

The Future of Post-COVID Innovation Finance

Global Innovation Index 2020/2021

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Introducing to the Global Innovation Index

Cornell
SC Johnson College of Business



GLOBAL INNOVATION INDEX 2020

Who Will Finance Innovation?



GII assists policymakers in evaluating their innovation performance + improving policy.

The GII 2020 published in Sept.2020

- Objective 1: Assess impact of crisis on innovation expenditures
- Objective 2: Assess the state of global innovation finance

Objective 1

Short-term impacts on innovation expenditures and outputs – Findings of GII2020

- Pre-Covid innovation expenditures and efforts were at an all time high
- Contrary to earlier concerns, the crisis seems to have had only a small immediate impact on overall innovation investments and major innovation spenders
- At the firm level, the crisis has impacted the sectoral distribution of innovation
- Yet, spending, and access to finance, in more nascent economies or more fragile firms are far more endangered.
- Imbalances in innovation finance access are likely increased

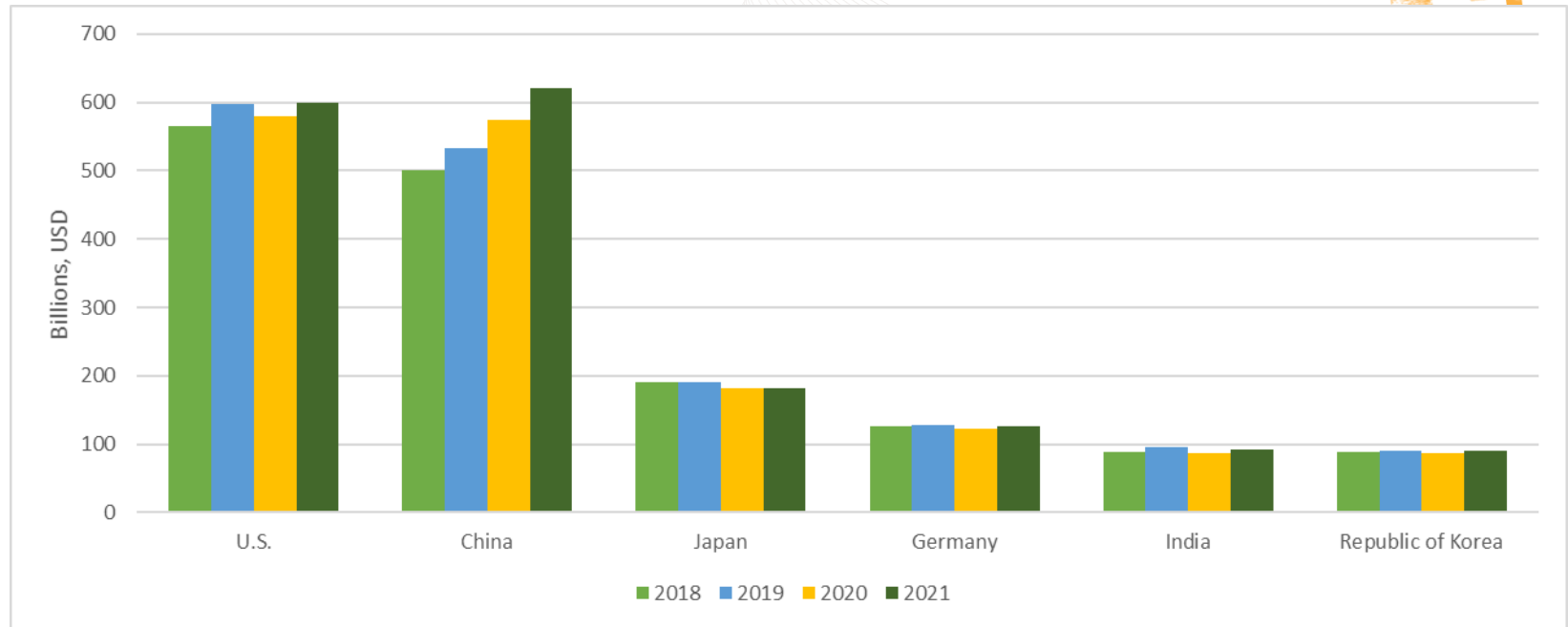
R&D: Impacts of the pandemic recession on Research and Development

Bracing for a downturn? Cyclical R&D investments, 2001–2020



Sources: Authors' estimates based on the UNESCO Institute for Statistics database, OECD Main Science and Technology Indicators, Eurostat, the National Bureau of Statistics of China, and the IMF World Economic Outlook.

YET: R&D spending of top countries barely dipped, 2021 ok



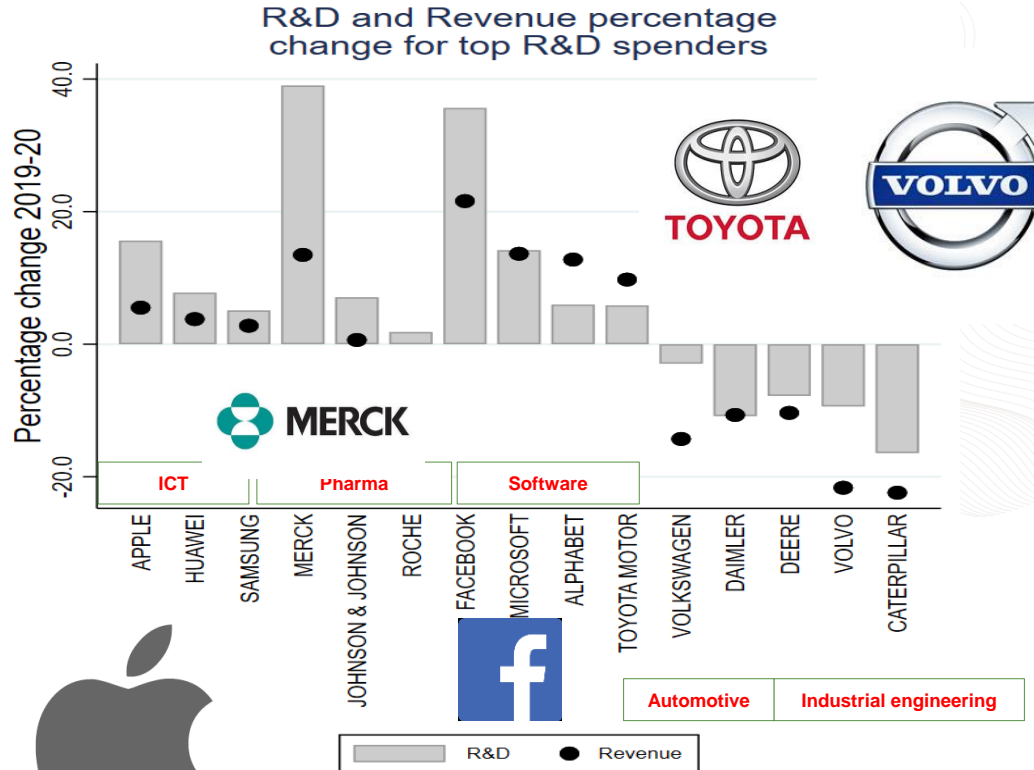
Source: Global R&D Funding Forecast, 2021, <https://www.rdworldonline.com/2021-global-rd-funding-forecast-released/>

Top ICT & Software firms ramp up R&D spending, others see spending decline in line with revenues

The top 3 firms in ICT increased R&D spending far more than their revenues grew; Apple increased R&D spending by 15.6%

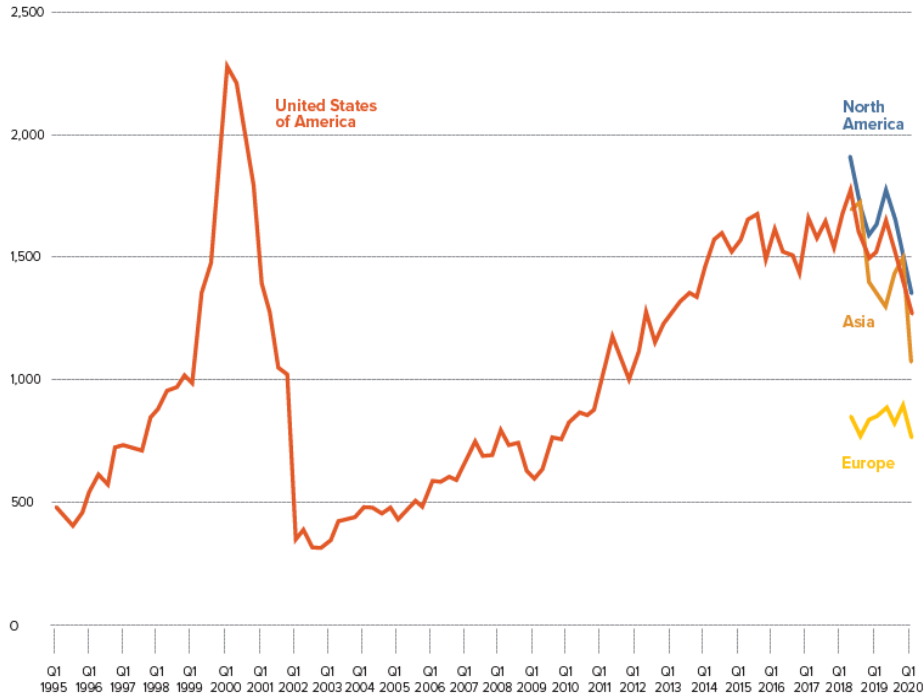
Despite **modest or negative** revenue growth for pharma, top firms increased their R&D spending

Top firms in Automobiles **reduced** R&D spending - even larger revenue declines (exp. Toyota).



Venture capital: Fears of strong innovation finance decline

Bracing for impact: venture capital decline in North America, Asia, and Europe, Q1 1995–Q1 2020



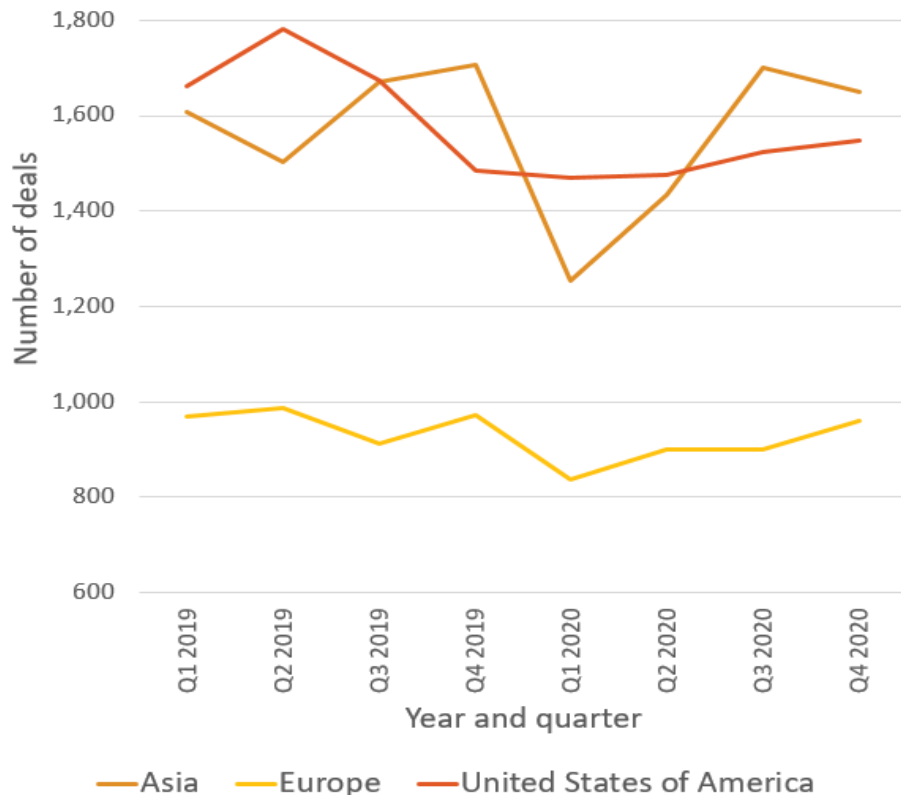
▲ Number of deals
► Year

Source: Authors' calculations based on PwC/CBInsights MoneyTree data explorer.



- The crisis has reinforced the decline in VC deals that had started before the pandemic.
- The evidence also points to an uneven negative impact, more so for early-stage than for later-stage VC.

YET: VC 2021 faster than expected recovery



- Asia saw a steep drop in VC deals as the pandemic hit; -22% in Q1 2020 compared to Q1 2019. But Asia quickly rebounded to pre-pandemic levels.
- VC deals in the U.S. also slumped in Q1 2020 by -11%, but recovery since.
- Europe is steadily recovering from its -13% drop in Q1 2020.

Objective 2

Global Innovation Index: 5 key findings on Innovation Finance

- 1. Access to innovation finance is skewed across countries and sectors**
- 2. Sound innovation ecosystems must balance start-ups, scale-ups, mature firms**
- 3. Finding balance between under / overinvestment in search for unicorns**
- 4. New instruments—that have raised expectations—are helping, but have not eased financial constraints in developing economies**
- 5. A policy mix is essential to improving the innovation finance landscape**

Initial upbeat message on sources of Innovation Finance

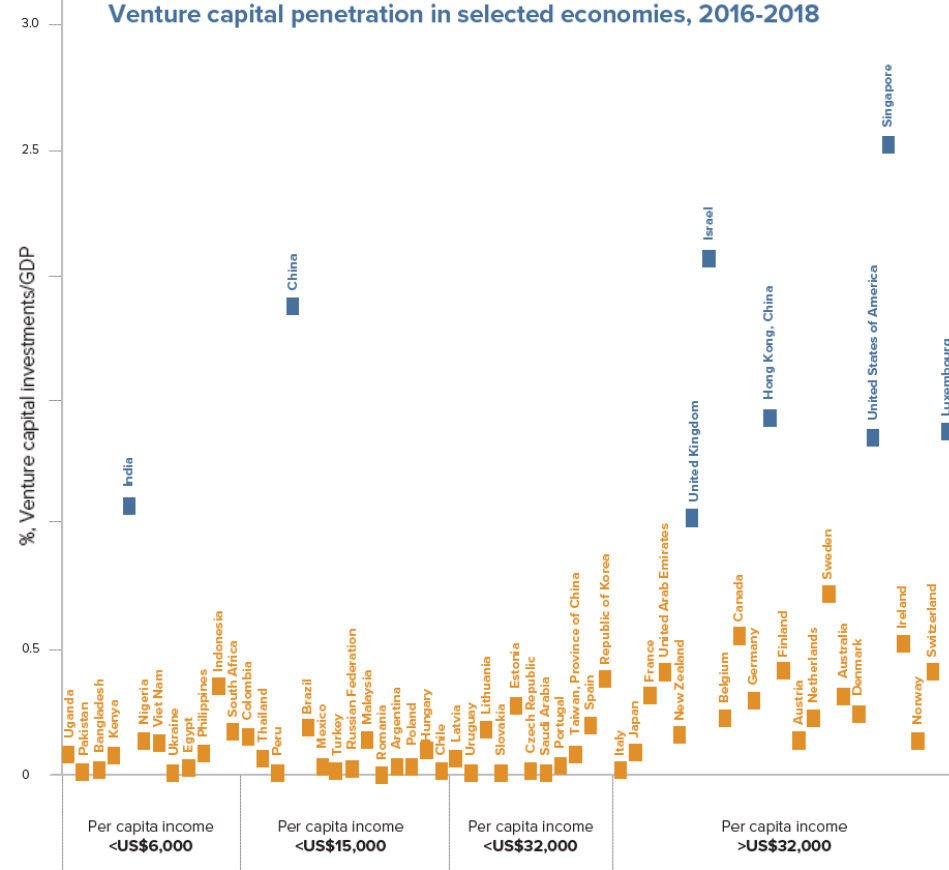
Today, innovators enjoy a spectrum of funding, including from a new actors, such as not-for-profit organizations, sovereign wealth funds (SWFs).

Traditional innovation financing mechanisms include public support schemes, firm-specific innovation investments, and market-based mechanisms targeting innovation specifically, such as loans, private equity, and venture capital (VC)

New mechanisms include corporate venturing, intellectual property (IP) marketplaces, microfinance, crowdfunding, and technology solutions.

Yet: access is skewed across countries and sectors

Venture capital penetration in selected economies, 2016-2018



- Access to innovation finance is skewed across and within countries and regions (U.S., Europe, China, India, South East Asia)
- ... and sectors (IT software and services, consumer products and services, business products and services, and financial services)

Source: Author's calculations based on data from Pitchbook and IMF WEO database, 2019.

Notes: Penetration rates refer to the annual average from 2016 to 2018. The x-axis refers to average per capita income figures for the years 2016-2018.

ONLY

Global Innovation Index: 5 key findings on Innovation Finance

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2. **Sound** innovation ecosystems **must balance start-ups, scale-ups, mature firms**

3. Finding balance between under / overinvestment in search for unicorns

4. New instruments—that have raised expectations—are helping, but have not eased financial constraints in developing economies

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Developing countries in particular

- Scout and Act ---accelerator and incubator programs
- Bridge to international finance —non-for-profit + sovereign wealth funds
- Play a role in in de-risking ventures
 - subsidies to finance prototyping, grants (challenges), procurement, advance purchase commitments.
- Efforts to develop vibrant VC and financial markets
 - access to accurate and timely credit information
 - financial literacy training

Make innovation central after the transition from containment to recovery



Most governments in high- and middle-income economies are setting up emergency relief packages to cushion the impact of the lockdown and face the looming recession.

YET: these trillion \$ packages are only at discretion of rich economies

Developing countries will have to find nimbler ways to sustain their past strong progress in innovation strategies – smart and nimble “bridge and connect” plus “prioritization” techniques