	16.5	12.6	10.7	13.3	15.0	13.0	10.0	4.3	7.2	6.1	7.6
Analysis of biological materials	1.4	0.4	1.2	4.1	1.5	0.4	2.5	4.8	0.3	1.6	5.0	3.7
Control	3.1	3.6	0.8	0.6	0.9	6.0	0.9	1.0	2.3	1.5	0.6	1.2
Medical technology	3.2	2.0	2.1	4.4	3.7	2.8	3.1	5.8	2.0	3.5	11.4	8.5
Organic fine chemistry	3.2	1.5	0.8	7.1	0.9	0.2	6.0	4.1	0.0	0.6	6.5	3.0
Biotechnology	7.1	1.5	0.9	10.3	2.9	0.0	7.8	13.3	0.1	3.5	16.9	13.8
Pharmaceuticals	3.6	0.8	0.4	10.0	1.4	0.0	2.1	8.8	0.0	1.8	16.5	9.5
Macromolecular chemistry, polymers	2.3	1.3	0.6	3.1	1.7	0.1	2.5	3.6	0.0	1.3	1.7	1.4
Food chemistry	4.2	1.6	0.1	0.3	0.6	0.0	1.2	0.6	0.0	0.1	0.6	0.7
Basic materials chemistry	2.3	1.7	1.5	2.4	2.4	1.0	2.9	2.4	0.1	1.1	1.8	1.9
Materials, metallurgy	3.6	6.2	2.6	4.8	3.6	1.9	9.1	2.6	0.1	1.9	1.5	1.3
Surface technology, coating	1.4	2.5	3.6	1.8	3.2	1.2	3.3	1.2	0.2	1.7	1.4	1.8
Micro-structural and nano-technology	1.1	1.0	2.6	2.1	1.2	0.0	1.9	1.1	0.1	0.9	1.0	1.2
Chemical engineering	3.6	3.3	3.2	6.1	2.5	0.7	5.3	1.8	0.3	2.7	3.6	4.1
Environmental technology	4.6	4.2	2.3	1.7	0.9	0.9	2.3	1.0	0.1	1.1	1.0	1.3
Handling	1.0	1.7	0.9	0.7	1.6	5.3	0.5	0.5	0.3	0.9	0.4	0.8
Machine tools	1.2	5.4	1.0	0.0	5.4	1.0	1.0	0.7	0.0	0.2	0.2	0.3
Engines, pumps, turbines	1.4	1.5	2.7	0.9	0.8	5.2	1.0	0.8	0.1	1.8	0.5	0.6
Textile and paper machines	0.5	0.8	0.2	0.4	0.9	2.3	1.1	1.3	0.1	0.2	0.4	0.5
Other special machines	3.7	1.5	1.5	1.4	4.1	9.3	2.3	3.5	0.5	1.5	1.6	3.6
Thermal processes and apparatus	2.0	1.4	3.5	0.8	1.9	7.4	0.4	0.9	0.1	0.4	0.6	0.7
Mechanical elements	1.7	1.9	1.1	0.7	1.3	3.7	0.1	0.3	0.0	0.5	0.3	0.5
Transport	1.6	2.9	1.2	0.6	1.5	12.1	0.2	0.8	1.5	2.1	0.5	1.2
Furniture, games	0.8	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.4	0.5	0.2	0.0
Other consumer goods	0.9	0.3	0.3	0.6	1.1	0.8	0.2	0.3	0.2	0.5	0.4	0.5
Civil engineering	2.8	1.6	0.5	0.4	0.6	0.2	0.4	1.9	0.1	1.7	0.4	0.5

Note: PRO means public research organization. A patent family is defined as patent applications interlinked by one or more of the following: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. Patent families include only those associated with patent applications for inventions and exclude patent families associated with utility model applications. Le Centre national de la recherche scientifique (CNRS); Le Commissariat à l'énergie atomique et aux énergies alternatives (CEA); Deutsches Zentrum für Luft- und Raumfahrt E.V. (DLR); Korea Advanced Institute of Science and Technology (KAIST); Massachusetts Institute of Technology (MIT); and National Institute of Advanced Industrial Science and Technology (AIST).

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

Published patent applications by field of technology

A29. Published patent applications worldwide by field of technology, 2007, 2012 and 2017

Field of technology		Number of published applications			Share of total (%)	Average growth (%)
		2007	2012	2017	2017	2007–2017
Electrical engineering	Electrical machinery, apparatus, energy	102,410	146,626	197,645	6.7	6.8
	Audio-visual technology	93,742	77,319	82,888	2.8	–1.2
	Telecommunications	66,954	51,694	58,467	2.0	–1.3
	Digital communication	64,059	91,738	144,669	4.9	8.5
	Basic communication processes	17,794	16,345	16,685	0.6	–0.6
	Computer technology	125,073	150,721	229,269	7.8	6.2
	IT methods for management	20,414	28,743	53,326	1.8	10.1
	Semiconductors	80,228	85,794	83,954	2.8	0.5
Instruments	Optics	78,025	65,003	73,134	2.5	–0.6
	Measurement	66,697	94,890	148,809	5.0	8.4
	Analysis of biological materials	11,354	12,440	17,869	0.6	4.6
	Control	27,776	32,997	67,309	2.3	9.3
	Medical technology	75,479	89,164	132,863	4.5	5.8
Chemistry	Organic fine chemistry	54,696	55,306	68,901	2.3	2.3
	Biotechnology	34,623	43,222	64,012	2.2	6.3
	Pharmaceuticals	75,046	75,788	106,312	3.6	3.5
	Macromolecular chemistry, polymers	28,444	33,631	54,504	1.8	6.7
	Food chemistry	21,262	34,580	74,470	2.5	13.4
	Basic materials chemistry	39,717	54,239	95,776	3.2	9.2
	Materials, metallurgy	30,734	48,464	71,684	2.4	8.8
	Surface technology, coating	30,091	38,879	46,696	1.6	4.5
	Micro-structural and nano-technology	2,594	4,295	5,294	0.2	7.4
	Chemical engineering	33,888	44,848	80,378	2.7	9.0
	Environmental technology	21,900	32,006	55,918	1.9	9.8
Mechanical engineering	Handling	43,261	51,316	85,296	2.9	7.0
	Machine tools	37,130	56,168	89,742	3.0	9.2
	Engines, pumps, turbines	42,149	56,113	65,948	2.2	4.6
	Textile and paper machines	36,316	34,849	44,541	1.5	2.1
	Other special machines	44,917	61,862	117,901	4.0	10.1
	Thermal processes and apparatus	25,598	34,503	50,357	1.7	7.0
	Mechanical elements	44,321	54,196	77,156	2.6	5.7
	Transport	65,707	79,069	124,203	4.2	6.6
Other fields	Furniture, games	44,773	48,281	77,522	2.6	5.6
	Other consumer goods	32,227	38,997	58,809	2.0	6.2
	Civil engineering	53,279	67,884	105,322	3.6	7.1
	Unknown	40,822	30,963	22,976	0.8	–5.6
Total		**1,713,500**	**2,022,933**	**2,950,605**	**100.0**	**5.6**

Note: Data refer to published patent applications. There is a minimum delay of 18 months between the application date and the publication date. WIPO's International Patent Classification (IPC) technology concordance table was used to convert IPC symbols into 35 corresponding fields of technology. For an electronic version of the IPC technology concordance table, visit *www.wipo.int/ipstats*.

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

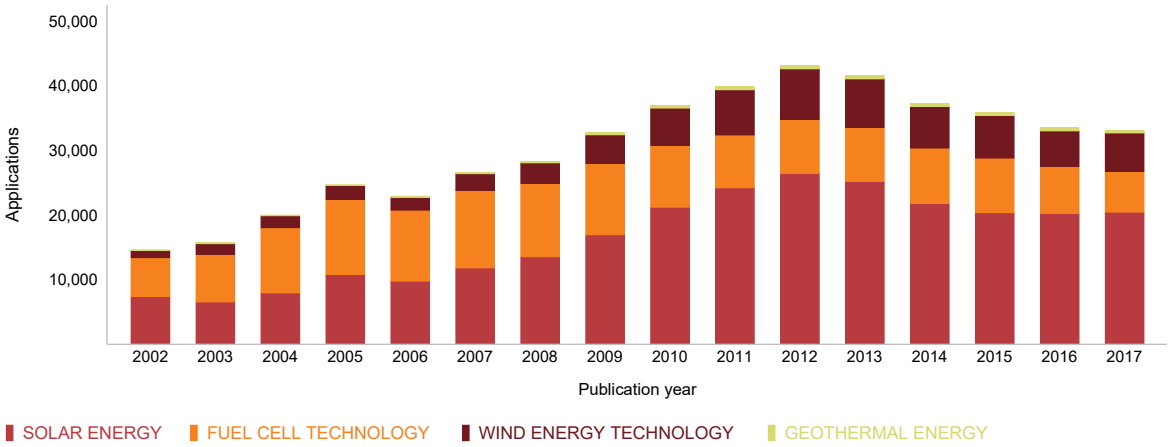
A30. Distribution of published patent applications by technology field for the top 10 origins, 2015–2017

	Origin									
Field of technology	China	U.S.	Japan	Republic of Korea	Germany	France	U.K.	Switzerland	Russian Federation	Netherlands
Electrical machinery, apparatus, energy	6.5	4.4	10.4	9.1	8.9	6.3	5.6	5.3	3.5	7.4
Audio-visual technology	2.1	2.9	4.7	5.4	1.5	2.3	1.7	0.9	0.6	2.7
Telecommunications	1.8	2.4	2.5	2.9	0.9	2.1	1.7	0.5	1.4	1.3
Digital communication	4.9	7.7	2.9	6.4	1.6	5.1	3.4	1.2	0.7	2.3
Basic communication processes	0.4	0.8	0.8	0.6	0.6	0.6	0.6	0.3	0.8	0.8
Computer technology	7.2	12.6	6.1	8.7	3.1	5.4	6.3	2.6	2.8	6.3
IT methods for management	1.5	2.9	1.2	3.2	0.4	1.0	1.4	0.7	0.4	0.6
Semiconductors	1.4	3.0	5.7	6.4	2.5	2.1	1.1	0.6	0.8	3.3
Optics	1.5	1.8	6.2	3.4	1.7	1.8	1.5	1.0	0.8	4.2
Measurement	6.0	4.0	4.3	3.6	5.8	5.1	5.2	7.6	7.6	5.1
Analysis of biological materials	0.4	0.9	0.3	0.4	0.6	0.9	1.3	1.3	2.2	0.7
Control	2.7	1.9	2.0	1.5	1.9	1.4	1.8	1.5	1.8	1.1
Medical technology	2.4	8.3	3.6	3.4	4.7	4.4	6.6	7.3	6.9	11.2
Organic fine chemistry	2.1	3.0	1.6	1.7	3.4	4.7	5.0	7.1	1.7	3.6
Biotechnology	1.6	3.8	1.0	1.5	1.8	3.0	4.4	6.1	1.7	3.6
Pharmaceuticals	4.0	5.8	1.3	2.0	2.5	4.2	7.2	11.0	4.2	3.5
Macromolecular chemistry, polymers	2.1	1.4	2.2	1.3	2.1	1.7	0.8	2.0	0.9	3.4
Food chemistry	4.5	1.0	0.8	1.8	0.4	0.8	1.0	3.4	12.5	3.1
Basic materials chemistry	4.4	2.9	2.2	1.7	3.4	2.2	3.1	3.1	2.8	4.9
Materials, metallurgy	3.6	1.1	2.4	1.9	2.0	2.3	1.6	1.5	4.9	0.8
Surface technology, coating	1.6	1.4	2.5	1.4	1.7	1.5	1.1	1.4	1.6	1.3
Micro-structural and nano-technology	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.8	0.1
Chemical engineering	3.4	1.9	1.4	2.1	2.7	2.5	3.1	2.4	3.6	2.6
Environmental technology	2.7	1.0	1.2	1.6	1.5	1.5	1.9	1.0	2.4	1.7
Handling	3.2	2.0	2.9	2.1	3.4	2.4	2.7	6.2	0.9	2.9
Machine tools	4.6	1.5	2.4	1.9	3.7	1.5	1.3	1.7	2.7	1.1
Engines, pumps, turbines	1.4	2.6	3.1	1.8	6.2	4.8	3.4	2.4	4.7	0.9
Textile and paper machines	1.6	0.9	2.6	0.9	1.5	0.7	0.9	2.4	0.4	1.3
Other special machines	4.8	2.7	2.8	2.9	3.7	3.8	2.6	2.6	5.7	4.9
Thermal processes and apparatus	2.1	0.8	1.8	1.9	1.7	1.6	1.2	1.1	1.6	1.0
Mechanical elements	2.2	2.0	3.2	2.2	7.3	4.1	3.3	2.0	3.6	1.5
Transport	2.7	3.5	5.7	5.2	9.9	10.5	5.2	1.8	4.4	2.4
Furniture, games	2.2	2.2	4.2	2.6	1.6	1.5	3.1	2.8	1.1	2.4
Other consumer goods	2.0	1.7	1.5	2.8	1.8	2.5	4.1	4.9	1.2	2.0
Civil engineering	4.0	3.2	2.3	3.9	3.2	3.2	4.7	2.0	6.5	3.9

Note: Data refer to published patent applications. There is a minimum delay of 18 months between the application date and the publication date. WIPO's International Patent Classification (IPC) technology concordance table was used to convert IPC symbols into 35 corresponding fields of technology. For an electronic version of the IPC technology concordance table, visit *www.wipo.int/ipstats*. The top 10 origins were selected based on their 2015–2017 total published applications.

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

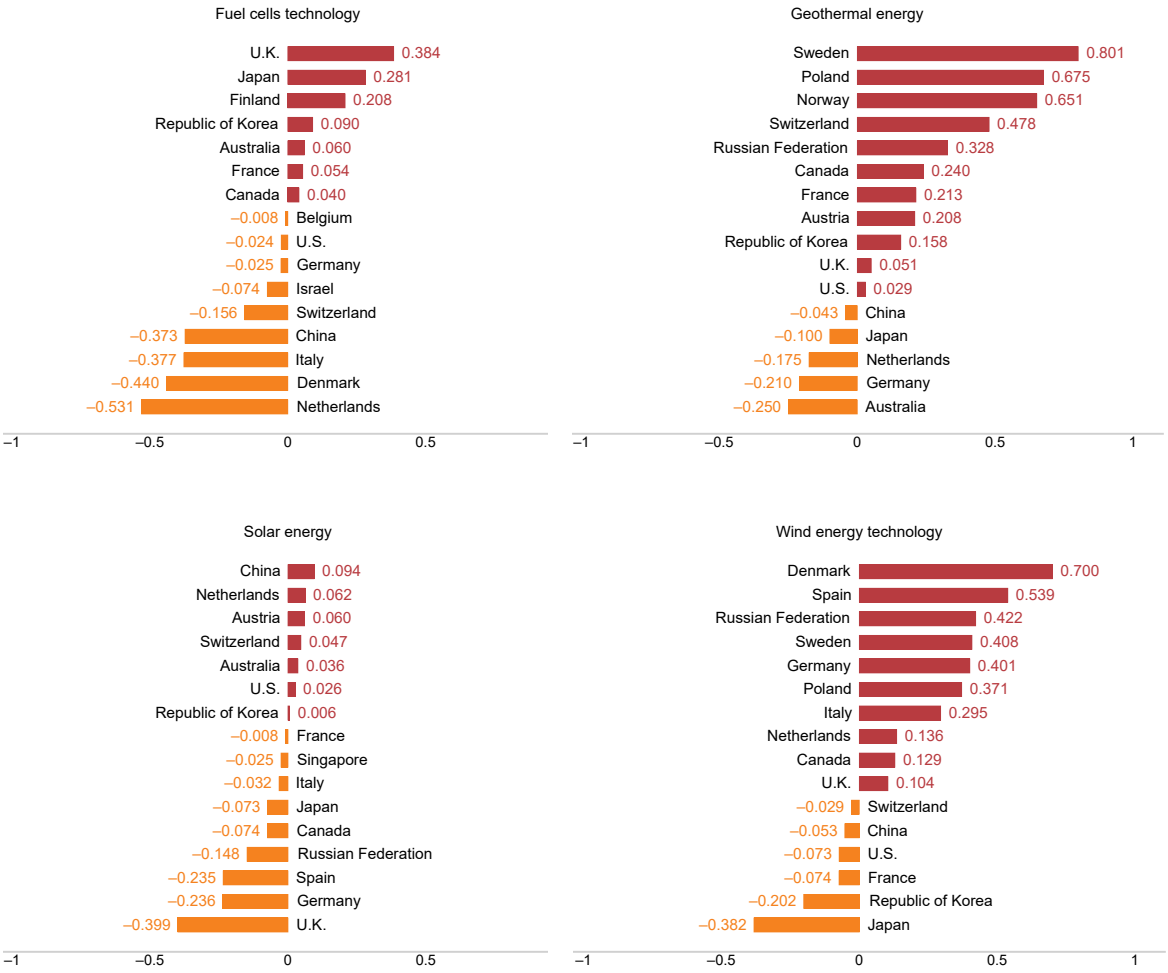
A31. Trend in patent applications in energy-related technologies, 2002–2017



Note: For definitions of the technologies – fuel cells, geothermal, solar and wind energy – see annex A. The correspondence between International Patent Classification (IPC) symbols and technology fields is not always apparent (there is no one-to-one correspondence). It is therefore difficult to capture all patents in a specific technology field. Even so, the IPC-based definitions are likely to capture the vast majority of patent applications in these areas. Data refer to published patent applications.

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

A32. Relative specialization for patent applications in energy-related technologies for the top origins, 2015–2017

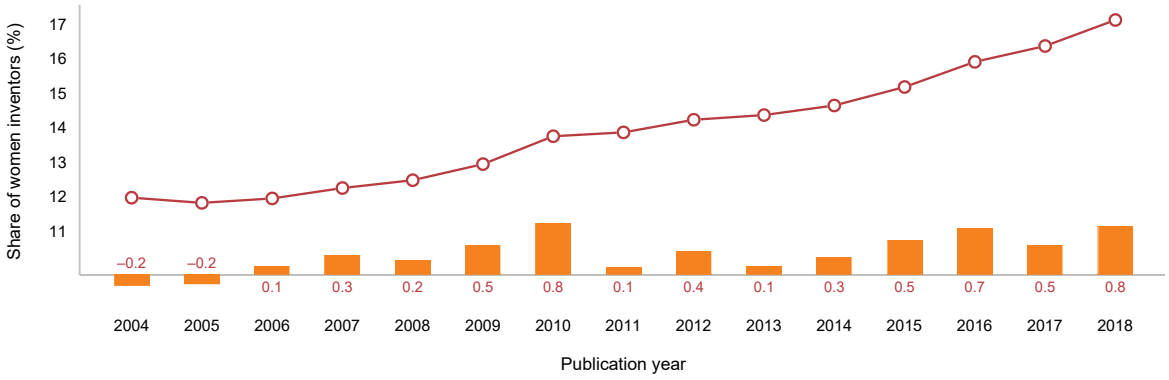


Note: For definitions of the technologies – fuel cells, geothermal, solar and wind energy – see annex A. The correspondence between International Patent Classification (IPC) symbols and technology fields is not always apparent (there is no one-to-one correspondence). It is therefore difficult to capture all patents in a specific technology field. Even so, the IPC-based definitions are likely to capture the vast majority of patent applications in these areas. Data refer to published patent applications.

Sources: WIPO Statistics Database and EPO PATSTAT database, August 2019.

Participation of women inventors in PCT applications

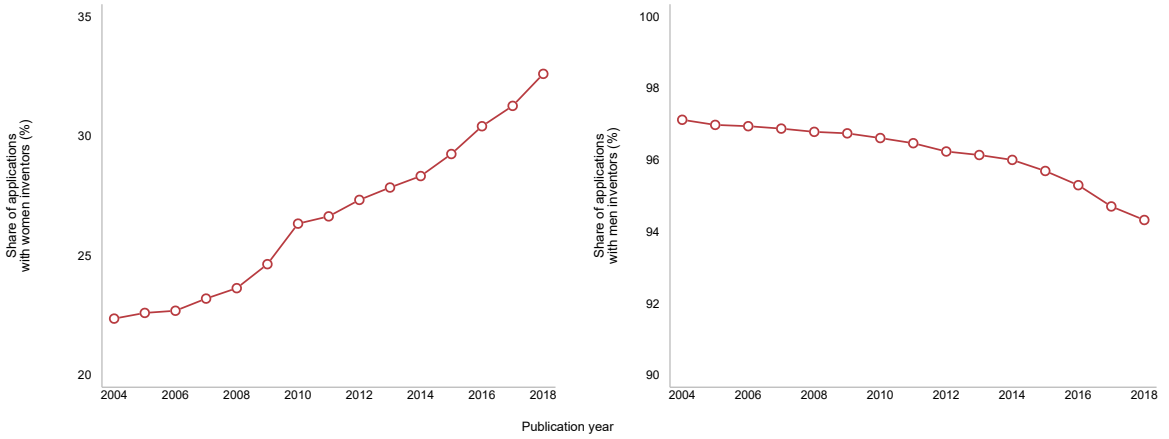
A33. Share of women among listed inventors in PCT applications, 2004–2018



Note: In order to attribute gender to inventors' names recorded in PCT applications, WIPO produced a world gender–name dictionary based on information from 13 different public sources. Gender is attributed to a given name on a country-by-country basis because certain names can be considered male in one country but female in another.

Source: WIPO Statistics Database, August 2019.

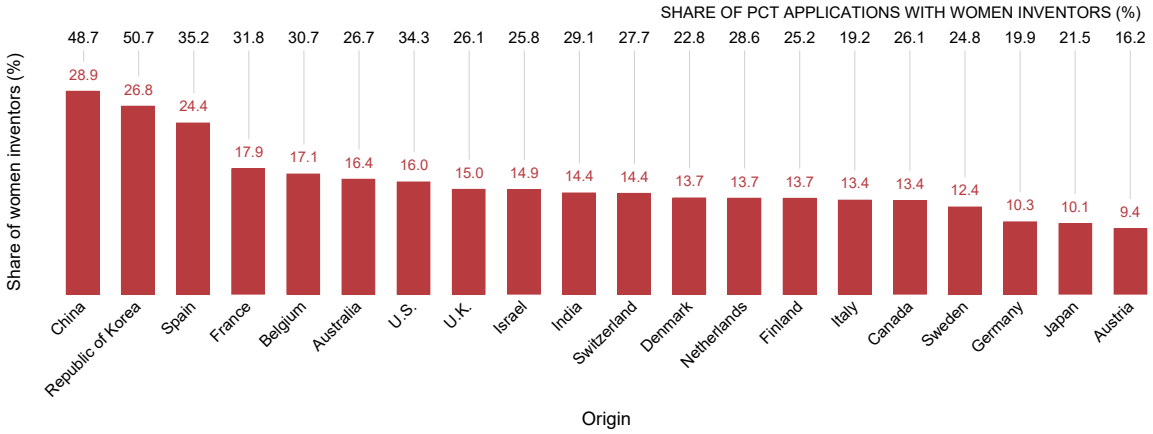
A34. Share of PCT applications with at least one woman as inventor and with at least one man as inventor, 2004–2018



Note: In order to attribute gender to inventors' names recorded in PCT applications, WIPO produced a gender–name dictionary based on information from 13 different public sources. Gender is attributed to a given name on a country-by-country basis because certain names can be considered male in one country but female in another.

Source: WIPO Statistics Database, August 2019.

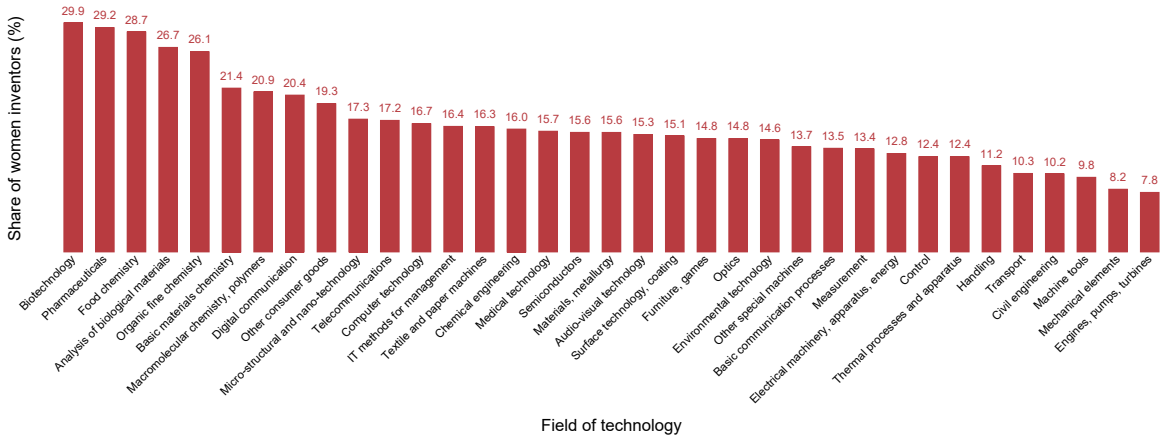
A35. Share of women among listed inventors and share of PCT applications with at least one woman as inventor for the top 20 origins, 2018



Note: In order to attribute gender to inventors' names recorded in PCT applications, WIPO produced a gender–name dictionary based on information from 13 different public sources. Gender is attributed to a given name on a country-by-country basis because certain names can be considered male in one country but female in another.

Source: WIPO Statistics Database, August 2019.

A36. Share of PCT patent applications with women inventors by field of technology, 2018

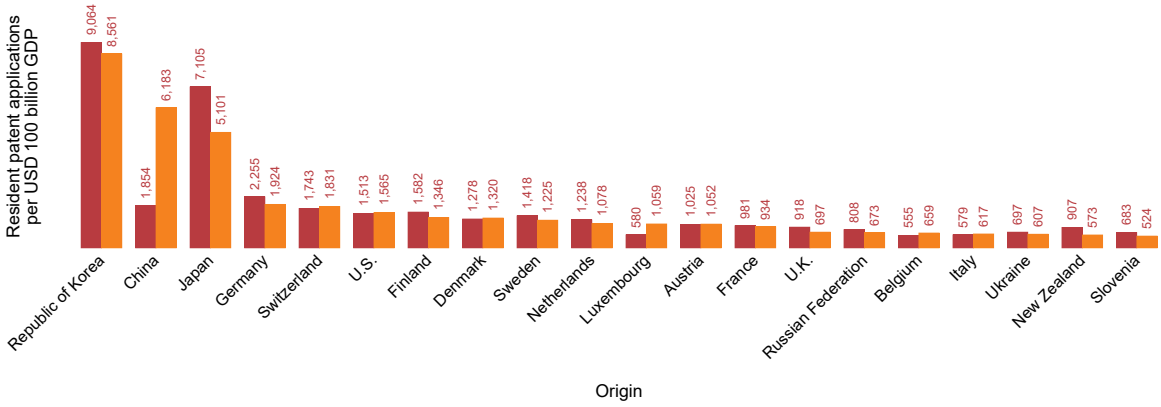


Note: In order to attribute gender to inventors' names recorded in PCT applications, WIPO produced a gender–name dictionary based on information from 13 different public sources. Gender is attributed to a given name on a country-by-country basis because certain names can be considered male in one country but female in another.

Source: WIPO Statistics Database, August 2019.

Patent applications in relation to GDP and population

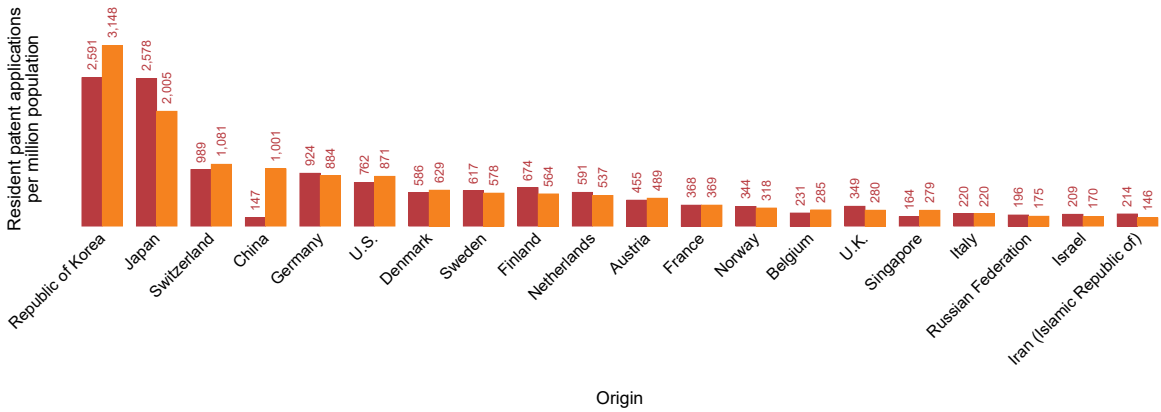
A37. Resident patent applications per USD 100 billion GDP for the top 20 origins, 2008 and 2018



Note: GDP data are in 2011 US purchasing power parity (PPP) dollars. The top 20 origins were included if they had a GDP greater than USD 25 billion PPP and more than 100 resident patent applications. Due to space constraints, only the top 20 origins to fulfil these criteria are presented.

Sources: WIPO Statistics Database and World Bank, August 2019.

A38. Resident patent applications per million population for the top 20 origins, 2008 and 2018

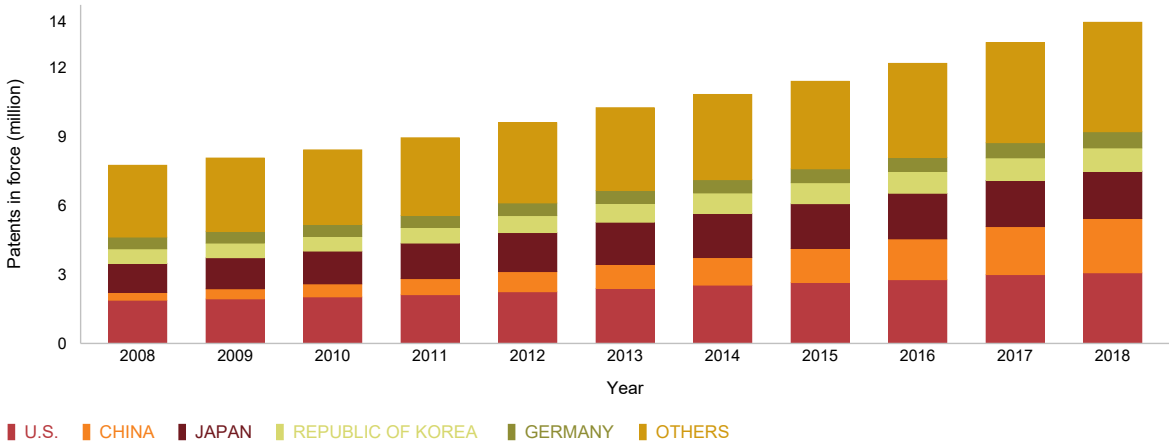


Note: The top 20 origins were included if they had a population greater than 5 million and if they had more than 100 resident patent applications. Due to space constraints, only the top 20 origins to fulfil these criteria are presented.

Sources: WIPO Statistics Database and World Bank, August 2019.

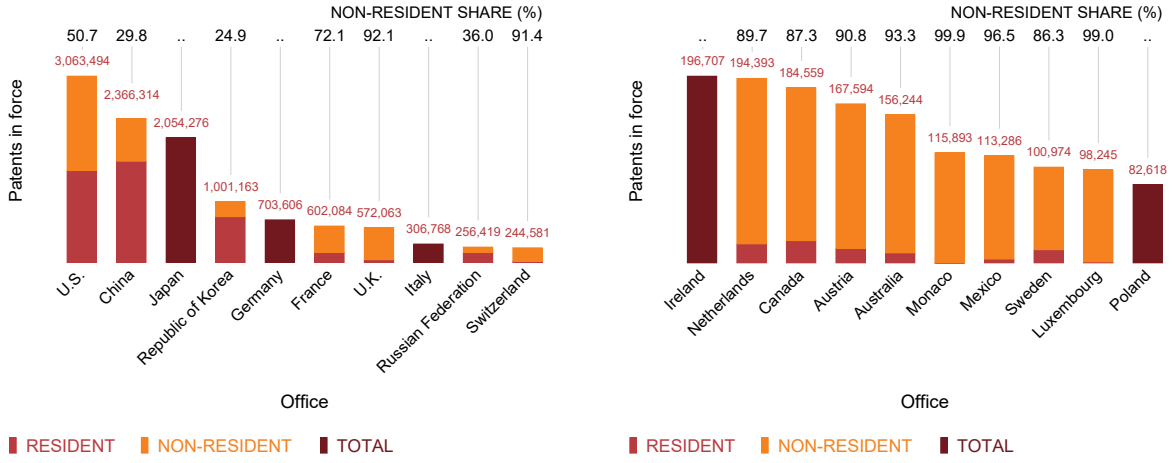
Patents in force

A39. Trend in patents in force worldwide, 2008–2018



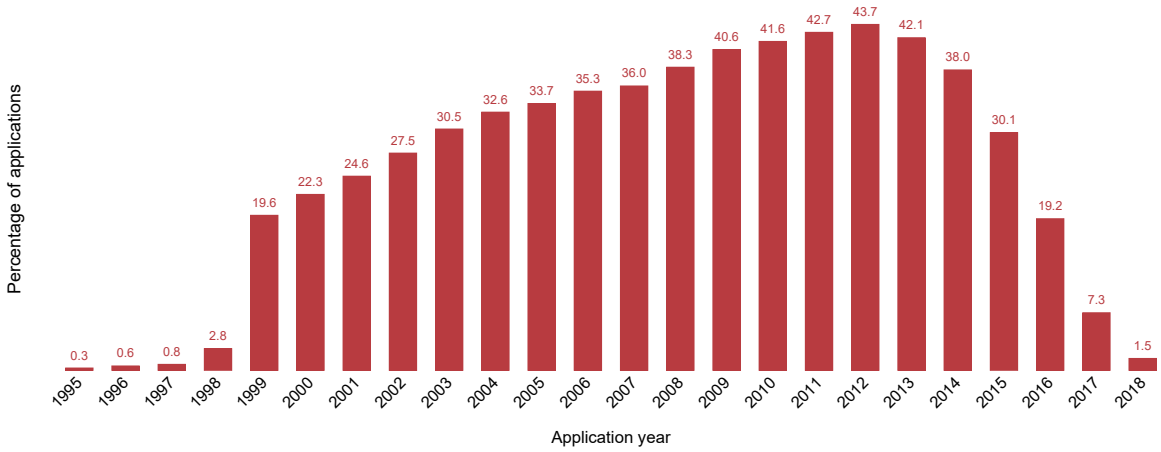
Note: World totals are WIPO estimates using data covering 125 offices.
Source: WIPO Statistics Database, August 2019.

A40. Patents in force at the top 20 offices, 2018



.. indicates not available.
Source: WIPO Statistics Database, August 2019.

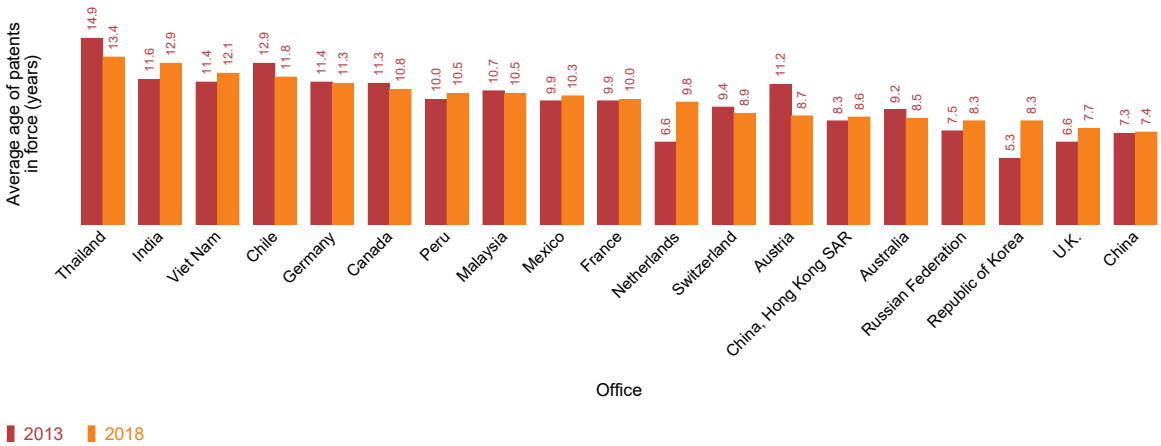
A41. Patents in force in 2018 as a percentage of total applications



Note: Percentages are calculated as the number of patent applications filed in year *t* and in force in 2018, divided by the total number of patent applications filed in year *t*. Patent holders must pay maintenance fees to maintain the validity of their patents. Depending on technological and commercial considerations, patent holders may opt to let a patent lapse before the end of the full protection term. This figure shows the distribution of patents in force in 2018 as a percentage of total applications in the year of filing. However, not all offices provide these data. Data for 78 offices show that 43.7% of the applications for which patents were eventually granted remained in force for at least 7 years after the application date. About 19.6% of these patents lasted the full 20-year patent term.

Source: WIPO Statistics Database, August 2019.

A42. Average age of patents in force at selected offices, 2013 and 2018

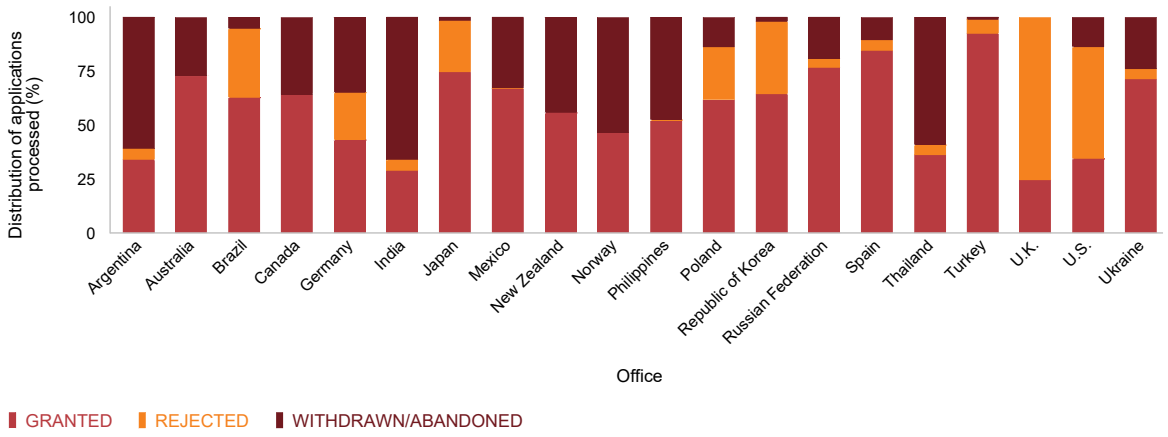


Note: The average age of patents in force is calculated using the following formula: $\Sigma(p*y)/\Sigma p$, where p is the number of patents in force and y the number of years between filing and reporting year.

Source: WIPO Statistics Database, August 2019.

Patent office procedural data

A43. Distribution of patent examination outcomes for selected offices, 2018



Note: The share of applications granted should not be interpreted as grant rates, as they are based on the examination date rather than the date when the application was filed. The number of grants in a given year relates to applications filed in previous years. WIPO collects data from IP offices using a common questionnaire and methodology. However, due to differences in patent procedures between offices, data cannot be fully harmonized. Therefore caution should be exercised when making comparisons across offices.

Source: WIPO Statistics Database, August 2019.

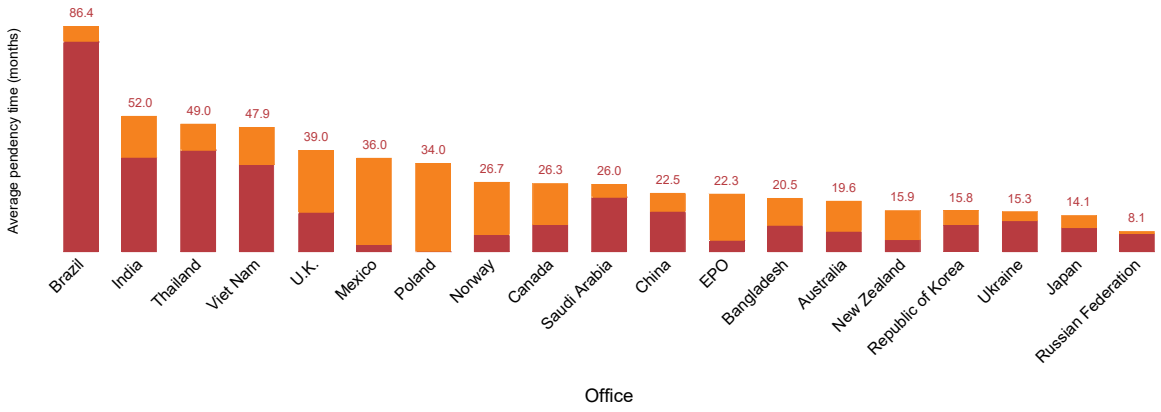
A44. Potentially pending applications at the top 20 offices, 2018

Note: EPO is the European Patent Office. Application processing varies between offices, making it difficult to measure pending applications. In some offices, patent applications automatically proceed to the examination stage unless applicants withdraw them; in others, applications do not proceed to examination unless applicants file a separate request for examination. To take account of procedural differences, pending application data are separated between (a) all patent applications, at any stage in the process, that are awaiting a final decision by a patent office, including those for which applicants have not filed a request for examination (where applicable) and (b) patent applications undergoing examination for which the applicant has requested examination (where such separate requests are necessary). Data for Brazil include both pending patent and utility model applications, and so are not comparable with other offices.

.. indicates not available.

Source: WIPO Statistics Database, August 2019.

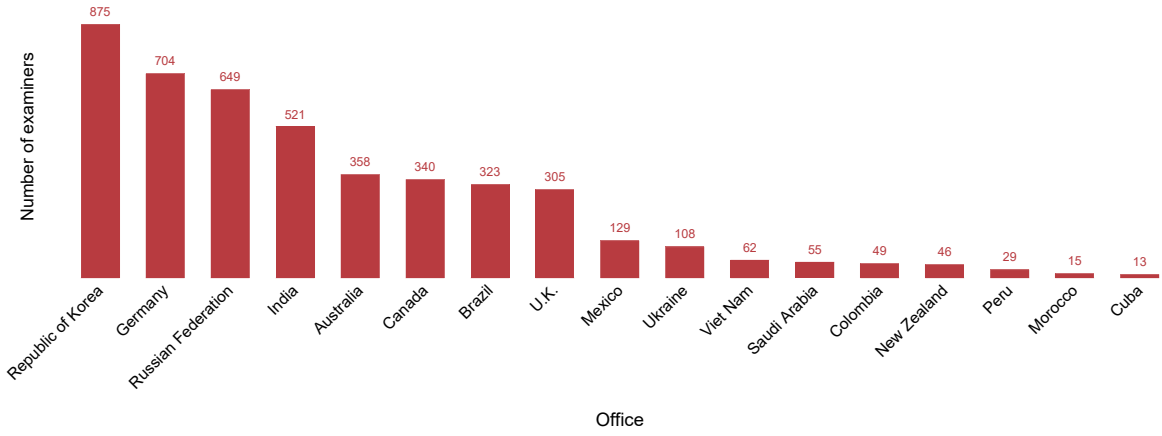
A45. Average pendency times for first office action and final decision at selected offices, 2018



Note: EPO is the European Patent Office. WIPO collects data from IP offices using a common questionnaire and methodology. However, due to differences in patent procedures between offices, data cannot be fully harmonized. Therefore caution should be exercised when making comparisons across offices.

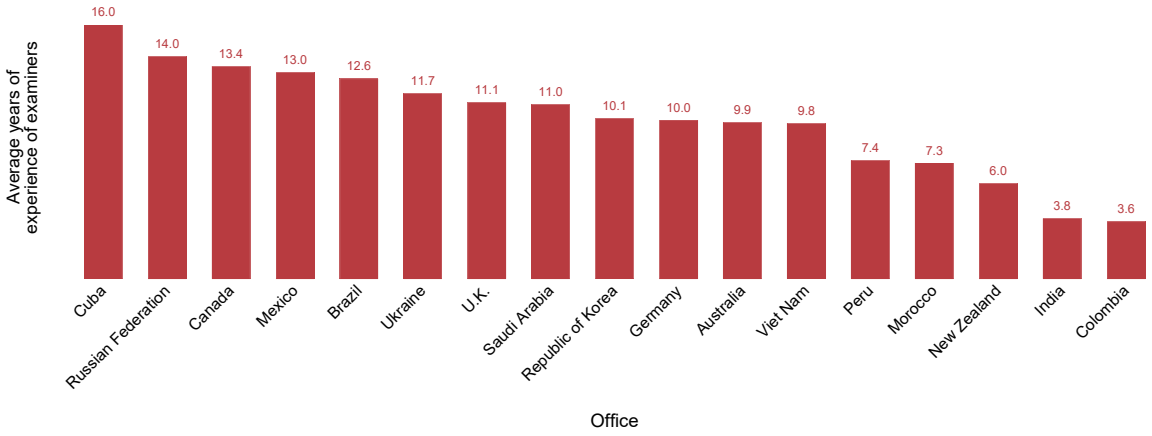
Source: WIPO Statistics Database, August 2019.

A46. Number of patent examiners for selected offices, 2018



Source: WIPO Statistics Database, August 2019.

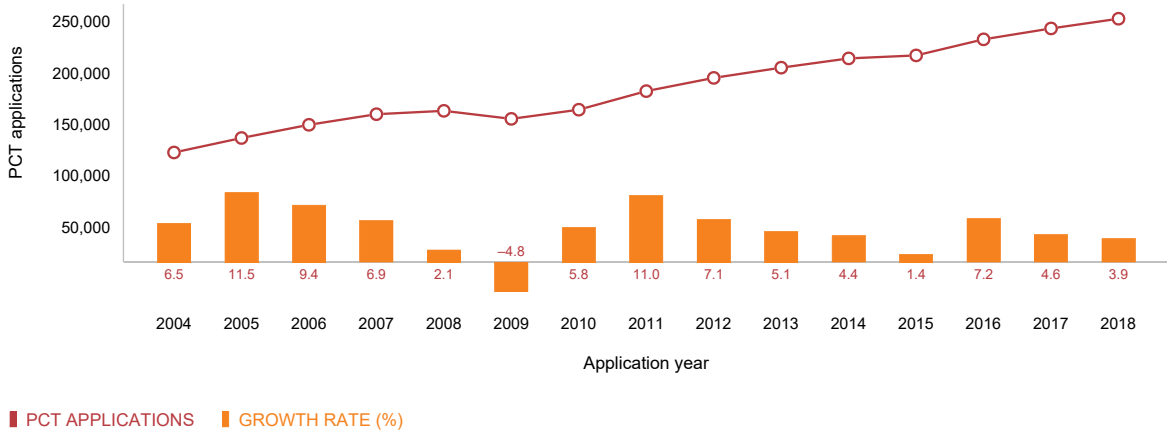
A47. Average years of experience of patent examiners for selected offices, 2018



Source: WIPO Statistics Database, August 2019.

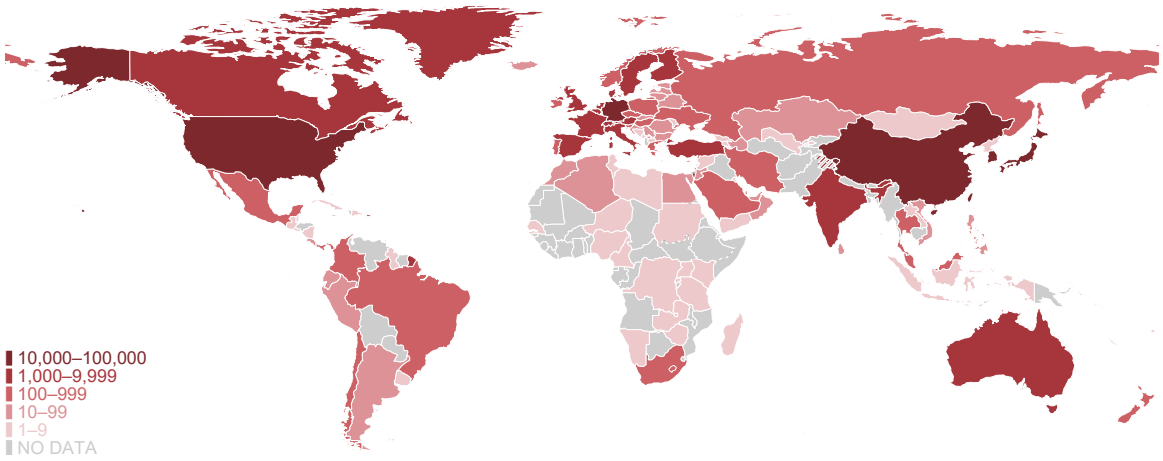
Patent applications filed through the Patent Cooperation Treaty (PCT) System

A48. Trend in PCT applications, 2004–2018



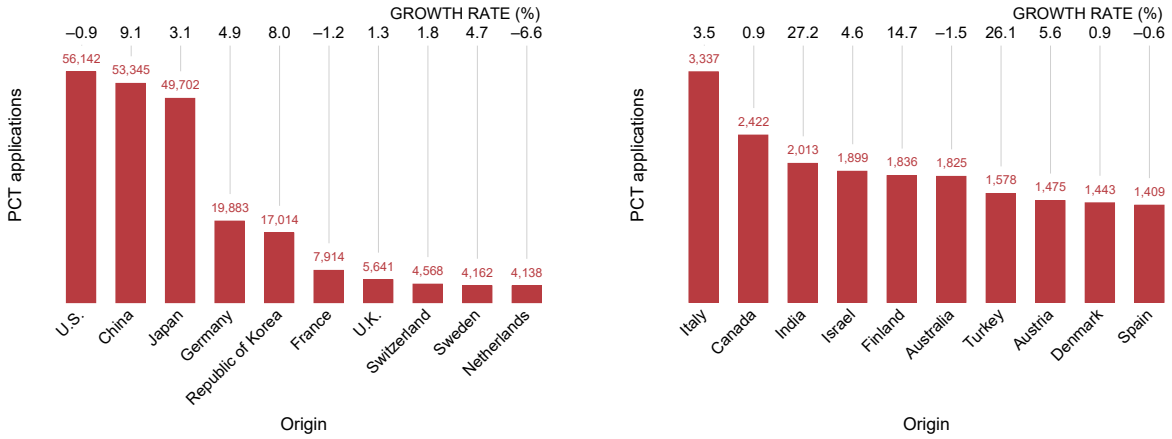
Note: Data refer to the international phase of the Patent Cooperation Treaty System. Counts are based on the international application date.
Source: WIPO Statistics Database, August 2019.

A49. PCT applications by origin, 2018



Note: Data refer to the international phase of the Patent Cooperation Treaty System. Counts are based on the residency of the first named applicant and the international application date.
Source: WIPO Statistics Database, August 2019.

A50. PCT applications for the top 20 origins, 2018



Note: Data refer to the international phase of the Patent Cooperation Treaty System. Counts are based on the residency of the first named applicant and the international application date.

Source: WIPO Statistics Database, August 2019.

Patent prosecution highway (PPH)

A51. PPH requests by office of first filing and offices of later examination, 2018

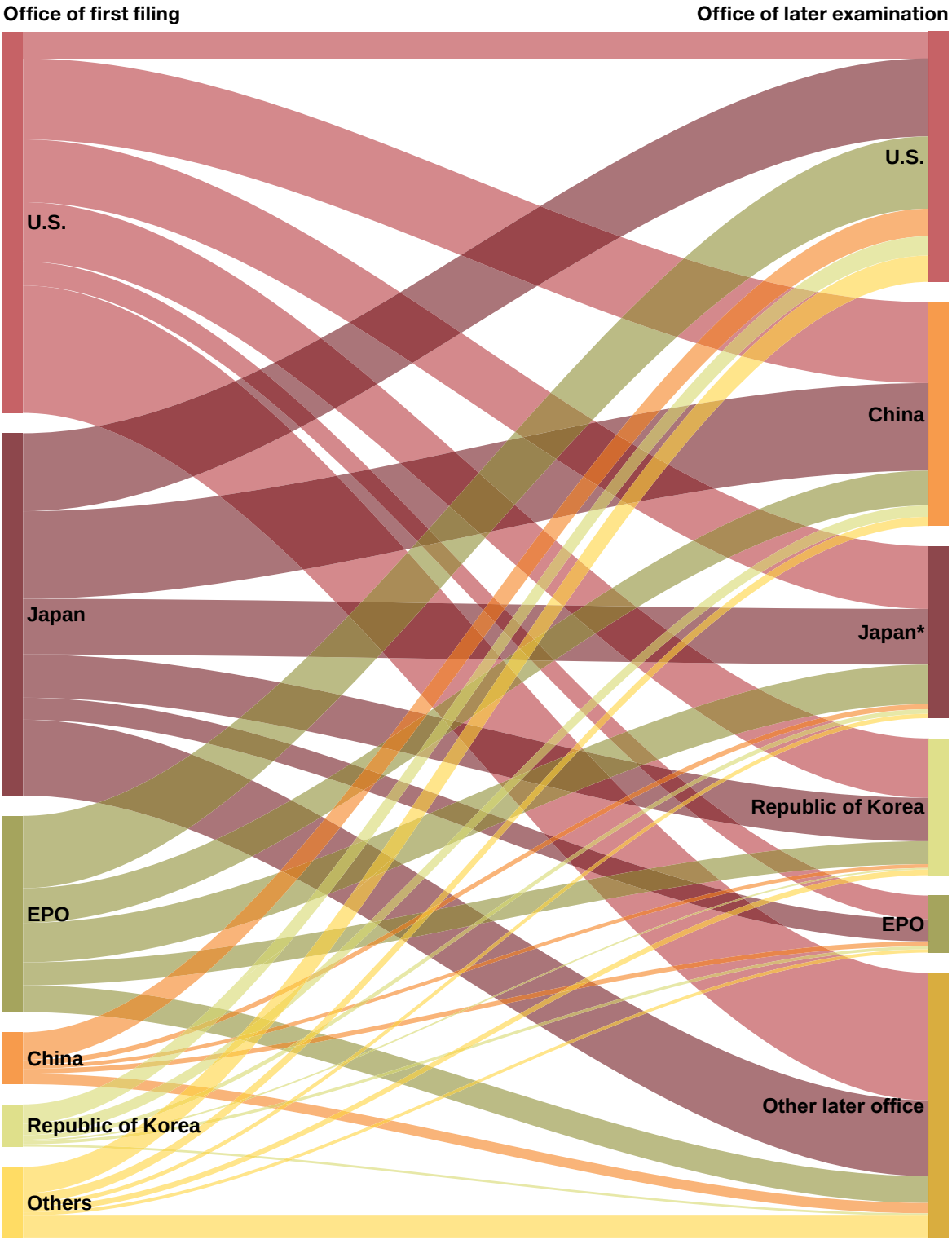
	Office of first filing																
Office of later examination	**U.S.**	**Japan**	**EPO**	**China**	**Republic of Korea**	**Canada**	**Australia**	**Germany**	**U.K.**	**Denmark**	**Israel**	**Russian Federation**	**Sweden**	**Finland**	**Singapore**	**Others/Unknown**	**Total**
Australia	688	104	87	9	10	11	4	20	34	14		3	3	3	5	67	**1,062**
Brazil	69	43	17	138				2								21	**290**
Canada	1,885	251	429	61	34	123	85	7	9	2	17	6	2	2	7	3	**2,923**
China	2,151	2,326	923		302	8		73	35	41	12	25	30	9	6	2	**5,943**
Colombia	42	2	10			1	1	2					1			3	**62**
EAPO		10	11	2													**23**
EPO	633	585		130	80	12	25				31	14			3	3	**1,516**
Germany	140	872		16	4		4		21					1	1	2	**1,061**
Indonesia	1	269						1								1	**272**
Japan*	1,667	1,479	1,049	136	122	12	22	23	14	27	6	4	1	2	1	4	**4,569**
Mexico	269	199	130	5	8	11									1	13	**636**
New Zealand	29	10		1			2		4					1	2	8	**57**
Norway	12					3			2	1			4	2		5	**29**
Republic of Korea	1,580	1,150	609	101	44	10	41	14	13	38	5	4	9	8	5	3	**3,634**
Russian Federation	106	66	20	8	1			5	1				1			3	**211**
Singapore	16	26	4	2			2	1			2				1	3	**57**
Thailand		24															**24**
U.K.	125	19		31	2	1	7	3								1	**189**
U.S.	714	2,071	1,920	733	512	158	62	99	78	31	74	79	34	36	13	35	**6,649**
Viet Nam		100															**100**
Others/Unknown	4	20	2	4	1	1		2	1	2				3		12	**52**
Total	**10,131**	**9,626**	**5,211**	**1,377**	**1,120**	**351**	**255**	**252**	**212**	**156**	**147**	**135**	**85**	**67**	**45**	**189**	**29,359**

Note: EAPO is the Eurasian Patent Organization and EPO is the European Patent Office. A patent prosecution highway is a bilateral agreement between two offices that enables applicants to request a fast-track examination whereby patent examiners can use the work already undertaken by the other office.

* indicates data based on office of earlier examination rather than office of first filing.

Source: WIPO Statistics Database, August 2019.

A52. Flows of PPH requests between offices of first filing and offices of later examination, 2018



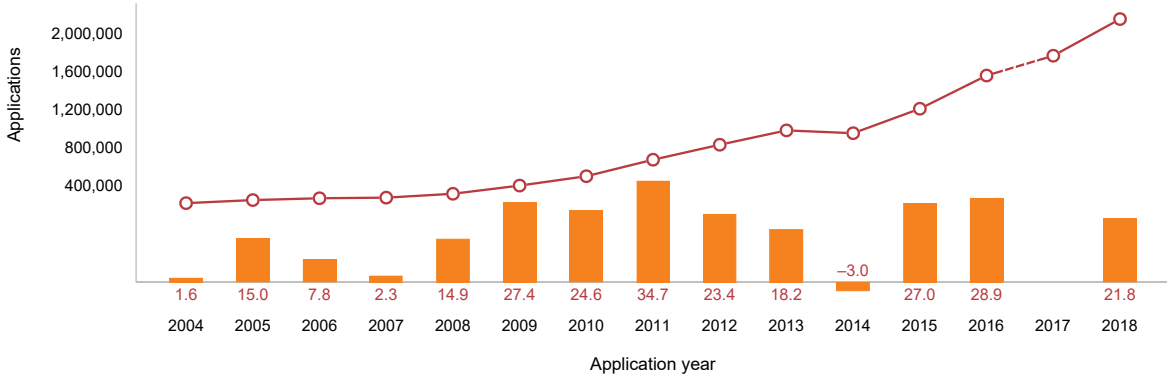
Note: EPO is the European Patent Office. Japan data refers to the office of earlier examination rather than the office of first filing. A patent prosecution highway (PPH) is a bilateral agreement between two offices that enables applicants to request a fast-track examination whereby patent examiners can use the work already undertaken by the other office. This graph shows the flows of PPH requests between offices of first filing and offices of later examination.

* indicates data based on office of earlier examination rather than office of first filing.

Source: WIPO Statistics Database, August 2019.

Utility model applications

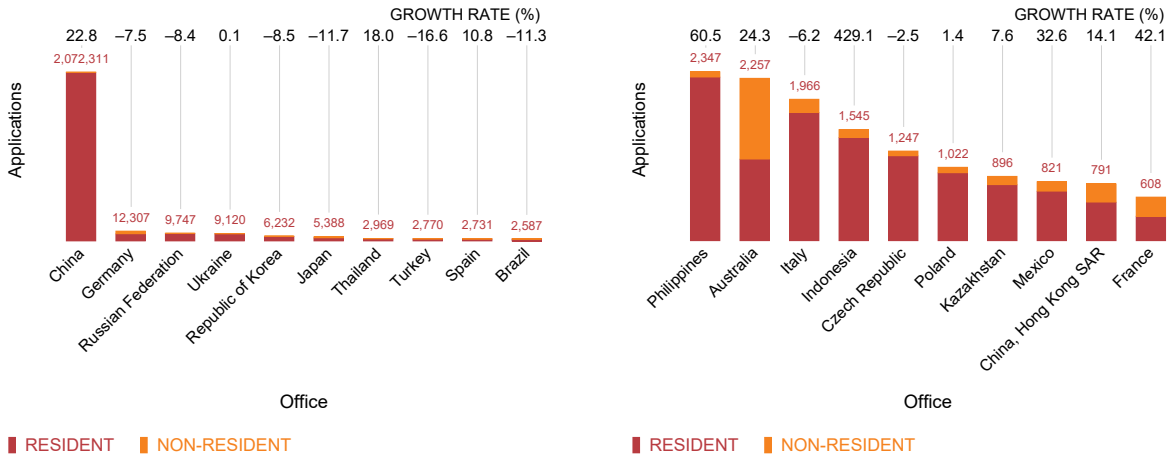
A53. Trend in utility model applications worldwide, 2004–2018



Note: World totals are WIPO estimates using data covering 75 patent offices. These totals include applications filed directly with national and regional offices and applications entering offices through the Patent Cooperation Treaty national phase (where applicable). China's pre-2017 data are not comparable due a change in methodology. Due to this break in the data series and to the large number of filings in China, it is not possible to report accurately the 2017 growth rate at world level (see the data description section in Additional information for details).

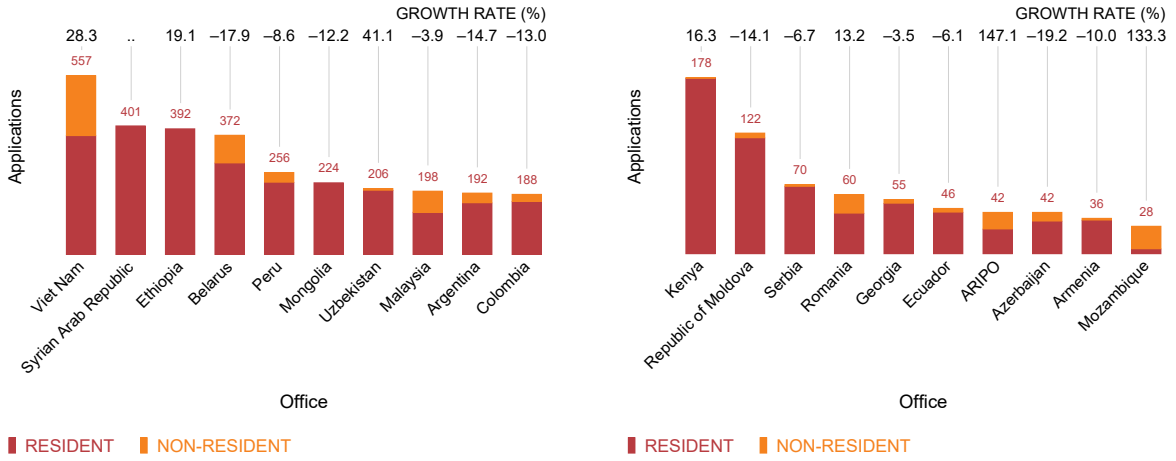
Source: WIPO Statistics Database, August 2019.

A54. Utility model applications for the top 20 offices, 2018



Source: WIPO Statistics Database, August 2019.

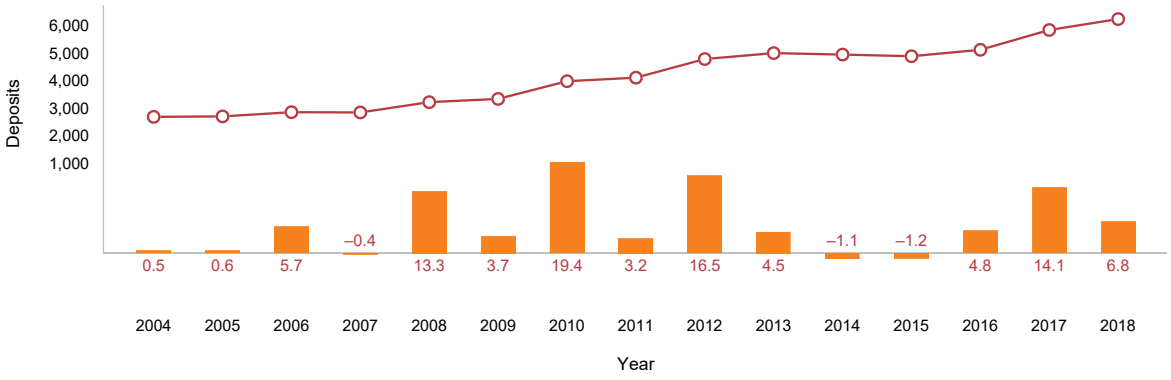
A55. Utility model applications for offices of selected low- and middle-income countries, 2018



Note: ARIPO is the African Regional Intellectual Property Organization.
.. indicates not available.
Source: WIPO Statistics Database, August 2019.

Microorganisms

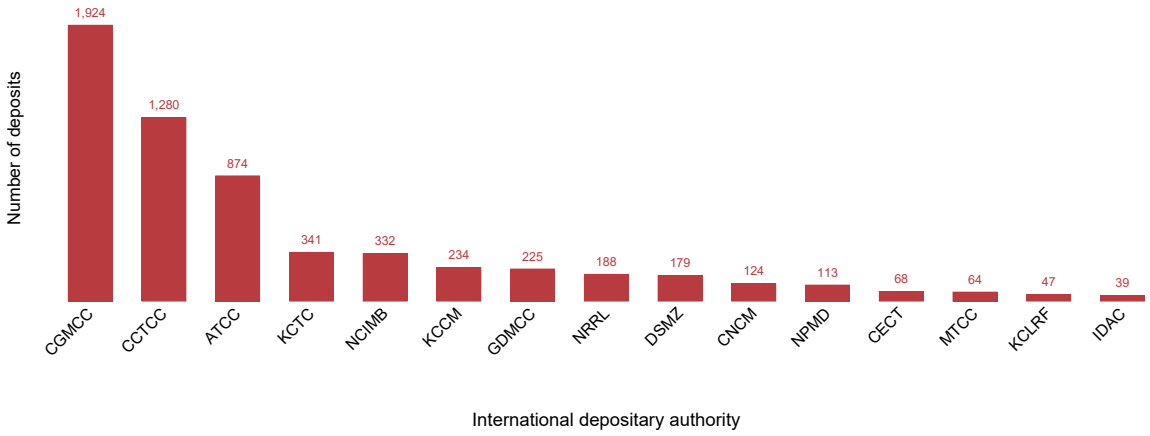
A56. Trend in microorganism deposits worldwide, 2004–2018



Note: Deposits of microorganisms for patent procedures are important for biotechnological inventions. Disclosing an invention is a requirement for receiving a patent.

Source: WIPO Statistics Database, August 2019.

A57. Deposits at the top international depositary authorities, 2018



Note: ATCC is the American Type Culture Collection (U.S.), CCTCC is the China Center for Type Culture Collection (China), CECT is the Colección Española de Cultivos Tipo (Spain), CGMCC is the China General Microbiological Culture Collection Center (China), CNCM is the Collection Nationale de Cultures de Micro-organismes (France), DSMZ is the Leibniz-Institut DSMZ (Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH; Germany), GDMCC is the Guangdong Microbial Culture Collection Center (China), IDAC is the International Depositary Authority of Canada (Canada), KCCM is the Korean Culture Center of Microorganisms (Republic of Korea), KCLRF is the Korean Cell Line Research Foundation (Republic of Korea), KCTC is the Korean Collection for Type Cultures (Republic of Korea), MTCC is the Microbial Type Culture Collection and Gene Bank (India), NCIMB is the National Collection of Industrial, Food and Marine Bacteria (U.K.), NPMD is the National Institute of Technology and Evaluation, Patent Microorganisms Depositary (Japan) and NRRL is the Agriculture Research Service Culture Collection (U.S.).

Source: WIPO Statistics Database, August 2019.

Statistical tables

A58. Patent applications by office and origin, 2018

Name	Applications by office			Equivalent applications by origin	PCT international applications		PCT national phase entry	
	Total	Resident	Non-resident	Total [a]	Receiving office	Origin	Office	Origin
Afghanistan (b)	..	..	..	11	n.a.	0	..	1
African Intellectual Property Organization	551	129	422	n.a.	0	n.a.	398	n.a.
African Regional Intellectual Property Organization	831	21	810	n.a.	2	n.a.	772	n.a.
Albania	18	15	3	18	0	0	3	..
Algeria	673	152	521	162	16	17	497	4
Andorra	11	1	10	22	n.a.	7	..	13
Angola (b,c)	..	..	..	8	n.a.	0	..	7
Antigua and Barbuda	10	5	5	596	0	96	5	526
Argentina	3,667	425	3,242	755	n.a.	42	..	111
Armenia	105	101	4	165	0	6	3	15
Aruba (b)	..	..	..	2	n.a.	0	..	..
Australia	29,957	2,757	27,200	12,261	1,675	1,825	20,900	7,824
Austria	2,207	2,039	168	14,561	441	1,475	427	7,473
Azerbaijan	171	155	16	414	14	15	15	27
Bahamas (b)	..	..	..	46	n.a.	4	..	22
Bahrain	230	11	219	47	0	1	213	3
Bangladesh	368	69	299	85	n.a.	0	..	1
Barbados (b,c)	..	..	..	825	n.a.	96	..	342
Belarus	547	453	94	1,479	22	23	60	75
Belgium	1,110	892	218	14,587	0	1,295	..	8,621
Belize	24	0	24	8	0	1	24	3
Benin (b,d,g)	n.a.	n.a.	n.a.	85	n.a.	0	n.a.	..
Bermuda (b)	..	..	..	74	n.a.	0	..	25
Bhutan (b)	..	..	..	6	n.a.	0	..	3
Bolivia (Plurinational State of) (b)	..	..	..	5	n.a.	0	..	3
Bosnia and Herzegovina	96	84	12	95	3	4	7	2
Botswana	3	0	3	1	0	0	..	1
Brazil	24,857	4,980	19,877	6,859	570	619	18,011	1,074
Brunei Darussalam	121	24	97	25	1	1	90	1
Bulgaria	198	180	18	459	47	60	4	145
Burkina Faso (b,d,g)	n.a.	n.a.	n.a.	120	n.a.	0	n.a.	..
Burundi (b)	..	..	..	6	n.a.	0	..	6
Cabo Verde	3	3	0	3	n.a.	0	..	..
Cambodia	159	0	159	10	0	0	26	9
Cameroon (b,d,g)	n.a.	n.a.	n.a.	708	n.a.	1	n.a.	7
Canada	36,161	4,349	31,812	24,483	1,914	2,422	28,396	9,450
Central African Republic (b,d,g)	n.a.	n.a.	n.a.	51	n.a.	0	n.a.	..
Chad (b,d,g)	n.a.	n.a.	n.a.	136	n.a.	0	n.a.	..
Chile	3,100	406	2,694	946	204	245	2,578	422
China	1,542,002	1,393,815	148,187	1,460,244	55,211	53,345	84,297	36,789
China, Hong Kong SAR	15,986	314	15,672	2,205	n.a.	0	..	511
China, Macao SAR	55	1	54	136	n.a.	0	..	28
Colombia	2,223	415	1,808	637	26	163	1,707	162
Congo (b,d,g)	n.a.	n.a.	n.a.	19	n.a.	0	n.a.	..
Cook Islands (b)	..	..	..	3	n.a.	0	..	..

Name	Applications by office			Equivalent applications by origin	PCT international applications		PCT national phase entry	
	Total	Resident	Non-resident	Total [a]	Receiving office	Origin	Office	Origin
Costa Rica	498	7	491	115	11	13	486	42
Côte d'Ivoire (b,d,g)	n.a.	n.a.	n.a.	394	n.a.	0	n.a.	2
Croatia	136	121	15	201	24	40	2	58
Cuba	155	29	126	148	7	7	120	111
Curaçao (b)	..	..	..	5	n.a.	0	..	1
Cyprus	4	4	0	432	2	40	..	247
Czech Republic	732	678	54	2,251	124	180	24	740
Democratic People's Republic of Korea (b)	..	..	..	63	2	2	..	40
Democratic Republic of the Congo (b)	..	..	..	2	n.a.	1	..	..
Denmark	1,501	1,262	239	13,385	457	1,443	93	7,496
Dominica	4	0	4	..	n.a.	0	4	..
Dominican Republic	228	17	211	40	4	4	208	8
Ecuador	405	34	371	51	2	31	364	14
Egypt	2,255	997	1,258	1,174	42	44	1,226	47
El Salvador	139	3	136	14	0	1	128	2
Eritrea (b)	..	..	..	2	n.a.	0	..	..
Estonia	30	24	6	270	4	48	4	113
Eswatini (b,f)	..	..	..	95	n.a.	0	..	93
Ethiopia	62	13	49	13	n.a.	0	..	..
Eurasian Patent Organization	3,488	664	2,824	n.a.	11	n.a.	2,643	n.a.
European Patent Office	174,397	81,565	92,832	n.a.	37,975	n.a.	102,196	n.a.
Fiji (b)	..	..	..	1	n.a.	1	..	..
Finland	1,487	1,387	100	11,572	1,007	1,836	24	6,507
France	16,222	14,303	1,919	69,120	3,555	7,914	..	35,439
Gabon (b,d,g)	n.a.	n.a.	n.a.	52	n.a.	0	n.a.	..
Gambia (b,f)	..	..	..	2	n.a.	0	..	1
Georgia	260	103	157	128	5	6	151	11
Germany	67,898	46,617	21,281	180,086	1,430	19,883	7,027	73,318
Ghana	52	13	39	15	0	0	26	..
Greece	579	430	149	1,137	60	115	..	357
Guatemala	234	6	228	15	0	1	220	3
Guinea (b,d,g)	n.a.	n.a.	n.a.	17	n.a.	0	n.a.	..
Guyana	20	2	18	2	n.a.	1	..	..
Haiti (b)	..	..	..	2	n.a.	0	..	..
Honduras	156	8	148	9	0	0	144	..
Hungary	443	407	36	1,340	113	153	11	672
Iceland	66	56	10	281	14	49	7	134
India	50,055	16,289	33,766	30,036	920	2,013	27,688	4,296
Indonesia	9,754	1,407	8,347	1,451	3	7	7,127	21
International Bureau (b)	..	..	..	n.a.	12,259	n.a.	..	n.a.
Iran (Islamic Republic of)	12,823	11,908	915	12,074	27	176	..	21
Iraq	730	653	77	664	n.a.	0	..	2
Ireland	108	76	32	6,334	16	620	..	2,863
Israel	7,363	1,506	5,857	15,482	1,437	1,899	6,158	7,281
Italy	9,821	8,921	900	32,286	434	3,337	..	14,887

Name	Applications by office			Equivalent applications by origin	PCT international applications		PCT national phase entry	
	Total	Resident	Non-resident	Total [a]	Receiving office	Origin	Office	Origin
Jamaica	79	26	53	42	n.a.	0	..	5
Japan	313,567	253,630	59,937	460,369	48,630	49,702	64,013	133,414
Jordan	133	24	109	51	9	13	16	7
Kazakhstan	982	789	193	1,633	15	18	..	33
Kenya	286	244	42	293	3	8	38	10
Kuwait	257	1	256	160	n.a.	6	256	5
Kyrgyzstan (b)	..	..	..	4	0	0	..	..
Lao People's Democratic Republic (c)	59	1	58	1	n.a.	3	40	..
Latvia	110	86	24	175	0	31	..	50
Lebanon (b)	..	..	..	76	n.a.	6	..	35
Liberia (b)	..	..	..	1	0	0	..	..
Libya (b)	..	..	..	..	0	2	..	..
Liechtenstein (b,e)	..	..	..	1,353	n.a.	263	..	749
Lithuania	105	81	24	230	0	37	..	95
Luxembourg	395	152	243	3,199	0	392	..	2,186
Madagascar (c)	46	9	37	9	n.a.	1	37	..
Malawi (b)	..	..	..	2	0	0	..	1
Malaysia	7,295	1,116	6,179	2,060	138	143	5,072	444
Mali (b,d,g)	n.a.	n.a.	n.a.	142	n.a.	0	n.a.	2
Malta (b)	..	..	..	394	0	45	..	228
Marshall Islands (b)	..	..	..	1	n.a.	0	..	1
Mauritania (b,d,g)	n.a.	n.a.	n.a.	1	n.a.	0	n.a.	..
Mauritius	29	16	13	192	n.a.	4	..	86
Mexico	16,424	1,555	14,869	2,695	196	274	12,637	643
Monaco	15	4	11	134	0	21	..	38
Mongolia	161	82	79	83	0	2	69	..
Montenegro (c)	3	3	0	16	0	8	..	8
Morocco	2,537	187	2,350	337	44	49	1,963	128
Mozambique (f)	47	34	13	34	n.a.	0	13	..
Myanmar (b)	..	..	..	1	n.a.	0	..	..
Namibia (f)	36	21	15	24	n.a.	3	7	2
Nepal (b)	..	..	..	6	n.a.	0	..	..
Netherlands	2,505	2,111	394	36,539	917	4,138	..	22,691
Netherlands Antilles (b)	..	..	..	1	n.a.	0	..	1
New Zealand	6,238	1,017	5,221	3,039	186	278	4,084	1,453
Nicaragua (b)	..	..	..	2	1	1	..	..
Niger (b,d,g)	n.a.	n.a.	n.a.	103	n.a.	1	n.a.	1
Nigeria (c)	338	120	218	153	n.a.	2	148	9
North Macedonia (b)	..	..	..	1	5	6	..	..
Norway	1,674	1,082	592	6,511	346	766	544	4,000
Oman (b,c)	..	..	..	19	11	14	..	..
Pakistan	892	306	586	350	n.a.	0	..	8
Panama	497	135	362	183	22	185	347	10
Paraguay	350	..	..	20	n.a.	0	..	5
Patent Office of the Cooperation Council for the Arab States of the Gulf	2,220	667	1,553	n.a.	n.a.	n.a.	..	n.a.

Name	Applications by office			Equivalent applications by origin	PCT international applications		PCT national phase entry	
	Total	Resident	Non-resident	Total [a]	Receiving office	Origin	Office	Origin
Peru	1,222	89	1,133	135	39	38	1,065	43
Philippines	4,300	529	3,771	736	14	18	3,182	57
Poland	4,322	4,207	115	6,757	201	335	53	1,219
Portugal	690	661	29	1,643	68	250	10	631
Qatar (b)	..	..	..	167	7	15	..	70
Republic of Korea	209,992	162,561	47,431	232,020	17,002	17,014	38,239	28,990
Republic of Moldova	113	92	21	160	5	5	20	44
Romania	1,147	1,100	47	1,501	16	28	20	151
Russian Federation	37,957	24,926	13,031	30,696	993	963	10,159	2,496
Rwanda	7	6	1	6	0	1	..	..
Saint Kitts and Nevis	4	0	4	10	0	4	4	8
Saint Lucia (c)	2	2	0	3	n.a.	0	..	..
Saint Vincent and the Grenadines (c)	4	0	4	..	n.a.	0	4	..
Samoa	1	1	0	62	n.a.	1	..	2
San Marino	695	14	681	68	0	3	..	30
Sao Tome and Principe (c)	408	0	408	3	n.a.	0	408	1
Saudi Arabia	3,399	1,078	2,321	6,910	40	661	2,464	1,104
Senegal (b,d,g)	n.a.	n.a.	n.a.	341	n.a.	4	n.a.	..
Serbia	174	163	11	308	20	20	7	92
Seychelles	17	0	17	106	0	2	16	50
Singapore	11,845	1,575	10,270	7,415	654	930	7,740	2,897
Slovakia	231	217	14	560	28	50	3	203
Slovenia	278	255	23	738	63	116	..	219
South Africa	6,915	657	6,258	1,861	67	274	5,706	1,081
Spain	1,674	1,525	149	10,292	948	1,409	96	5,062
Sri Lanka (c)	603	343	260	382	n.a.	18	234	18
Sudan	380	349	31	350	6	6	..	..
Sweden	2,280	1,838	442	25,310	1,406	4,162	73	17,371
Switzerland	1,615	1,283	332	46,659	78	4,568	82	26,856
Syrian Arab Republic	148	103	45	112	1	1	..	7
Tajikistan (b)	..	..	..	56	0	0	..	..
Thailand	8,149	904	7,245	1,685	61	105	6,290	499
Togo (b,d,g)	n.a.	n.a.	n.a.	52	n.a.	0	n.a.	..
Trinidad and Tobago	139	4	135	11	2	5	134	1
Tunisia	451	180	271	201	6	7	271	8
Turkey	7,466	7,156	310	9,360	1,292	1,578	215	1,461
Turkmenistan (b)	..	..	..	9	0	0	..	1
Uganda (f)	6	6	0	10	n.a.	1	..	..
Ukraine	3,968	2,107	1,861	2,541	143	156	1,613	206
United Arab Emirates (c)	1,783	56	1,727	734	n.a.	92	1,664	201
United Kingdom	20,941	12,865	8,076	56,216	3,887	5,641	2,573	28,914
United Republic of Tanzania (f)	25	25	0	27	n.a.	2	9	9
United States of America	597,141	285,095	312,046	515,180	55,330	56,142	155,322	189,054
Uruguay (b)	..	..	..	110	n.a.	8	..	79
Uzbekistan	650	470	180	480	1	2	157	4

Name	Applications by office			Equivalent applications by origin	PCT international applications		PCT national phase entry	
	Total	Resident	Non-resident	Total [a]	Receiving office	Origin	Office	Origin
Vanuatu (b)	..	..	..	10	n.a.	0	..	10
Venezuela (Bolivarian Republic of) (b)	..	..	..	21	n.a.	0	..	8
Viet Nam	6,071	646	5,425	749	8	22	4,567	50
Yemen (b)	..	..	..	7	n.a.	1	..	..
Zambia (b)	..	..	..	2	0	2	..	1
Zimbabwe (b)	..	..	..	4	0	1	..	2
Others/Unknown	..	..	..	40,480	n.a.	289	..	7,524
Total (2018 estimates)	**3,326,300**	**2,378,400**	**947,900**	**n.a.**	**253,000**	**253,000**	**647,700**	**n.a.**

(a) Equivalent applications by origin data are incomplete because some offices do not report by origin.

(b) The office did not report resident applications therefore the equivalent applications by origin data may be incomplete.

(c) The International Bureau acts as the receiving office for PCT applications.

(d) The African Intellectual Property Organization (OAPI) acts as the receiving office for PCT applications.

(e) The Swiss Federal Institute of Intellectual Property (IFPI) acts as the receiving office for PCT applications.

(f) The African Regional Intellectual Property Organization (ARIPO) acts as the receiving office for PCT applications.

(g) The African Intellectual Property Organization (OAPI) acts as the national office for patent applications.

.. indicates not available.

n.a. indicates not applicable.

Source: WIPO Statistics Database, August 2019.

A59. Patent grants by office and origin, and patents in force, 2018

Name	Grants by office			Equivalent grants by origin	In force by office
	Total	Resident	Non-resident	Total [a]	Total
Afghanistan	..	..	..	7	..
African Intellectual Property Organization	540	112	428	n.a.	..
African Regional Intellectual Property Organization	282	1	281	n.a.	3,572
Albania	12	9	3	12	5,021
Algeria	162	27	135	35	2,084
Andorra	6	0	6	11	10
Angola	..	..	..	1	..
Antigua and Barbuda	..	..	..	9	78
Argentina	1,525	129	1,396	290	..
Armenia	100	98	2	128	209
Aruba	..	..	..	1	..
Australia	17,065	905	16,160	5,624	156,244
Austria	1,189	1,005	184	8,913	167,594
Azerbaijan	64	53	11	341	253
Bahamas	..	..	..	55	..
Bahrain	15	0	15	7	60
Bangladesh	138	..	..	17	990
Barbados	..	..	..	406	..
Belarus	627	524	103	1,467	1,991
Belgium	1,019	867	152	8,252	..
Belize	..	..	..	8	1,409
Benin (b)	n.a.	n.a.	n.a.	51	..
Bermuda	..	..	..	107	..
Bolivia (Plurinational State of)	..	..	..	2	..
Bosnia and Herzegovina	5	0	5	3	234
Botswana	..	..	..	..	2,038
Brazil	9,966	1,066	8,900	1,976	31,977
Brunei Darussalam	..	..	..	1	113
Bulgaria	181	171	10	310	13,393
Burkina Faso (b)	n.a.	n.a.	n.a.	153	..
Burundi	28	9	19	27	..
Cabo Verde	1	0	1	..	1
Cambodia	56	0	56	1	..
Cameroon (b)	n.a.	n.a.	n.a.	629	..
Canada	23,499	2,221	21,278	13,542	184,559
Chad (b)	n.a.	n.a.	n.a.	103	..
Chile	1,599	172	1,427	383	13,795
China	432,147	345,959	86,188	377,305	2,366,314
China, Hong Kong SAR	9,651	161	9,490	1,140	49,922
China, Macao SAR	27	1	26	59	387
Colombia	1,271	215	1,056	301	7,403
Congo (b)	n.a.	n.a.	n.a.	69	..
Cook Islands	..	..	..	2	..
Costa Rica	168	4	164	31	925
Côte d'Ivoire (b)	n.a.	n.a.	n.a.	528	..

Name	Grants by office			Equivalent grants by origin	In force by office
	Total	Resident	Non-resident	Total [a]	Total
Croatia	21	9	12	52	8,945
Cuba	93	8	85	116	727
Curaçao	..	..	..	14	..
Cyprus	..	..	..	213	12
Czech Republic	512	455	57	1,391	45,016
Democratic People's Republic of Korea	..	..	..	31	..
Denmark	322	195	127	6,506	62,408
Dominican Republic	95	11	84	16	635
Ecuador	10	2	8	7	65
Egypt	690	160	530	240	5,706
El Salvador	36	1	35	2	..
Estonia	14	13	1	137	10,452
Eswatini	..	..	..	5	..
Ethiopia	10	1	9	1	..
Eurasian Patent Organization	2,630	436	2,194	n.a.	n.a.
European Patent Office	127,603	57,882	69,721	n.a.	n.a.
Finland	533	472	61	8,571	52,140
France	12,249	10,574	1,675	50,384	602,084
Gabon (b)	n.a.	n.a.	n.a.	18	..
Gambia	..	..	..	..	16
Georgia	133	36	97	50	1,312
Germany	16,367	10,789	5,578	101,556	703,606
Ghana	9	9	0	10	..
Greece	240	229	11	561	27,426
Grenada	..	..	..	1	..
Guatemala	30	0	30	18	914
Guinea (b)	n.a.	n.a.	n.a.	18	..
Guyana	6	1	5	1	..
Holy See	..	..	..	1	..
Honduras	88	0	88	1	1,765
Hungary	156	85	71	641	28,677
Iceland	16	6	10	218	7,380
India	13,908	2,311	11,597	8,350	60,865
Indonesia	6,374	521	5,853	552	22,584
Iran (Islamic Republic of)	3,367	2,993	374	3,057	48,859
Iraq	426	398	28	400	2,784
Ireland	52	28	24	3,170	196,707
Israel	4,107	742	3,365	7,482	33,951
Italy	6,424	6,340	84	22,224	306,768
Jamaica	..	..	..	4	..
Japan	194,525	152,440	42,085	284,068	2,054,276
Jordan	167	16	151	85	532
Kazakhstan	778	589	189	945	..
Kenya	26	26	0	39	..
Kiribati	..	..	..	1	..

Name	Grants by office			Equivalent grants by origin	In force by office
	Total	Resident	Non-resident	Total [a]	Total
Kuwait	..	..	..	68	..
Kyrgyzstan	110	109	1	151	253
Lao People's Democratic Republic	5	0	5	..	..
Latvia	51	48	3	135	9,475
Lebanon	..	..	..	29	..
Liechtenstein	..	..	..	670	..
Lithuania	92	68	24	150	474
Luxembourg	423	59	364	2,171	98,245
Madagascar	31	3	28	5	229
Malaysia	4,287	469	3,818	985	26,572
Mali (b)	n.a.	n.a.	n.a.	121	..
Malta	..	..	..	309	..
Marshall Islands	..	..	..	7	..
Mauritania (b)	n.a.	n.a.	n.a.	51	..
Mauritius	7	0	7	37	53
Mexico	8,921	457	8,464	1,170	113,286
Monaco	28	3	25	78	115,893
Mongolia	76	26	50	26	1,030
Montenegro	11	11	0	11	..
Morocco	600	126	474	207	8,364
Mozambique	..	..	..	..	2,531
Myanmar	..	..	..	1	..
Namibia	4	0	4	4	623
Nepal	..	..	..	3	..
Netherlands	1,972	1,635	337	22,831	194,393
Netherlands Antilles	..	..	..	5	..
New Zealand	2,039	82	1,957	1,236	33,331
Niger (b)	n.a.	n.a.	n.a.	102	..
Nigeria	842	200	642	204	..
North Macedonia	..	..	..	5	..
Norway	1,548	545	1,003	3,705	37,434
Oman	..	..	..	3	..
Pakistan	265	16	249	35	1,835
Panama	147	2	145	33	1,338
Paraguay	13	..	..	15	347
Patent Office of the Cooperation Council for the Arab States of the Gulf	2,660	353	2,307	n.a.	7,350
Peru	625	30	595	54	3,098
Philippines	3,435	33	3,402	141	23,405
Poland	2,980	2,906	74	3,973	82,618
Portugal	69	61	8	503	38,193
Qatar	..	..	..	73	..
Republic of Korea	119,012	89,227	29,785	131,912	1,001,163
Republic of Moldova	79	47	32	78	324
Romania	363	356	7	521	22,732
Russian Federation	35,774	20,526	15,248	23,627	256,419
Rwanda	..	..	..	..	309
Saint Kitts and Nevis	..	..	..	7	..

Name	Grants by office Total	Resident	Non-resident	Equivalent grants by origin Total [a]	In force by office Total
Saint Vincent and the Grenadines	8	0	8	1	8
Samoa	..	..	..	30	52
San Marino	686	11	675	48	..
Sao Tome and Principe	8	0	8	..	19
Saudi Arabia	569	123	446	3,488	3,383
Serbia	44	36	8	424	5,685
Seychelles	11	0	11	60	209
Sierra Leone	..	..	..	1	..
Singapore	5,172	312	4,860	3,337	48,105
Slovakia	109	86	23	221	19,247
Slovenia	232	222	10	534	1,343
South Africa	4,746	451	4,295	1,443	73,270
Spain	1,760	1,638	122	6,271	81,957
Sri Lanka	212	64	148	75	850
Sudan	204	180	24	181	204
Sweden	1,063	885	178	16,787	100,974
Switzerland	614	420	194	26,109	244,581
Syrian Arab Republic	37	25	12	26	..
Tajikistan	..	..	..	32	..
Thailand	3,818	128	3,690	348	15,696
Togo (b)	n.a.	n.a.	n.a.	68	..
Trinidad and Tobago	26	1	25	10	..
Tunisia	451	..	..	6	..
Turkey	2,882	2,597	285	3,703	75,363
Turkmenistan	..	..	..	1	..
Uganda	2	2	0	2	..
Ukraine	2,469	1,203	1,266	1,498	22,977
United Arab Emirates	451	1	450	320	1,302
United Kingdom	5,982	3,005	2,977	26,442	572,063
United Republic of Tanzania	6	6	0	24	..
United States of America	307,759	144,413	163,346	289,082	3,063,494
Uruguay	..	..	..	34	..
Uzbekistan	219	149	70	164	966
Vanuatu	..	..	..	2	..
Venezuela (Bolivarian Republic of)	..	..	..	16	..
Viet Nam	2,219	205	2,014	248	12,965
Yemen	8	1	7	9	35
Zambia	..	..	..	1	..
Zimbabwe	..	..	..	1	..
Others/Unknown	..	..	..	19,262	..
Total (2018 estimates)	**1,422,800**	**875,200**	**547,600**	**n.a.**	**13,950,543**

(a) Equivalent grants by origin data are incomplete because some offices do not report by origin.

(b) The African Intellectual Property Organization (OAPI) acts as the national office for patent grants.

.. indicates not available.

n.a. indicates not applicable.

Source: WIPO Statistics Database, August 2019.

A60. Patent office procedural data, 2018

Office	Total applications processed	Granted	Rejected	Withdrawn or abandoned	Number of examiners (FTE)	First office action (months)	Final office decision (months)
Albania	..	826	8	..	1.0	2.5	12.0
Algeria	430	169	80	181	4.0	14.0	48.0
Argentina	4,750	1,608	256	2,886	63.0	..	..
Armenia	100	88	4	8	8.0	1.4	3.2
Australia	23,410	17,065	31	6,314	358.2	8.0	19.6
Azerbaijan	146	85	7	54	17.0	13.0	17.0
Bahrain	..	15	..	49	5.0	..	..
Bangladesh	344	138	204	2	10.0	10.0	20.5
Belarus	784	590	188	6	14.0	15.0	19.0
Belize	..	..	..	..	1.0	..	..
Bosnia and Herzegovina	..	..	..	..	7.0	2.0	30.0
Brazil	15,908	9,968	5,081	859	323.0	80.4	86.4
Brunei Darussalam	..	..	..	..	3.0	..	..
Cambodia	..	..	..	..	4.0	..	..
Canada	..	23,499	..	13,040	340.8	10.6	26.3
China	..	..	..	..	..	15.4	22.5
China, Macao SAR	..	29	35	..	..	5.0	11.9
Colombia	2,071	1,271	230	570	49.0	7.1	13.9
Costa Rica	674	168	176	330	21.0	48.0	60.0
Croatia	54	21	25	8	6.0	41.0	66.0
Cuba	158	93	3	62	13.0	24.0	32.0
Czech Republic	1,144	512	261	371	32.0	..	..
Denmark	2,057	322	3	1,732	65.4	5.5	22.6
Dominica	..	..	..	..	1.0	..	..
Ecuador	745	17	693	35	4.0	24.0	60.0
Egypt	825	594	46	185	100.0	6.0	18.0
El Salvador	..	..	..	..	2.0	24.0	36.0
Estonia	42	15	7	20	9.0	10.1	23.6
Ethiopia	..	..	..	..	25.0	..	..
European Patent Office	..	127,603	..	..	4,276.0	4.4	22.3
Finland	1,475	533	10	932	116.0	6.7	27.6
Georgia	260	133	32	95	18.0	15.0	21.0
Germany	38,087	16,367	8,375	13,345	704.3	..	..
Greece	..	..	..	..	7.0	..	..
Guyana	..	..	..	..	1.0	..	..
Honduras	325	102	115	108	4.0	1.0	36.0
Hungary	756	156	40	560	46.0	6.0	20.0
Iceland	..	16	..	19	..	4.0	84.0
India	48,755	14,130	2,325	32,300	521.0	36.0	52.0
Iran (Islamic Republic of)	1,772	1,116	88	568	..	..	..
Japan	238,482	177,852	56,701	3,929	1,690.0	9.3	14.1
Jordan	366	195	167	4	6.0	12.0	24.0
Kuwait	..	..	..	..	13.0	..	..
Latvia	78	51	15	12	6.0	..	..
Lithuania	105	98	2	5	5.0	1.0	5.0
Madagascar	..	31	..	6	2.0	30.0	30.0
Mexico	13,310	8,904	79	4,327	129.0	3.0	36.0
Monaco	..	28	4	..	2.0	4.0	7.0
Mongolia	120	76	17	27	3.0	..	..
Montenegro	..	239	..	2	3.0	2.0	20.0
Morocco	1,226	650	347	229	15.0	7.9	22.0

Office	Total applications processed	Granted	Rejected	Withdrawn or abandoned	Number of examiners (FTE)	First office action (months)	Final office decision (months)
Namibia	..	..	..	..	1.0	..	..
New Zealand	..	1,740	..	1,388	46.0	4.7	15.9
Nigeria	..	..	..	..	4.0	..	..
Norway	3,343	1,548	8	1,787	76.0	6.5	26.7
Pakistan	..	265	..	30	9.0	18.0	36.0
Panama	..	..	..	..	4.0	..	..
Patent Office of the Cooperation Council for the Arab States of the Gulf	2,812	2,660	143	9	35.0	12.9	41.8
Peru	..	1,255	359	..	29.0	22.4	35.6
Philippines	5,152	2,682	12	2,458	107.0	6.1	48.0
Poland	5,243	3,240	1,273	730	79.0	0.1	34.0
Portugal	154	60	87	7	19.0	..	32.5
Republic of Korea	165,902	106,716	55,631	3,555	875.0	10.3	15.8
Republic of Moldova	129	69	26	34	15.0	4.0	12.0
Romania	929	363	287	279	34.0	35.0	50.0
Russian Federation	45,405	34,756	1,951	8,698	649.0	7.1	8.1
Rwanda	..	..	..	..	1.0	..	..
Saint Vincent and the Grenadines	12	8	1	3	2.0	6.0	6.0
Samoa	..	..	..	..	..	3.0	12.0
Sao Tome and Principe	..	..	..	..	4.0	..	..
Saudi Arabia	2,090	569	998	523	55.0	21.0	26.0
Serbia	200	44	48	108	13.0	12.0	18.0
Seychelles	..	..	..	..	5.0	..	..
Slovakia	259	109	55	95	25.0	..	..
Spain	11,291	9,557	534	1,200	173.0	1.1	9.6
Sri Lanka	1,015	212	787	16	8.0	0.5	24.0
Sudan	..	204	18	..	16.0	..	..
Sweden	2,442	1,063	28	1,351	120.3	7.9	30.3
Thailand	10,536	3,818	471	6,247	120.0	39.0	49.0
Trinidad and Tobago	..	..	..	..	6.0	..	..
Turkey	3,784	3,496	250	38	112.0	4.8	18.2
Uganda	..	2	..	..	2.0	15.0	18.0
Ukraine	3,522	2,507	172	843	108.0	11.9	15.3
United Arab Emirates	..	451	..	..	13.0	38.7	..
United Kingdom	..	5,982	18,386	..	305.0	15.0	39.0
United Republic of Tanzania	..	6	2	..	2.0	1.0	6.0
United States of America	897,281	307,757	466,070	123,454	7,984.0	15.4	21.8
Uzbekistan	787	341	342	104	9.0	..	..
Viet Nam	203	69	70	64	62.0	33.6	47.9

Note: FTE is full time equivalent. Grant data differ slightly from grant data reported elsewhere in this report due to different dates of extraction. Every effort has been made to compile procedural data based on common definitions and concepts, but procedural differences make it extremely difficult to fully harmonize such data. For instance, “rejection” is not recorded as a final decision in Canada. Applicants are informed of the action that they must take or questions that they must answer in order for their application to be considered, and if an applicant cannot provide the required information, they are regarded as having abandoned the application. A similar situation exists in Australia.

.. indicates not available.

Source: WIPO Statistics Database, August 2019.

A61. Utility model applications and grants by office and origin, 2018

Name	Applications by office			Equivalent applications by origin	Grants by office		
	Total	Resident	Non-resident	Total [a]	Total	Resident	Non-resident
African Regional Intellectual Property Organization	42	25	17	n.a.	2	1	1
Albania	2	1	1	1	2	1	1
Algeria	..	..	..	1	..	..	..
Andorra	..	..	..	3	..	..	..
Argentina	192	161	31	190	82	67	15
Armenia	36	34	2	36	35	34	1
Australia	2,257	1,133	1,124	1,230	2,023	1,072	951
Austria	537	380	157	748	521	369	152
Azerbaijan	42	33	9	33	16	15	1
Barbados	..	..	..	10	..	..	..
Belarus	372	285	87	367	293	242	51
Belgium	..	..	..	122	..	..	..
Belize	1	1	0	1	..	..	..
Bolivia (Plurinational State of)	..	..	..	1	..	..	..
Bosnia and Herzegovina	..	..	..	1	..	..	..
Botswana	12	12	0	12	6	6	0
Brazil	2,587	2,493	94	2,537	1,098	1,052	46
Bulgaria	..	..	..	9	..	..	..
Cambodia	13	0	13	..	3	0	3
Canada	..	..	..	91	..	..	..
Chile	139	113	26	151	72	52	20
China	2,072,311	2,063,860	8,451	2,066,904	1,479,062	1,471,759	7,303
China, Hong Kong SAR	791	536	255	618	763	485	278
China, Macao SAR	28	7	21	70	2	0	2
Colombia	188	166	22	179	..	..	..
Costa Rica	20	17	3	40	6	3	3
Croatia	70	66	4	67	50	48	2
Cuba	3	1	2	1	..	..	..
Cyprus	..	..	..	244	..	..	..
Czech Republic	1,247	1,179	68	1,381	1,130	1,081	49
Democratic People's Republic of Korea	..	..	..	1	..	..	..
Denmark	92	70	22	129	108	78	30
Dominican Republic	21	12	9	12	11	7	4
Ecuador	46	42	4	45	6	2	4
Egypt	..	..	..	1	..	..	..
El Salvador	4	3	1	3	2	2	0
Estonia	31	28	3	45	30	28	2
Eswatini	..	..	..	1	..	..	..
Ethiopia	392	392	0	392	41	41	0
Fiji	..	..	..	4	..	..	..
Finland	400	370	30	572	368	340	28
France	608	341	267	835	..	..	..
Gambia	2	2	0	2	2	2	0
Georgia	55	51	4	51	42	38	4
Germany	12,307	8,800	3,507	9,967	11,295	7,765	3,530
Ghana	2	2	0	2	..	..	..

Name	Applications by office			Equivalent applications by origin	Grants by office		
	Total	Resident	Non-resident	Total [a]	Total	Resident	Non-resident
Greece	22	13	9	17	19	16	3
Guatemala	13	12	1	12	4	3	1
Honduras	4	2	2	2	4	2	2
Hungary	226	205	21	228	96	84	12
Iceland	..	..	..	1	..	..	..
India	..	..	..	34	..	..	..
Indonesia	1,545	1,432	113	1,435	331	275	56
Iran (Islamic Republic of)	..	..	..	2	..	..	..
Ireland	533	117	416	142	35	27	8
Israel	..	..	..	118	..	..	..
Italy	1,966	1,781	185	2,192	1,420	1,395	25
Japan	5,388	3,810	1,578	6,395	1,507	827	680
Jordan	..	..	..	4	..	..	..
Kazakhstan	896	778	118	795	950	862	88
Kenya	178	177	1	177	32	32	0
Kuwait	..	..	..	1	..	..	..
Kyrgyzstan	..	..	..	..	22	19	3
Lao People's Democratic Republic	7	1	6	2	..	..	..
Latvia	..	..	..	8	..	..	..
Lebanon	..	..	..	2	..	..	..
Liberia	..	..	..	1	..	..	..
Liechtenstein	..	..	..	19	..	..	..
Lithuania	..	..	..	4	..	..	..
Luxembourg	..	..	..	41	..	..	..
Malaysia	198	132	66	168	95	58	37
Mali	..	..	..	2	..	..	..
Malta	..	..	..	5	..	..	..
Mexico	821	688	133	707	199	144	55
Monaco	..	..	..	1	..	..	..
Mongolia	224	224	0	224	152	152	0
Morocco	..	..	..	1	..	..	..
Mozambique	28	5	23	5	28	5	23
Netherlands	..	..	..	211	..	..	..
New Zealand	..	..	..	23	..	..	..
Norway	..	..	..	21	..	..	..
Oman	..	..	..	1	..	..	..
Pakistan	..	..	..	2	..	..	..
Panama	5	4	1	5	7	5	2
Peru	256	225	31	232	207	186	21
Philippines	2,347	2,272	75	2,279	1,224	1,147	77
Poland	1,022	943	79	1,009	816	769	47
Portugal	99	66	33	81	48	32	16
Republic of Korea	6,232	5,768	464	6,889	2,715	2,521	194
Republic of Moldova	122	117	5	123	106	105	1
Romania	60	41	19	41	40	28	12
Russian Federation	9,747	9,262	485	9,484	9,869	9,391	478

Name	Applications by office			Equivalent applications by origin	Grants by office		
	Total	Resident	Non-resident	Total [a]	Total	Resident	Non-resident
Rwanda	6	6	0	6	5	5	0
Samoa	1	1	0	12	1	1	0
Sao Tome and Principe	10	0	10	..	1	0	1
Saudi Arabia	..	..	..	9	..	..	..
Serbia	70	68	2	69	53	49	4
Seychelles	..	..	..	17	..	..	..
Singapore	..	..	..	763	..	..	..
Slovakia	388	320	68	365	337	262	75
Slovenia	..	..	..	5	..	..	..
South Africa	..	..	..	34	..	..	..
Spain	2,731	2,571	160	2,882	2,208	2,062	146
Sweden	..	..	..	109	..	..	..
Switzerland	..	..	..	483	..	..	..
Syrian Arab Republic	401	401	0	401	..	..	..
Thailand	2,969	2,832	137	2,889	1,372	1,248	124
Trinidad and Tobago	1	1	0	1	..	..	..
Turkey	2,770	2,698	72	2,741	335	307	28
Ukraine	9,120	8,980	140	9,134	8,620	8,471	149
United Arab Emirates	11	1	10	23	1	0	1
United Kingdom	..	..	..	263	..	..	..
United Republic of Tanzania	3	3	0	3	3	3	0
United States of America	..	..	..	2,799	..	..	..
Uruguay	..	..	..	6	..	..	..
Uzbekistan	206	200	6	201	82	81	1
Venezuela (Bolivarian Republic of)	..	..	..	1	..	..	..
Viet Nam	557	370	187	372	355	290	65
Yemen	..	..	..	1	..	..	..
Others/Unknown	..	..	..	2,188	..	..	..
Total (2018 estimates)	**2,145,960**	**2,127,450**	**18,510**	**n.a.**	**..**	**..**	**..**

(a) Equivalent applications by origin data are incomplete because some offices do not report by origin.

.. indicates not available.

n.a. indicates not applicable.

Source: WIPO Statistics Database, August 2019.