
Covid-19, Innovation and Megatrends

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The CAREC Institute

The Central Asia Regional Economic Cooperation (CAREC) Institute is an intergovernmental organization dedicated to promoting the economic cooperation in the Central Asia and along the Silk Road through knowledge generation and sharing. The Institute is headquartered in Urumqi, Xinjiang Uygur Autonomous Region, the People's Republic of China (PRC).

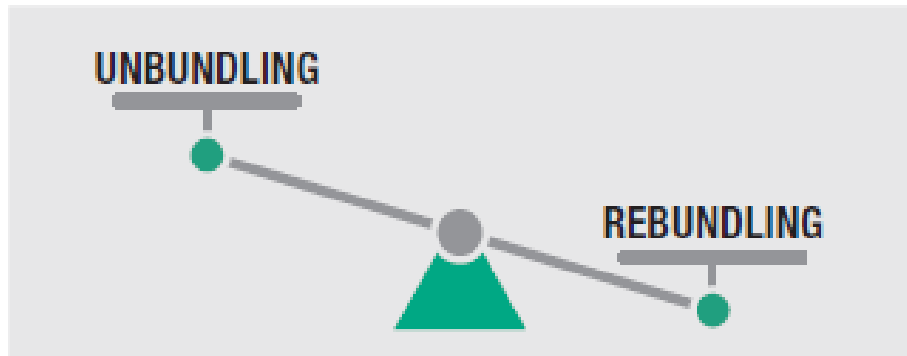
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New technologies are about to change production, life, the world. Digitalization is playing a major role.

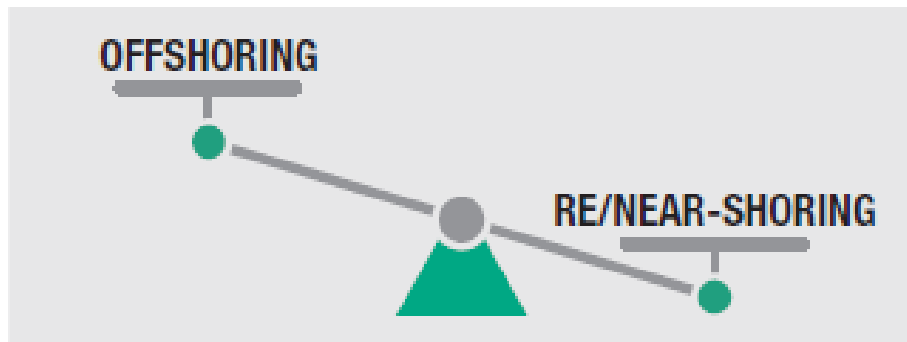
Digital technology initiatives	Artificial intelligence
	Nanotechnology and virtual reality
	Internet of things
	E-government
	Digital finance
	Cloud computing
	General digital technology/data-related issues (data collection)
	Transportation and mobility systems
	Climate tech and data
	Combinations of frontier technologies

Health and biological technologies initiatives	Biotechnology and genomics
	Health and drug delivery
Energy and material technology initiatives	Renewables and energy storage
	Innovation, tech and manufacturing
Other technologies	Nuclear
	Space
	Basic Internet, ICT and cybersecurity
	E-commerce

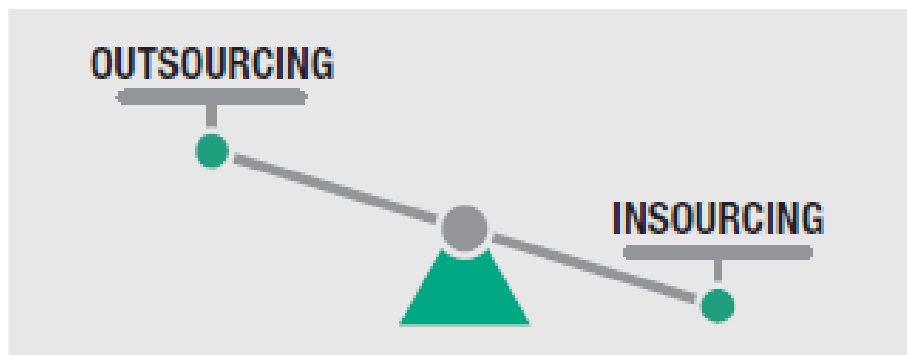
Changing globalization - Digitalization of *production*: rebundling, near-shoring, insourcing



- Advanced industrial robots can perform complex integrated sequential tasks, generally leading to a rebundling of previously separated steps



- Robots reduce the need for MNEs to exploit arbitrage opportunities based on labour costs, leading to reshoring of manufacturing operations from developing to developed and higher-income emerging economies

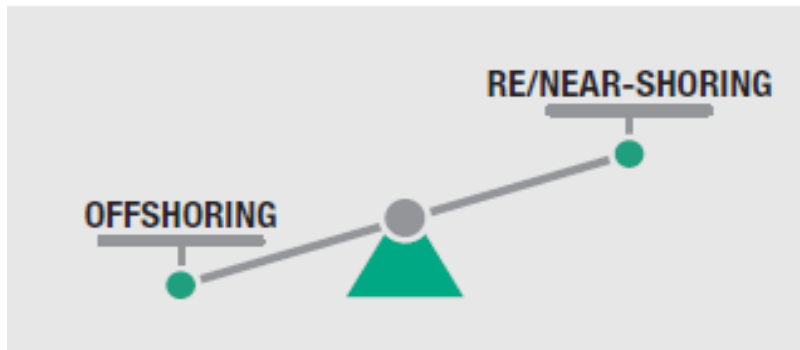


- High capital investment requirements and reshoring are likely to reduce the role of smaller third-party suppliers in favour of more direct governance by MNEs

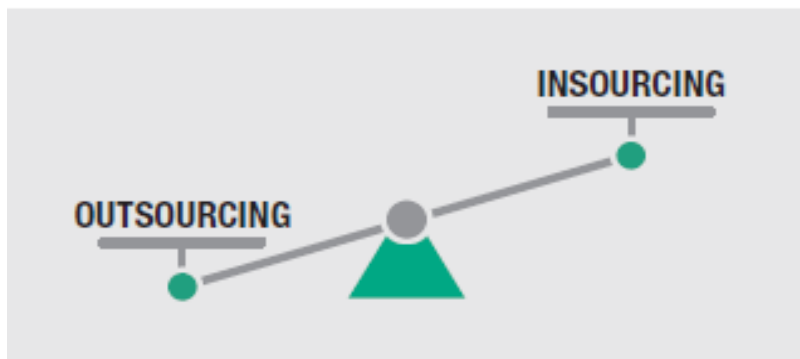
Changing globalization - Digitalization of *services*: unbundling, offshoring, outsourcing



- Digital technologies favour servicification and introduce new mechanisms for coordination and control in fragmented supply chains
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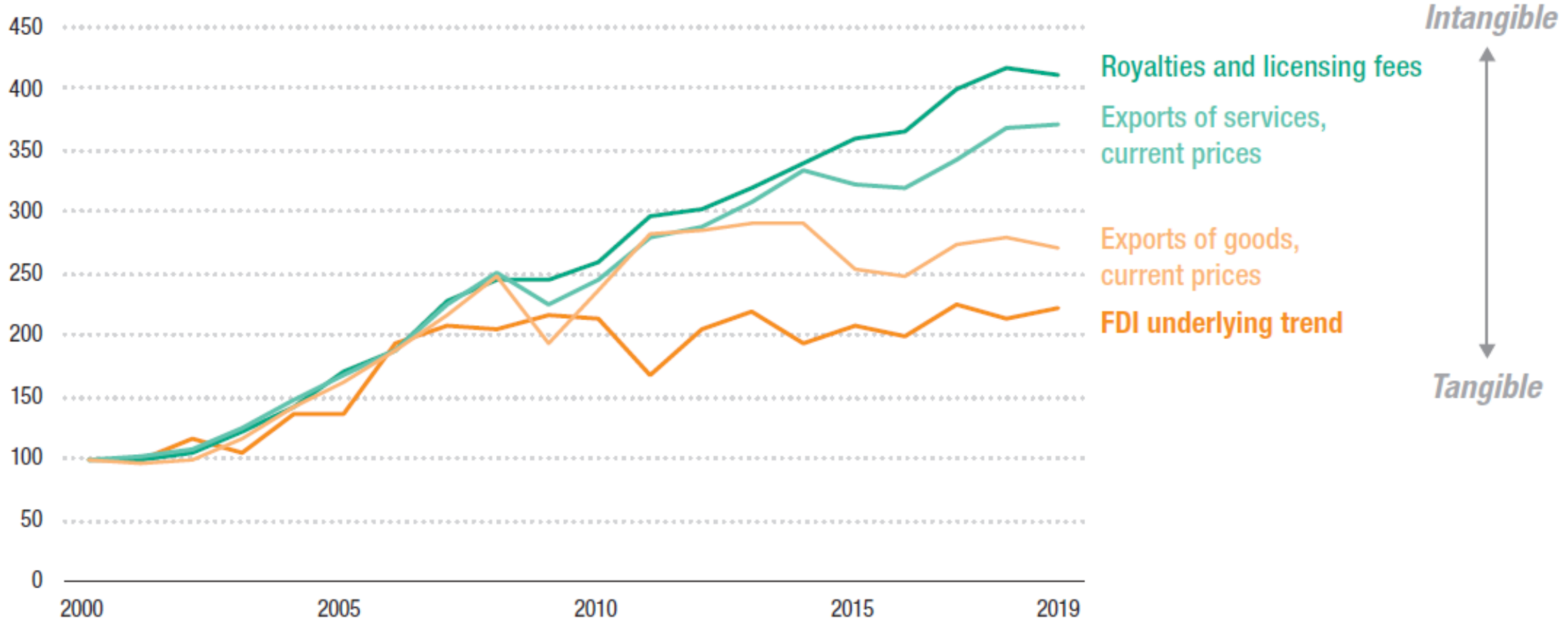
- New digital technologies favour faster, more effective and safer (e.g. through blockchain) remote communication, coordination and control
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- Services increasingly outsourced to NEMs and third-party providers; role of third parties in production also increases due to servicification
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Changing globalization - Tangible is stagnating, intangible is growing.

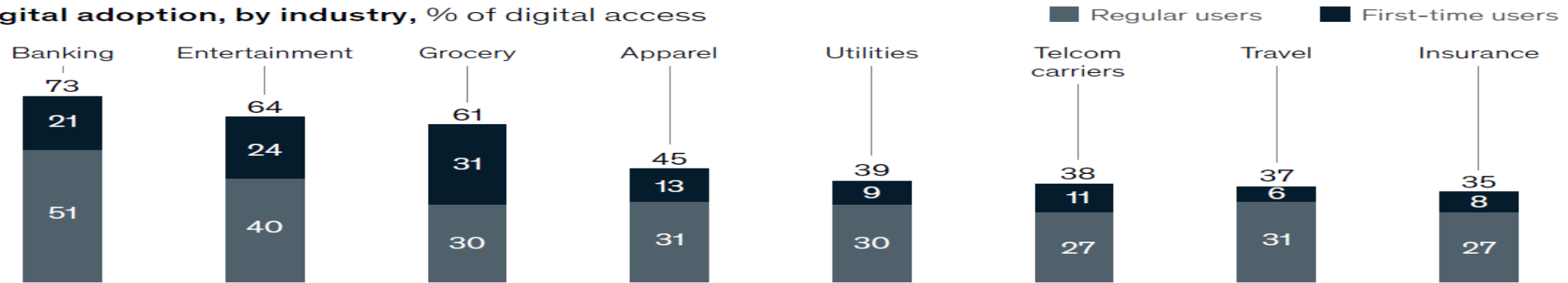
Index, 2000 = 100



Source: UNCTAD, World Investment Report 2020

Covid-19 acceleration - going digital, going remote

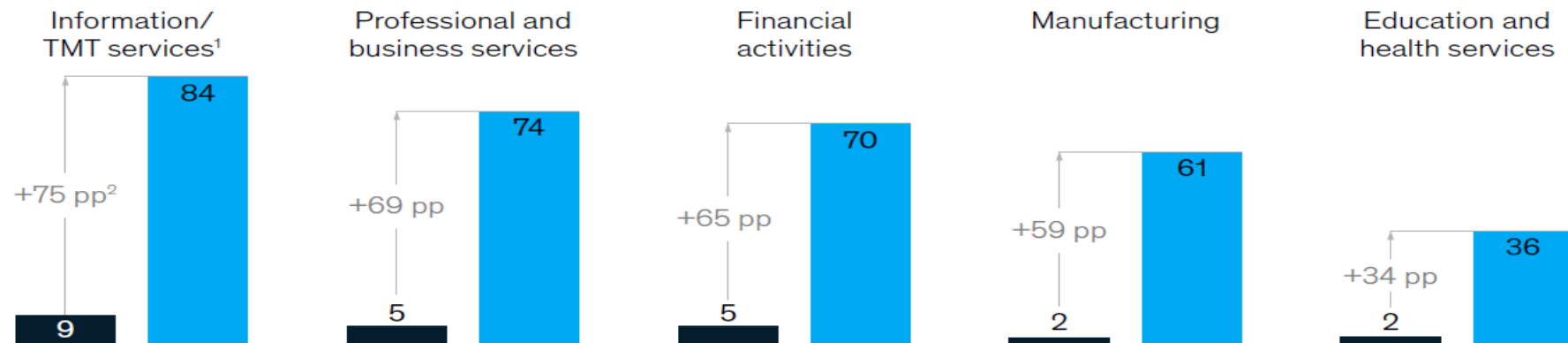
Digital adoption, by industry, % of digital access



Note: Figures may not sum to listed totals, because of rounding.

Source: McKinsey COVID-19 US Digital Sentiment Survey, Apr 25–28, 2020

Share of employees working remotely full time, %

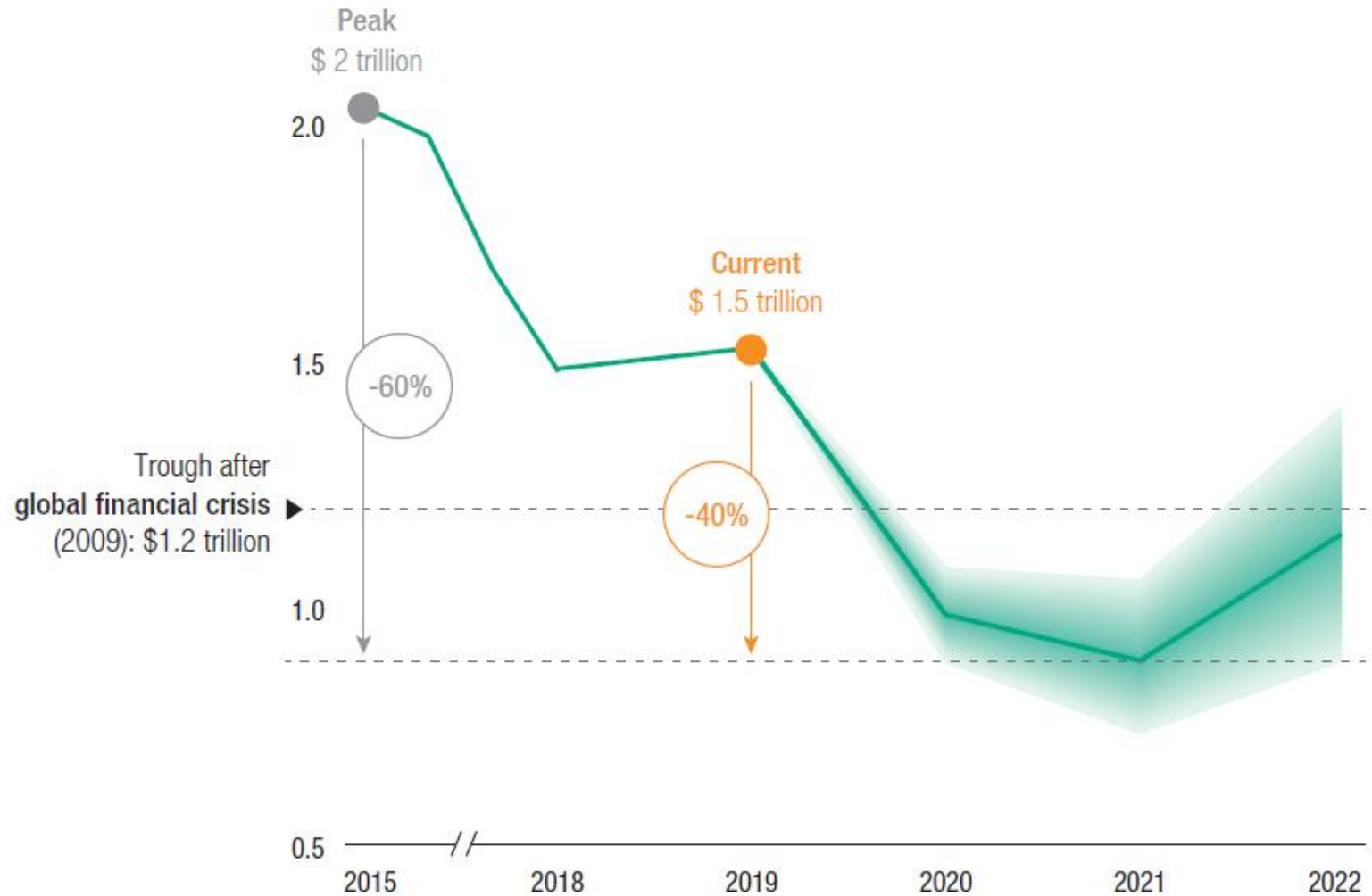


¹TMT = technology, media, and telecom. Pre-COVID-19 figures for remote-work frequency in sector sourced from internal survey (unavailable in American Time Use Survey).

²Percentage points.

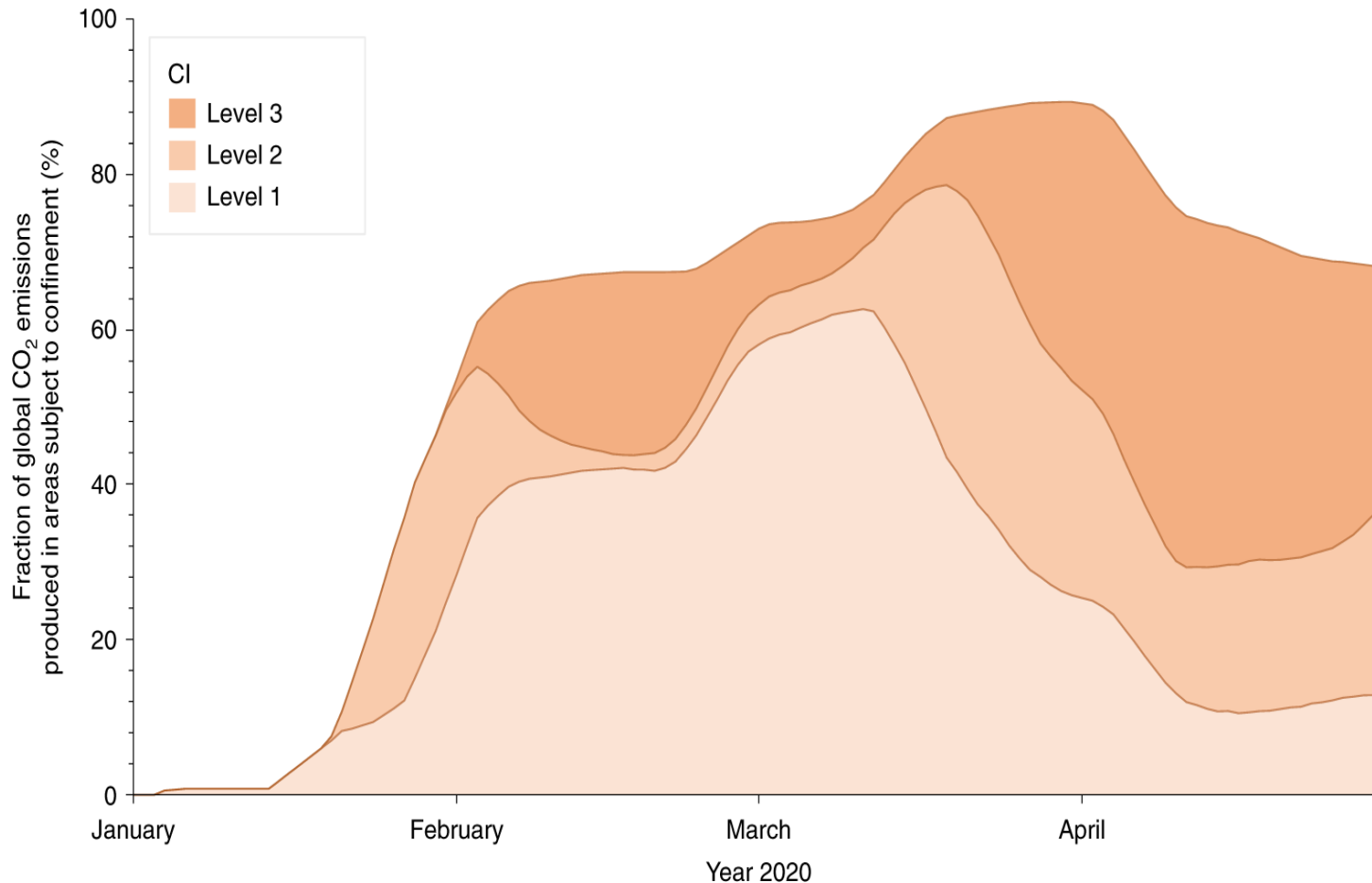
Source: American Time Use Survey, US Bureau of Labor Statistics, n =134; expert interviews; press search; McKinsey analysis

Covid-19 acceleration - Foreign Direct Investment further muted



Covid-19 reminded us how much CO2 we produce.

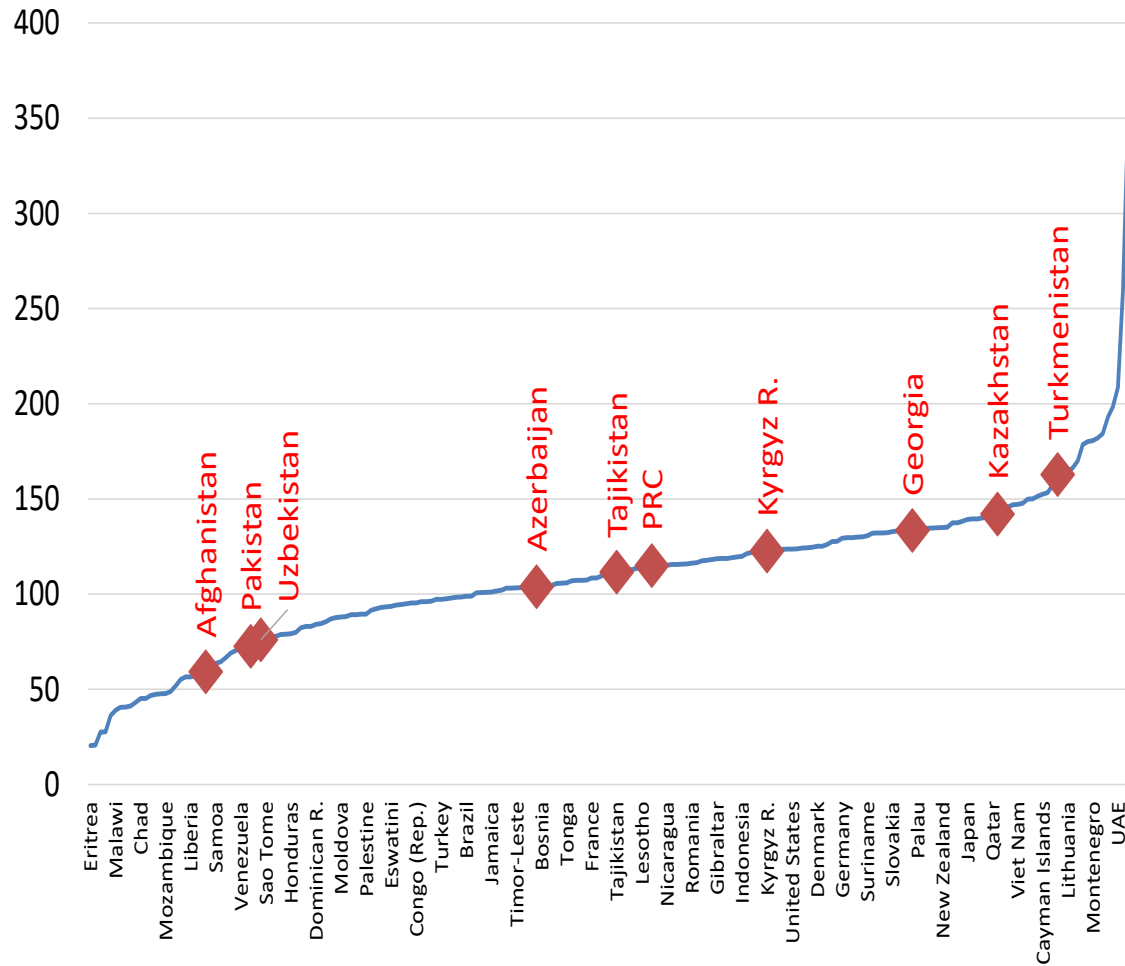
Fraction of global CO2 emissions produced in areas subject to confinement



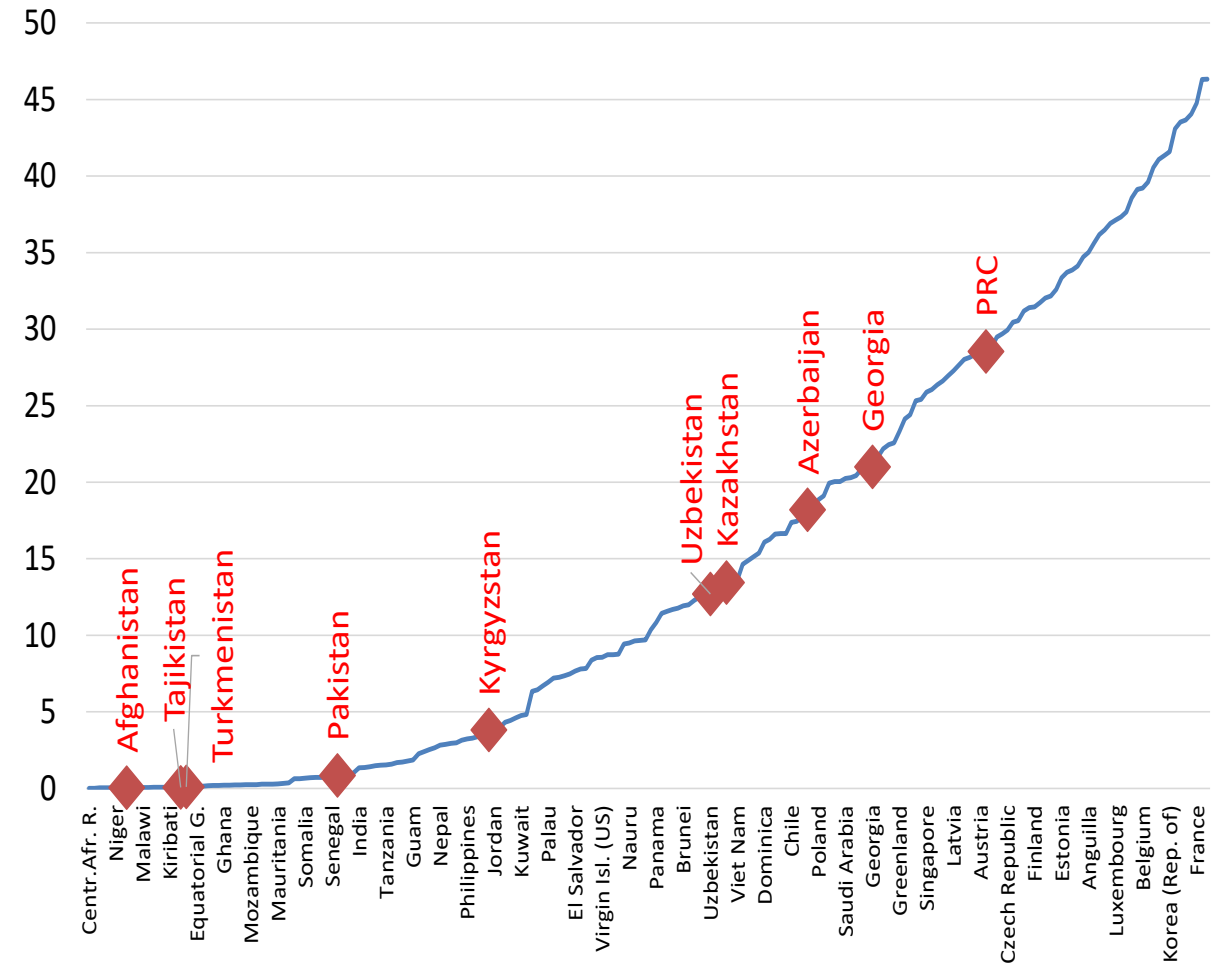
Level	Description	Policy examples
0	No restrictions	
1	Policies targeted at long distance travel or groups of individuals where outbreak first nucleates	Isolation of sick or symptomatic individuals
		Self-quarantine of travellers arriving from affected countries
		Screening passengers at transport hubs
		Ban of mass gatherings >5,000
2	Regional policies that restrict an entire city, region or ~50% of society from normal daily routines	Closure of selected national borders and restricted international travel
		Citizen repatriation
		Closure of all national borders
		Mandatory closure of schools, universities, public buildings, religious or cultural buildings, restaurants, bars and other non-essential businesses within a city or region
		Ban of public gatherings >100
3	National policies that substantially restrict the daily routine of all but key workers	Perhaps also accompanied by recommended closures at a broader or national level
		Mandatory night curfew
		Mandatory national 'lockdown' that requires household confinement of all but key workers
		Ban public gatherings and enforce social distancing >2 m

The state in CAREC countries - Digitalization: some have to catch up quite a lot

Mobile-cellular subscriptions per 100 inhabitants

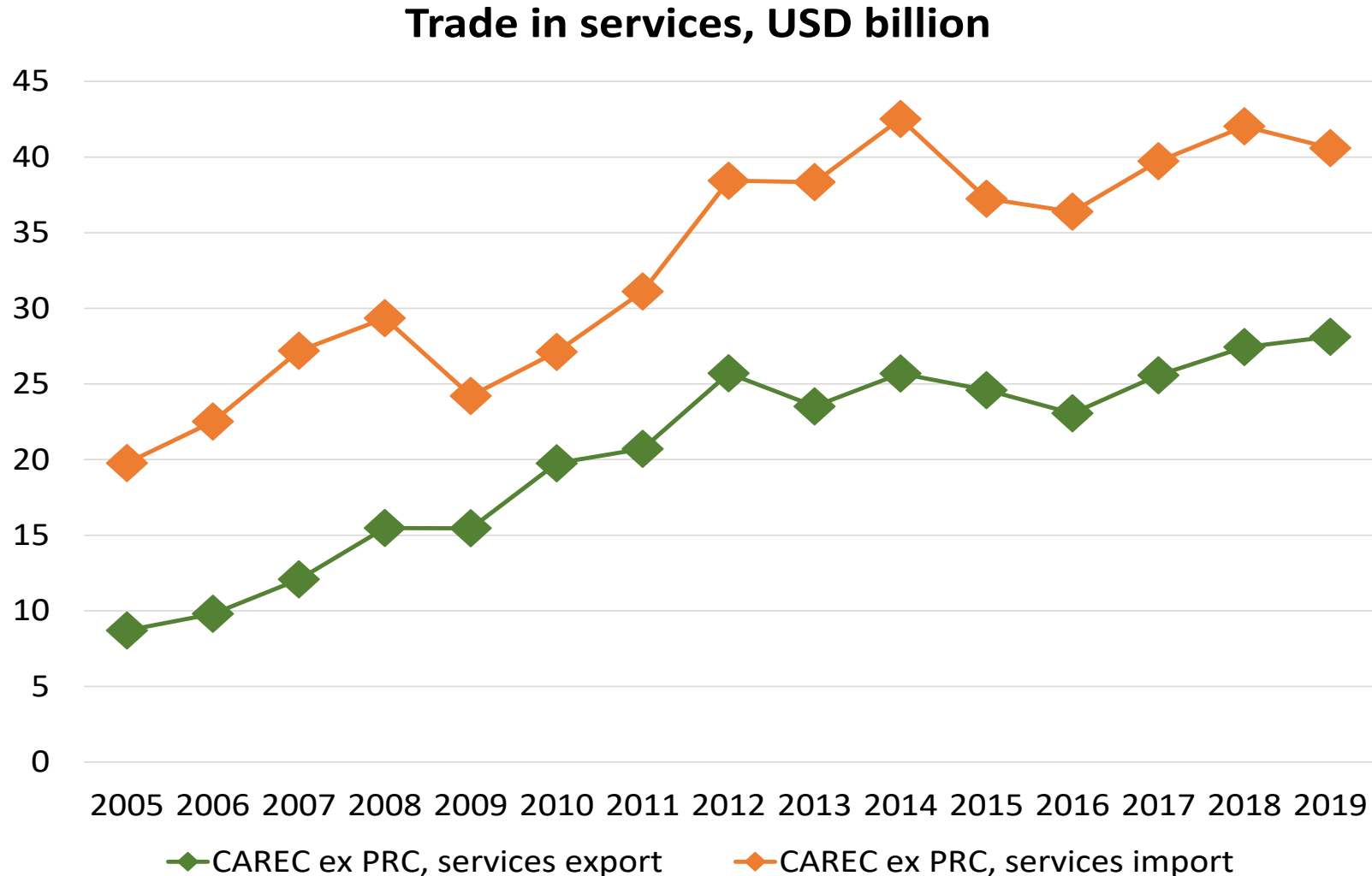


Fixed-broadband subscriptions per 100 inhabitants

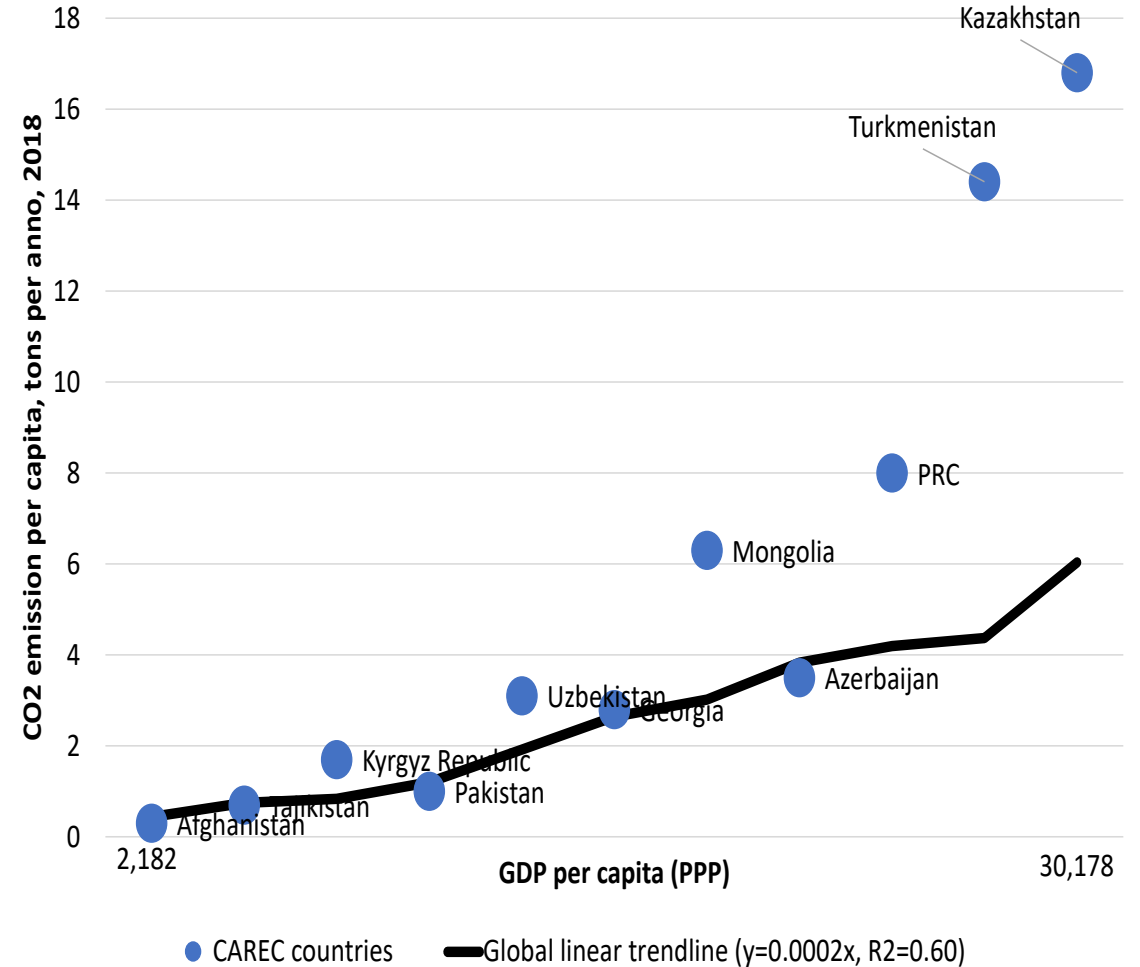
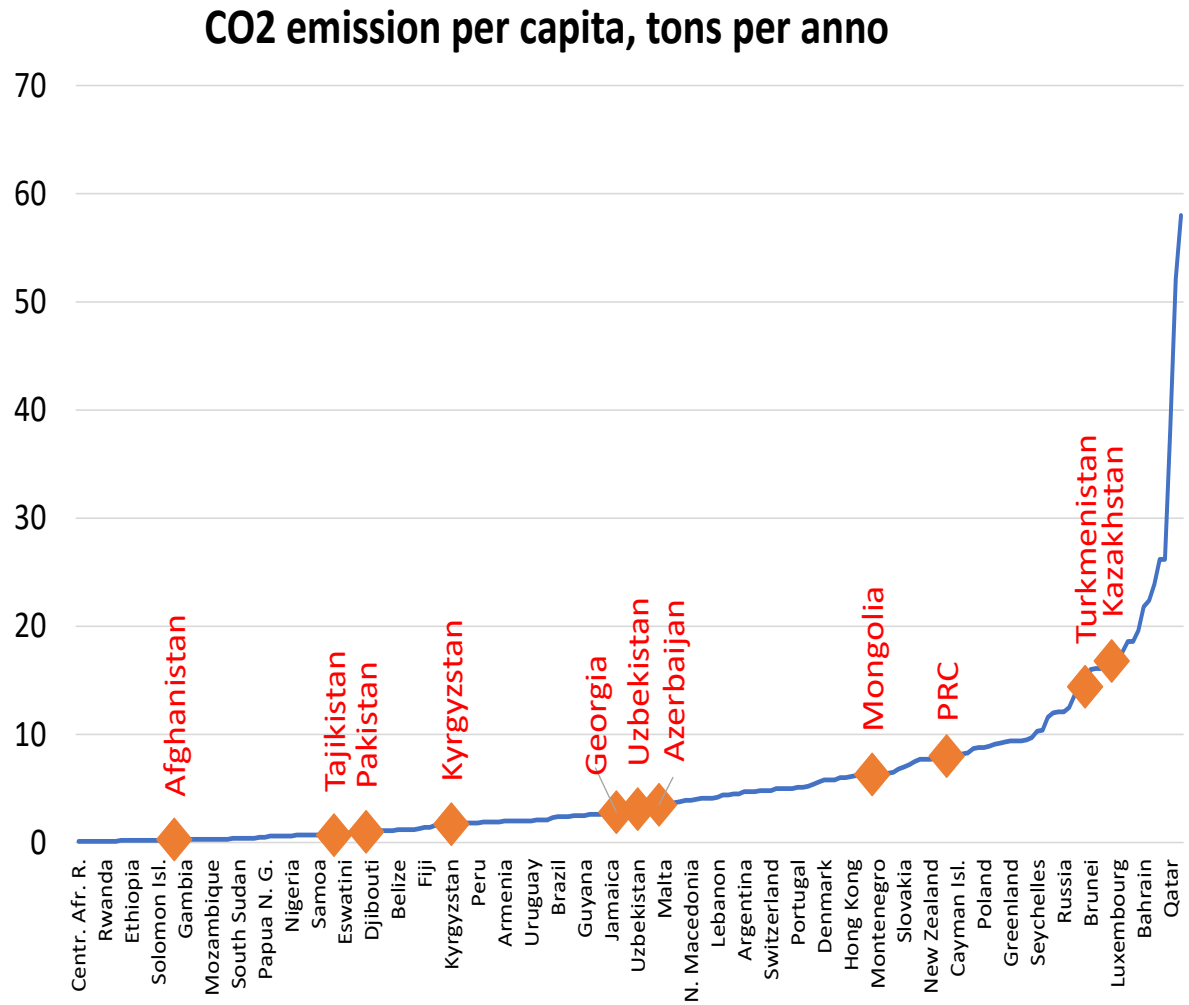


Source: <https://www.itu.int>, 2018 data

The state in CAREC countries - Trade in services is stagnating since 2012.



The state in CAREC countries - CO2 emissions: some must reduce them quite a lot.



Source: Emissions Database for Global Atmospheric Research (EDGAR), author's calculation

Policies and actions for meeting the evolving new challenges and opportunities accelerated by Covid-19

- **CAREC countries need speeding up digitalization.**
- **CAREC countries need diversifying into new segments of international value chains.**
- **CAREC countries need speeding up own greening and coping with international decarbonization.**

Fields, which need actions, include:

- Education
- Reform of national innovation systems (NISs)
- New (digital) infrastructure
- Incubators and technoparks; attraction of venture capital
- Legislation and policies appropriate for non-equity modes (NEMs) of international governance
- E-government
- Fintech
- New tax legislation/policies capturing digital value added flows
- A whole set of greening policies

Looking forward to a fruitful Innovation Summit and interesting discussions!



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