

The Future of Post-COVID Innovation Finance

Global Innovation Index 2020/2021

June 23, 2021

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Introducing to the Global Innovation Index

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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

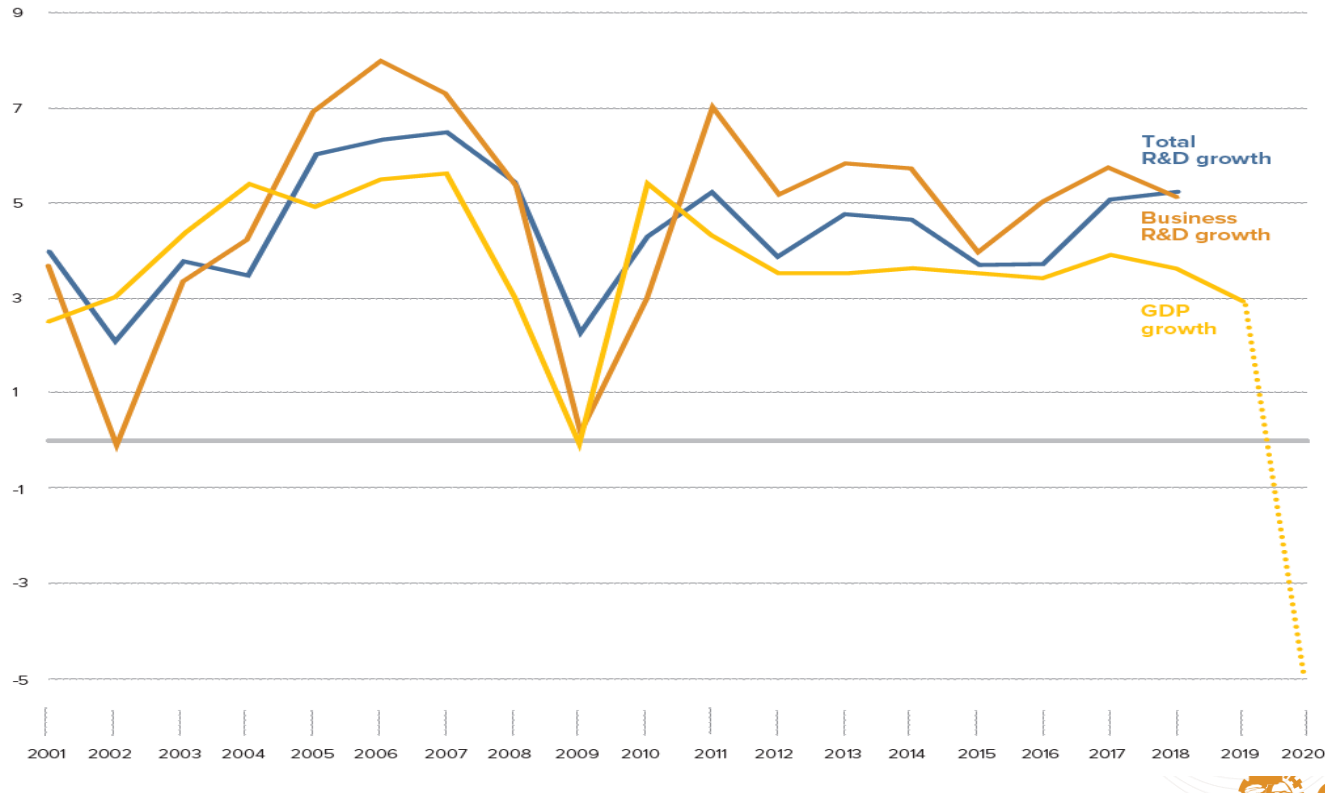
Objective 1

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

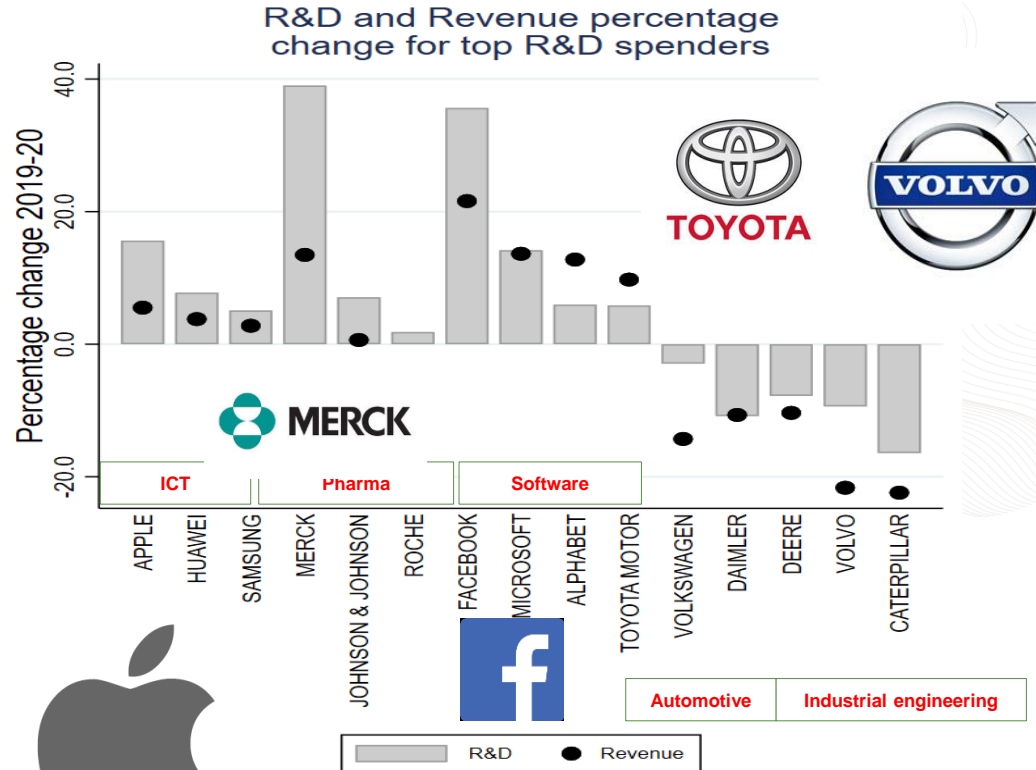


Sources: Authors' estimates based on the UNESCO Institute for Statistics database, OECD Main Science and Technology Indicators, Eurostat, the National Bureau of Statistics of China, and the IMF World Economic Outlook.

TOP 10 R&D SPENDING COUNTRIES FOR 2021

		2020 Estimated			2021 Forecast		
Top 10	Country	GDP	R&D	GERD	GDP	R&D	GERD
		<i>PPP</i>	<i>as % GDP</i>	<i>PPP</i>	<i>PPP</i>	<i>as % GDP</i>	<i>PPP</i>
		<i>Bil, US\$</i>		<i>Bil, US\$</i>	<i>Bil, US\$</i>		<i>Bil, US\$</i>
1	China	29,010.7	1.98%	574.40	31,389.6	1.98%	621.50
2	United States	20,145.1	2.88%	580.20	20,789.7	2.88%	598.70
3	Japan	5,174.2	3.50%	181.10	5,210.4	3.50%	182.36
4	Germany	4,283.5	2.84%	121.65	4,480.5	2.84%	127.25
5	India	9,991.1	0.86%	85.92	10,870.3	0.86%	93.48
6	South Korea	2,002.6	4.35%	87.11	2,102.7	4.35%	91.47
7	France	2,864.7	2.25%	64.46	2,979.3	2.25%	67.03
8	Russia	3,927.7	1.50%	58.92	4,037.7	1.50%	60.57
9	United Kingdom	2,876.7	1.73%	49.77	2,983.1	1.73%	51.61
10	Brazil	3,199.3	1.16%	37.11	3,288.9	1.16%	38.15

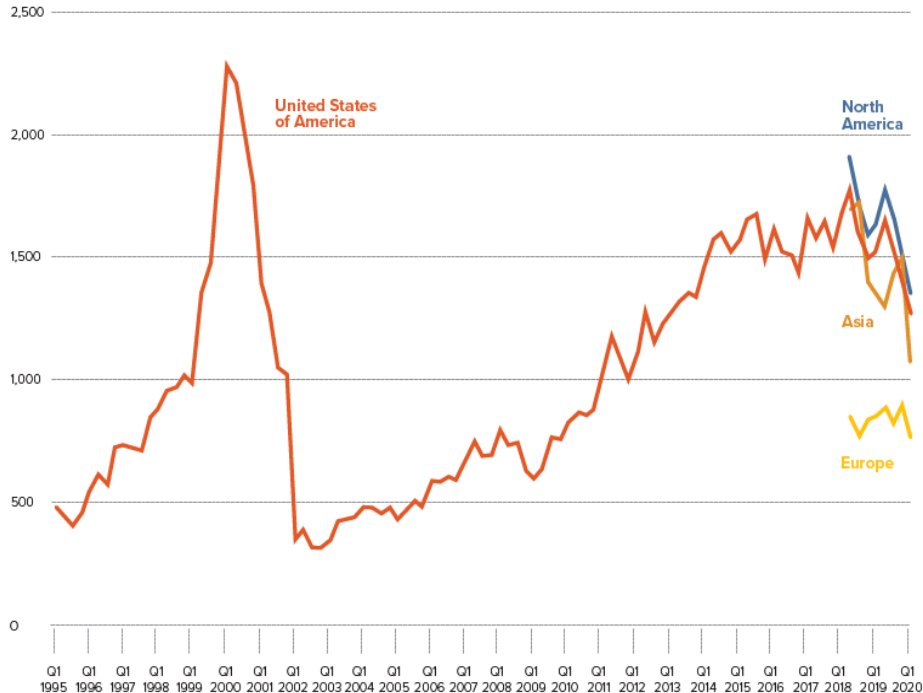
Top ICT & Software firms ramp up R&D spending, others see spending decline in line with revenues



- 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

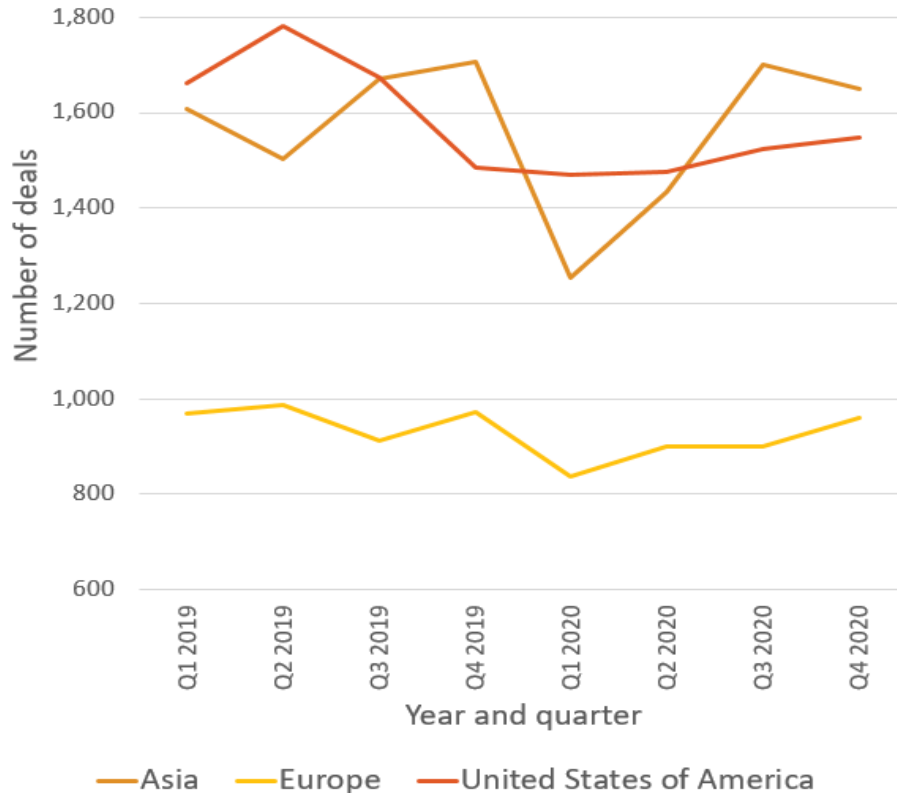


- ▲ Number of deals
- Year

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

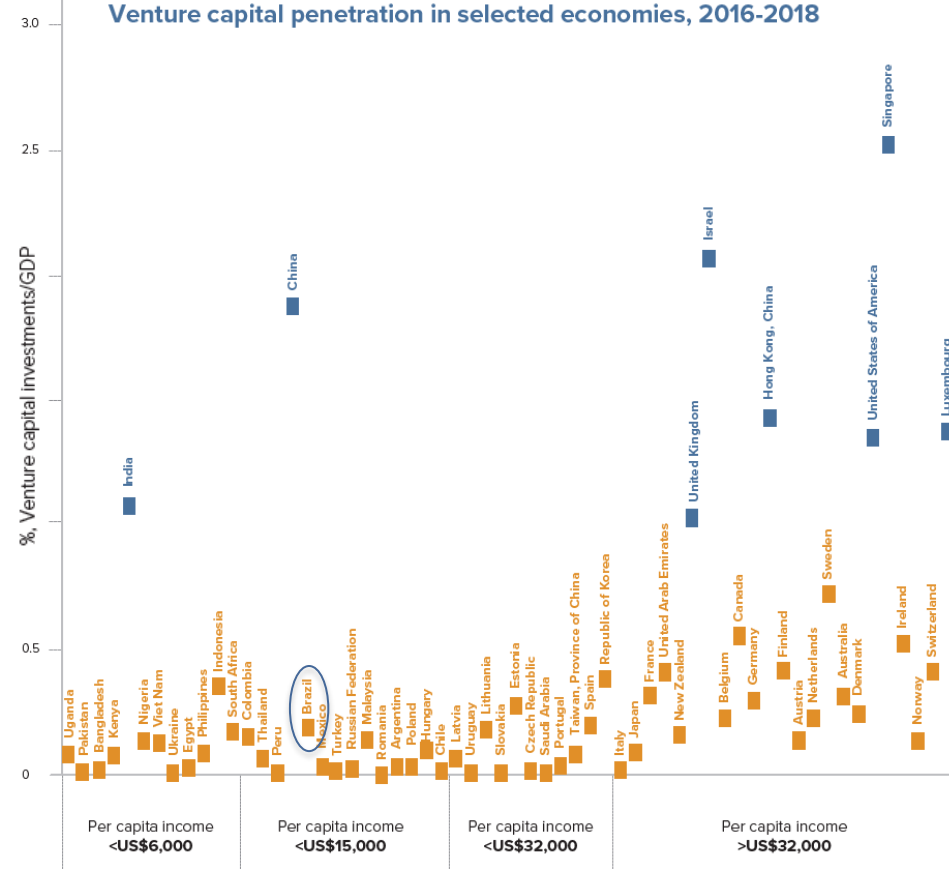
Today, innovators enjoy a spectrum of funding, including from a new actors, such as not-for-profit organizations, sovereign wealth funds (SWFs).

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.

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

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5. Policy mix essential to improving the innovation finance landscape

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

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