

WORLD BANK EAST ASIA AND THE PACIFIC ECONOMIC UPDATE OCTOBER 2023

SERVICES FOR DEVELOPMENT



Services for Development

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Throughout the report, geographic groupings are defined as follows:

Developing East Asia and Pacific comprises Cambodia, China, Indonesia, Lao People’s Democratic Republic (PDR), Malaysia, Mongolia, Myanmar, Papua New Guinea, the Philippines, Thailand, Timor-Leste, Vietnam, and the Pacific Island Countries.

The **Pacific Island Countries** comprise Fiji, Kiribati, the Marshall Islands, the Federated States of Micronesia, Nauru, Palau, Samoa, the Solomon Islands, Tonga, Tuvalu, and Vanuatu.

The **ASEAN** member countries comprise Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

The **ASEAN-5** comprise Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.

The analysis in this report is based on the latest country-level data available as of September 22, 2023.

List of Abbreviations

AE	Advanced Economy
AI	Artificial Intelligence
AFC	Asian Financial Crisis
ASEAN	The Association of Southeast Asian Nations
B2B	Business-to-Business
B2C	Business-to-Consumers
CAR	Capital Adequacy Ratio
CBA	Cost-Benefit Analysis
COVID	Coronavirus Disease
CPI	Consumer Price Index
DALYs	Disability-Adjusted Life Years
EPU	Economic Policy Uncertainty
EFI	Equitable Growth Finance and Institutions
EMBI	Emerging market Bond Index
EMDE	Emerging Markets and Developing Countries
EPU	Economic Policy Uncertainty
EU	European Union
FDI	Foreign Direct Investment
FSOL	Financial Sector Omnibus Law
GDP	Gross Domestic Product
GEP	Global Economic Prospects
GFC	Global Financial Crisis
GHG	Greenhouse Gas
GNI	Gross National Income
GMV	Gross Merchandise value
GVC	Global Value Chain
HIC	High Income Country
ICT	Information and Communications Technology
ILO	International Labor Organization
IMF	International Monetary Fund
IMO	International Maritime Organization
IPEF	Indo-Pacific Economic Framework
IPO	Initial Public Offers

IRA	Inflation Reduction Act
LGfV	Local Government Financing Vehicle
LMIC	Lower Middle Income Country
MSME	Micro, Small and Medium Enterprise
NCD	Non-Communicable Disease
NDC	Nationally Determined Contributions
NPL	Nonperforming loans
OECD	Organisation for Economic Co-operation and Development
pp	Percentage point
PIH	Permanent Income Hypothesis
PMI	Purchasing Manager's index
PPP	Purchasing Power Parity
PSA	Public Service Act
P2P	Peer-to-Peer
RHS	Right Hand Side
ROW	Rest of the World
SME	Small and Medium Enterprise
SD	Standard Deviation
SOE	State-Owned Enterprise
STRI	Services Trade Restrictions Index
TFP	Total Factor Productivity
TPP	Trans-Pacific Partnership
UHC	Universal Health Coverage
UMIC	Upper Middle Income Country
USMCA	United States-Mexico-Canada
VAT	Value Added Tax
VAR	Vector autoregression
WDI	World Development Indicator
WEO	World Economic Outlook
WDR	World Development Report
WHO	World Health Organization
WTO	World Trade Organization

Regions, World Bank Classification and Country Groups

EAP	East Asia and Pacific
ECA	Eastern Europe and Central Asia

LAC	Latin America and the Caribbean
MNA	Middle East and North Africa
SAR	South Asia
SSA	Sub-Saharan Africa

<i>Country/Economy Abbreviations</i>	
CHN	China
FJI	Fiji
FSM	Federated States of Micronesia
HKG	Hong Kong SAR, China
IDN	Indonesia
JPN	Japan
KHM	Cambodia
KIR	Kiribati
KOR	Republic of Korea
LAO	Lao People's Democratic Republic
MNG	Mongolia
MMR	Myanmar
MYS	Malaysia
NRU	Nauru

PHL	Philippines
PICs	Pacific Island Countries
PLW	Palau
PNG	Papua New Guinea
RMI	Republic of the Marshall Islands
SLB	Solomon Islands
THA	Thailand
TLS	Timor-Leste
TON	Tonga
TUV	Tuvalu
TWN	Taiwan, China
UK	United Kingdom
USA / US	United States
VNM	Vietnam
VUT	Vanuatu
WSM	Samoa

<i>Currency Units</i>	
B	Thai baht
CR	Cambodian riel
D	Vietnamese dong
F\$	Fiji dollar
K	Myanmar kyat
K	Papua New Guinea kina
Kip	Lao kip

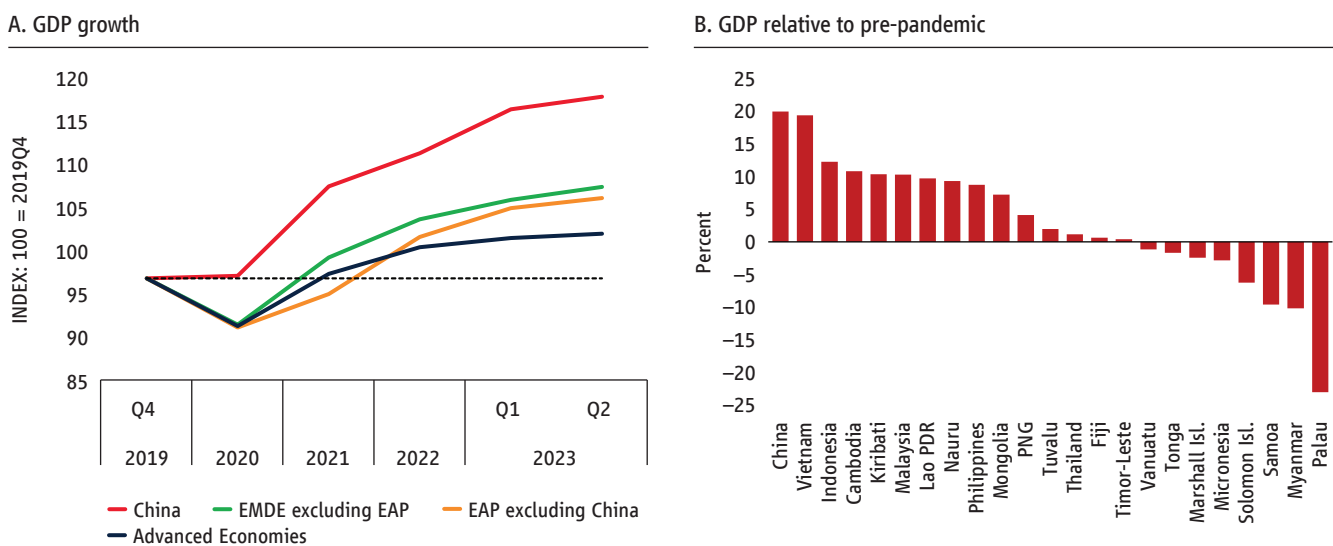
P	Philippine peso
RM	Malaysian ringgit
RMB	Chinese renminbi
Rp	Indonesian rupiah
SIS	Solomon Islands dollar
Tog	Mongolian tugrik
US\$	Timor-Leste (U.S. dollar)
US\$	United States dollar

Overview

► Growth

Most economies in developing East Asia and Pacific (EAP), other than several Pacific Island Countries, have recovered from the succession of shocks since 2020 and are continuing to grow, albeit at a slower pace (figure O1). China’s economy slowed to 0.8 percent (q/q) in the second quarter of 2023, after growing by 2.2 percent (q/q) in the first quarter. The rest of the region grew at an estimated 1.0 percent (q/q) in both the first and the second quarter of 2023.

Figure O1. Most major EAP economies have recovered and are growing, but at a slower pace



Source: Haver Analytics; World Bank.
 Note: B. Bars show GDP forecast in 2023 relative to 2019 level. EAP: East Asia and Pacific.

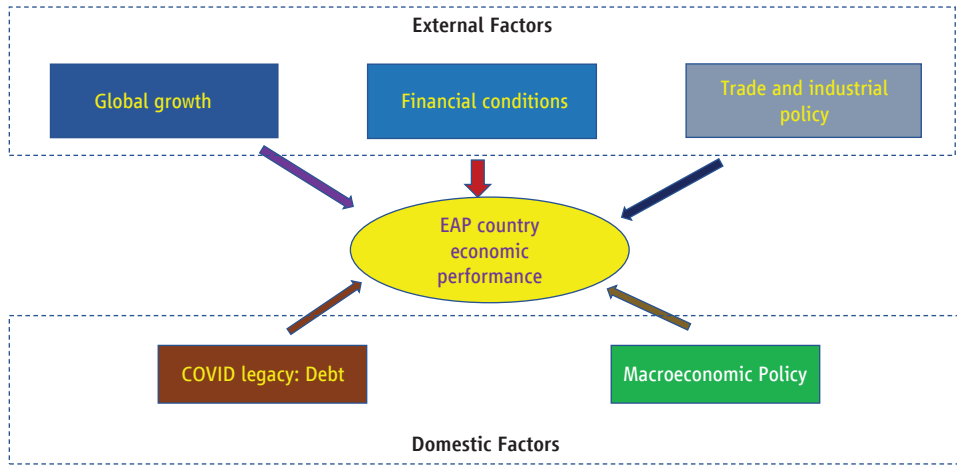
► Determinants

Economic performance in the region is being shaped by both external and domestic developments (figure O2). The key external factors are slowing global growth, still tight financial conditions and trade and industrial policies. Among the domestic factors, the most important are the legacy of amplified public and private debt and the macroeconomic policy stance.

External factors

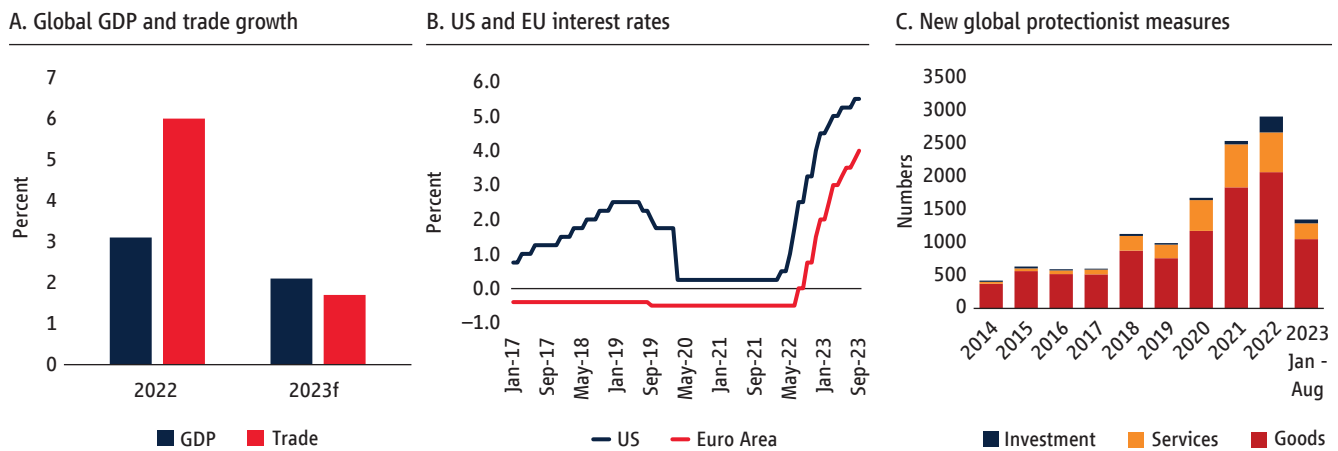
The external environment remains challenging for EAP countries. Global growth is projected to fall to 2.1 percent in 2023, from 3.1 percent last year (figure O3). Even though inflation is declining in major economies, core inflation in the US and EU remains elevated and labor markets remain tight, leading to continued high interest rates. Furthermore, almost 3,000 new restrictions were imposed on global trade in 2022, three times as large as those in 2019.

Figure O2. External and domestic factors are shaping near-term economic performance in the EAP countries



Source: World Bank staff's illustration.

Figure O3. Global growth slowdown, financial tightening and protectionist measures are affecting economic performance in the EAP countries



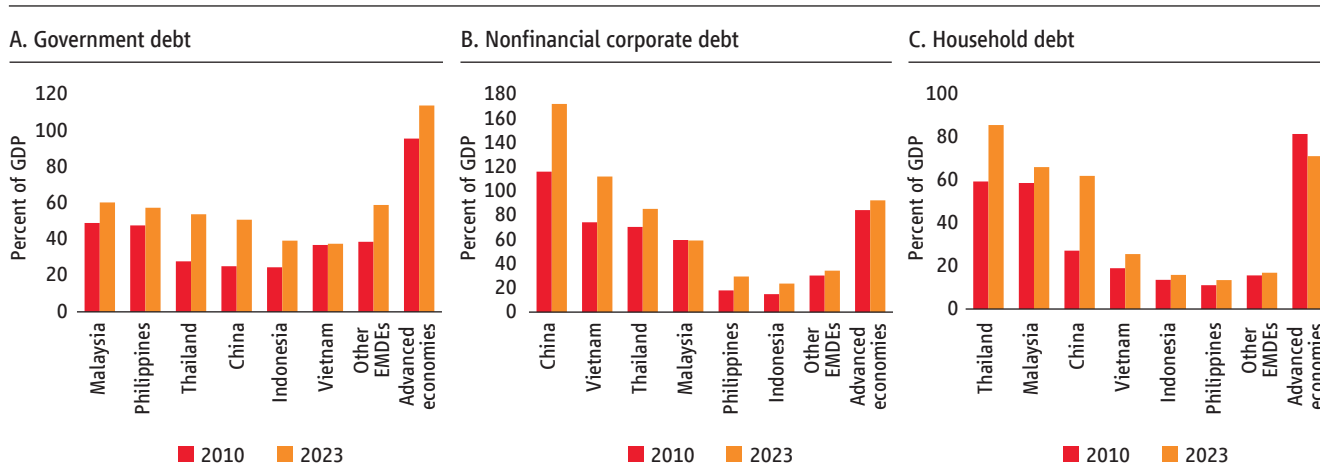
Source: Global Trade Alert, Haver Analytics, World Bank.

Domestic factors

Debt

Debt as a share of GDP increased significantly over the last decade in most EAP countries. General government debt as a share of GDP has increased significantly in most of the region’s economies (figure O4). Corporate debt too has increased significantly in China and Vietnam by more than 40 percentage points of GDP since 2010, and now exceeds the level in advanced economies. And household debt is now significantly higher in China, Malaysia and Thailand compared to levels in other emerging markets.

Figure O4. Government and private debt has increased across the region



Source: Institute of International Finance, World Bank staff estimates.

High government debt limits fiscal space, constraining public investment, and, by leading to higher interest rates, hurts private investment. High corporate debt also hurts private investment by leaving firms with less resources for new projects. The cost of servicing high household debt erodes disposable income and hurts consumption.

Macroeconomic policy

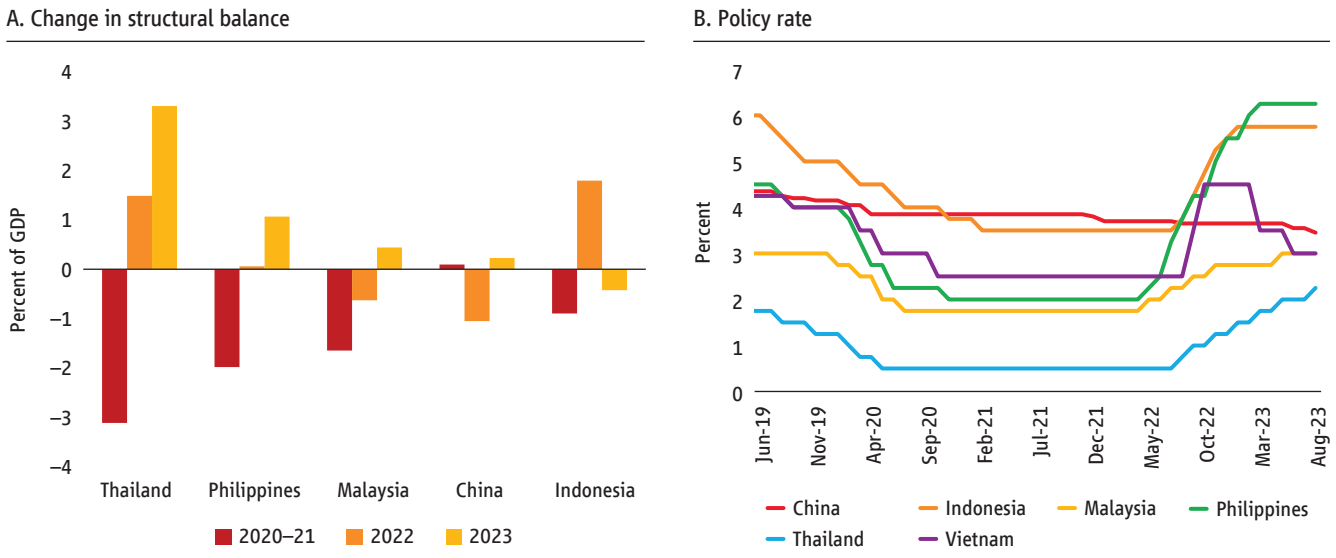
The macroeconomic policy stance in 2023 is less expansionary than in the 2020–2022 period in most economies. The major economies in the region are projected to have a lower structural balance in 2023 than in 2022, except Indonesia which already saw significant fiscal consolidation in 2022 (figure O5). At the same time, policy rates in the EAP region have been raised starting in late 2022 but remain lower than in other emerging market and developing economies (EMDEs). Authorities appear to be balancing the need for monetary policy support and risks of continuing inflation. Rates have recently been reduced in China and Vietnam in response to declining inflation and weaker growth.

› **Tracing the impact of external and domestic factors**

Exports

Foreign demand for manufactured goods and commodities is weakening as global growth slows down. Goods exports have fallen by more than 20 percent in Indonesia and Malaysia, and by more than 10 percent in China and Vietnam from

Figure O5. Fiscal policy has become less expansionary in most countries, while monetary policy has tightened in the region, except in China and Vietnam

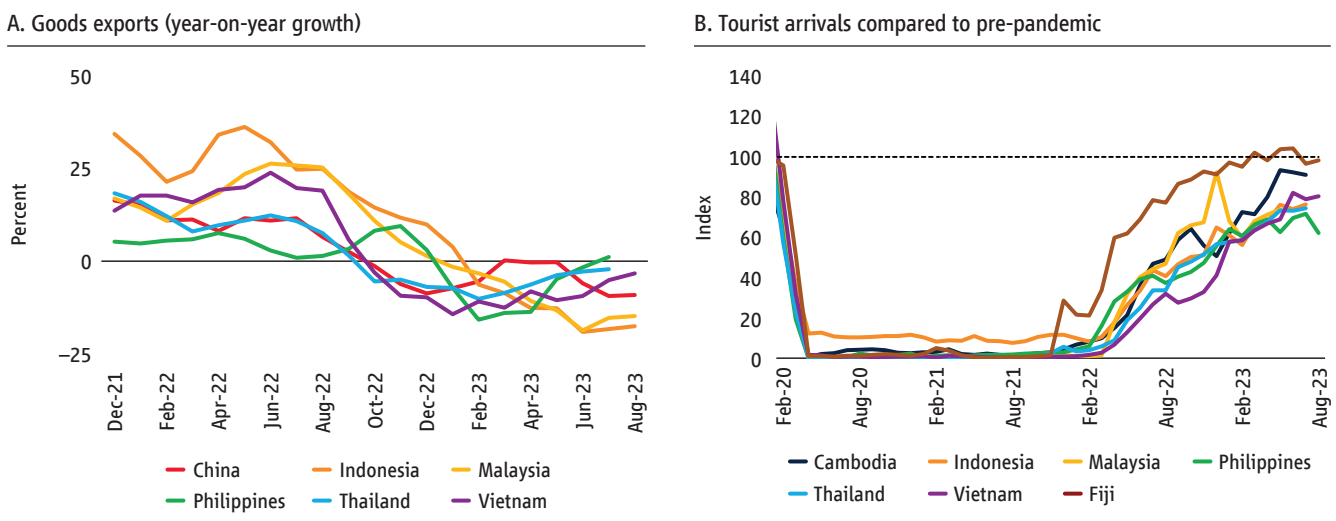


Source: International Monetary Fund, Haver Analytics.

their levels in the second quarter of 2022 (figure O6). An ongoing revival of tourism has helped services exports in the Philippines, Thailand and many Pacific Island countries.

Trade and industrial policy measures in the EAP countries’ major trading partners are affecting their exports. As demonstrated in earlier EAP Updates, the tariffs imposed by the US on China since 2018 shifted US imports towards other countries in the region. More recently, the Inflation Reduction Act (IRA) and the CHIPS and Science Act of August 2022, introduced

Figure O6. Goods exports have been declining while tourist arrivals have largely recovered



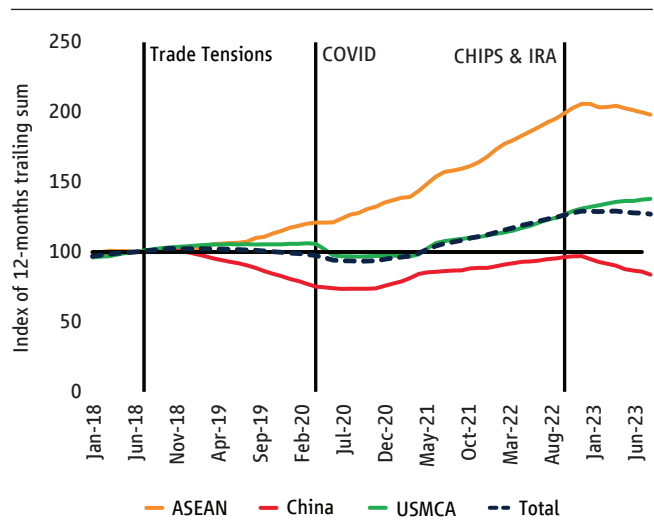
Source: Haver Analytics.
 Note: A. three month moving average. B. index to the corresponding month in 2019.

domestic content requirements linked to subsidies granted under the new laws. These Acts were followed by a decline in the exports of the affected products to the US from China and the ASEAN countries, and a slight increase in the exports from Canada and Mexico which are exempted from these requirements (figure O7).

Consumption

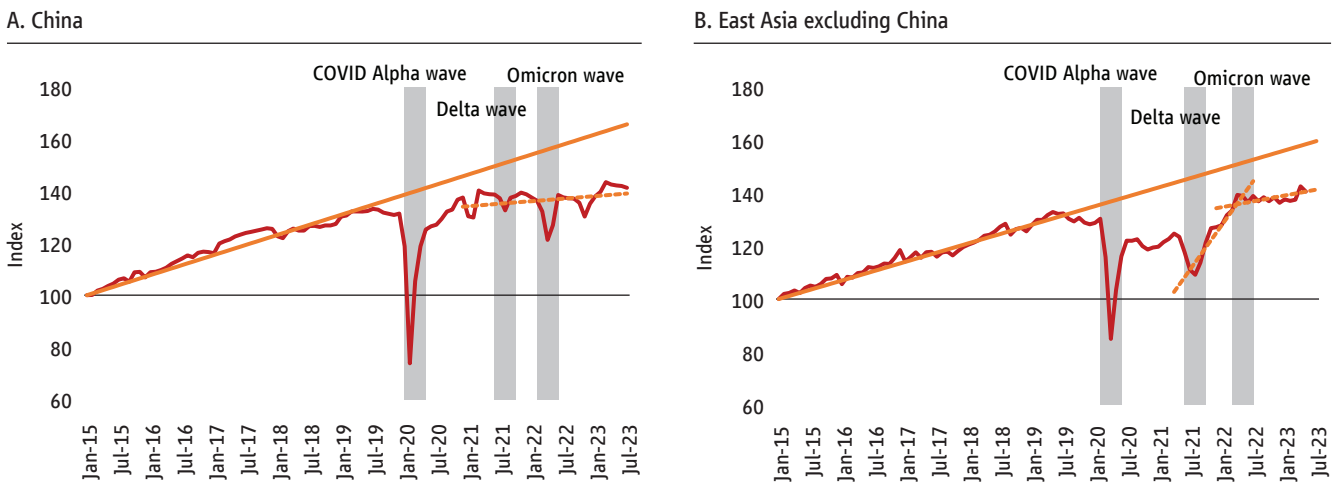
Private consumption, bouncing back from COVID and inflation-induced austerity, had sustained growth in the region but is running out of steam, unexpectedly early in China. In China, the current trend of retail sales is flatter than the pre-pandemic trends due to both proximate factors (e.g. falling house prices and increased household debt) and structural factors (e.g. aging) (figure O8). Consumption growth has flattened also in the other EAP economies after the post-Delta variant bounce, for reasons similar to those in China: increasing household debt (e.g. in Malaysia, Thailand) and aging populations (e.g. in Malaysia, Thailand, Vietnam).

Figure O7. Electronics and machinery exports of China and ASEAN to the US declined after the introduction of the CHIPS and IRA Acts in August 2022



Source: US Census Bureau.
 Notes: Horizontal running lines (colored) show exports to the US of electronics and machineries (HS code 84 and 85) from China, ASEAN countries, and members of the United States-Mexico-Canada (USMCA) agreement. The dashed line shows total exports to the US. The data are smoothed by taking a 12-month trailing sum, and indexed to June 2018. The three vertical black lines correspond to the beginning of the trade tensions, the beginning of COVID-19, and August 2022, when the IRA acts and the CHIPS act were signed.

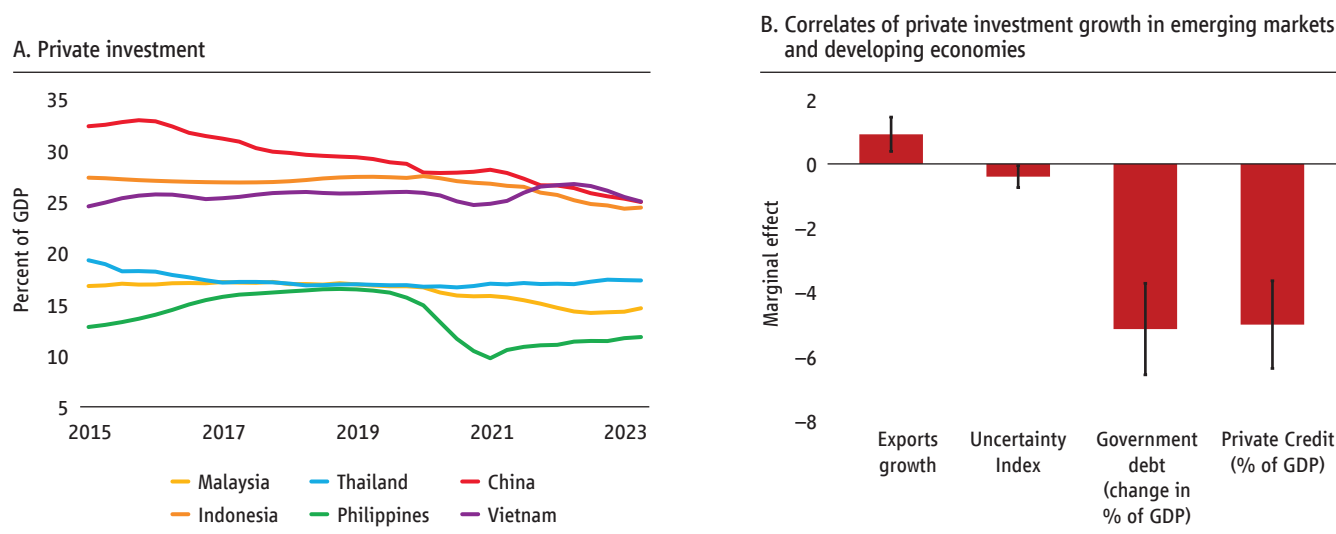
Figure O8. Recent trends in retail sales are flatter than pre-COVID trends



Source: Haver Analytics.
 Note: Figure shows seasonally adjusted real retail sales indexed to January-2015. When volume-based retail sales data were not available, value-based retail sales were adjusted by the consumer price index. Straight line shows pre-COVID trend and dashed line shows the trend since January 2021. B. figure shows unweighted average of ASEAN-5 countries.

Investment

Investment as a share of GDP has been lower than pre-pandemic levels in developing EAP over the last few years (figure O9). Investment growth is affected by export growth, corporate and government debt, and policy uncertainty. All countries in the

Figure O9. Private investment as a share of GDP has been lower in recent years than pre-pandemic levels in most EAP economies

Source: International Monetary Fund, Haver Analytics, World Bank staff estimates.

Note: A. China's data shows fixed asset investment which includes land purchases etc. B. The bars show marginal effects of each variable in predicting investment growth. Coefficients are standardized by dividing by the standard deviation of each variable. Black lines show 90 percent confidence intervals (1.68 x standard errors). See Box A1 for details.

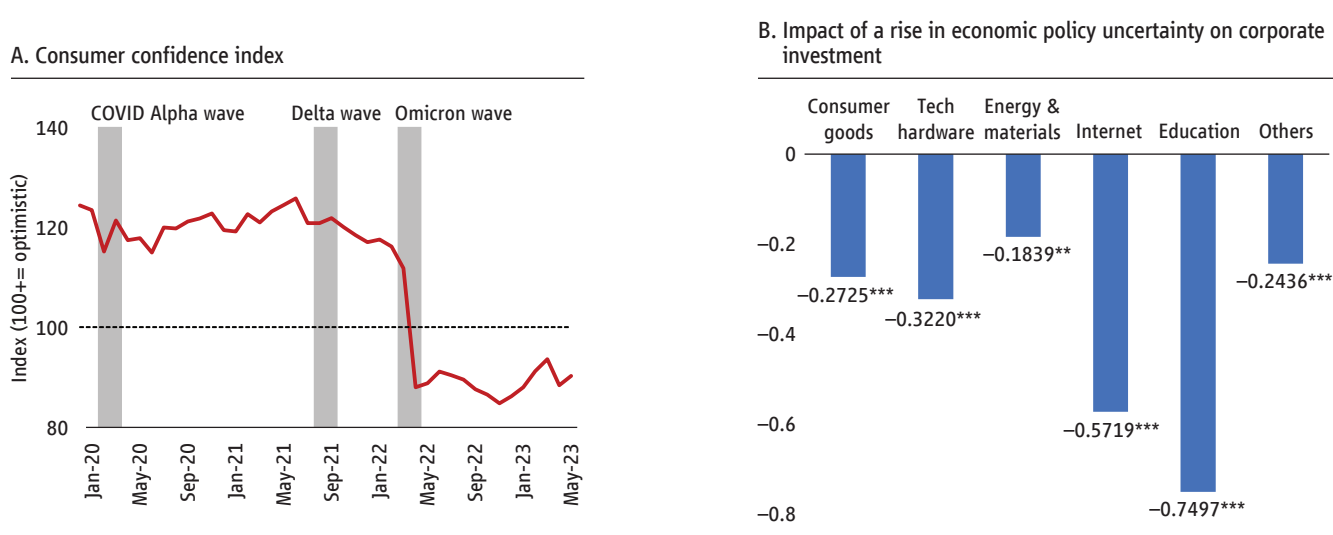
EAP region are seeing a slowdown in export growth and most have seen a significant increase in all forms of debt. For example, the share of government debt in GDP has increased by 10 percentage points, on average, since 2019 (figure O.4). Several countries have also seen high policy uncertainty because of political transitions and instability, as well as international tensions.

China

China's economic performance today is being shaped by how it has grown in the past and how it aims to grow in the future. And what happens in China matters for the whole region; a 1 percent reduction in its growth is associated with a reduction in regional growth by 0.3 percentage points. China's past growth, largely driven by investment in infrastructure and property, has left firms and local governments burdened by debt – as saturated infrastructure yields diminishing returns and an oversupply of housing reduces property prices. China's aggregate domestic non-financial debt-to-GDP ratio has more than doubled from 132 percent in 2007 to 285 percent in 2023. Property accounts for 65 percent of total household assets, and in July 2023, secondary market home prices in lower-tier cities were more than 20 percent below the 2021 peak. The external environment has also become more challenging, with weaker external demand weighing on growth in the short run and geoeconomic tensions constraining access to critical technologies.

China is seeking new drivers of growth based on consumption and innovation that would avoid the problems inherent in the old model of growth, but the transition is proving difficult. Some policy choices and changes, have exacerbated uncertainty for consumers and investors (figure O10). Loss of confidence, attributable in part to falling property prices, increased indebtedness, and the implications of aging, has led to a further increase in the already-high savings rate to 33 percent. Private fixed asset investment growth has hovered around zero percent since 2021, weighed down by high debt, declining operating profits and persistent uncertainty. The Producer Price Index has declined by an average of 0.4 percent per month in January-July 2023, with deflation threatening to increase the real burden of debt and erode corporate profits. Stronger structural reforms – including further liberalization of the Hukou system, stronger social safety nets, greater regulatory predictability for investments in innovative and green products – could help revive consumption and investment, creating the basis for inclusive and sustainable growth.

Figure O10. Consumer confidence in China has declined and policy uncertainty has hurt investment in specific sectors



Source: NBS; Haver Analytics; CSMAR database; World Bank staff estimates.
 Note: Coefficient estimates from regressing corporate investment to asset ratio on a standardized index of economic policy uncertainty (EPU). The EPU index measures the frequency of economic policy uncertainty-related words in media. Controls include asset liability ratio, log of total assets, revenue growth, Tobin's Q, cash ratio, GDP growth, trade policy uncertainty, time and firm fixed effects. Sample included data on 4993 China-listed firms for the 2011Q1-2021Q1 period. *** P<0.01, ** P<0.05, *P<0.1.

› **Growth outlook**

Growth in the region remains higher than the growth projected in other EMDEs but is slowing compared to earlier projections. The EAP region is projected to grow by 5.0 percent in 2023, about 0.1 percentage points lower than was expected in April 2023 (table O1). Growth in China is projected to be 5.1 percent in 2023, faster than 3.0 percent in 2022 (figure O11). However, growth in the rest of the region is projected to slow to 4.6 percent in 2023 from 5.8 percent

Table O1. GDP growth forecast

	2020	2021	2022	Oct 2023 forecast		Apr 2023 forecast	
				for 2023	for 2024	for 2023	for 2024
East Asia & Pacific	1.3	7.5	3.4	5.0	4.5	5.1	4.8
East Asia & Pacific (excluding China)	-3.5	2.7	5.8	4.6	4.7	4.9	4.9
Pacific Island Countries	-10.2	-3.5	6.4	5.2	3.6	4.3	3.6
China	2.2	8.4	3.0	5.1	4.4	5.1	4.8
Indonesia	-2.1	3.7	5.3	5.0	4.9	4.9	4.9
Malaysia	-5.5	3.3	8.7	3.9	4.3	4.3	4.2
Philippines	-9.5	5.7	7.6	5.6	5.8	5.6	5.9
Thailand	-6.1	1.5	2.6	3.4	3.5	3.6	3.7
Vietnam	2.9	2.6	8.0	4.7	5.5	6.3	6.5
Cambodia	-3.1	3.0	5.2	5.5	6.1	5.2	5.7
Lao PDR	0.5	2.5	2.7	3.7	4.1	3.9	4.2
Mongolia	-4.4	1.6	5.0	5.1	6.1	5.2	6.3
Myanmar	3.2	-18.0	3.0	3.0	2.0	3.0	

(continues)

Table O1. GDP growth forecast (*Continued*)

	2020	2021	2022	Oct 2023 forecast		Apr 2023 forecast	
				for 2023	for 2024	for 2023	for 2024
Papua New Guinea	-3.2	0.1	4.3	3.0	5.0	3.7	4.4
Timor-Leste	-8.3	2.9	3.9	2.4	3.5	3.0	3.2
Palau	-9.1	-12.1	-2.3	-1.4	10.4	12.3	9.1
Fiji	-17.0	-5.1	18.6	7.7	4.0	5.0	4.1
Solomon Isl.	-3.4	-0.6	-4.1	1.8	2.7	2.5	2.4
Tuvalu	-4.3	1.8	0.7	3.9	3.5	4.2	3.1
Marshall Isl.	-1.8	1.0	-4.5	3.0	3.0	1.9	2.1
Vanuatu	-5.0	0.6	1.9	1.5	2.6	3.5	3.6
Kiribati	-1.4	7.9	1.2	2.5	2.4	2.5	2.4
Tonga	0.5	-2.7	-2.0	2.6	2.5	3.0	2.9
Samoa	-3.1	-7.1	-5.3	6.0	4.0	5.0	3.4
Micronesia	-1.8	-3.2	-0.6	2.8	2.8	2.9	2.8
Nauru	0.7	3.4	2.9	2.0	1.5	1.0	2.0

Source: World Bank; World Bank estimates and projections.

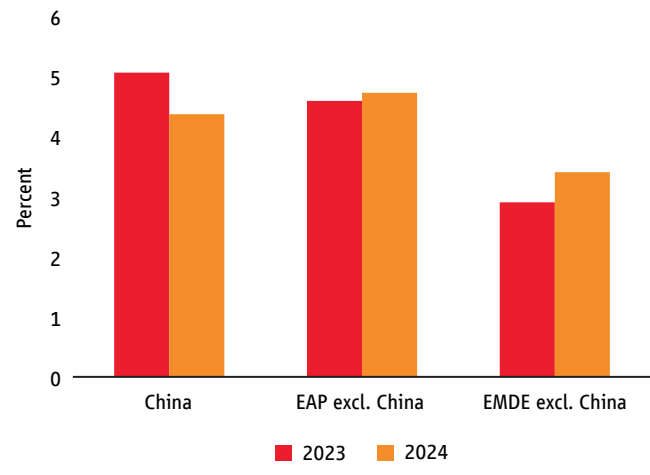
Note: Percent growth of GDP at market prices. Values for 2022 for the small island economies refer to GDP growth estimates. Values for Timor-Leste represent non-oil GDP. For the following countries, values correspond to the fiscal year: Federal states of Micronesia, Palau, and Republic of the Marshall Islands (October 1–September 30); Nauru, Samoa, and Tonga (July 1–June 30). Myanmar growth rates refer to the fiscal year from October to September.

in 2022, and down from the 4.9 percent projected in April 2023. The Pacific economies are expected to continue expanding in 2023, with growth projected to be 5.2 percent, on average, in 2023.

The EAP region is projected to grow by 4.5 percent in 2024. While domestic factors are likely to be the dominant influence on growth in China, external factors will have a stronger influence on growth in much of the rest of the region. Growth in China is projected to slow to 4.4 percent in 2024, as the bounce back from the re-opening of the economy fades and both proximate problems, such as elevated debt and weakness in the property sector, as well as longer-term structural factors weigh on growth. Growth in the rest of the region, is expected to edge up to 4.7 percent in 2024, as easing global financial conditions and the recovery in the global economy offset the impact of slowing growth in China.

Figure O11. Growth prospects are higher than in other emerging markets but have weakened since the previous forecast

GDP growth forecast



Source: World Bank.

Note: Forecast of EMDE excl. China is based on Global Economic Prospects in June.

▸ Special focus: Services for development

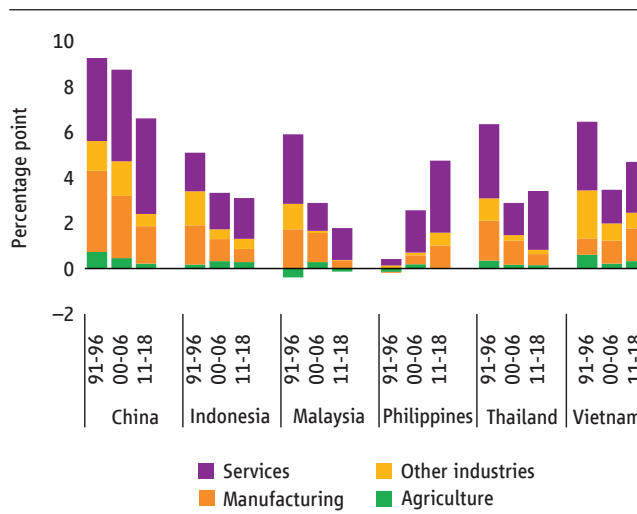
Looking ahead to the medium and long term, the development of services will be central to EAP's overall development. East Asia's rapid economic growth in recent decades is often seen as driven by the manufacturing sector. Yet, services are playing a growing, but often underappreciated role as key drivers of economy-wide growth and job creation.

To begin with, consider seven facts about services. First, from 2010 to 2021, the share of employment in services increased from 35 percent to 47 percent in China and from 42 percent to 49 percent in the rest of the EAP countries.

Second, productivity in certain services – such as business services, finance, and communications – is higher than in manufacturing, although most service jobs in the region are still in low skill and low productivity services, such as traditional retail and transport. However, as Figure O12 shows, in the most recent years, the contribution of the service sector to aggregate labor productivity growth has been higher than the contribution of manufacturing in all major economies in the region.

Third, services currently represent the most dynamic elements of international trade and foreign direct investment (FDI) in East Asia. In all countries but Vietnam, the growth of service exports has exceeded the growth of manufacturing exports in the period 2010–2019, especially in digitally delivered services (figure O13). In most countries, in the period 2012–2019, the growth of FDI in services has exceeded the growth of FDI in manufacturing by a factor of 5.

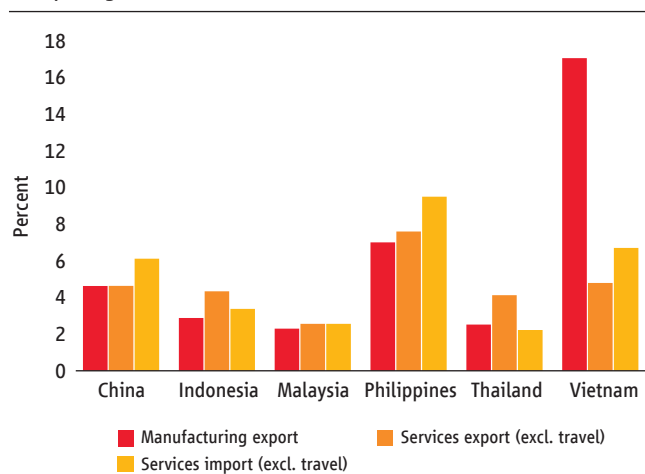
Figure O.12. Services overall are key contributors to aggregate productivity growth



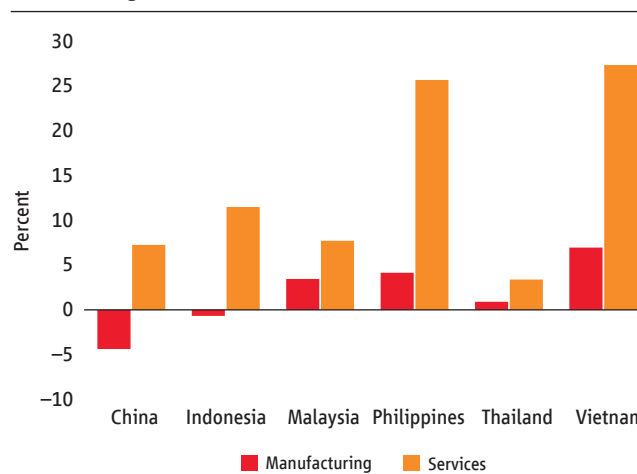
Source: GGDC/UNU-WIDER Economic Transformation Database (Kruse et al. 2022).
 Note: Figure shows sectoral contribution to labor productivity growth, annual average during three different periods. Other industries include mining, utilities, and construction.

Figure O13. Services outpaced Manufacturing in terms of growth of Trade and FDI in recent years

A. Exports growth (2010–2019)



B. FDI inflow growth (2012–2019)

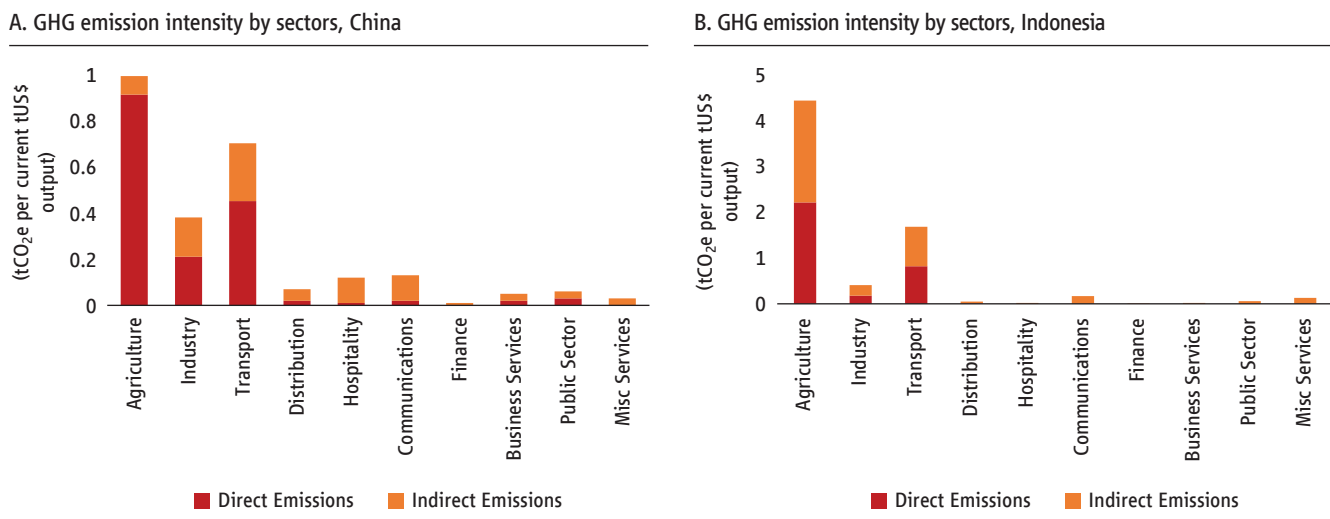


Source: Haver Analytics, World Development Indicators.
 Note: B. shows average annual growth of 3-year moving-average FDI values, during 2012–2019, except for Vietnam (2014–2019) and Indonesia and Philippines (2013–2019).

Fourth, the importance of services will increase further as consumer demand shifts towards services with incomes rising and populations aging across the region. Fifth, since services tend to employ more skilled workers than manufacturing or agriculture, the growing share of service sectors will increase the relative demand for skilled workers. Sixth, services tend to be characterized by higher female to male employment ratios, and the ratios grow faster with the levels of development

in services than in manufacturing. Lastly, most services except for transport emit significantly lower greenhouse gases for every unit of output generated than industry and agriculture (figure O.14). Therefore, structural transformation towards services would support the region's shift to lower carbon growth.

Figure O14. Services tend to be less carbon-intensive, except for transport



Sources: World Bank staff calculations based on the Emissions Database for Global Atmospheric Research (EDGAR; European Commission et al., 2016) and Global Resource Input Output Assessment (GLORIA; Lenzen et al., 2017) databases. Emissions include CO₂, CH₄ and N₂O.

Next consider the central argument in this report. Changes in technology and services policy have shaped and will influence the evolution of services and their contribution to development. Even the uneven diffusion of digital technologies and the limited reform of policies restricting entry and competition in services sectors are leading to structural change across and within sectors. The result, through increased scale, tradability, and innovation, is higher productivity growth in services sectors as well as in the manufacturing sectors that use these services, and increased demand for the sophisticated skills that complement the new technologies. The same combination of services reform and technological diffusion is also improving education, health and finance to equip people to take advantage of these new opportunities. But deeper reform is needed to unleash the virtuous cycle between opportunity and capacity that constitutes development (figure O15).

The first piece of evidence for the argument above is the growing penetration of digital technologies in a range of EAP services sectors and its link with productivity (as illustrated on the left branch of figure O15). New firm level evidence from the Philippines suggests that the average services firm has about a third more data and software assets per worker than their manufacturing counterpart, though the adoption of digital technologies varies across services sectors (Figure O.16). Digital technology adoption is stronger for firms with access to broadband, as well as for foreign-owned firms. And, the adoption of digital technologies is associated with higher productivity and value-added within firms.

Second, evidence for EAP and other countries confirms that reducing barriers to competition in services spur higher productivity growth in services sectors as well as in the manufacturing sectors that use these services. For example, new firm-level analysis for Vietnam reveals that the reduction in restrictions on transport, finance and business sectors over the 2008–2016 period was associated with a 2.9 percent annualized increase in value-added per worker in these sectors (figure O17). Furthermore, the liberalization in services was associated with a 3.1 percent increase in labor productivity of the manufacturing enterprises that use services inputs, benefiting small and medium private enterprises most significantly.

Figure O15. Services for development-the virtuous cycle of opportunity and capacity: an organizing framework

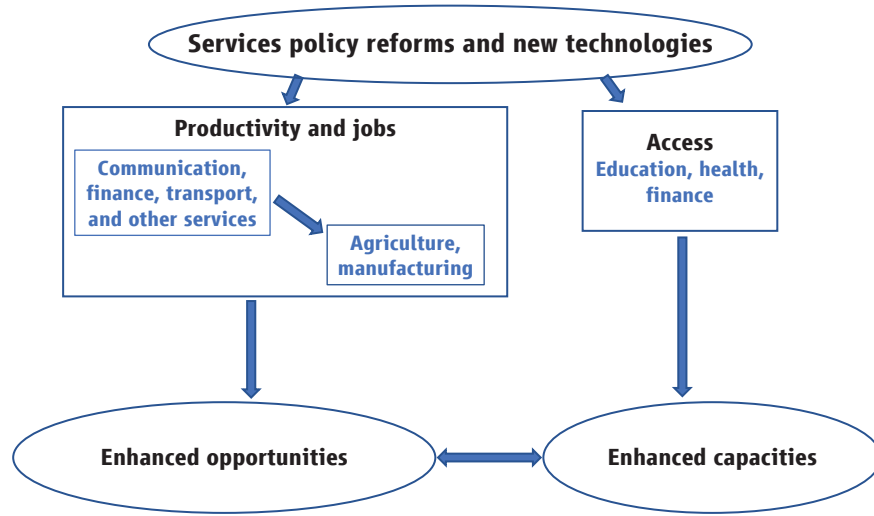
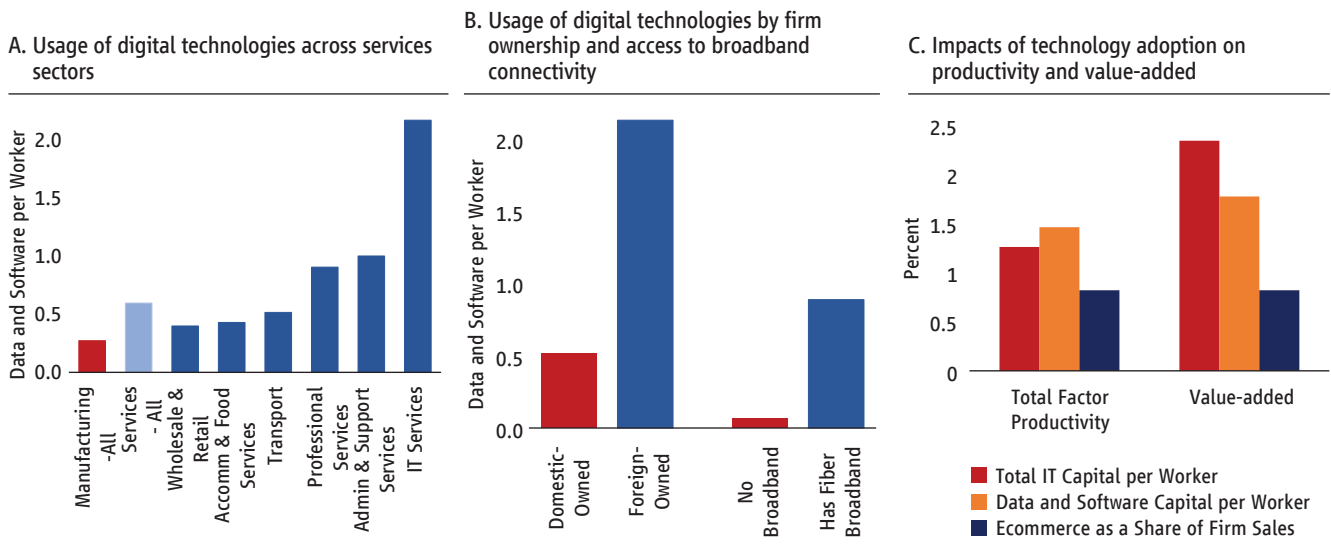
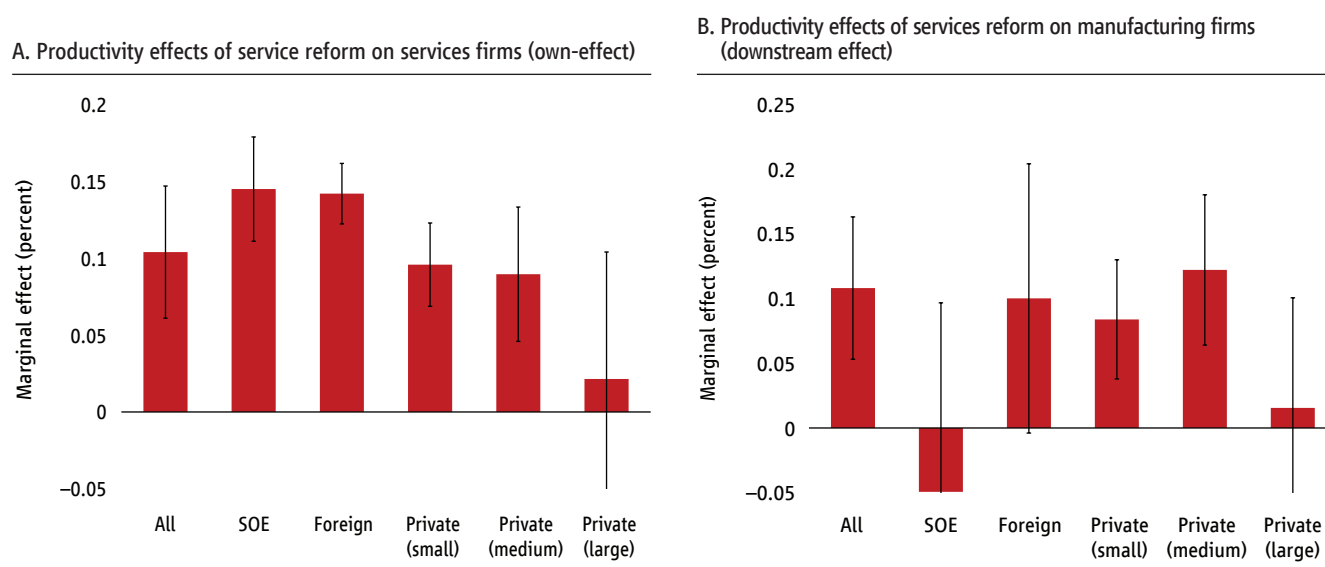


Figure O16. Services firms use more digital technologies; especially when foreign-owned and with access to broadband; digital technologies are associated with higher levels of productivity



Source: Philippines Statistical Authority – ASPI, CPBI and SICT Databases and World Bank staff analysis.

Figure O17. Services liberalization increased firms' labor productivity in both services and downstream manufacturing firms

Source: World Bank staff estimation based on data from Vietnam enterprise surveys 2008 and 2016.

Note: OLS regression results. The dependent variable is the change in log value-added per worker between 2016 and 2008. The main explanatory variable is the change in STRI values in Trade, Transport, Finance, Professionals, and Telecommunication sectors between 2016 and 2008 in Panel A, and the change in the "downstream" STRI for manufacturing sectors in Panel B. The downstream STRI is a sector-specific measure for each 2-digit manufacturing sector, calculated by the average STRI of the above five services sectors weighted by the corresponding purchasing value from each manufacturing sectors. The regression sample in panel A consists of all enterprises operating in Trade, Transport, Finance, Professionals, and Telecommunication sectors, and all manufacturing enterprises in Panel B, in 2008 and 2016. All regressions control for firms' baseline revenue and employment. Standard errors clustered at the industry level.

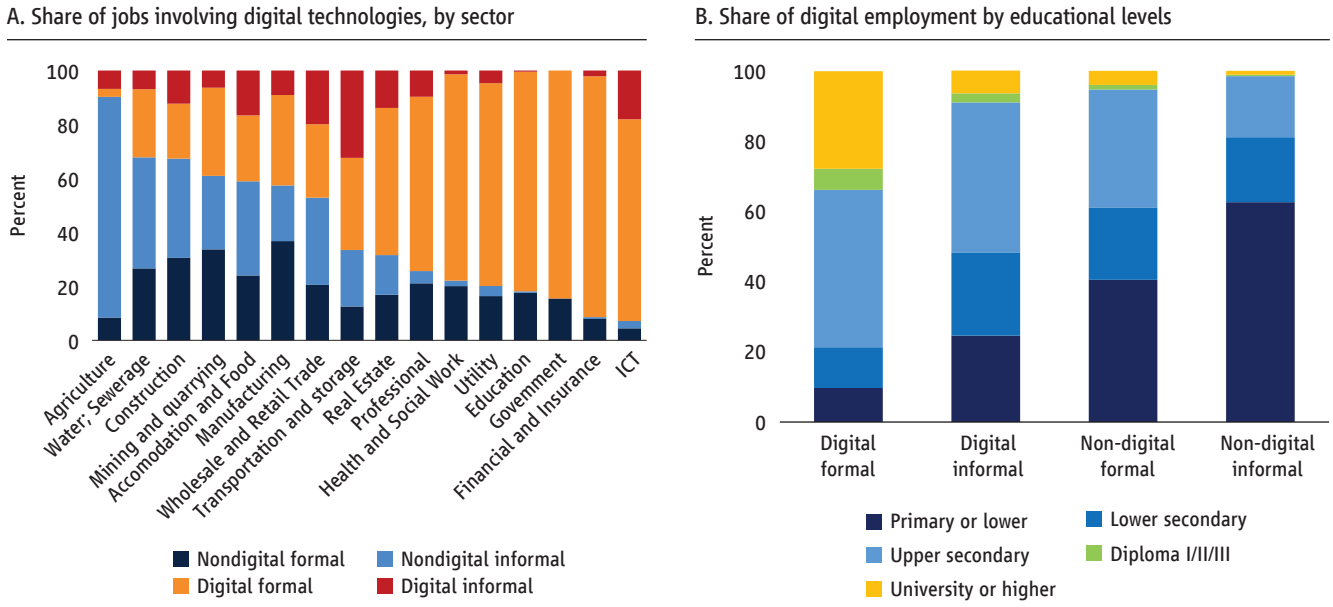
New jobs created in digital services may, however, require greater skills than those in traditional services, as indicated by new micro-level evidence from Indonesia. Digital employment represents a larger share in services than in agriculture and manufacturing, and an even higher share in more technical ICT and financial services than in less technical sectors such as distribution and transportation services (figure O18). Furthermore close to 40 percent of formal digital workers have a university degree or above while less than 20 percent of non-digital workers do so, which reveals the relative dominance of the highly educated among digital workers. These findings imply a likely increase in the demand for skilled workers in the coming years. However, other evidence suggests an important distinction: web-based digital platform jobs—where services like customized software and programming are delivered over the internet—tend to require higher levels of education than location-based digital jobs—e.g., ride sharing and food delivery—which are dominated by less-educated workers.

Since the promise of higher productivity levels and growth is likely to be more strongly associated with higher skilled jobs, equipping workers with the relevant skills must be a priority. The use of new digital technologies and reforms in education and health services, could help address the skills deficit as well as the inequality of access and quality across the region (figure O19), and equip more EAP citizens to engage productively in the new digital economy (as illustrated on the right branch of figure O15).

The role of policy

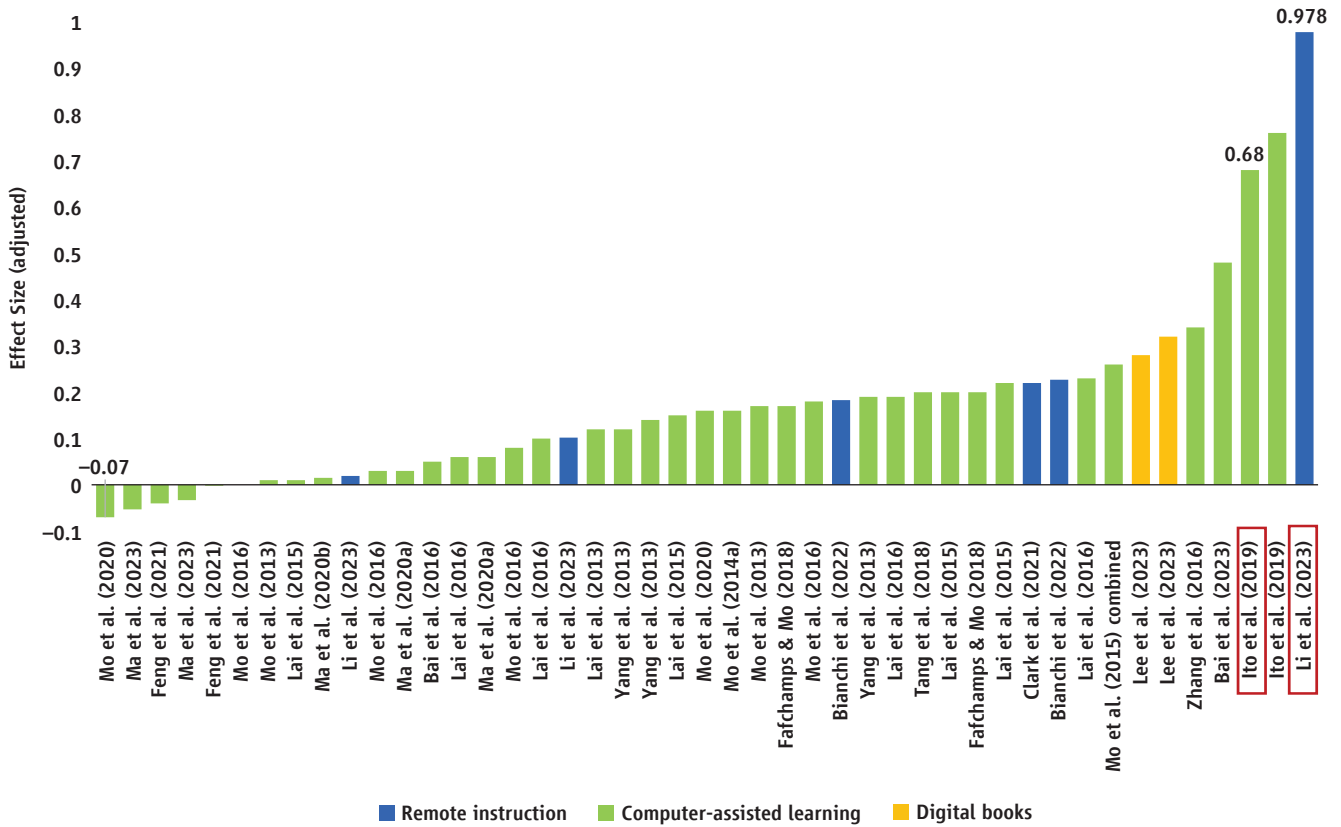
To unleash the virtuous cycle between opportunity and capacity, and to ensure that services development is inclusive and sustainable, EAP countries must take three pairs of policy actions.

Figure O18. In Indonesia, digital jobs often require higher level of education and dominate in more technical service sectors



Source: World bank staff analysis using Indonesia's Labor Force Surveys 2022.
 Note: Digital workers are defined as workers who use digital technologies and internet for work in primary job.

Figure O19. Existing studies show that digital technologies improve education outcomes when complemented by education reform



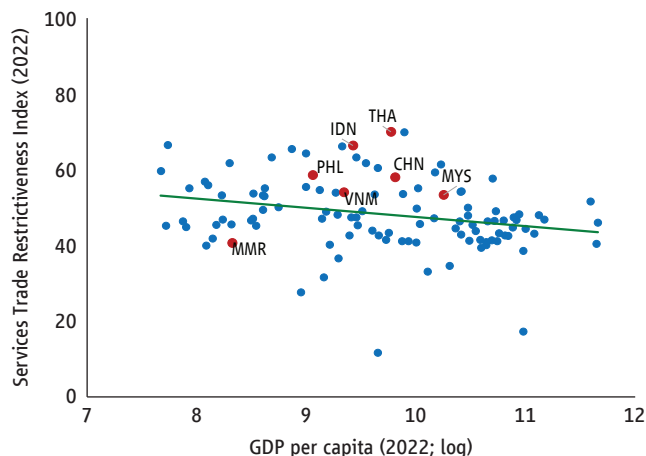
Source: Yarrow et. al., forthcoming.

First, countries must pursue both liberalization and regulation. New data for 2022 from the World Bank-WTO Services Trade Restrictions Database reveals that service trade liberalization is still unfinished business. Figure O20 reports the value for the Services Trade Restrictions Index (STRI) recorded against the level of development (measured as the logarithm of GDP per capita). Despite past reforms, the EAP countries are still characterized by relatively restrictive regimes for services. Advancing the liberalization agenda requires addressing policy restrictions on entry and competition in EAP services markets, ranging from discretionary and opaque licensing to limits on foreign ownership. In parallel, countries need to institute a regulatory framework that addresses old and new market distortions, including the concentration and data misuse that can arise in markets where digital platforms dominate – and for which there is already some evidence in EAP countries.

Second, countries must assess how the state needs to complement private enterprise in creating the infrastructure and skills needed to take advantage of the opportunities that are emerging. Over the last decades, the democratization of access to mobile telephony provided by competing private firms seemed to have obviated the need for the fixed line networks created by plodding public sector monopolies (figure O21). But the digital benefits of access to high-speed broadband have revived the question of how the state can ensure adequate access for the poor and remote. Competitively allocated subsidies to private providers may help bridge the gaps, as the experience with universal access funds for basic telecommunications shows. Countries must also wrestle with the question of how far the market and private institutions can be relied on to deliver the skills needed by the digital services economy and what role the state must play in ensuring the appropriate educational scale, composition, quality and access (figure O22).

Figure O20. Most EAP countries restrict services trade more than other countries at comparable levels of development

STRI and level of development



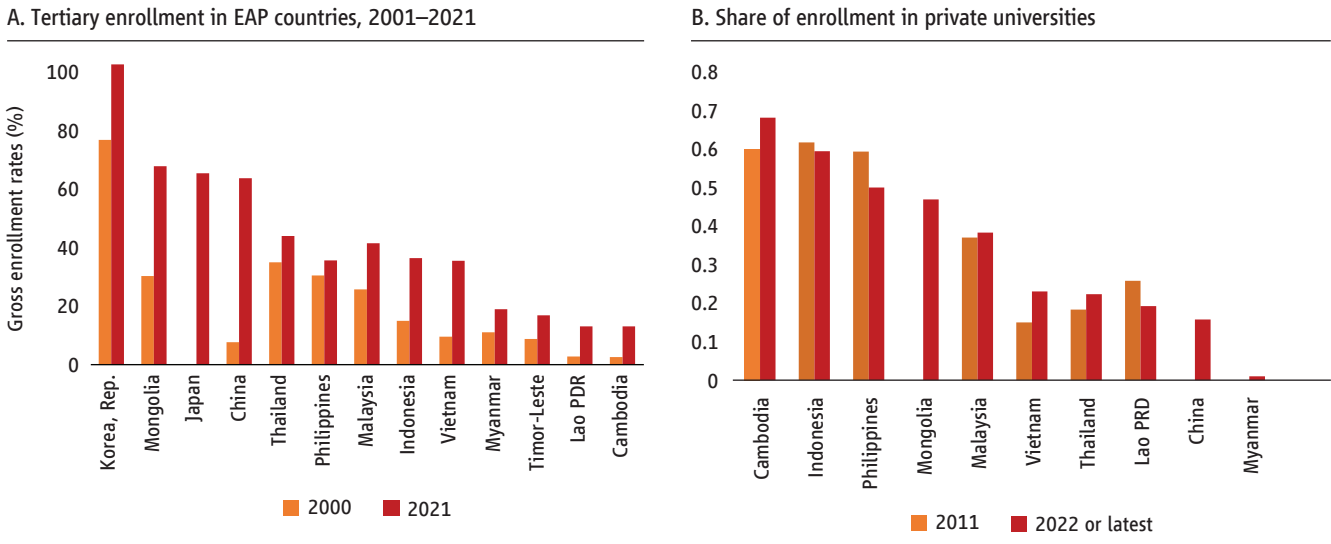
Source: WTO-WB STRI Database and WDI (2022).
 Note: The average STRI is computed as a simple average of the indicators for the financial, communication and transport sectors.

Figure O21. Mobile broadband access has improved in most countries, but mobile does not offer the potential speed of fixed broadband, access to which remains limited and unequal

	Fixed Broadband			Mobile Broadband		
	Access Fixed broadband household penetration (%)	Quality Median download speed (Mbps)	Cost Fixed broadband basket as % of GNI per capita	Access Active mobile-broadband subscribers per 100 inhabitants	Quality Median download speed (Mbps)	Cost Mobile broadband basket as % of GNI per capita
China	113	194	0.5	102	95	0.5
Vietnam	76	94	3.5	88	48	0.5
Thailand	58	211	3.5	112	41	1.4
Mongolia	52	57	1.9	116	15	1.9
Malaysia	50	96	2.3	125	49	1.0
Fiji	44	15	4.7	76	22	3.0
Philippines	33	92	11.6	62	26	2.0
Indonesia	18	27	7.6	115	24	0.9
Lao PDR	12	32	9.0	56	30	2.7
Cambodia	10	22	12.1	106	24	2.4
Myanmar	8	19	12.4	110	23	1.7
Solomon Islands	1	N/A	47.4	18	N/A	8.9
PNG	1	16	13.4	11	20	18.8
Timore-Leste	1	6	32.1	30	N/A	4.6
PIC-9 average	25		13.8	21		4.4

Source: ITU, TeleGeography, Ookla.
 Note: PIC-9 includes Kiribati, Marshall Islands, Micronesia, Nauru, Palau, Samoa, Tonga, Tuvalu, and Vanuatu. Data availability is incomplete. The graphs show numerical average of the available data points for PIC-9.

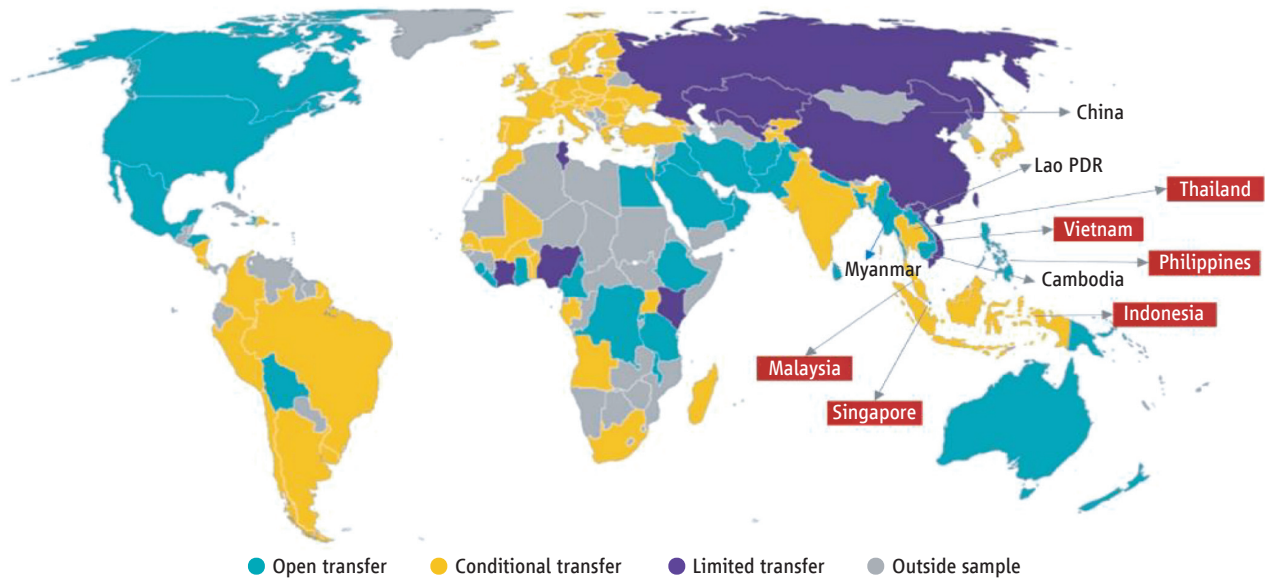
Figure O22. Tertiary enrollment rates have increased in the EAP region but remain low in most countries, with the private sector playing a limited role



Source: ILOSTAT (2022).

Third, EAP and other countries must complement unilateral domestic reform with cooperative international action to address services market failures that have a transborder dimension. One example is the need to ensure that data flows that are central to the global services economy are not impeded by the heterogeneity in national regulatory approaches to privacy and cybersecurity (as shown in figure O23). Another example is the need to ensure that international transport that is central to global trade and tourism does not continue to add CO₂ emissions to the atmosphere. In both these cases, countries are beginning to cooperate meaningfully in both regional and multilateral fora.

Figure O23. Cooperation in cross-border data flows: EAP countries take a heterogeneous regulatory approach to international data transfers



Source: World Development Report 2020, updated for SEA-6 countries in June 2023.

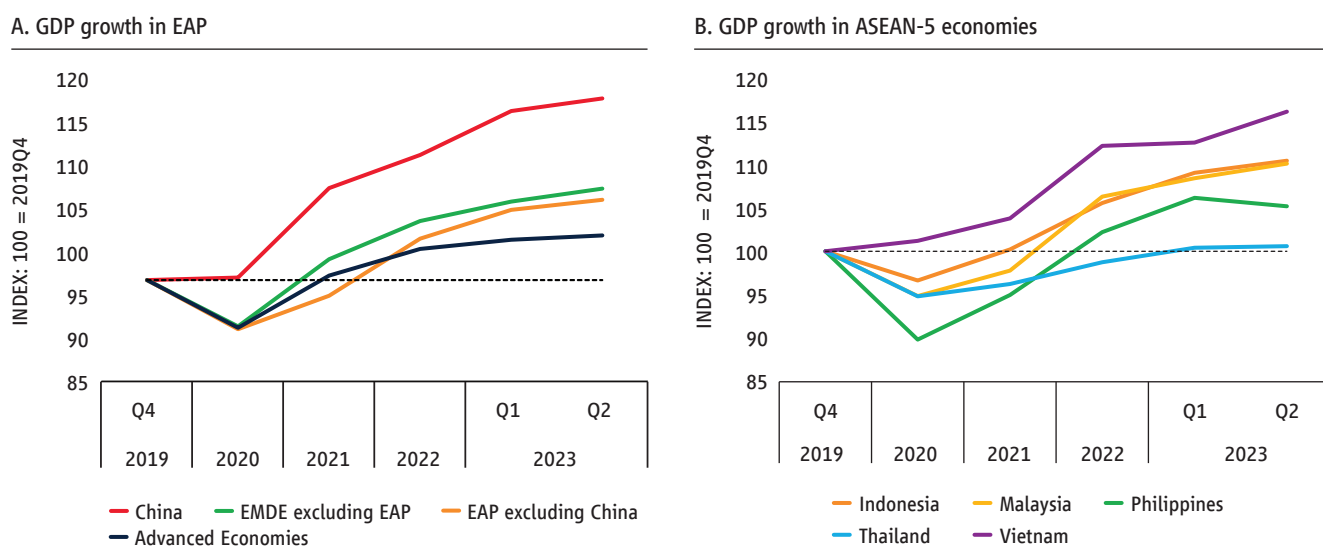
Recent Developments and Outlook

1. Recent developments

▸ Continued growth

The economies in most of developing East Asia and Pacific (EAP), other than several Pacific Island Countries, have recovered from the succession of shocks since 2020 and are continuing to grow, albeit at a slower pace. China’s economy slowed to 0.8 percent (q/q) in the second quarter of 2023, after growing by 2.2 percent (q/q) in the first quarter. The rest of the region grew at an estimated 1.0 percent (q/q) in the second quarter of 2023, same as in the first quarter, amid weak external demand and moderating private consumption (figure I.1). Economic activity remained subdued in the Pacific Islands as rising prices of imports have hurt consumers.

Figure I.1. Most major EAP economies have recovered and are growing, but at a slower rate



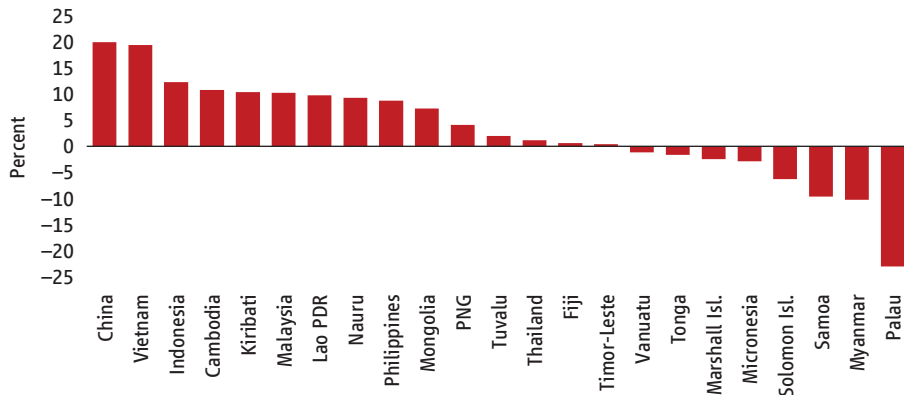
Source: Haver Analytics; World Bank.

While output has surpassed pre-pandemic levels in most of the larger EAP economies, recovery has been uneven across the region. Output in China and Vietnam had already exceeded pre-pandemic levels in 2020 and is now about 20 percent higher. By the end of 2022, Cambodia, Indonesia, Lao PDR, Malaysia, Mongolia, the Philippines, and three Pacific Island countries (Kiribati, Nauru, and Papua New Guinea) had also exceeded pre-pandemic levels of output. By the end of 2023, Thailand, and three more Pacific Island countries (Fiji, Tuvalu, and Timor-Leste) will have exceeded pre-pandemic levels of output. But output remains below pre-pandemic levels in several Pacific Island countries as well as in Myanmar (figure I.2).

The recovery has also been uneven across sectors. Information and communication technology and finance have experienced relatively strong growth. Services sector started to recover after economic reopening in several of the region’s economies, benefitting from the release of pent-up demand. However, output in transportation, accommodation and catering sectors in the Philippines and Thailand, and construction and real estate in Malaysia, Philippines and Thailand is still well below pre-pandemic levels (figure I.3). Manufacturing recovered strongly in the aftermath of COVID-19 but has recently slowed down.

Figure I.2. Output in most major EAP economies is now above pre-pandemic levels, but not in many Pacific Island Countries

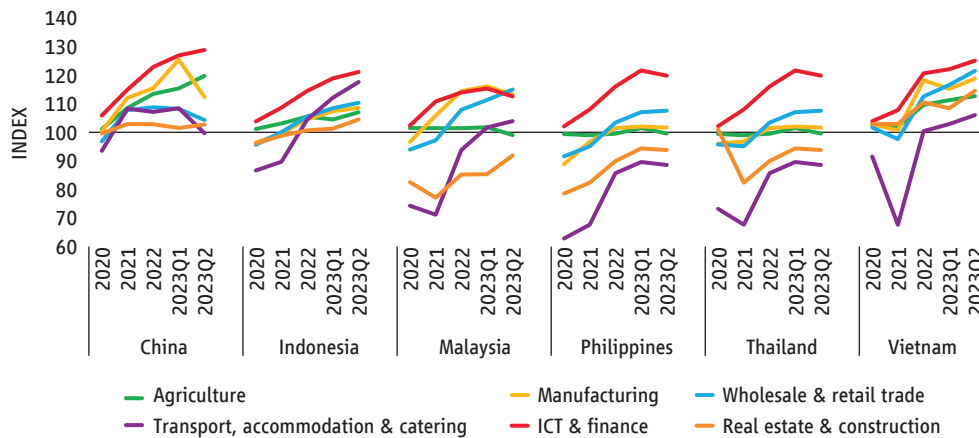
2023 GDP (forecast) compared to 2019



Source: World Bank staff calculations.

Figure I.3. ICT and finance are growing rapidly, other services are recovering, manufacturing is slowing down

Growth of sectoral output (2019Q4 = 100)



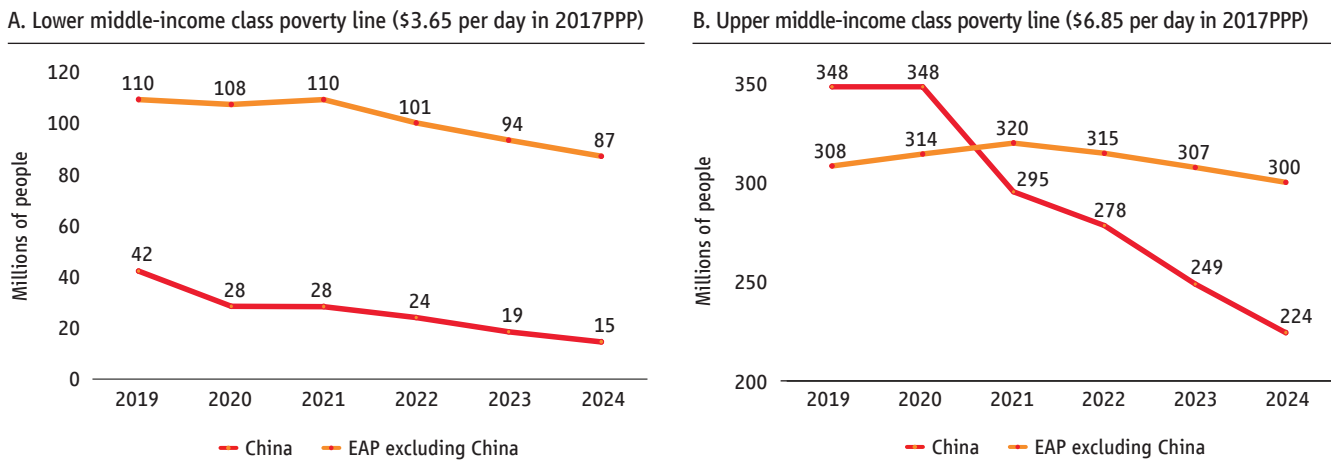
Source: Haver Analytics.

After a relatively modest performance in 2022, China’s pace of poverty reduction is expected to pick up in 2023 following higher growth this year (figure I.4). In the rest of the region, the rate of poverty reduction has been moderate in 2022 and is expected to continue this way over the next years. Overall, 7 million people in the region are expected to escape poverty between 2022 and 2023 at the lower-middle income poverty line (US\$3.65/day, 2017 PPP), whereas 37 million people are projected to escape poverty at the upper-middle income poverty line (US\$6.85/ day, 2017 PPP).

2. Determinants

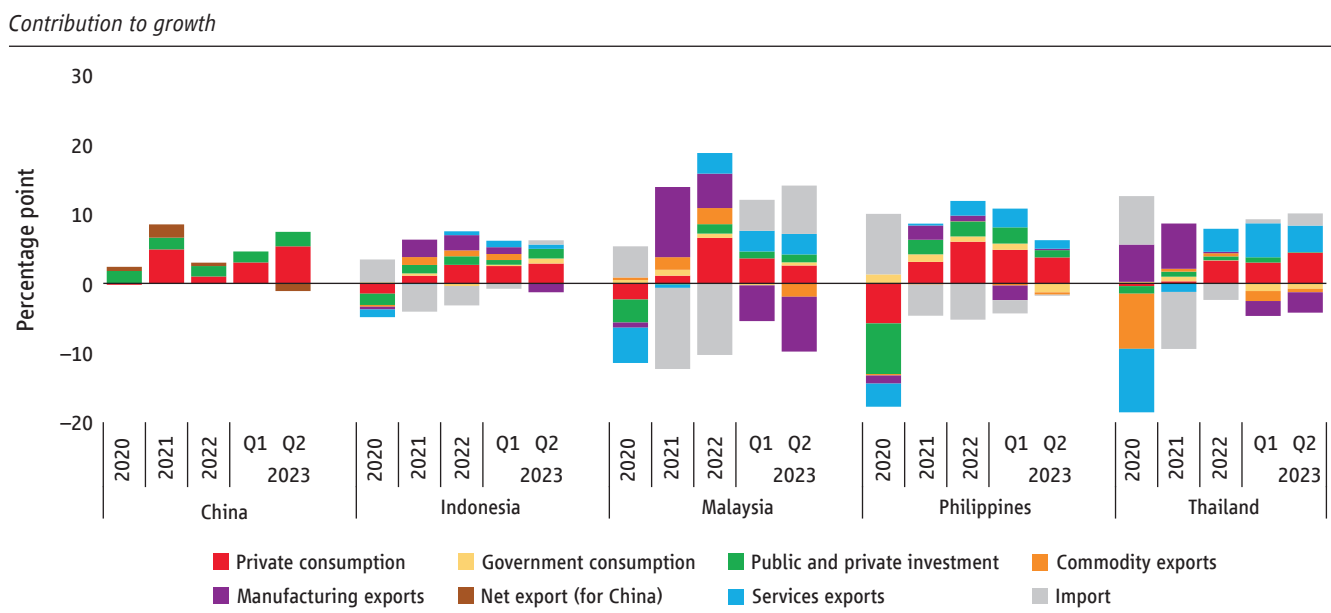
In most major EAP economies, private consumption, bouncing back from COVID and inflation-induced austerity, sustained growth in the first half of 2023, but is running out of steam, unexpectedly early in China. Meanwhile, exports of both manufactured goods and commodities have contracted (figure I.5). Public investment and private investment also remain low in much of the region. Fiscal policy is now less expansionary in most countries.

Figure I.4. The number of poor in developing EAP countries is expected to decline in 2023



Source: World Bank staff's estimation. Poverty estimates are based on growth forecasts, population projections, and historical growth elasticities of poverty. Note: Forecasts are based on GDP growth projections as of September 21, 2023.

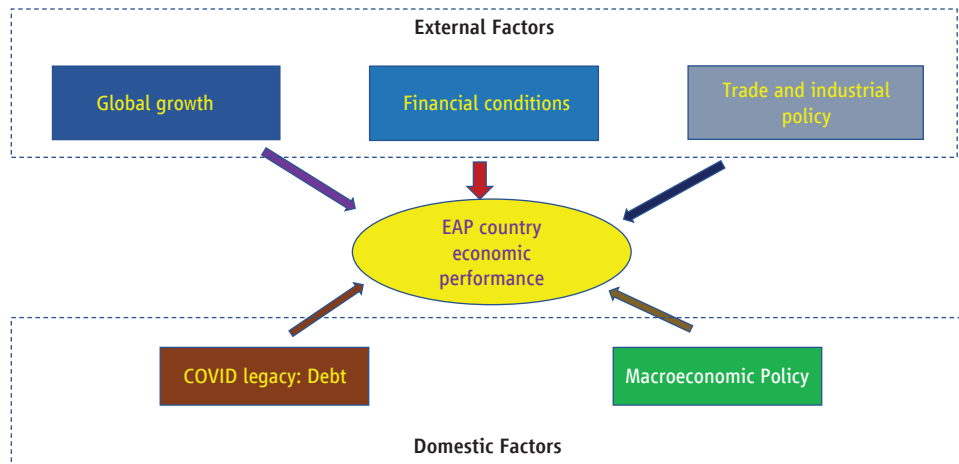
Figure I.5. Private consumption and services exports have sustained growth, amidst weak private investment and goods exports



Source: Haver Analytics. Note: China's private consumption includes government consumption. Decomposition of goods export is estimated from trade statistics.

Economic performance in the region is being shaped by external and domestic developments (figure I.6). The key external factors are slowing global growth, still tight financial conditions and an increase in trade protection combined with industrial policies. Among the domestic factors, the most important are the COVID legacy of amplified public and private debt and the policy stance, especially fiscal and monetary.

Figure I.6. External and domestic factors are shaping economic performance in the EAP countries

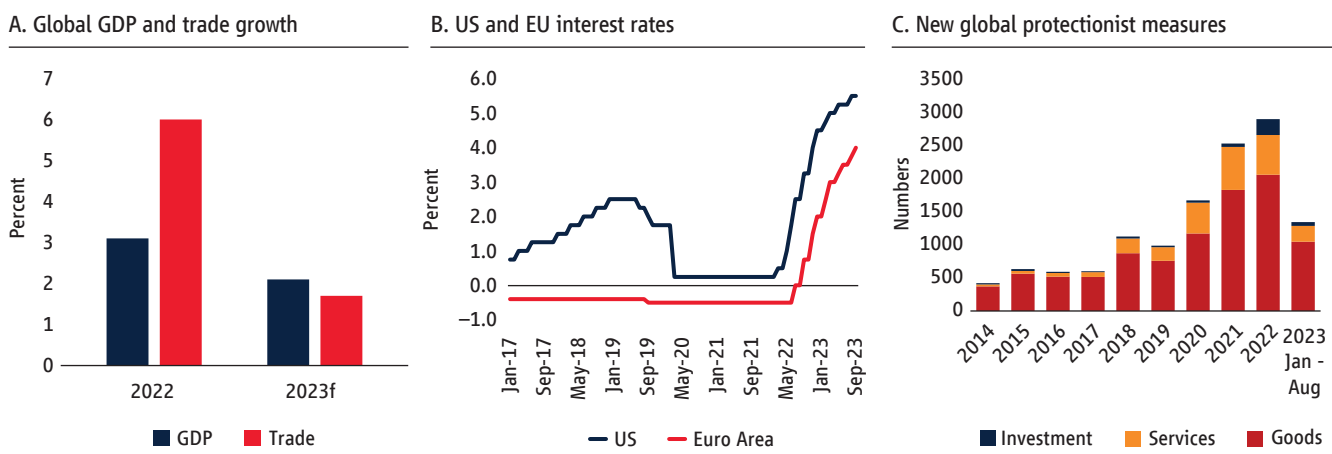


Source: World Bank staff's illustration.

▸ **External factors**

Global growth is projected to fall this year to 2.1 percent, from 3.1 percent last year (figure I.7). Even though inflation shows signs of declining in major economies, core inflation in the US and EU remains elevated and labor markets remain tight, leading to continued high interest rates in the US and EU. Furthermore, almost 3,000 new restrictions were imposed on global trade in 2022, three times as large as those in 2019.

Figure I.7. Global growth slowdown, financial tightening and protectionist measures are shaping economic performance in the EAP countries



Source: Global Trade Alert, Haver Analytics, World Bank.

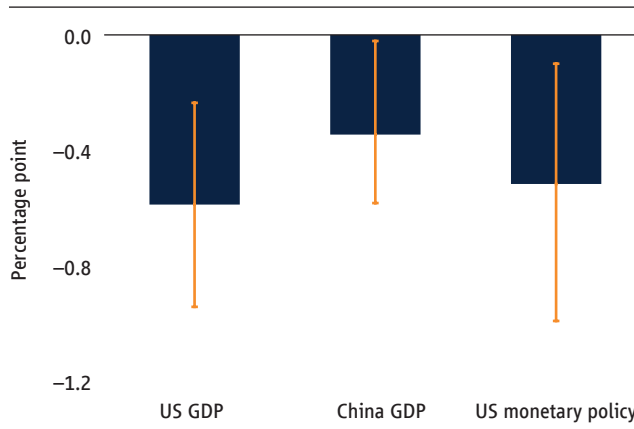
A growth shock originating in the region’s largest trading partners, China and the US, would impact EAP economies through bilateral trade and financial flows, including foreign direct investment (FDI) (as discussed at length in World Bank 2023a). Changes in growth in the US or China could also impact regional economies by affecting confidence and hence domestic consumption and investment. An unexpected one-off decline in US (China’s) GDP growth rate of 1 percentage point would decrease growth rate in the other developing EAP countries, on average, by an estimated 0.5 (0.3) percentage points in the next year (figure I.8). Unanticipated shocks to US monetary policy also affect growth; a 25 basis points increase lowers growth by an estimated 0.5 percentage points.

▸ Domestic factors

General government debt as a share of GDP has increased significantly in most of the region’s economies (figure I.9). High government debt limits fiscal space constraining public investment. High public debt can also hurt private investment if it leads to higher interest rates, making it more expensive for businesses to borrow money. Rapid increases in debt can also rise uncertainty about the future and make businesses hesitant to invest in new projects. A 10 percentage points increase in general government debt to GDP is associated with a 1.2 percentage point decline in investment growth (Box A1).

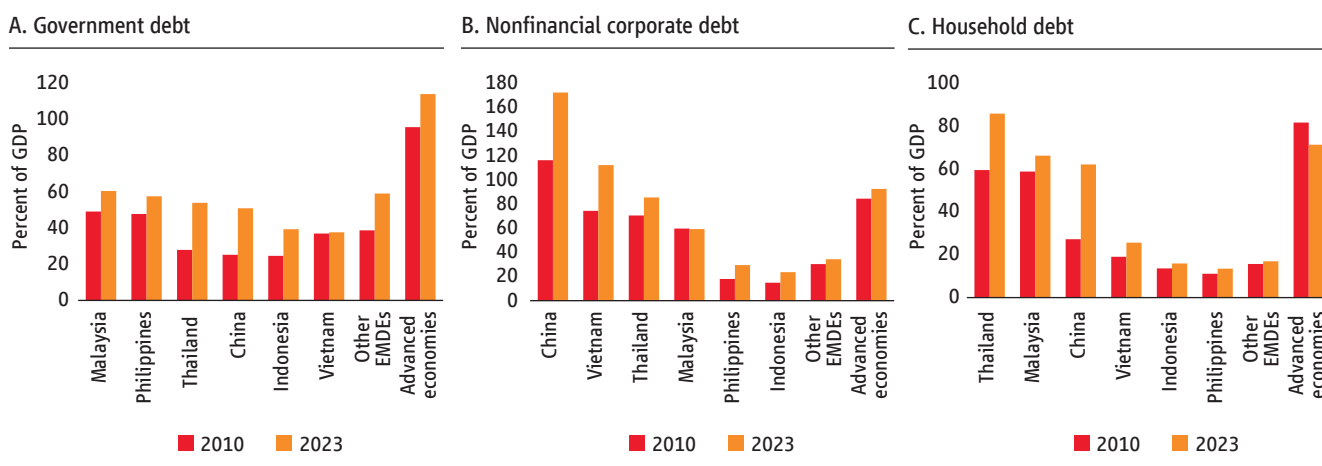
Figure I.8. Growth in the region is influenced by growth in the region’s largest trading partners and monetary tightening in the US

Impact of 1 pp decrease in China and US GDP growth, and 25 bps increase in US 2-year yield



Source: World Bank staff’s estimations.
 Notes: Bar show impact of the following shocks: one percentage point decrease in China and US growth, and 25 bps increase in US 2-year interest rate yield. Effects estimated using a structural Bayesian VAR model that includes the following variables: US monetary policy reaction shock, U.S real GDP growth, China real GDP growth, commodity weighted prices for recipient country, recipient country real GDP growth, and recipient country exchange rate to the US dollar. EAP countries included in the estimation are Indonesia, Malaysia, the Philippines, and Thailand. The models are estimated from 2000Q1 to 2022Q4, except in Malaysia which starts in 2005Q1. The US monetary policy shock is based on Arteta et al. (2022) and captures changes in investors assessments that the Federal Reserve’s reaction function has become more hawkish.

Figure I.9. Government debt has increased across the region and corporate and household debt remains high in some countries



Source: Institute of International Finance, World Bank staff estimates.

Corporate debt has increased in the region’s economies, quite rapidly in China, Thailand and Vietnam. Higher corporate can hurt private investment growth as firms are left with less money available to invest in new projects or expand its existing business. Nonfinancial corporate debt is significantly higher than in other emerging markets in China, Malaysia, Thailand and Vietnam. A 10 percentage points increase in private debt to GDP is associated with a 1.1 percentage point decline in investment growth.

Household debt is relatively high in China, Malaysia and Thailand compared to other emerging markets. Similarly, high household debt can have a negative impact on consumption. When households have high levels of debt, a significant portion of their income goes towards paying off debt obligations, resulting in less disposable income and less consumption. High levels of debt can also lead to increased financial stress, which can cause households to cut back on spending in order to reduce their debt burden. Households with high debt may also find it more difficult to access credit to finance purchases of big-ticket items. A 10-percentage point increase in household debt would decrease consumption growth by 0.4 percentage point (Box A2).

▸ Macroeconomic policy

As the COVID-19 situation stabilized and economic activity resumed, governments in the region have reduced their expenditure on support programs that were implemented during the pandemic. However, this decrease in support is leading to a decline in disposable income for households and firms, which could potentially dampen consumption and investment. Most major economies in the region are estimated to have a lower structural balance in 2023 compared to the previous year (figure I.10).

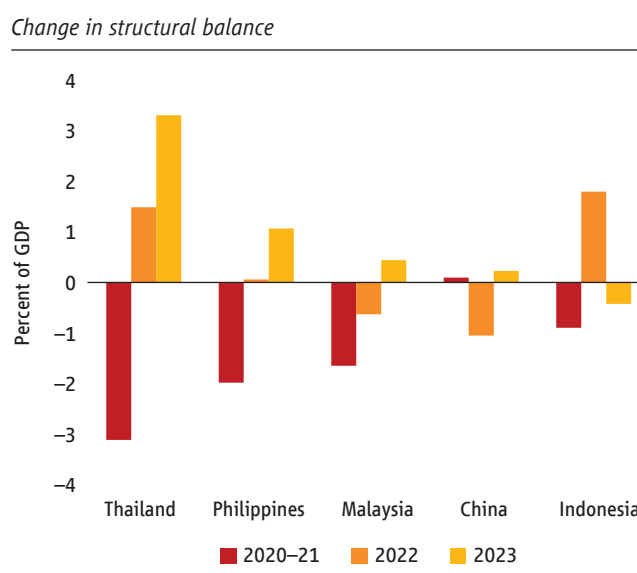
Policy interest rates have been raised both globally and in the EAP region to address the threat of inflation. Policy rates in the EAP region, however, remained lower than in other emerging market and developing economies (EMDEs), and the rise in policy rates has been milder. This is because that the EAP region has generally been less affected by inflationary pressures than other regions. Nonetheless, policymakers in the EAP region are still keeping a close eye on inflation. For example, central banks in the region have been implementing various measures to manage inflation, such as tightening monetary policy and adjusting interest rates. Due to weak growth, rates have recently been decreased in China and Vietnam (figure I.11). Monetary policy in the region appears to be balancing the need for monetary policy support and risks of continuing inflation.

▸ Tracing the impact of external and domestic factors

Exports

Goods exports have fallen by more than 20 percent from their peak in the second quarter of 2022 in Indonesia and Malaysia, and by more than 10 percent in China and Vietnam (figure I.12). An ongoing revival of tourism has helped services exports in the Philippines, Thailand and many Pacific Island countries. But contribution of tourism activity to economic growth is expected to plateau as tourist arrivals reaches pre-pandemic in most EAP economies.

Figure I.10. Fiscal policy in 2023 is less expansionary than in the 2020-2022 period in most countries



Source: World Economic Outlook Database, April 2023.

Figure I.11. Monetary policy has tightened in the region, except in China and Vietnam

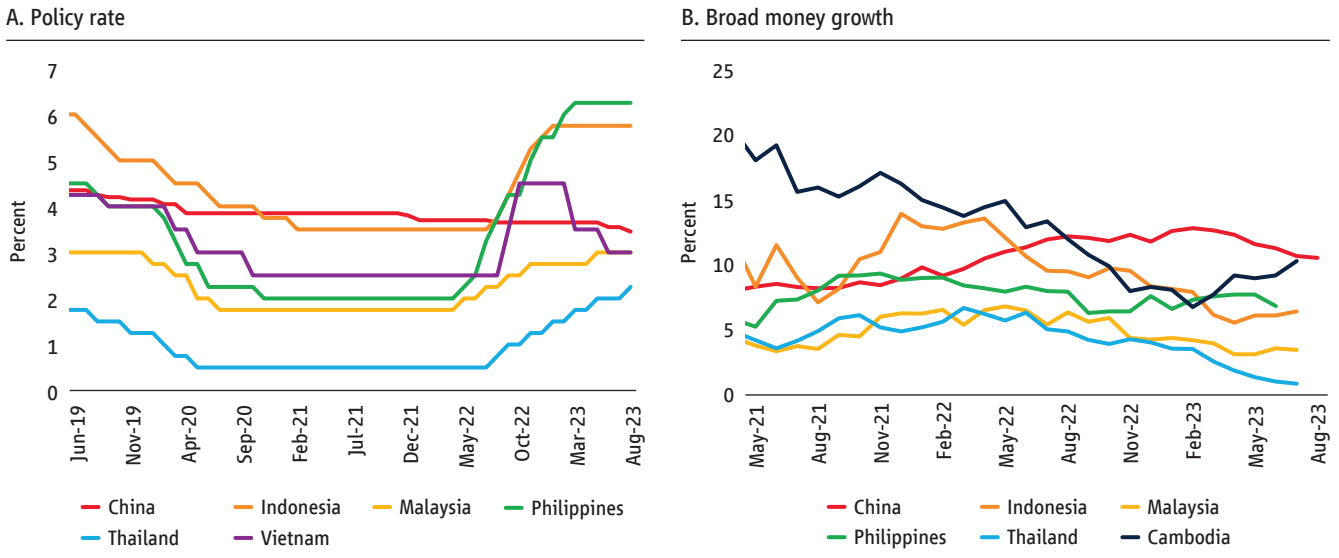
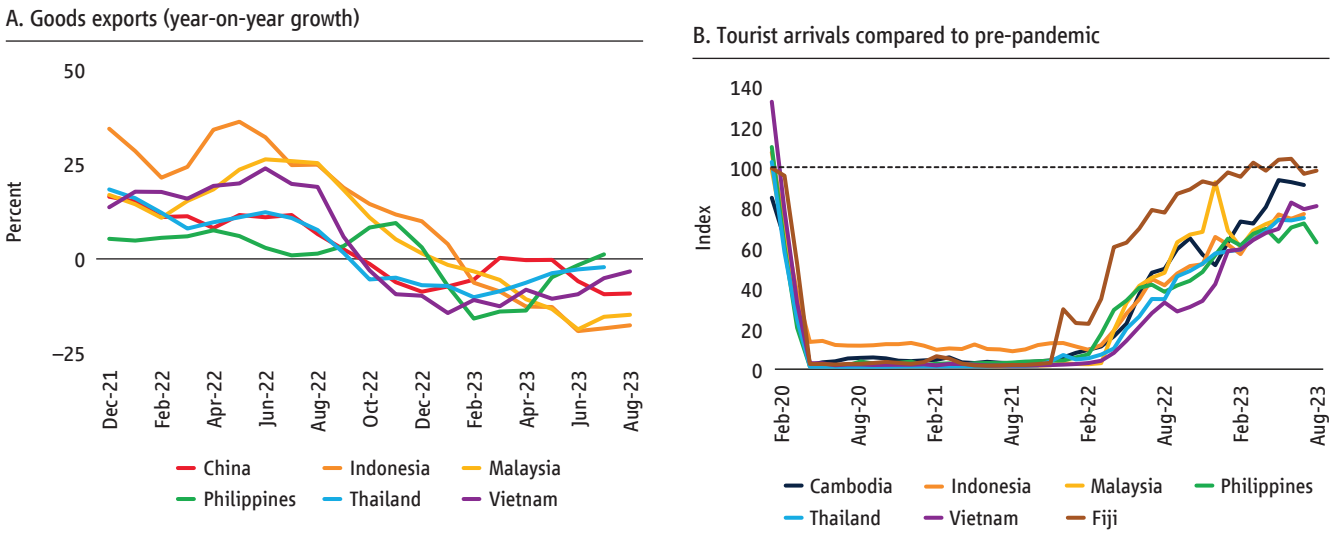


Figure I.12. Goods exports have been declining while tourist arrivals have largely recovered



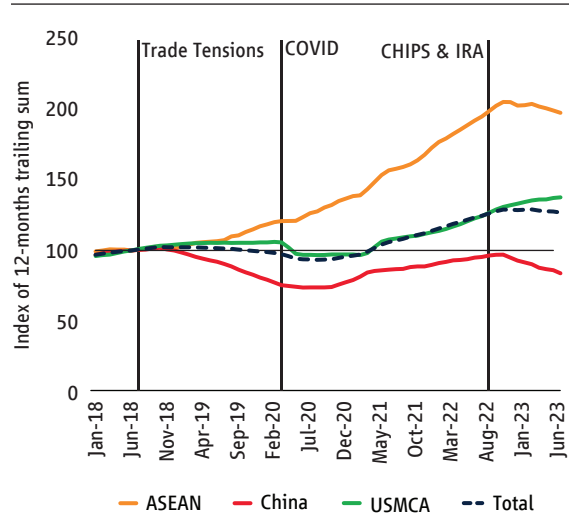
One reason for the decline in exports is weakening foreign demand for manufactured goods and commodities in EAP countries as global growth slows down. As we saw above (figure 7A), global GDP growth in 2023 is projected to be 1 percentage point lower than in 2022, while global goods trade growth is projected to be about 4 percentage points lower than in 2022. Furthermore, as we saw in Figure 8, slowing growth in the region’s largest trading partners, China and the US, has a significant negative effect on growth in the rest of the EAP region, with trade likely to be an important transmission mechanism.

A second reason is the impact on exports of trade and industrial policy measures in EAP countries' major trading partners. As demonstrated in earlier EAP Updates, the tariffs imposed by the US on China since 2018 shifted US imports towards other countries in the region. More recently, the Inflation Reduction Act (IRA) and the CHIPS and Science Act of August 2022, introduced domestic content requirements linked to subsidies granted under the new laws. These Acts were followed by a decline in the exports of the affected products to the US from China and the ASEAN countries, and a slight increase in the exports from Canada and Mexico which are exempted from these requirements (Figure 13).

Consumption

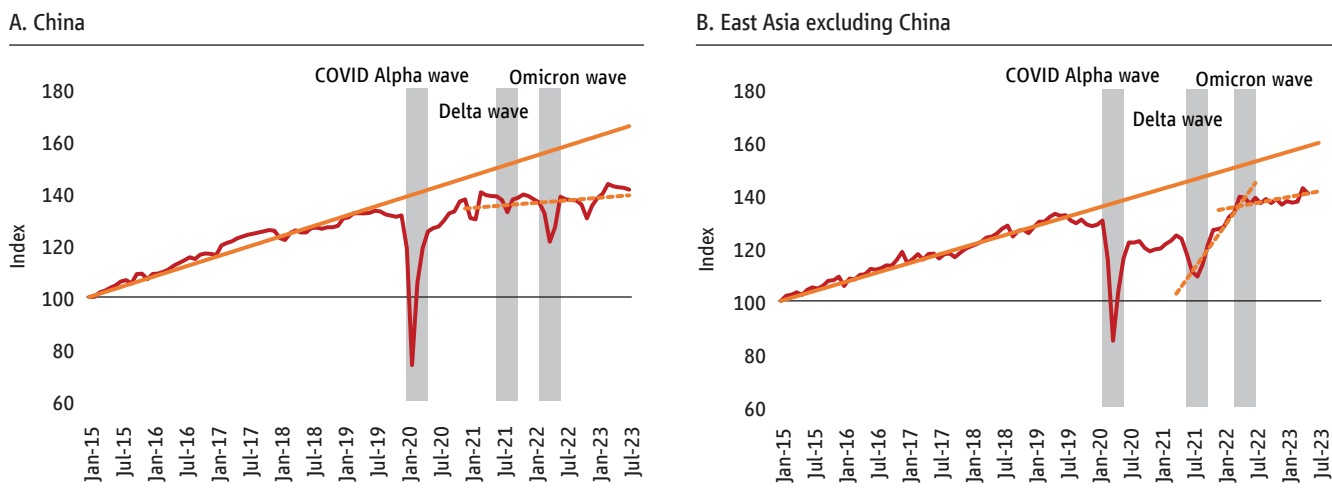
Household spending remains below pre-pandemic trends in the EAP region (figure I.14). In China, the current trend of retail sales is flatter than the pre-pandemic trend due to both proximate factors (e.g. falling house prices and increased household debt) and structural factors (e.g. aging) (Box I.1). Consumption growth has flattened also in the other EAP economies after the post-Delta variant bounce. The reasons are likely to be similar to those in China: the increase in household debt (e.g. in Malaysia, Thailand) and population aging (e.g. in Malaysia, Thailand, Vietnam). High levels of indebtedness have been shown to dampen consumption of both the poor and rich (Box A2).

Figure I.13. Electronics and machinery exports of China and ASEAN to the US declined after the introduction of the CHIPS and IRA Acts in August 2022



Source: US Census Bureau.
 Notes: Horizontal running lines (colored) show exports to the US of electronics and machineries (HS code 84 and 85) from China, ASEAN countries, and members of the United States-Mexico-Canada (USMCA) agreement. The dashed line shows total exports to the US. The data are smoothed by taking a 12-month trailing sum, and indexed to June 2018. The three vertical black lines correspond to the beginning of the trade tensions, the beginning of COVID-19, and August 2022, when the IRA acts and the CHIPS act were signed.

Figure I.14. Recent retail sales data suggest divergence from pre-COVID trends



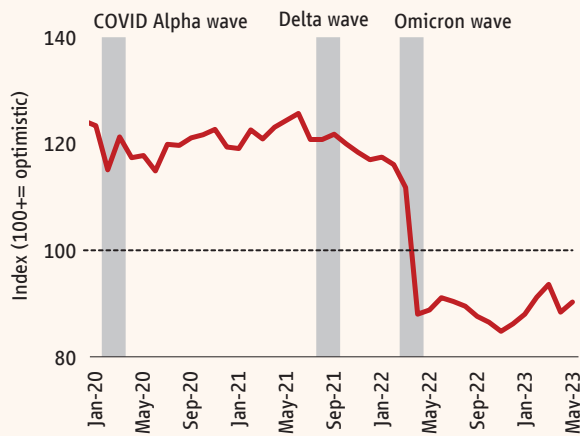
Source: Haver Analytics.
 Note: Figure shows seasonally adjusted real retail sales indexed to January-2015. When volume-based retail sales data were not available, value-based retail sales were adjusted by the consumer price index. Straight line shows pre-COVID trend and dashed line shows the trend since January 2021. B. figure shows unweighted average of ASEAN-5 countries.

Box I.1. Understanding slowing growth in China

Growth in China is projected to be 5.1 percent in 2023, faster than the 3.0 percent in 2022. But growth has slowed since April, due to subdued domestic demand and persistent difficulties in the real estate sector. Consumer confidence has been affected by concerns over jobs, income, and falling property prices (figure BI.1.1). Real estate investment continues to contract, while declining profits and uncertainty have dampened investment in other sectors. Meanwhile, slowing global growth and geo-economic tensions, which have affected global value chains in some sectors, have weakened external demand for China’s exports and limited access to key technologies. Long-term factors have also played a role—demographic trends and limitations to China’s social safety net are weighing on consumption and high corporate leverage on investment.

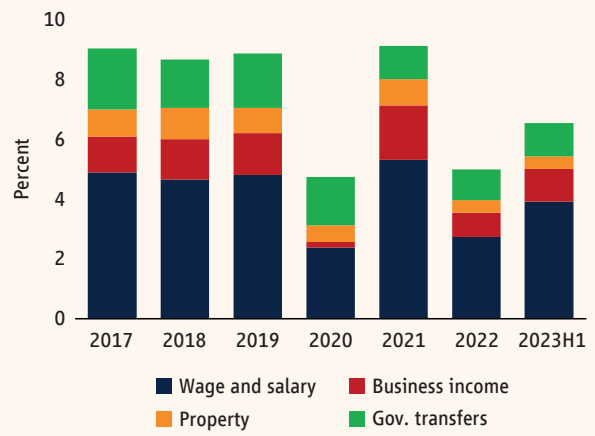
Consumption has been affected by weaker household income growth, the negative wealth effect from the property market slump and increased precautionary savings. Despite an improvement over 2022, growth in average household income remains below the pre-pandemic trend (figure BI.1.2). In addition, property is estimated to account for 65 percent of total household assets (IMF 2020). Falling property prices -secondary market home prices in lower-tier cities were more than 20 percent below the 2021 peak in July- have weighed on consumer spending. Finally, consumption has also been held back by increased precautionary savings.¹ China’s household savings rate—already exceptionally high before COVID-19- increased further to 33 percent of disposable income reflecting heightened uncertainty and mobility restrictions during COVID-19 as well as limitations of China’s social safety net which induces high levels of precautionary savings.

Figure BI.1.1. Consumer confidence index



Source: NBS.

Figure BI.1.2. Contributions to growth in disposable income (percentage points y/y)

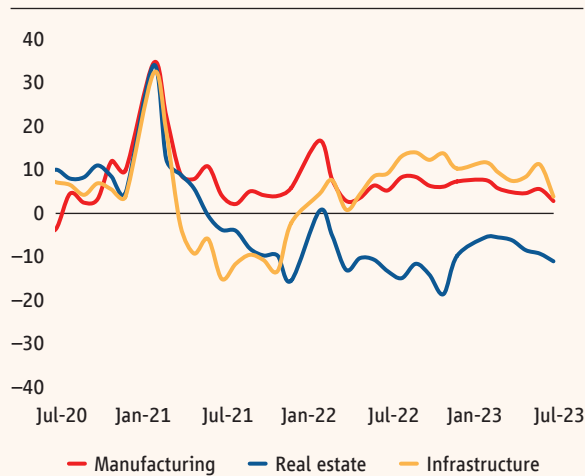


Turning to investment, it has remained stagnant mainly because of the severe property sector downturn but also due to policy uncertainty. Real estate investment has contracted by 28 percent since July 2021, owing to weak housing demand and debt distress among property developers (figure BI.1.3). Investment in upstream sectors, e.g. construction materials, has also been declining. Furthermore, there is some global evidence that policy uncertainty

¹ In the past, a low labor income share also contributed to depressed consumption, but the ratio has increased in recent years.

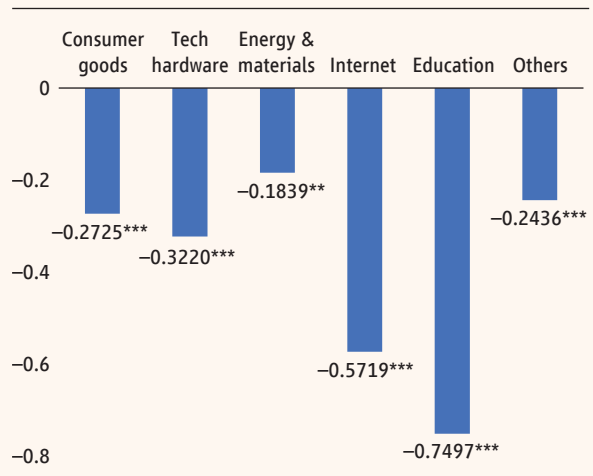
(continued)

(Box 1.1. continued)

Figure BI.1.3. Fixed asset investment growth by sector

Source: NBS, World Bank staff estimates.

Note: B2.4. Coefficients from a time and firm fixed effects regression of firm investment to asset ratio on a standardized index of economic policy uncertainty (EPU), using data for 4993 China-listed firms in 2011Q1-2021Q1. The EPU index measures the frequency of economic policy uncertainty-related words in media.² Control variables include the asset liability ratio, log of total assets, revenue growth, Tobin's Q, cash ratio, GDP growth, and trade policy uncertainty. *** P<0.01, ** P<0.05, *P<0.1.

Figure BI.1.4. Impact of economic policy uncertainty on firm investment

has contributed to lower investment. Recent advances in measuring policy uncertainty facilitate empirical analysis of its impact (Baker et al., 2016). There is evidence to suggest that elevated policy uncertainty in China is associated with reduced firm-level investment (figure B1.4). These results are consistent with analytical findings that even moderate amounts of policy uncertainty can have a large negative impact on investment (Rodrik 1991). In particular, previous research has found that uncertainty stemming from macroeconomic shocks can lead to firms pausing investment and hiring, translating to rapid drops in output and employment in the short term (Bloom 2009). The external environment has also become less favorable, further weighing on growth. After three years of strong exports of goods during the pandemic, the demand for China's exports has declined in 2023 due to slower global growth amid tighter financial conditions. Beyond the short term, China's export sector faces headwinds from geo-economic tensions and the fragmentation of global value chains. The authorities have responded to the worsening economic conditions by easing macroeconomic policies and signaling further support to bolster consumption and improve the business environment. Key monetary policy rates have been lowered, but elevated interest rates in other major economies and the risk of capital outflows constrain the room for monetary easing.

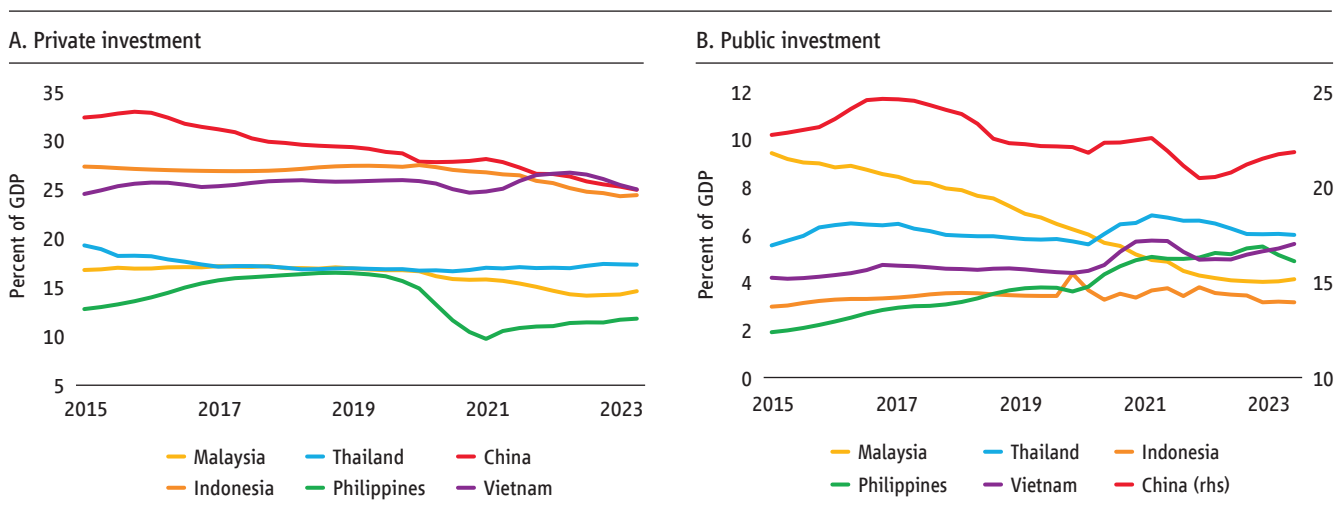
On the fiscal front, support has traditionally consisted of tax relief and infrastructure investment, but fiscal policy is facing challenges. Funding pressures for local governments, due to the sharp decline in land sales, and a limited pipeline of feasible infrastructure projects have constrained spending. Local government financing vehicles (LGFVs), which supported growth during the pandemic, are also facing funding constraints. Over 70 percent of bonds issued by LGFVs so far in 2023 have been used to repay debt. However, with a debt-to-GDP ratio of 21 percent, the central government has space to step in and help finance the necessary increase in fiscal spending, as was done in 2020 when the central government issued a special COVID bond and transferred the funds directly to cash-strapped city and county governments.

² Retrieved from https://www.policyuncertainty.com/scmp_monthly.html. Baker, Scott, Nicholas Bloom, Steven J. Davis, and Xiaoxi Wang, 2013. "Economic Policy Uncertainty in China," unpublished paper, University of Chicago and Baker, Scott, Nicholas Bloom and Steven J. Davis, "Measuring Economic Policy Uncertainty," Quarterly Journal of Economics, November 2016, Vol 131, Issue 4 have developed widely-used news-based indexes of economic policy uncertainty.

Investment

Investment as a share of GDP has been lower than pre-pandemic levels in developing EAP over the last few years (figure I.15). Investment growth has been closely associated with export growth fluctuations in the EAP, as well as increased policy uncertainty and rising levels of corporate and government debt (Box A3). Policy uncertainty was high in Malaysia and Thailand amidst political uncertainty but has come down recently. Public investment generally supported growth in the region, but it has plateaued recently as governments’ debt burden has increased.

Figure I.15. Public investment has supported growth, whereas private investment as a share of GDP is lower than pre-pandemic levels in most EAP economies



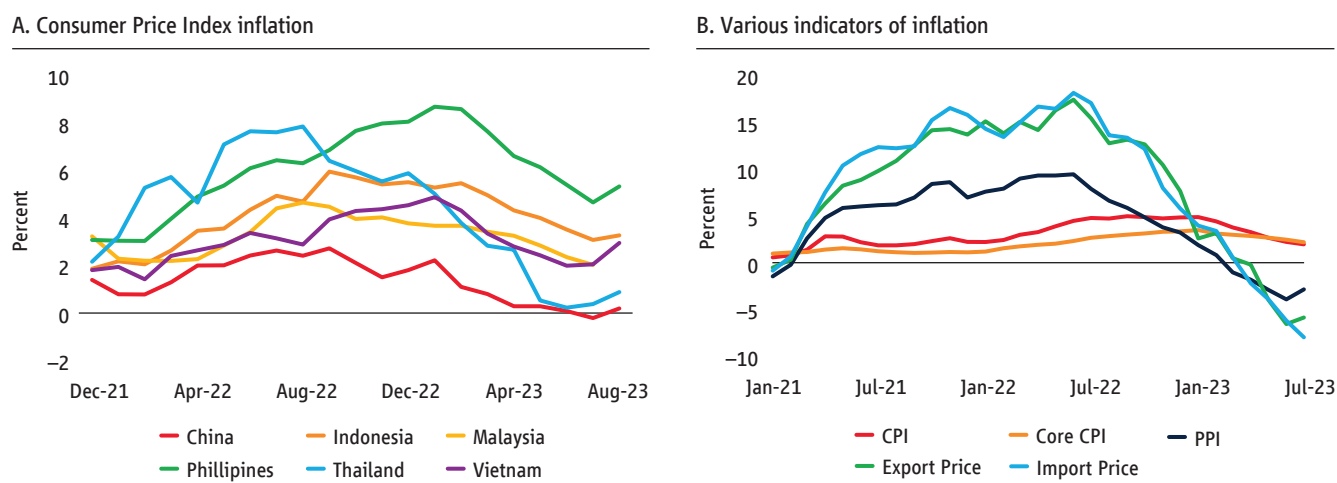
Source: International Monetary Fund, Haver Analytics, World Bank staff estimates.
 Note: China’s data shows fixed asset investment which includes land purchases etc. China’s public investment can include SOE investment.

Inflation

Inflation had been declining across the EAP region, in response to lower commodity prices, easing supply constraints and decelerating domestic demand (figure I.16). However, inflation ticked up in August as energy prices increased slightly and fed into higher transport costs, and food costs increased in some countries (Indonesia and Philippines). Inflation has remained stubbornly high across the Pacific, with an average of over 6.7 percent in 2022, a significant increase from the 1.5 percent average during 2019–2021.

3. Outlook and risks

Growth in the region is slowing compared to earlier projections but remains higher than the growth projected in other EMDEs. The EAP region is projected to grow by 5.0 percent in 2023, about 0.1 percentage points lower than was expected in April 2023 (table I.1). Growth in China is projected to be 5.1 percent in 2023, faster than the 3.0 percent in 2022. However, growth in the rest of the region is projected to slow to 4.6 percent in 2023 from 5.8 percent in 2022, and down from the 4.9 percent projected in April 2023. The Pacific economies are expected to continue expanding in 2023, with growth projected to be 5.2 percent, on average, in 2023. Fiji has been leading the post-COVID-19 recovery in the Pacific region and is expected to reach its pre-pandemic output level in 2023.

Figure I.16. CPI inflation is declining; PPI shows deflationary pressures

Source: Haver Analytics.

Note: B. figure shows unweighted average of China and ASEAN-5 countries.

Table I.1. GDP growth forecast

	2020	2021	2022	Oct 2023 forecast		Apr 2023 forecast	
				for 2023	for 2024	for 2023	for 2024
East Asia & Pacific	1.3	7.5	3.4	5.0	4.5	5.1	4.8
East Asia & Pacific (excluding China)	-3.5	2.7	5.8	4.6	4.7	4.9	4.9
Pacific Island Countries	-10.2	-3.5	6.4	5.2	3.6	4.3	3.6
China	2.2	8.4	3.0	5.1	4.4	5.1	4.8
Indonesia	-2.1	3.7	5.3	5.0	4.9	4.9	4.9
Malaysia	-5.5	3.3	8.7	3.9	4.3	4.3	4.2
Philippines	-9.5	5.7	7.6	5.6	5.8	5.6	5.9
Thailand	-6.1	1.5	2.6	3.4	3.5	3.6	3.7
Vietnam	2.9	2.6	8.0	4.7	5.5	6.3	6.5
Cambodia	-3.1	3.0	5.2	5.5	6.1	5.2	5.7
Lao PDR	0.5	2.5	2.7	3.7	4.1	3.9	4.2
Mongolia	-4.4	1.6	5.0	5.1	6.1	5.2	6.3
Myanmar	3.2	-18.0	3.0	3.0	2.0	3.0	
Papua New Guinea	-3.2	0.1	4.3	3.0	5.0	3.7	4.4
Timor-Leste	-8.3	2.9	3.9	2.4	3.5	3.0	3.2
Palau	-9.1	-12.1	-2.3	-1.4	10.4	12.3	9.1
Fiji	-17.0	-5.1	18.6	7.7	4.0	5.0	4.1
Solomon Isl.	-3.4	-0.6	-4.1	1.8	2.7	2.5	2.4
Tuvalu	-4.3	1.8	0.7	3.9	3.5	4.2	3.1
Marshall Isl.	-1.8	1.0	-4.5	3.0	3.0	1.9	2.1
Vanuatu	-5.0	0.6	1.9	1.5	2.6	3.5	3.6
Kiribati	-1.4	7.9	1.2	2.5	2.4	2.5	2.4
Tonga	0.5	-2.7	-2.0	2.6	2.5	3.0	2.9
Samoa	-3.1	-7.1	-5.3	6.0	4.0	5.0	3.4
Micronesia	-1.8	-3.2	-0.6	2.8	2.8	2.9	2.8
Nauru	0.7	3.4	2.9	2.0	1.5	1.0	2.0

Source: World Bank; World Bank estimates and projections.

Note: Percent growth of GDP at market prices. Values for 2022 for the small island economies refer to GDP growth estimates. Values for Timor-Leste represent non-oil GDP. For the following countries, values correspond to the fiscal year: Federal states of Micronesia, Palau, and Republic of the Marshall Islands (October 1–September 30); Nauru, Samoa, and Tonga (July 1–June 30). Myanmar growth rates refer to the fiscal year from October to September.

The EAP region is projected to grow by 4.5 percent in 2024. While domestic factors are likely to be the dominant influence on growth in China, external factors will have a stronger influence on growth in much of the rest of the region. Growth in China is projected to slow to 4.4 percent in 2024, as the bounce back from the re-opening of the economy fades and both proximate problems, such as elevated debt and weakness in the property sector, as well as longer-term structural factors weigh on growth. Growth in the rest of the region, which had suffered in 2023 from slowing global growth and tightening financial conditions, is expected to edge up to 4.7 percent in 2024. The likely recovery of global growth (from 2.1 percent in 2023 to 2.4 percent in 2024) and the expected easing of global financial conditions are expected to offset the impact of China slowing down. The growth rate in the Pacific Island countries is expected to moderate to 3.6 percent in 2024, as the initial post-COVID-19 rebound dissipates and the region moves towards its estimated long-term trend growth of 2.6 percent. Growth in the EAP region as a whole is projected to be higher than that of other EMDEs in 2023 and 2024.

Despite declining inflation and lower industrial country interest rates, monetary policy in the region will continue to be constrained by domestic inflationary fears and historically high foreign interest rates. Therefore, borrowing costs are likely remain high, constraining room for spending and raising the risk of debt distress in some countries. Furthermore, high indebtedness, combined with rising costs of servicing debt, will weigh on private investment.

The baseline projection for the region is subject to several downside risks, including the global economy slowing down and tighter-than-expected global financial conditions. An intensification of geopolitical tensions presents a further downside risk, as do natural disasters, including extreme weather events related to climate change, especially for the small Pacific Island economies.

The outlook for consumption in China is also subject to downside risks. Further loss of consumer confidence could hold back consumer spending and weigh on growth. China's property sector is also subject to downside risks. While the authorities have provided liquidity support to property developers, house prices continue to fall in many cities. Mongolia, the Solomon Islands, Lao PDR, and Myanmar are especially exposed to China as a destination for exports of construction materials, and as a source of FDI (Box A3).

Increased financial stress in some advanced economies in early 2023, following the failures of certain industrial country banks, raised concerns about potential spillovers to EMDEs, including those in the (EAP) region. While risk aversion increased, causing credit default swap premia to rise in some EMDEs, those concerns have large dissipated, and the EAP banking sector has not so far been impacted. But risks remain, amidst recent downgrades of financial institutions in the US. A credit crunch in advanced economies, even if contained, would result in negative spillover in other EMDEs, including in the EAP region.

4. Macro financial policies

Increased government spending in the last decade was not matched by higher revenues. Government spending as a share of GDP in EAP countries has, on average, been increasing since the Asian Financial Crisis (AFC) and has continued after the Global Financial Crisis (GFC) (World Bank 2023). The increase in government spending above and beyond revenues, especially to cope with recent shocks, has led to an increased debt burden in all major economies and especially in Fiji, Palau, and Timor-Leste. The interest payment burden has been increasing across the region as interest rates rise and is significant in Indonesia, Lao PDR, Papua New Guinea, and Mongolia. General government gross debt is significant in Mongolia and Fiji, while short term debt to GDP ratio is high in Malaysia and Thailand.

The higher debt combined with increased costs of borrowing have shrunk fiscal space, curtailing the ability of EAP countries to spend money on important programs or respond to unexpected economic events. The recent decline in commodity price pressures offers some breathing room for countries to move away from wasteful subsidies and start boosting their fiscal space. Governments can commit to fiscal reform through the enactment of legislation, especially to boost tax revenues. Committing to restoring fiscal discipline through the (re)introduction of fiscal rules could lower borrowing spreads in the event of future economic shocks (World Bank 2023).

Tighter monetary policies in global markets have led to higher funding costs for corporate borrowers, which can increase their vulnerabilities. Moreover, higher interest rates can worsen the existing vulnerabilities caused by high household indebtedness in certain countries, such as Malaysia and Thailand. While banks appear to be capable of handling financial difficulties faced by both corporations and households, they must remain vigilant to potential threats to their safety and soundness (table I.2).

Table I.2. Financial sector is well-capitalized except for Vietnam, but risks remain to profitability, solvency, and liquidity

	Financial											
	Credit Expansion		Capital Adequacy		Asset Quality		Profitability		Solvency		Liquidity	
	Domestic credit to private sector (% of GDP)	Regulatory Capital to Risk-Weighted Assets (%)	NPLs to Total Gross Loans (%)	Return on equity (%)	Deposit to loan ratio (%)	Liquid asset (% short-term liability)	2022	change	2023	change	2023	change
China	220	14	15	1	2	0	7.0	-3	115	-4	62	5
Indonesia	41	-2	23	1	2	0	14.8	4	108	6	24	0
Malaysia	129	-8	19	0	2	0	10.6	1	122	7	151	4
Philippines	49	1	15	0	3	1	12.7	3	140	15	44	-6
Thailand	175	21	19	0	3	0	8.6	1	91	1	34	1
Vietnam	123	15	11	0	2	0	14.9	3	94	-21	21	1
Cambodia	182	68	22	0	3	1	6.7	0	80	-13	18	-7
Lao PDR	54	12	19	3	2	-1	12.9	-1	180		35	7
Mongolia	43	-6			9	-1	-10.3	-9	125	14	34	-3
Myanmar							3.0	0	198	28	64	2

Source: IMF, Fitch Solutions, World Bank, Haver Analytics, national sources.

Note: Latest quarterly figures. Color scale represents country quintiles relative to the group of emerging markets and developing economies, with red denoting the worst exposure and green the least. Change denotes percentage change compared to 2017–2021 average.

Credit is growing in most countries in the region driven by factors such as the removal of pandemic-related restrictions. While this is a positive symptom of economic recovery, rapid lending growth and overexposures to the real estate sector such as in Vietnam raise concerns. The phasing out of forbearance measures put in place during the pandemic has revealed vulnerabilities in the financial sectors of Vietnam and Cambodia, triggering the re-introduction of measures in Vietnam during April 2023. Similarly, their continuation in Lao PDR and China is likely to lead to an underestimation of the true levels of non-performing loans (NPLs). Even in countries that have phased out such measures, a clear plan for dealing with deferred payments and restructured loans is often missing.

Idiosyncratic risks persist in the banking sector, especially for entities exposed to the real estate sector. While non-performing loans (NPLs) in most EAP countries have been relatively stable, there is a risk of overestimated asset quality and understatement of the vulnerabilities accumulating in some of East Asia's bank-dominated financial systems. A correction on this front will constrain the banking sector's balance sheet headroom and impact credit growth. Banks in Vietnam and Lao PDR present modest capital buffers relative to regulatory requirements. In Lao PDR, the largest state-

owned bank (with 34 percent of banking system assets) had its capital adequacy ratio steadily decline to levels below the prudential minimum of eight percent as of end 2022, putting at risk the entire financial sector. In Myanmar, banks and the microfinance sector are struggling to recover from the military takeover amid political and economic disruptions and the imposition of restrictions on some international transactions.

While banks reported adequate capital and liquidity in China, their net interest margins declined as property-related loans to developers slowed down and their NPLs have been steadily going up. Furthermore, regional banks in less developed regions are increasingly exposed to the local government financing vehicle (LGFV) debt. Vietnamese banks faced low profitability and deteriorating asset quality. The slowdown of the real estate sector in both China and Vietnam poses substantial risks to banks that have large exposures to the sector.

Policy priorities differ across EAP economies.

- In Vietnam, the authorities will need to ensure that banks strengthen their balance sheet, including through increased capitalization and improved asset management, while strengthening legal and regulatory foundations for improved micro- and macro-prudential supervision, bank resolution, and crisis management.
- In Lao PDR, the policy priorities for the authorities involve: aligning the fiscal and monetary policy stances, strengthening foreign exchange management, developing a clear timeline on phasing out the forbearance measures and continue to strengthen prudential regulations on capital adequacy and improve financial safety net, including deposit insurance.
- In Cambodia, the emergence of real estate developer credit represents a form of shadow banking. Concerted efforts are needed to enhance data collection and monitoring for signs of overheating in credit markets and mitigate the build-up of concentration risks as well as restart the stalled capital markets development plans.
- In Mongolia, governance of banks and independence of the central bank need to be strengthened as supervision transitions from a compliance-based to a risk-based approach.
- In China, the authorities will need to implement plans to harmonize financial asset classification and risk management at commercial banks, as well as closely monitor regional commercial banks exposed to the property sector and LGFVs to assess their true financial health.

Appendix

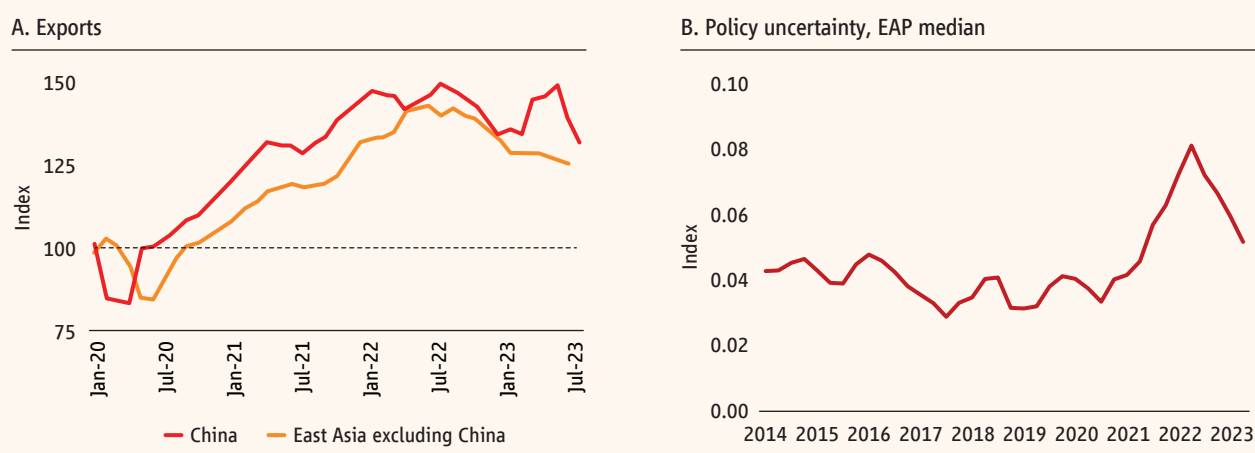
Box A1. Drivers of investment growth in East Asian economies

The slowdown of investment growth in the East Asia and Pacific region has coincided with a sharp decline in exports. In a globalized world, tradeable goods are often produced through complex global value chains, a process that entails intermediate inputs being produced in more than one country and exported to the final destination for assembly. Thus, it is not inconceivable that the prospects of sluggish exports growth have a direct negative impact on investment growth, especially in export-oriented sectors.

High levels of uncertainty have a negative impact on investment growth, as investors become hesitant to invest in new projects or expand their existing businesses. Uncertainty refers to the lack of predictability or clarity about future economic conditions, such as changes in government policies, market conditions, or geopolitical events. When uncertainty is high, investors are unsure about the potential risks and returns. This can lead to a decrease in investment growth, as businesses may delay or cancel their investment plans until the uncertainty is resolved. Low levels of uncertainty, on the other hand, can lead to an increase in investment growth, as investors are more confident in their ability to generate returns on their investments.

Previous studies suggest that even moderate amounts of policy uncertainty can have a large negative impact on investment (Rodrik 1991). More recently, studies employing news-based measures of policy uncertainty have found that economic policy uncertainty is negatively correlated with investment growth (Bloom 2009; Baker et al., 2016). Uncertainty in the EAP region has increased in recent years, potentially hurting investment growth (figure A1.1)

Figure A1.1. The region's exports have declined while regional policy uncertainty has increased



Source: World Uncertainty Index. Wind and BoP.
Note: A. 3-month moving average. B. Four-quarter moving average. Median value.

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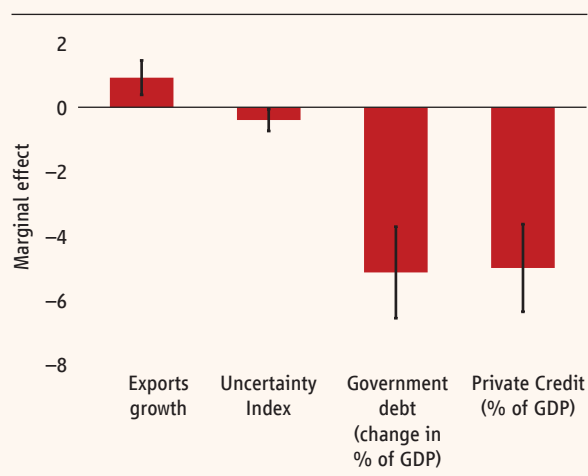
(Box A1. continued)

Corporate debt has increased in the region’s economies, quite rapidly in China and Vietnam. Higher corporate debt is likely to hurt private investment growth. When a company takes on more debt, it may have less money available to invest in new projects or expand its existing business. This can lead to a decrease in private investment growth, as businesses may be less willing or able to invest in new projects.

High government debt can also hurt private investment especially if it leads to higher interest rates or increase uncertainty about the future. The negative effects of higher government debt on investment are likely to be more pronounced during rapid increases in debt. A rise in government indebtedness can make it more expensive for businesses to borrow money for investment as domestic banks and international investors lend more to the government. Rapid increases in debt can also rise uncertainty about the future and make businesses hesitant to invest in new projects. Changes in government debt in EAP region appear to be inversely correlated with private investment growth.

Sluggish investment growth in some EAP economies has coincided with a sharp decline in trade, a spike in policy uncertainty as well as an increase in corporate and public debt. Indeed, evidence suggests, that for a large number of countries including in the EAP, investment growth is positively and statistically significantly correlated with exports growth and negatively and statistically significantly correlated with uncertainty and public and private debt (Figure A1.2). In China, a drop in residential investment explains a significant portion of investment slowdown.

Figure A1.2. Correlates of private investment growth in emerging markets and developing economies



Source: World Bank staff estimates.
 Note: The bars show marginal effects of each variable in predicting investment growth. Coefficients are standardized by dividing by the standard deviation of each variable. Black lines show 90 percent confidence intervals (1.68 x standard errors). Other variables included in the regression are lagged GDP growth, credit growth, FDI growth, lagged government debt as a share of GDP, lagged public investment as a share of GDP and change in private investment as a share of GDP, and a dummy for crisis. The regressions include country and year fixed effects. Sample included 98 emerging markets and developing economies.

Box A2. Consumption response to rising house prices, population aging and rising household debt

Consumption constitutes a significant fraction of income, surpassing two-thirds in many countries. Numerous studies examine the sensitivity of consumption to changes in income. These studies often rely on the life-cycle permanent income hypothesis (PIH), which offers analytical tractability and predicts that anticipated changes in income should have no effect on consumption because they are assumed to be already internalized. And yet, the modeling of consumption behavior is still a challenge as research finds significant evidence for the excess sensitivity of consumption to income, rejecting the PIH and suggesting the importance of liquidity and credit constraints (Campbell and Mankiw 1989; Lewis 1997; Jappelli and Pistaferri 2010; Kaplan, Violante and Weidner 2014).

This box documents that consumption growth is sensitive to changes in house prices as well as population aging. Following a PIH framework, the analysis regresses private consumption per capita growth on income per capita growth. In addition, the independent variables include house prices growth, household debt to GDP, and the share of working age population. The specification controls for time and country fixed effects. Standard errors are clustered at country level. Data are quarterly and include 65 emerging market and developing economies between 2001–2022.

Rising house prices may stimulate consumption by increasing households' perceived wealth, or by relaxing borrowing constraints. Homeowners may feel wealthier and more confident about their financial situation, which can lead them to spend more on discretionary items such as vacations, home improvements, and luxury goods. Conversely, falling house prices can decrease the wealth of homeowners, which can lead to a decrease in consumption. Homeowners may feel less wealthy and more uncertain about their financial situation, which can lead them to cut back on discretionary spending and focus on paying down debt or building up savings.

Changing house prices can also affect the availability of credit. When house prices are rising, homeowners may be more likely to take out home equity loans or refinance their mortgages to access the equity in their homes. This can provide a source of funds for consumption spending. Conversely, when house prices are falling, lenders may be less willing to extend credit, which can limit the ability of homeowners to access funds for consumption spending. Earlier work in the literature suggests that house prices changes are positively correlated with consumption growth (Campbell and Cocco 2007; Berger, Guerrieri, Lorenzoni and Vavra 2018).

High household debt can also have a negative impact on consumption. When households have high levels of debt, a significant portion of their income goes towards paying off debt obligations, resulting in less disposable income and less consumption. High levels of debt can also lead to increased financial stress, which can cause households to cut back on spending in order to reduce their debt burden. Highly indebted households may also find it more difficult to access credit to finance purchases of big-ticket items.

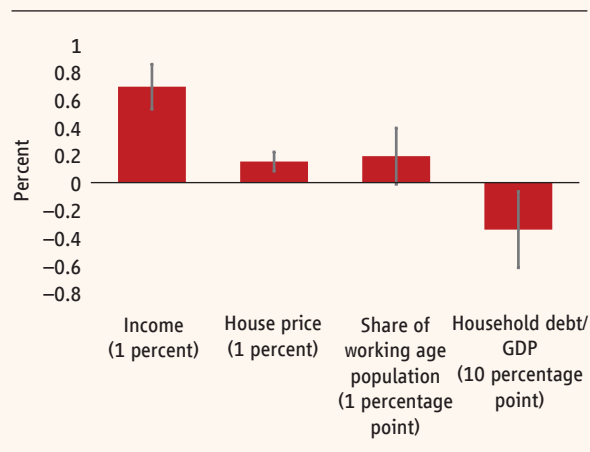
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(Box A2. continued)

Population aging can also have a significant impact on consumption patterns. As people age, their spending habits tend to change. Older individuals tend to spend less on discretionary items such as entertainment and travel, but more on necessities such as healthcare and housing. Older people tend to consume less overall than younger people, as they have fewer dependents and may be more focused on saving for retirement (Gourinchas and Parker 2002). Another way population aging affects consumption is through the demand for housing. As people age, they may downsize their homes or move into retirement communities, which can impact the housing market. This can also have an impact on the construction industry, as there may be a shift in demand for different types of housing.

Results suggests that both house price increases and a higher working age population are correlated with higher consumption growth. Specifically, a 10 percent increase in house prices would increase consumption per capita, on average, by about 2 percent (Figure A2.1). Similarly, a 5 percentage points higher share of working age population (share of working age population in China has decreased about 5 percentage points from earlier peak) would increase consumption per capita by an average of 1 percent. A 10-percentage point increase in household debt would decrease consumption by 0.4 percent. Additionally, interacting income per capita growth with each variable suggest that higher house prices growth increases the sensitivity of consumption to income changes, whereas a higher working age population decreases the sensitivity of consumption to income changes.

Figure A2.1. Conditional correlation between private consumption growth, house prices, working age population and rising household debt



Note: Figure shows regression coefficients (bar height) and 90% confidence interval (whiskers) on private consumption per capita growth on income per capita growth and (i) house prices growth; (ii) share of working age population; and (ii) household debt as a share of GDP. Regressions control for time and country fixed effects. Standard errors are clustered at country level. Data is quarterly for 65 emerging market and developing economies between 2001–2022.

Box A3. Simulated regional impact of continued consumption and residential investment weakness in China

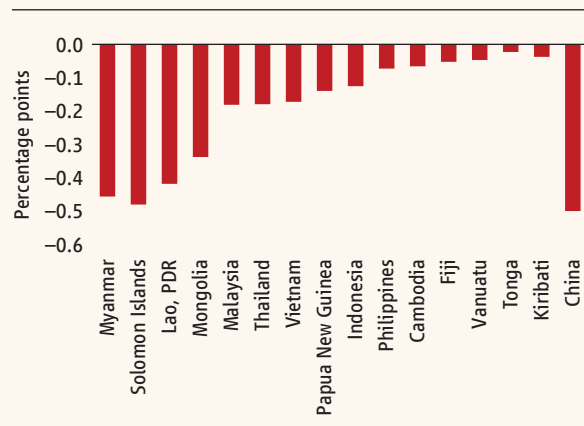
Economic developments in China can have meaningful spillovers onto activity in the broader EAP region. These spillovers can be simulated using the Oxford Global Economic Model (OEM). The OEM is a semi-structural projection model that balances theoretical properties, empirical fit, and forecasting performance. It features over 80 explicitly modeled country blocks, many of which are available at the quarterly frequency.³

Weak consumption expenditure in China will hurt economic activity in China and have negative spillovers onto the rest of the region. To quantify the effects, this box uses high-frequency survey data related to employment in China to assess the impact of continuing employment deterioration on consumption. Specifically, it adjusts the residuals of the consumption equation in OEM for labor markets conditions by regressing them on the employment sub-index of manufacturing PMI (longest series available for employment indexes in China PMIs). Then it assumes two alternative paths for the PMI: flat, and continued deterioration until end of 2023. The difference is used to adjust the residuals. These shocks represent exogenous disturbances to private consumption unrelated to the model's predicted evolution of macroeconomic fundamentals (including expected employment). The negative shock is assumed to occur in 2023Q3 followed by a gradual rebound in 2024Q1. In this scenario, employment index would decrease 1.2 points by the end of 2023, reducing consumption, before going back to current levels by 2024Q4.

The spillovers would be nontrivial for some EAP countries. The model-based simulations point to significant heterogeneity in the impact on activity across EAP countries. Spillovers would be most acute for small commodity-exporting and tourism-focused economies such as Lao PDR, Myanmar, and the Solomon Islands. In contrast, spillovers to the larger better-diversified trading partners would be limited. Overall, output in the developing EAP region could be reduced by about 0.2 percent on average in 2024 if consumption weakness continues (Figure A3.1).

The model can also quantify the domestic and regional effects of weaker-than-expected residential investment in China. The shock assumes zero growth in residential investment in China from 2023Q3 onwards, compared to about 4-5 percent growth in the Oxford baseline. This pessimistic scenario can be driven by further problems in China's residential investment companies. The shock would have a relatively small impact on private consumption in China due to its limited effect on the level of personal disposable income. But the impact on Chinese imports would be more pronounced, in part due to the property market's relatively high commodity intensity. The resulting

Figure A3.1. Impact on annualized GDP growth in 2024 from a consumption slowdown in China



Sources: Oxford Economics; World Bank.

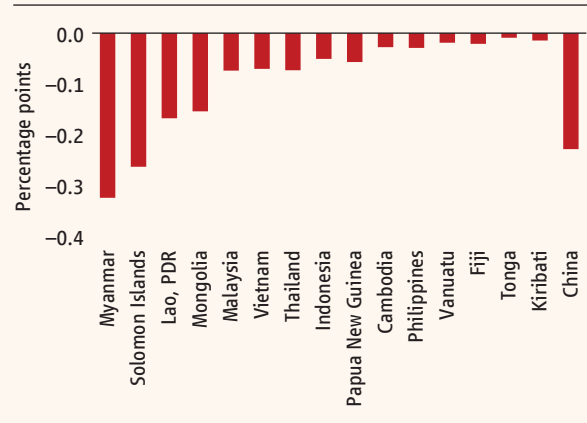
³ The model exhibits "Keynesian" features such as sticky prices in the short run, and neoclassical properties in the long run, such that prices adjust fully and the equilibrium is determined by supply factors. Countries are assumed to be small open economies, in the sense that exports are determined by aggregate demand and a country cannot ultimately determine its terms of trade. Consequently, exports are a function of world demand and real exchange rates.

(continued)

(Box A3. continued)

decline in global commodity demand would lower global commodity prices. The region’s economies would be affected via several channels. First, the decline in China’s import demand, coupled with a deterioration in competitiveness caused by the depreciation of the Yuan, would lower trading partner exports. Second, the decline in commodity prices induced by the contraction in residential investment would further weigh on activity in the region’s commodity-exporting economies. Third, weaker equity prices would weigh on investor risk appetite across the region, contributing to a mild downturn in equity markets in several neighboring countries. Overall, growth in developing EAP excluding China would be reduced by 0.1 percentage points in 2024 (Figure A3.2). The heterogenous impact across EAP countries reflects differences in their exposure to developments in China.

Figure A3.2. Impact on annualized GDP growth in 2024 from a weaker residential investment in China



Sources: Oxford Economics; World Bank.

Special Focus

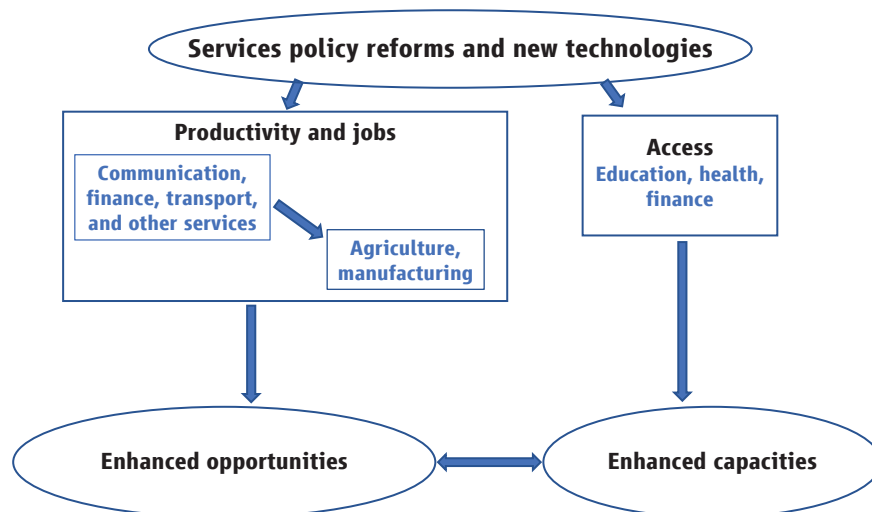
1. Introduction

The development of the services sector is central to EAP’s growth and development. East Asia’s rapid economic growth in recent decades is often seen as synonymous with manufacturing-led development. Yet, the reality is that services play a growing, but often underappreciated role as key drivers of economy-wide growth, the largest source of job creation and the most dynamic elements of international trade and foreign direct investments. And the importance of services will continue increasing, as consumer demand shifts towards services with rising incomes and aging populations across the region.

Productivity growth in services is therefore increasingly crucial for inclusive growth in the region. The traditional pessimism about the productivity of services was never fully justified and is today even less so. Productivity in some services—such as business services, finance, and communications—is already higher than in manufacturing, although most service jobs in the region are still in low skill and low productivity services, such as traditional retail and transport. There are reasons for optimism about productivity growth across a broader range of services. First, many services are being transformed by the digital technologies, which deliver productivity gains through increased scale, tradability, and innovation. Second, evidence for the EAP and other countries reveals that structural reforms can unlock higher productivity growth in services sectors as well as in manufacturing sectors that use these services.

Harnessing the digital revolution for inclusive economic growth requires deeper services reforms alongside investment in skills and digital connectivity (figure II.1). These reforms include the unfinished business of addressing long-standing policy barriers that hamper market entry and competition. New measures of services trade restrictiveness reveal that EAP’s services sectors continue to be less open than in other parts of the world. At the same time, policy-makers will need to address emerging challenges of the digital economy and strengthen regulation to ensure digital firms do not engage in anti-competitive behavior to the detriment of their consumers and workers, respect prudential concerns, e.g., in financial markets, and address data protection and cybersecurity risks. The required combination of liberalization and regulation is difficult, but the potential gains are large.

Figure II.1. Services for development—the virtuous cycle of opportunity and capacity: An organizing framework



One concern is that the new jobs created in digital services may require greater skills than those in the traditional services. Global evidence suggests that web-based digital platform jobs, i.e., where services like customized software are delivered over the internet, do require higher education, but location-based digital jobs, e.g., food deliver, are dominated by less-educated workers.

But since the promise of higher productivity levels and growth is likely to be more strongly associated with higher skill digital jobs, equipping workers with the relevant skills must be a priority. Reform of education and health services, to address inequality of access and quality, could help address the skills deficit and equip more EAP citizens to engage productively in the new digital economy. The result would be improvements in endowments of human capital even as changes in the structure of the economy enhance the demand for skills, unleashing a virtuous cycle between greater capacity and increased opportunities, as illustrated in our organizing framework.

Accelerated structural transformation towards services could also support the region's shift to lower carbon growth. Except for transport services, most services emit significantly lower greenhouse gases for every unit of output generated than industry and agriculture. As the share of services, especially higher productivity, high value-added services rises, the overall carbon-intensity of GDP—which remains relatively high across emerging EAP—will decline. Of course, what happens to global emissions will be determined by the global reallocation of production across sectors.

Beyond domestic policy reform, international cooperation can help realize the development potential of services. One example is the recent international agreement to reach net-zero GHG emissions from international shipping by or around 2050 while ensuring that developing countries' interests are not hurt. Another is the effort in international fora to ensure that the divergence in regulatory approaches across countries do not impede the international flow of data, which is the lifeblood of the digital services economy.

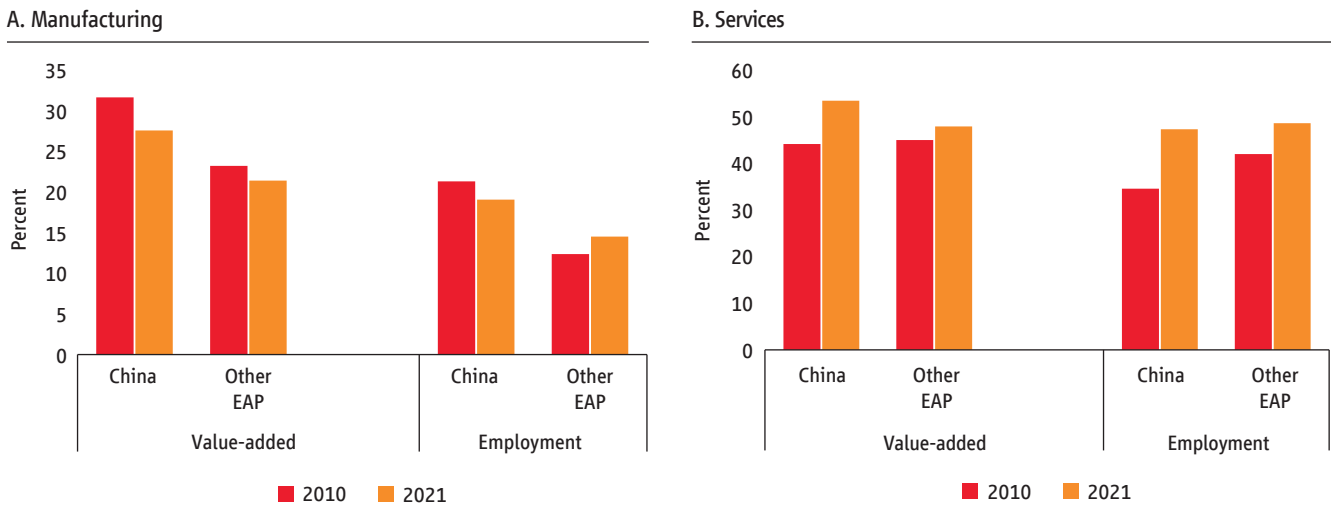
▸ The underappreciated role of services in EAP

East Asia's rapid economic growth in recent decades is often seen as synonymous with manufacturing-led development and the region continues to pride itself for its strong position in global manufacturing value chains. Labor-intensive, export-oriented industrialization allowed a succession of East Asian economies to create millions of jobs for unskilled labor which in turn propelled the region's unparalleled achievements in reducing poverty.

Yet, the reality is that with very few exceptions, manufacturing is playing a steadily diminishing role in both employment and output across the region. Indeed, there is evidence that developing economies, including in EAP are starting to de-industrialize at lower levels of income and earlier stage of their development than was the case in current high-income economies. In contrast, fast-growing services sectors play an important, but often underappreciated role as key drivers of growth, job creation and increasingly international trade (especially the digitally deliverable services) and foreign direct investments, as well as in consumer demand. Moreover, on the labor market side, services jobs tend to be more skilled intensive. Services also tend to be characterized by higher female to male employment ratios, and the ratios grow faster with the levels of development in services than in manufacturing. Finally, except for transport, services also tend to be less carbon intensive. This chapter discusses each of these seven aspects in more detail.

First, figure II.2 reports the share of manufacturing and services in both employment and value added in 2010 and 2021. For both China and the rest of the EAP region, we observe a substantial increase in the share of services and a decrease in the share of manufacturing in value added. As for the employment share, we observe an increase in the employment share of services across the region. Manufacturing employment share decreased in China, while it increased in other countries, most notably Cambodia and Vietnam.

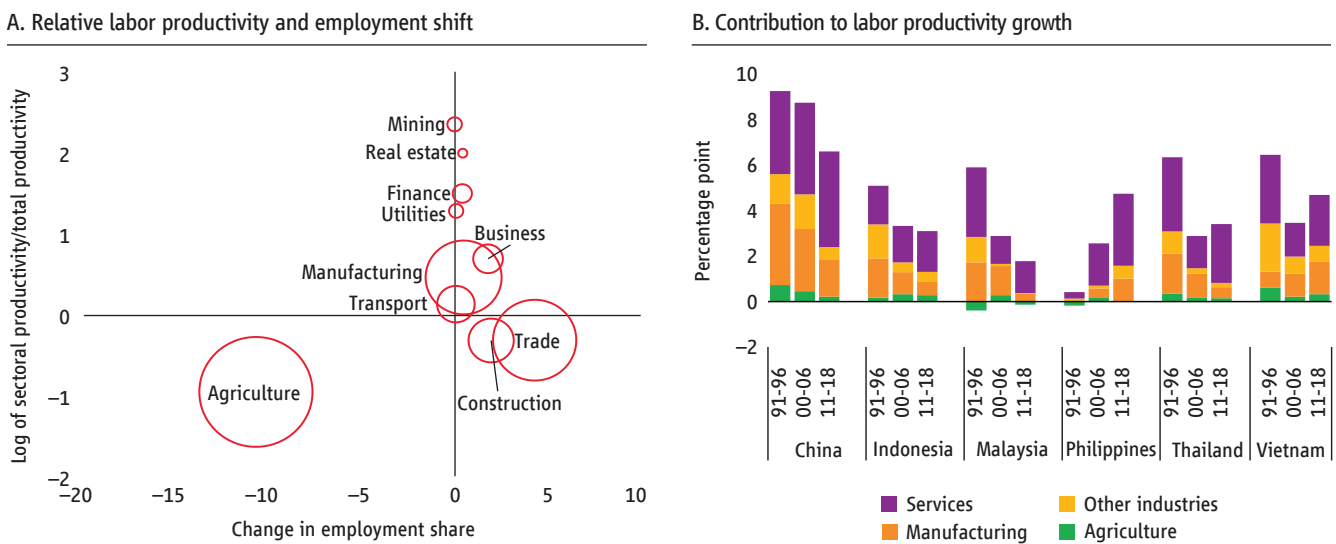
Figure II.2. Share of services in employment and value added increased significantly in recent years



Source: World Development Indicators, ILOSTATS.

Second, in the larger EAP countries, the increase in employment in services has been mostly directed to traditional, lower productivity sectors such as construction and trade (see figure II.3A), rather than higher productivity sectors such as business services, finance, or transport. However, on aggregate, the services sector has been a consistent and resilient contributor to aggregate labor productivity growth. Figure II.3B reports the contribution of agriculture, manufacturing, and services to the labor productivity growth in six large EAP countries for the last three decades excluding the years of Asian Financial Crisis and Global Financial Crisis. As the figure shows, in the most recent years, the contribution of the services sector to the aggregate labor productivity growth has been higher than the contribution of manufacturing in all economies. Moreover, as shown by figure II.4 using data for a large sample of developed and developing countries, even after controlling for the

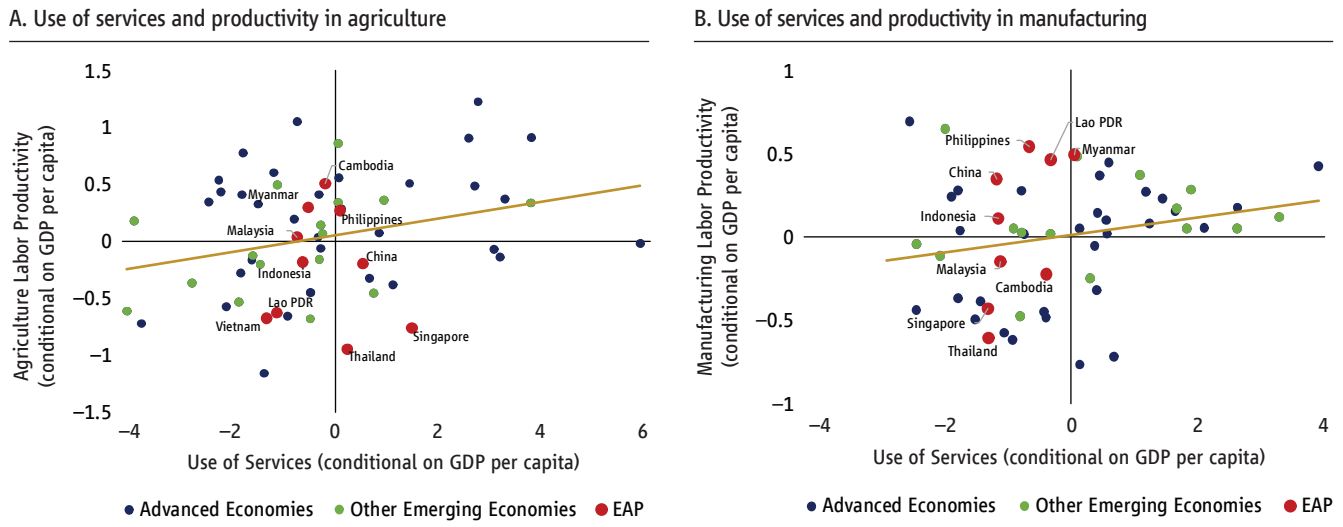
Figure II.3. Labor reallocated to less productive sectors. In aggregate, services are important contributors to productivity growth



Source: WDI, GGDC/UNU-WIDER Economic Transformation Database (Kruse et. al. 2022).

Note: A. data shows average of China, Indonesia, Thailand and Malaysia between 2004 and 2018. Bubble size denotes relative size of employment in 2004. B. data. Figure shows sectoral contribution to average annual labor productivity growth, annual average during three different periods. Other industries include mining, utilities, and construction.

Figure II.4. An increase in the use of Finance, ICT and Business services is associated with higher labor productivity in manufacturing and agriculture, even after controlling for the level of development

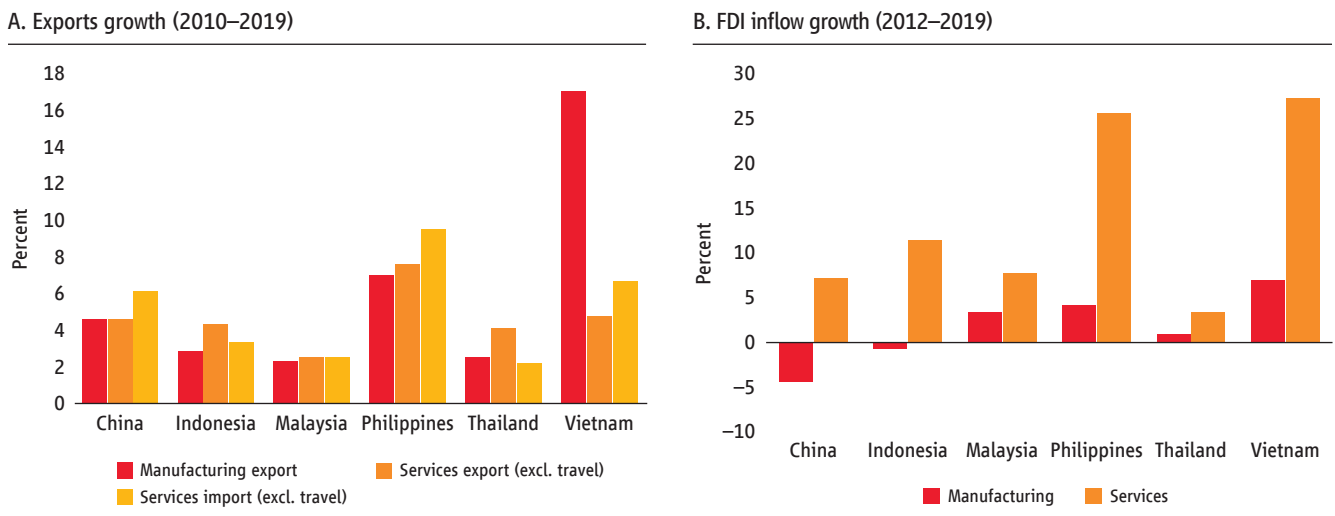


Source: WDI and OECD ICIO.
 Note: The charts represent the positive association between the use of Finance, ICT and business services as intermediate inputs (measured as direct requirements in production) and labor productivity both in Agriculture and in Manufacturing. Data are for 2018. To establish that this relationship holds even after controlling for the level of development, we first regressed both the use of services and the logarithm of the labor productivity on the logarithm of the GDP per capita, and then we plotted in Figures II.4A and II.4B the residuals from those regressions.

level of development, an increase in the use of services such as finance, ICT and business services as intermediate inputs is positively associated with an increase in labor productivity in agriculture and manufacturing.

Third, figure II.5A reports the annual growth in the export and import of services for several EAP countries. Importantly, we exclude travel from the services sector. As a reference, we also include the growth rate of manufacturing exports. In all the countries presented, except for Vietnam, the rate of growth of services exports is higher than for manufacturing. Figure II.5B

Figure II.5. Services outpaced manufacturing in terms of growth of trade and FDI in recent years



Source: Haver Analytics, World Development Indicators.
 Note: B. shows average annual growth of 3-year moving-average FDI values, during 2012–2019, except for Vietnam (2014–2019) and Indonesia and Philippines (2013–2019).

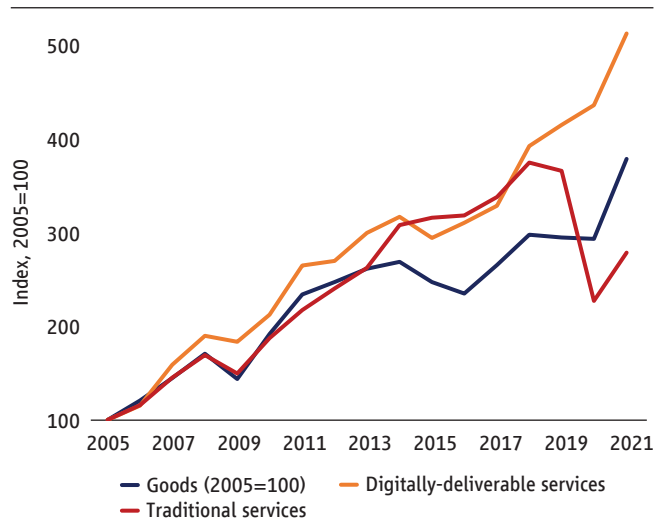
reports instead the average annual growth of foreign direct investment (FDI) inflows in services and manufacturing for the period 2012–2019. Strikingly, in all countries considered, the growth rate of FDI inflows in services vastly outpaced the growth of FDI in manufacturing. Moreover, figure II.6 reports the evolution of trade in goods, traditional services and digitally deliverable services for the EAP countries. Trade is defined as the sum of imports and exports. The increase of trade in digitally deliverable services over the 2005–2021 period is almost the double of the increase in the trade of goods.

Fourth, demand for services is likely to expand at faster pace with incomes growing rapidly and the middle class emerging across the region. As shown in figure II.7, evidence from the Philippines confirms that more affluent households tend to spend a higher share on the consumption of services, especially in sector like health, education, and communication. Based on this evidence, we can expect an increase in the demand for services as the levels of income rise across the region.

Fifth, on the labor market side, services tend to employ more skilled workers than manufacturing or agriculture, as shown in figure II.8 for the case of Vietnam. Forty percent of the people working in the services sectors in 2019 owned a tertiary education degree. The corresponding number for manufacturing was 10 percent, and for Agriculture 1 percent.

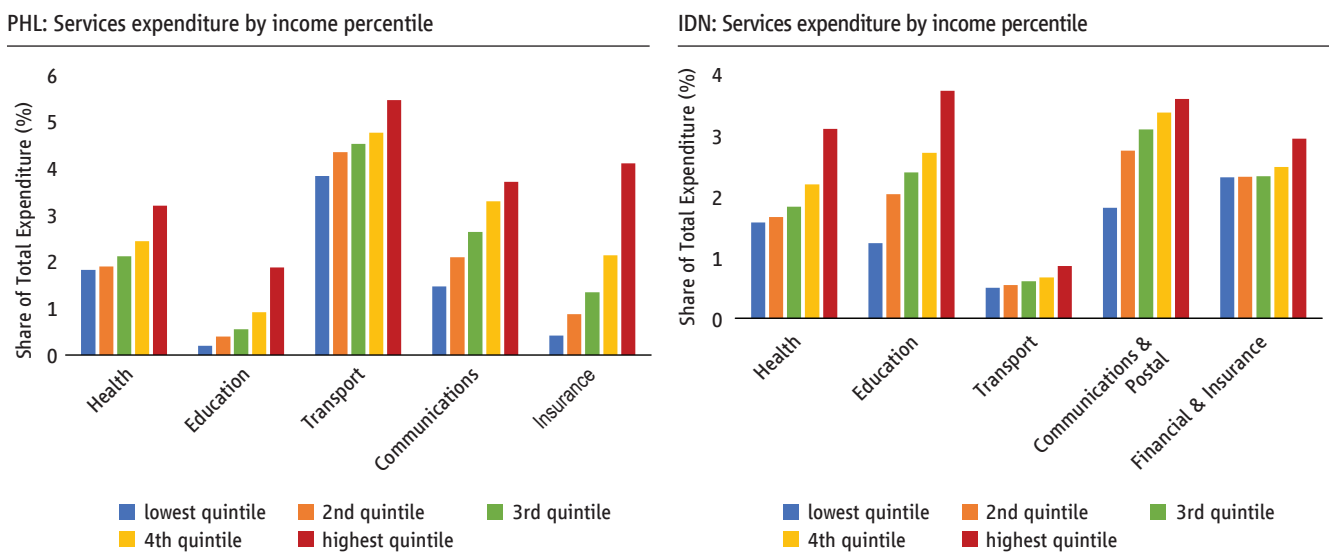
Sixth, the services sector has higher female employment shares than manufacturing. Figure II.9 shows the ratio of female to male workers in the services sector (solid line) and the manufacturing sector (dashed line). Complete gender equality

Figure II.6. Trade in digitally delivered services increased more than other sectors in recent years

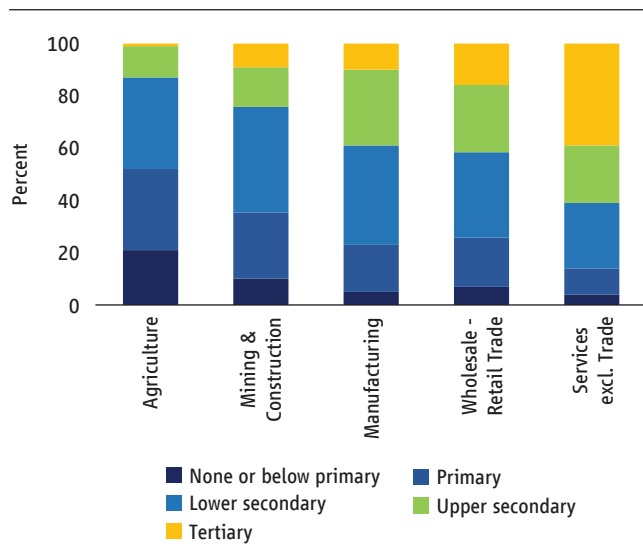


Source: UNCTAD.
 Note: Digitally-deliverable services are an aggregation of insurance and pension services, financial services, charges for the use of intellectual property, telecommunications, computer and information services, other business services and audiovisual and related services. EAP countries include: Cambodia, China, Fiji, Indonesia, Kiribati, Malaysia, Mongolia, Papua New Guinea, Philippines, Solomon Islands, Thailand, Tonga, Vanuatu, Vietnam.

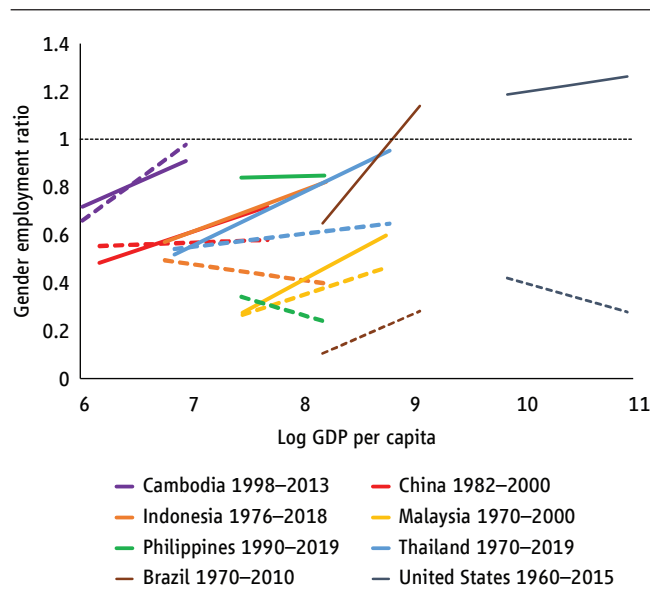
Figure II.7. Demand for services rises with income level



Source: The Indonesian National Socioeconomic Survey (SUSENAS) and Family Income and Expenditure Survey (FIES) in Philippines, 2021.

Figure II.8. Structural transformations towards services shift demand towards higher educated workers

Source: Vietnam Labor Force Survey 2021.

Figure II.9. The services sector has higher female employment shares than manufacturing

Notes: This figure plots the gender employment ratios in the services and manufacturing sector for selected countries over time against the log of real GDP per-capita in constant 2010 US dollars. Gender employment ratios divide the number of women working in a sector by the number of men. Solid lines are employment ratios for the services sector and dotted lines for the manufacturing sector. The covered time period spans between 1960 and 2019 and varies depending on the data availability of each country. The horizontal dimension of the graph shows how fast each country's GDP per capita increased during the sample period. Data is obtained from IPUMS international (Minnesota Population Center, 2020) and complemented with labor force survey data from the World Bank's Global Labor Database.

would imply a ratio of 1 in all sectors. Over time, gender employment ratios in the EAP countries increased rapidly in the services sector but they stagnated or even decreased in the manufacturing sector.

Overall, the expected future rise of services is likely to improve gender representation in the labor market, thus stimulating gender-inclusive growth.

Lastly, as shown in figure II.10, services sectors, except transport, are characterized by a lower emission intensity than agriculture and manufacturing in both China and Indonesia.

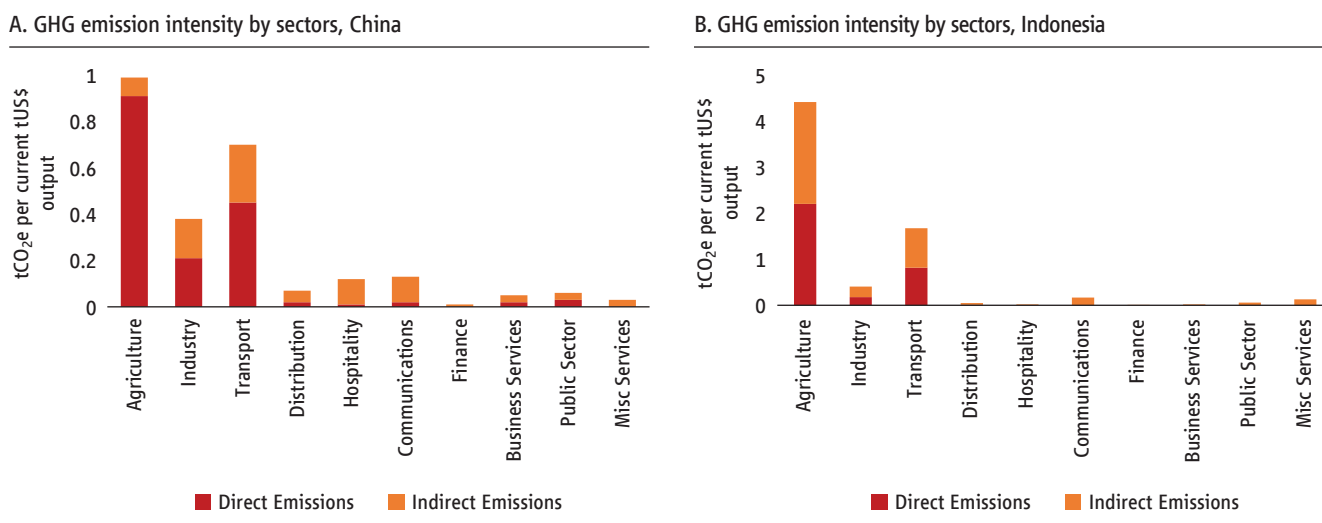
2. What is happening?

▸ 2.1. Significant but uneven digitalization

2.1.1. Digitalized businesses

We look at the digitalization of businesses through several lenses. The first is to explore the extent of technology adoptions by firms in all sectors of the economy. Firms in EAP have been increasingly adopting digital technologies, especially in the services sector. Measuring digitalization is not straightforward and is often hampered by the availability of representative panel data.

Figure II.10. Services are generally less carbon intensive than agriculture and manufacturing (except in transport)



Sources: World Bank staff calculations based on the Emissions Database for Global Atmospheric Research (EDGAR; European Commission et al., 2016) and Global Resource Input Output Assessment (GLORIA; Lenzen et al, 2017) databases. Emissions include CO₂, CH₄ and N₂O.

The Philippines Statistical Office has been collecting detailed and representative technology data for both manufacturing and services firms that can be matched to their firm-level productivity surveys to gain novel insights on technology diffusion and the implications for productivity, wages and jobs. This data shows the digital intensity of Philippines services firms is higher than for manufacturing firms, as measured by their investments in IT capital per worker. Moreover, the growth of digital technology adoption between 2012 and 2017 has been larger in the services sector, particularly for technologies related to data, such as cloud computing, data analytics and investments in databases and software.

Table II.1. Technology adoption in the Philippines is higher in services than manufacturing

	Manufacturing		Services	
	2012	2017	2012	2017
Total IT Capital per Worker (Log)	2.81	2.77	3.59	4
Databases and Software Capital per Worker (Log)	0.17	0.27	0.36	0.62
Cloud Computing (% of Firms)		18%		38%
Devote IT resources to data or analytics (% of Firms)	5%	30%	8%	42%
Ecommerce sales (% of Firms)	1%	25%	0%	17%
Share of sales via Ecommerce (% of Firm Sales)	0.30%	4.90%	0.10%	1.00%

Source: Philippines Statistical Authority – ASPI, CPBI and SICT Databases.

Notes: Representative statistics for business sector services firms (ISIC rev 4 divisions 45-82) and manufacturing firms (ISIC rev 4 divisions 10-33) with twenty or more employees. To avoid dropping zero values, we add one Philippine Peso per worker to capital before taking logs.

However, the digitalization of firms varies enormously across services sub-sectors (figure II.11). The average Philippines services firm has around a third more data and software assets per worker than their manufacturing counterpart. However, this average masks substantial sectoral differences. The average technology services firm has seven times more data and software assets per worker than the average manufacturer.

Moreover, the use of data is uneven across services firms in the Philippines, with foreign firms five times more data-intensive than those domestic owned, and firms with fiber more than twice as data-intensive as those without broadband (figure II.12). However, foreign firms with fiber are more than fifteen times more data-intensive than domestic firms without.

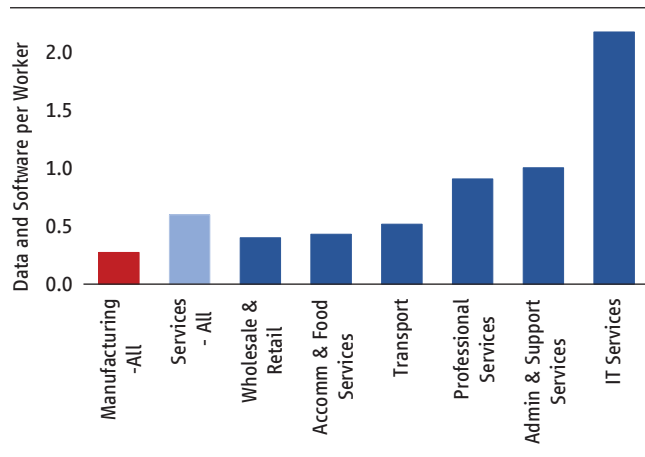
A second way of examining digitalization is to focus on the tech providers. We are able to do this drawing upon a newly assembled firm level database: the FCI Digital Businesses Database. This is a newly assembled firm-level database of about 1,000,000 digital businesses in 200 countries, covering companies founded in 1970–2022 and funding flows to digital businesses as of 2022 (mostly early-stage risk financing to start-ups). As shown in figure II.13, the landscape of digital businesses and the venture capital funding in EAP is dominated by China. Naturally this is partly due to China’s size.

Figure II.14, therefore, presents a plot of the number of digital businesses and the funding received as a function of the level of development (measure as GDP per capita) after controlling for the impact of country size (measured as population). The plot reveals a strong positive correlation between the level of development and both number of digital businesses and funding. The position of the EAP countries in terms of number of digital businesses are roughly in line with the levels predicted by their level of development, whereas they do slightly better than predicted in terms of funding.

The allocation of venture capital funding across different types of digital services suggests both similarities and differences in the development of the digital economy within EAP, and between EAP other regions. For instance, Fintech and Ecommerce are among the most important recipients of funding in both EAP and developed economies. On the other hand, the share of HealthTech in the funding in the developed economies is roughly the double of what observed in the EAP region, where MobilityTech instead appears to be a more funded sector (figure II.15). Zooming into specific countries, we compare the shares of funding across different sectors in China, Indonesia, Malaysia and Thailand (see Annex 1). The clearest pattern is that funding on digital firms is much more concentrated in Indonesia, Malaysia and Thailand than in China, whose digital economy is unsurprisingly deeper and more diverse.

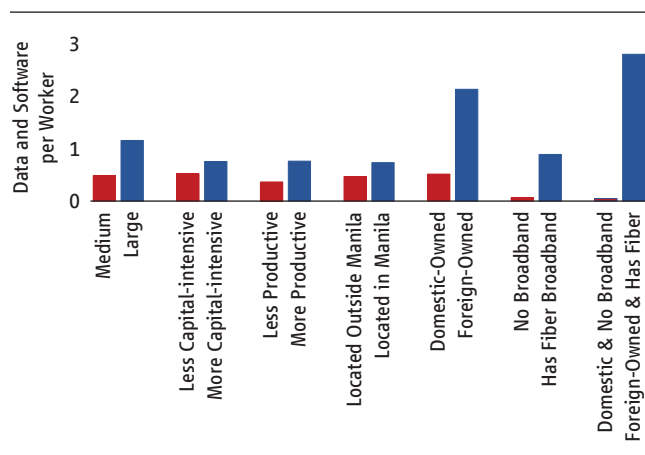
Most venture capital funding in the region so far has gone to consumer services. Categorizing services into business-to-business (B2B, such as AI or BigDataAnalytics), business-to-consumers (B2C, such as MobilityTech or EntertainmentTech) or

Figure II.11. Uneven use of data technologies across services sectors in the Philippines



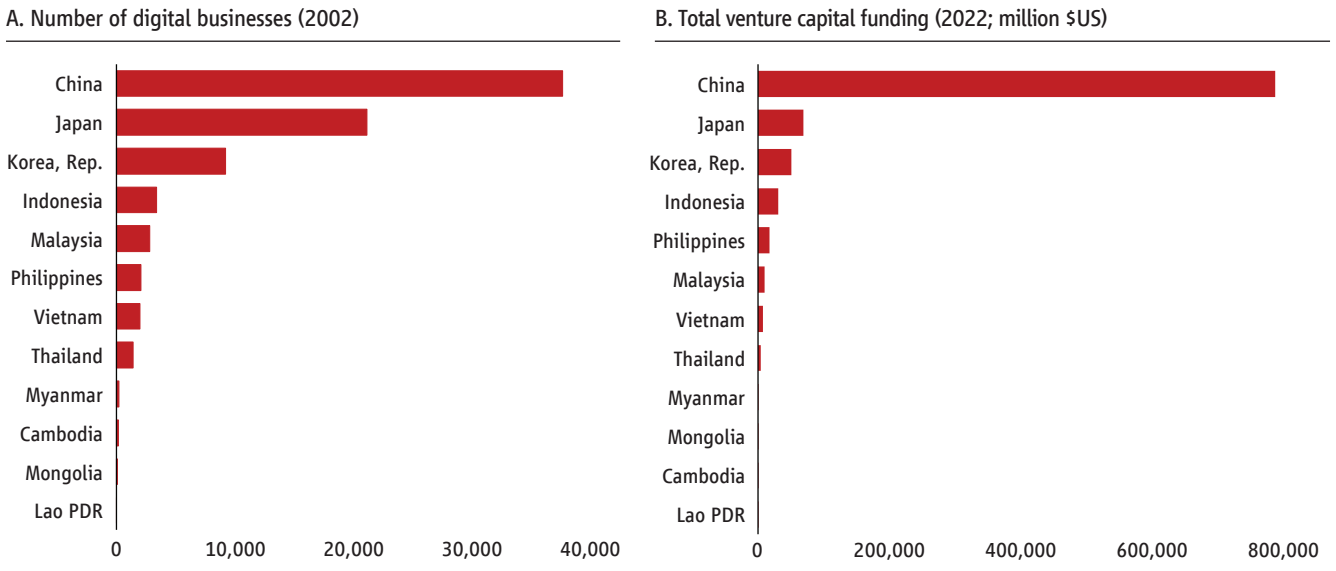
Source: Philippines Statistical Authority – ASPI and CPBI Databases.
Notes: Representative statistics for business sector services firms (ISIC rev 4 divisions 45–82) with twenty or more employees in 2017. Reflects log data and software capital per worker. To avoid dropping zero values, we add one Philippine Peso per worker to data and software capital before taking logs.

Figure II.12. FDI plays a crucial role in diffusion of data technologies in Philippines services firms, especially when complemented with high-speed broadband



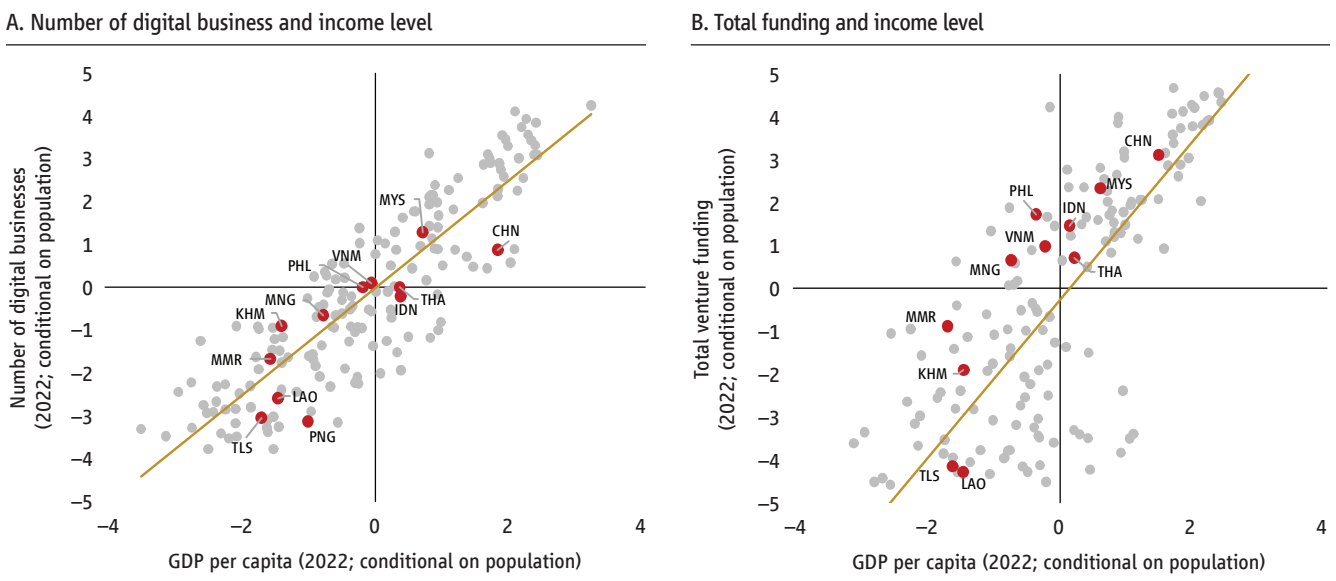
Source: Philippines Statistical Authority – ASPI and CPBI Databases.
Notes: Large reflects firms with one hundred or more employees and medium between twenty and ninety-nine. More capital-intensive (more productive) reflects firms with capital per worker (Total Factor Productivity) above the median within their two-digit industry, with those below the median defined as less-capital intensive (less productive). Foreign-owned reflects at least fifty per cent foreign ownership, with the remainder being domestic-owned. No broadband reflects either narrowband internet access or not internet access. Representative statistics for business sector services firms (ISIC rev 4 divisions 45–82) with twenty or more employees in 2017. Reflects log data and software capital per worker. To avoid dropping zero values, we add one Philippine Peso per worker to data and software capital before taking logs.

Figure II.13. China dominates the region in number of digital businesses and venture capital funding



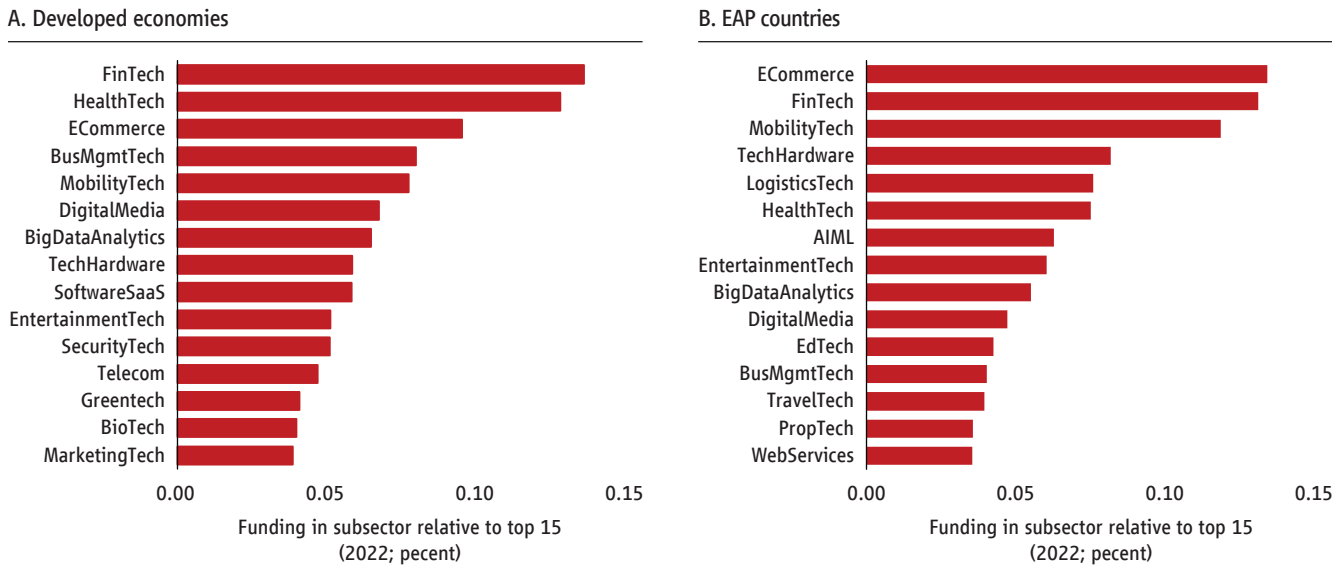
Source: FCI Digital Business Database.

Figure II.14. Most EAP countries do slightly better in terms of funding than predicted by their level of development, controlling for size



Source: FCI Digital Business Database.

Figure II.15. E-commerce, FinTech and MobilityTech attract high shares of venture funds both in developing EAP and in developed countries

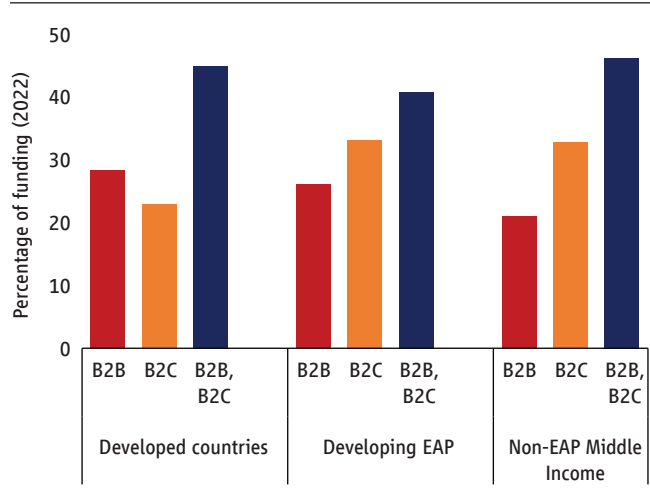


Source: FCI Digital Business Database.

mixed (FinTech, Ecommerce and HealthTech), figure II.16 shows some similarities and an interesting asymmetry between developed and developing countries. Venture capital funding is allocated more to B2B sectors than to B2C sector in the developed countries, while the opposite pattern is observed in developing countries. While, as already noted, FinTech and Ecommerce dominate both groups of countries, this asymmetry is interesting, since B2B digital business are arguably more relevant for productivity gains, while B2C for market access.

Finally, we focus on the digital platforms, which include some of EAP’s most valuable and fast-growing firms. China’s Alibaba, Meituan and Tencent, Indonesia’s GoTo and Singapore’s Grab are major players in e-commerce, delivery and ride hailing, with revenues that rival that of Amazon, Uber and eBay. But the dynamism extends beyond these well-known examples. In fact, a third of the world largest digital platform firms are from EAP, second only to the US (figure II.17A). A decade ago, Asia was home to only two unicorns (privately held start-ups valued at \$1 billion or more), today, the region has 185 unicorns. The combined valuation of these firms has grown to about US\$780 billion, the equivalent of 3.7 percent of the combined GDP of countries from which they originate, up from virtually zero a decade ago (figure II.17B). Of the 20 largest publicly-listed private sector firms in EAP, 8 are technology-based service companies, with a combined market capitalization—a reflection of expected future revenue streams from these businesses, of US\$1.05 trillion (5.8 percent of China’s GDP

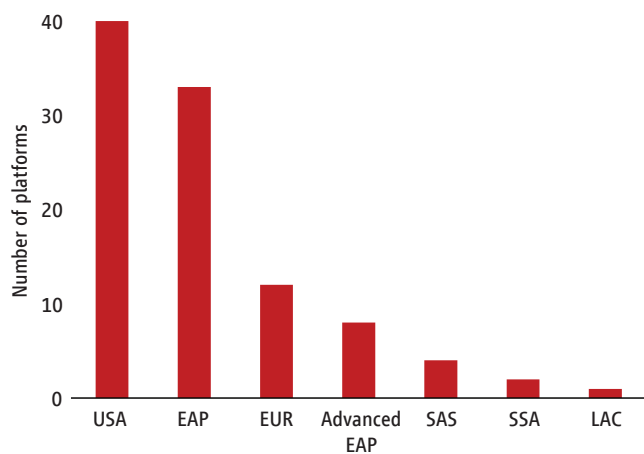
Figure II.16. Developed countries funds are more concentrated on average in B2B and developing country funds more in B2C



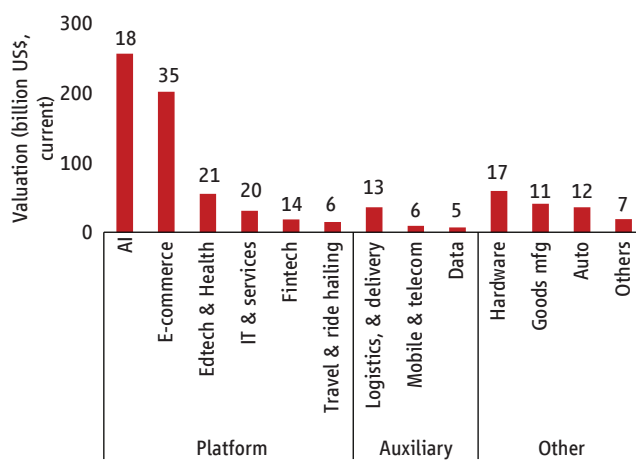
Source: FCI Digital Business Database.

Figure II.17. Platform business is expanding rapidly in EAP

A. Number of top 100 global digital platforms (including both public and private firms), by region



B. Share of valuation of EAP unicorns by industry



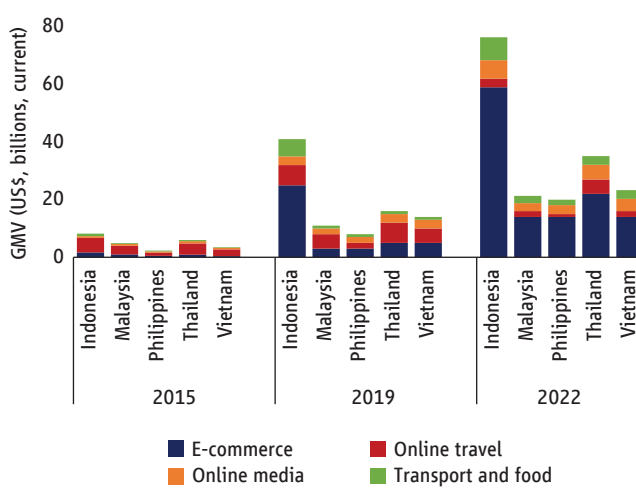
Source: UNCTAD (2022), FactSet Fundamentals, CB insights.

Note: Market capitalization is calculated based on the closing prices on the last trading day of the year. Number indicates the number of unicorn firms in each industry.

in 2023).⁴ Based on market capitalization, four of the world’s ten most valuable technology-based service firms were Asian in 2022; whereas the region had no companies in the global top ten in 2012.

A way to visualize the rapid growth over time of the platform economy is to consider the evolution of its gross merchandise value (GMV). Figure II.18 shows the estimated provided by Google, Bain and Temasek in their annual report on the digitalization of Southeast Asia (Google-Temasek-Bain, 2022). The Figure shows a rapid growth in estimated GMV between 2015 and 2022 for all the EAP countries considered. At current market rates, the size of the digital economy according to this measure is between 5 and 7 percent of GDP.

Figure II.18. The size of the platform economy is still modest but increasing rapidly (now between 5 to 7 percent of GDP)



Source: Google-Temasek-Bain report on Digitalization in SEA 2016–2022. SEA: Indonesia, Malaysia, Philippines, Thailand, Singapore, Vietnam.
Note: GMV: Gross Merchandise Values.

2.1.2. Digitalized households

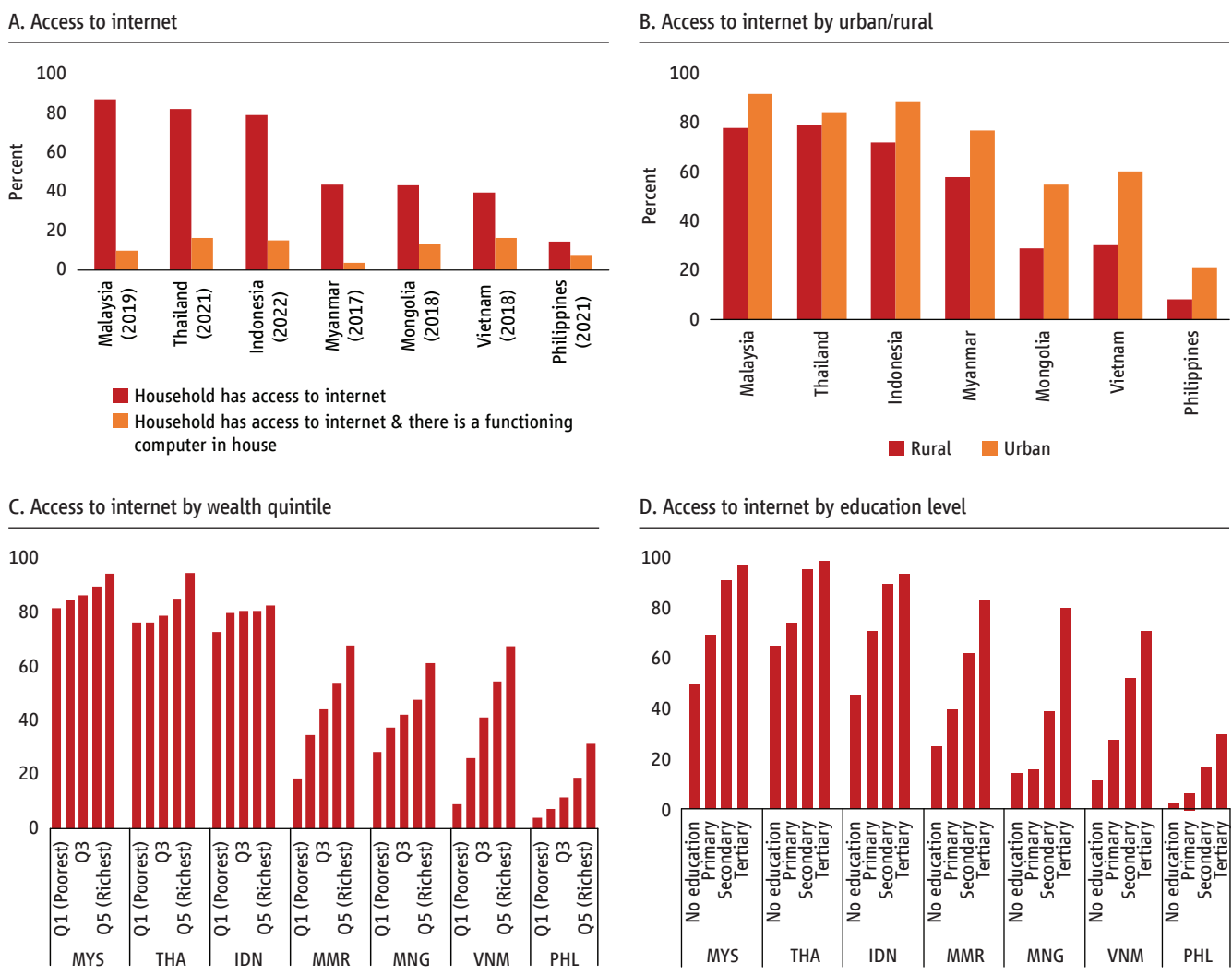
Beyond businesses, the digital connectivity of people, especially through mobile technology, has expanded dramatically in the last decade. Today, the EAP region is home to 1.5 billion active internet users, accounting for 70 percent of the total population. Growth in mobile broadband subscriptions has far outstripped fixed broadband growth since early 2010s, with subscriptions increasing from 437 million in 2013 to 2.0 billion in 2021. However, there are remaining gaps in

⁴ The 8 companies are: Tencent, Alibaba, Pinduoduo, Meituan, NetEase, JD mall, Baidu, Xiaomi.

access, both within and across countries. This is shown in figure II.19, which reports the share of households having access to internet in seven EAP countries. The figure shows large differences in internet access between countries. Moreover, all countries exhibit three sources of digital divides. The share of households with access to internet is sensibly higher in urban area than rural areas, among the richest households and the most educated ones.

An important caveat regarding the Figure is that it reports different definitions of access (according to the different availability of data) for different countries. Data for Malaysia, Myanmar, Philippines, and Vietnam are more likely to capture only the access to the fixed internet broadband, while data for Indonesia, Mongolia, and Thailand are likely to capture also mobile internet access. This might explain the relatively flatness of the income gradients in Figure II.19C for those countries.

Figure II.19. Internet access is unequal among EAP countries, with strong urban-rural, income and education divides



Source: World Bank East Asia and Pacific Team for Statistical Development using EAPPOV harmonized survey data from Indonesia SUSENAS 2022, Malaysia HIESBA 2019, Mongolia HSES 2018, Myanmar MLCS 2017, Philippines FIES 2021, Thailand SES 2021, and Vietnam VHLSS 2020.

Note: B. Country statistics computed from two different internet-access proxy indicators depending on survey availability: "The household has an internet subscription" (Malaysia, Myanmar, Philippines, and Vietnam; e.g., more likely capturing access to fixed internet broadband only), and "The household has internet access, whether inside or outside the house" (Indonesia, Mongolia, and Thailand; e.g., more likely capturing access to both fixed and mobile internet broadbands).

The evidence presented in this Section leaves little doubt that digitization has been accelerating across the region. The question is how deep the impact of these developments is, and how broad the potential consequences will be for productivity, jobs and development.

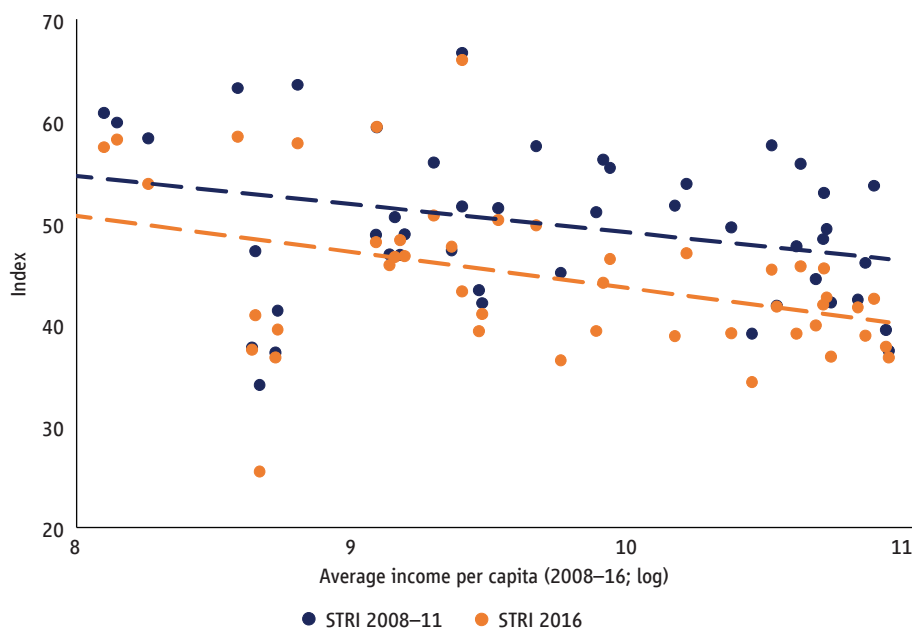
▸ 2.2. Significant but uneven services reforms

In addition to digitization, structural reforms are a second driver affecting what is happening in the service sector in the region. Major economies in EAP region have implemented significant structural reforms since the early 1980s, albeit a slowdown in the pace of reforms after the early 2000s. As discussed in our previous EAP Economic Update, the earlier reforms were broad-based and covered multiple sectors such as domestic finances, and telecommunication.

Focusing more specifically on the reforms in the realm of service trade, we present here evidence from the World-Bank-WTO Service Trade Restrictiveness Index (STRI). The STRI is a measure of the restrictiveness of an economy’s regulatory and policy framework with respect to trade in services. The STRI takes values from zero to 100, with 100 being the most restrictive regime and zero being the most open.

Figure II.20 plots for many developed and developing countries the values of the STRI index against the average level of GDP per capita. The blue dots and fitted line correspond to the year 2008, while the orange dots and line correspond to the year 2016. As the Figure shows, there has been a general tendency to the decline in the restriction to service trade across all countries. Interestingly, though, both in 2008 and 2016 several EAP countries still exhibited levels of restrictions above the ones predicted by their development level.

Figure II.20. Service trade restrictions decreased after 2008



Source: WTO-WB STRI Database.

Services reforms that facilitate FDI can help spur the diffusion of new technologies, especially when complemented with pre-requisites like high-speed broadband infrastructure (see Figure II.12). Reforms and digitalization are not independent, since diffusion relies on firms having the right incentives and the right prerequisites (Nicoletti et al. 2020). Greater openness to foreign competition can spur firms to upgrade technology and those with the complementary skills and high-speed broadband have the lowest costs of doing so. This is particularly the case for data technologies, which often involve large sunk costs and depend on the high-speed collection and transmission of information.

While these developments are interesting in themselves, like for the case of digitalization, a key question is that are the potential impacts of reforms on productivity and jobs. This is where we turn next.

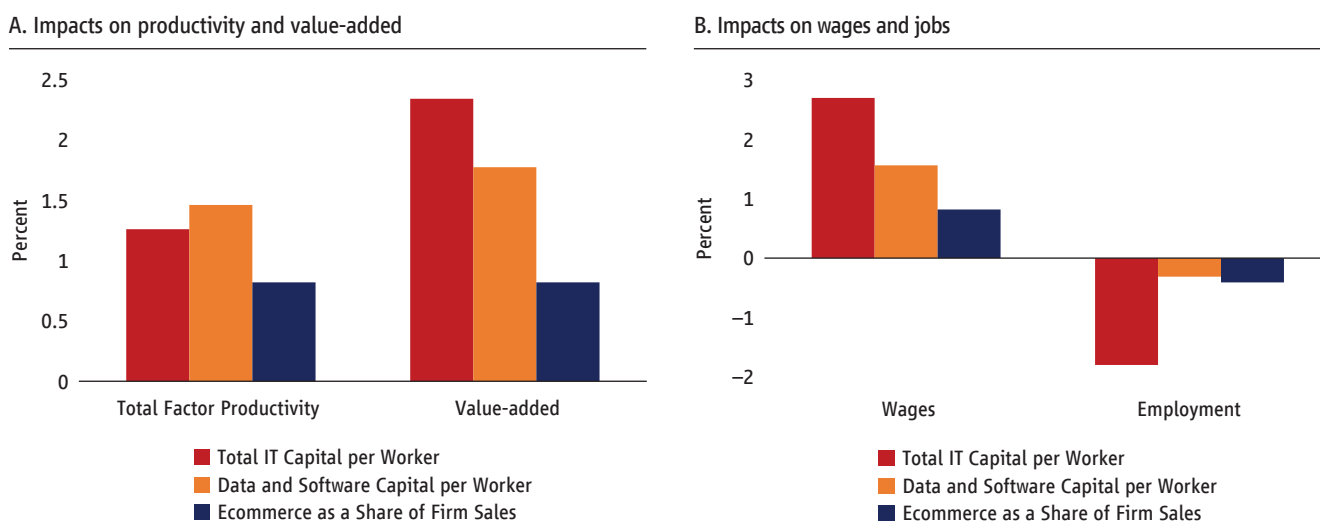
3. Why do digitalization and services reforms matter?

▸ 3.1. Productivity

3.1.1. Digitalization and productivity

The link between digitalization and productivity is as important as it is complex. Most existing economic and empirical research focused on developed economies has generally found a positive link between digitalization and productivity.⁵ Evidence from the Philippines shows that services firms who adopt digital technology increase their productivity, raise wages and increase their value-added (figure II.21). The productivity increases are larger for adoption of IT or data and software capital, than the use of e-commerce.

Figure II.21. Technology adoption increases services firms' productivity, value-added and wages, but reduces in employment



Source: Philippines Statistical Authority – ASPI and CPBI Databases.

Notes: The table shows the results from regressions of firm performance metrics on firm technology use, including firm and year fixed effects. To aid comparisons across technologies, the figure presents the estimated percentage change in firm performance from a one standard deviation change in technology usage, roughly equivalent to going from the median to the ninetieth percentile change. We express IT capital per worker and Data and Software Capital per worker in logs. To avoid dropping zero values, we add one Philippine Peso per worker before taking logs. Representative statistics for business sector services firms (ISIC rev 4 divisions 45-82) with twenty or more employees, for the period 2010 to 2019. All coefficients are statistically significant at the 90% level or more.

⁵ Establishing a causal link is admittedly harder, since it is not easy to disentangle the impact of digitalization on productivity from the effect of productivity on digitalization adoption.

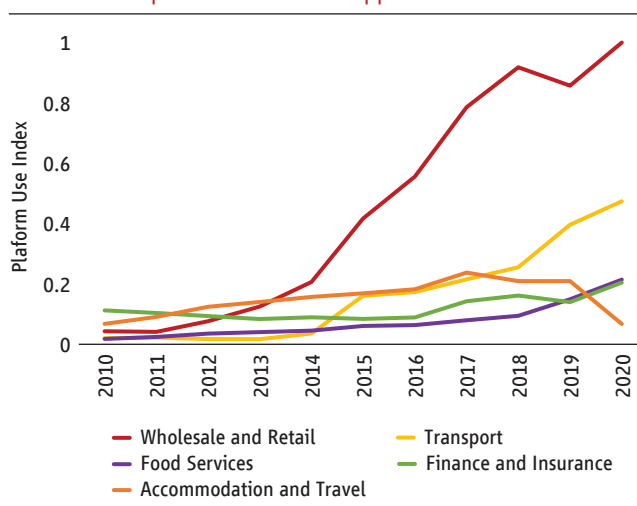
A large literature shows that turning technology into productivity requires reorganization to take advantage of it, as technology adoption alone is rarely enough. For instance, adopting data technologies often requires substantial organizational change and complementary sunk investments, both in the skills and infrastructure to collect and store data, and the reorganization of processes to leverage data analytics in business decisions. A recent paper studying OECD economies (Gal et al 2019) finds that the positive association between digital technology adoption and productivity is stronger in the absence of ICT skills shortages. Similarly, a recent experiment on the productivity effects of the introduction of generative Artificial Intelligence (“AI”) for customer support agent reveals a positive average productivity effect. The effects are also found to be highest for the lowest skilled workers, and negligible for the most skilled (Brynjolfsson et al. 2023).

A second dimension of the link between digitalization and productivity is the impact of the diffusion of digital platforms. These platforms present a competition shock for incumbent firms in the sectors in which they operate, for example e-commerce platforms affect traditional wholesalers and retailers by offering customers new ways of connecting with suppliers, e.g., through online matching, review and rating systems (Rivares et al. 2019). We see a rapid diffusion of such platforms in the Philippines. We follow Rivares et al. (2019) and proxy the diffusion of platforms using data on Google search trends for major platforms (figure II.22). There is a particularly rapid explosion in wholesale and retail, with major e-commerce platforms such as Grab, Lazada and Shopee appearing in the period 2012–2015, and to a lesser degree transport and accommodation and hotels (at least pre-COVID).

In the case of the Philippines’s service sectors, online platforms diffusion is associated with higher productivity, and growing sales of the firms in the sector in which platforms operate (figure II.23). Platform diffusion also affect firms that use their services, increasing their productivity and raising their wages. As the impacts of platform competition ripple through supply chains, we find the magnitude of productivity gain is triple the size of the direct own-sector effect.

The results obtained for the Philippines are reminiscent of the findings in Rivares et al (2019), who consider the impact of the diffusion of digital platforms on multifactor productivity of service firms in 10 OECD countries and dig deeper into the distinctions by types of platforms.⁶ They find that platforms support the productivity of the average incumbent service firm while stimulating labor reallocation towards the most productive of them (figure II.24A). But the effects depend crucially on the type of platform considered. “Aggregator” platforms that connect existing service providers to consumers (e.g., Booking.com) have tended to push up productivity, profits and employment of existing service firms. “Disruptive” platforms that enable new types of providers to compete with existing ones (e.g., Uber, Airbnb) are not found to have had a significant effect on the productivity of existing providers, but tended to reduce their mark-ups, employment and wages. Finally, the overall positive effects of platforms on productivity are dependent on the level of competition among platforms (figure II.24B), and on prevailing product and labor market regulations (figure II.24C).

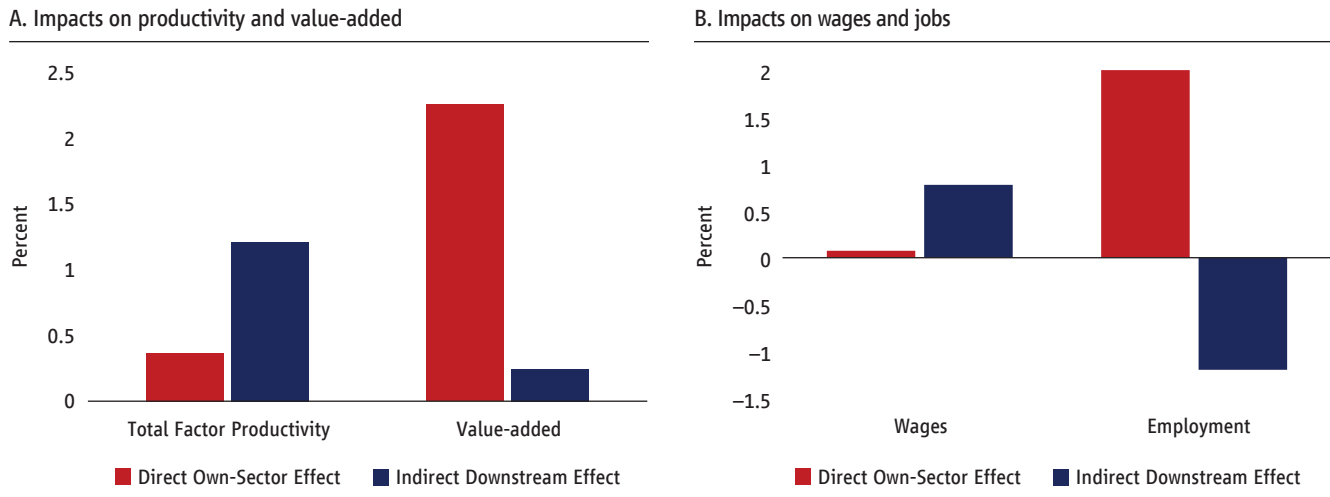
Figure II.22. Rapid diffusion of online retail and transport platforms in the Philippines



Source: World Bank calculations based on Google Trends Data.
Notes: Platform use is proxied using the frequency of Google searches - following Baillin Rivares et al. (2019). Major online platforms for each sector are taken from the Philippine Competition Commission (2020) and cross-checked using Philippines’ web-traffic data from Semrush. The chart reflects forty-two platforms (nine retail, eleven transport, eight food service, seven finance and seven travel and accommodation). Multi-sector platforms (e.g., Grab) are allocated to individual sectors using additional keywords (e.g., searches for GrabTaxi vs GrabFood). Platform use index is normalized relative to retail platform use in 2020.

⁶ See also Cusolito et al (2020) for evidence from developing countries on the positive productivity effects of digitalization in the manufacturing sector.

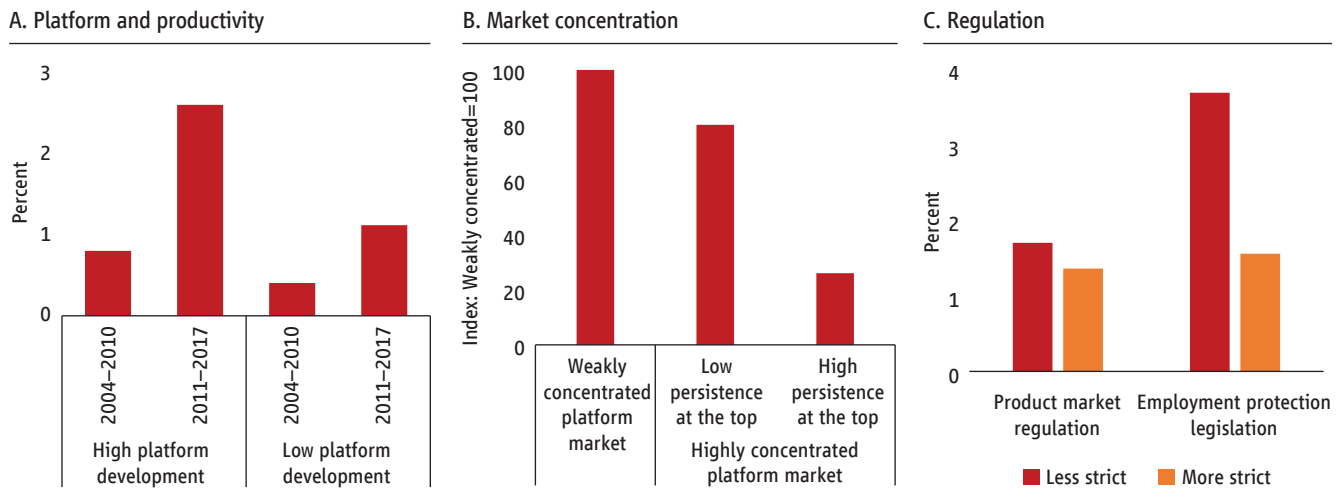
Figure II.23. Online platform diffusion increases the productivity and scale of incumbent services firms in these same sectors, and leads to larger productivity gains in downstream sectors



Source: Philippines Statistical Authority – ASPI and CPBI Databases.

Notes: The table shows the results from regressions of firm performance metrics on measures of platform diffusion, including firm and year fixed effects. To aid comparisons across regressions, the figure presents the estimated percentage change in firm performance from a one standard deviation change in platform diffusion, roughly equivalent to going from the median to the ninetieth percentile change. Direct own-sector results reflect the correlations between firm performance and platform diffusion in Accommodation and Travel, Food Services, Transport and Wholesale and Retail. The downstream platform diffusion measure is a weighted sum of upstream platform diffusion, with the weights reflecting intermediate input shares taken from the 2010 OECD ICIO, we exclude the use of own-sector intermediates in this calculation. Indirect downstream effects are representative of manufacturing and services sectors (ISIC rev 4 divisions 10-33 and 45-82) for the period 2010 to 2019. Wage correlations are statistically insignificant for direct own-sector effect, as is value-added correlations for indirect downstream effect, all other coefficients are significant at the 90% level or more.

Figure II.24. Platforms improve productivity, but the effects depend on competition and regulation



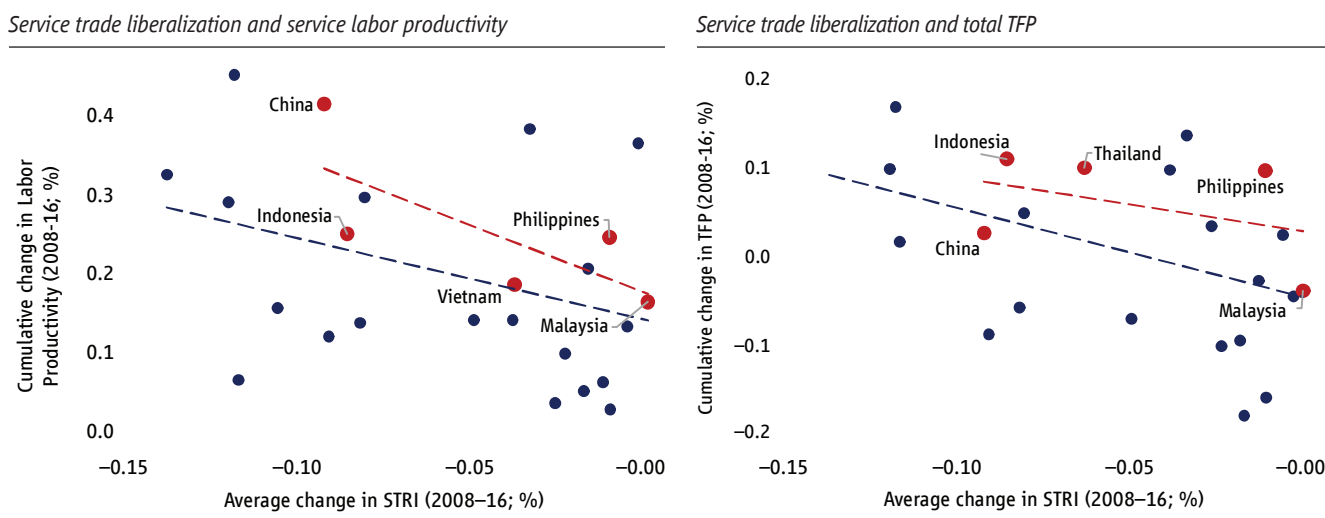
Source: Rivas et al (2019).

Overall, the existing literature and our new evidence suggest that digitalization can have positive impacts on productivity, but these impacts are heterogeneous and depend on complementary factors, such as skill endowments, the regulatory environment and level of competition.⁷

3.1.2. Service reforms and productivity

In addition to the adoption of digital technologies, structural reforms that open service sectors to greater competition can spur productivity growth in services (figure II.25). Increased openness in services implies increased foreign presence, foreign entry, and competition between foreign and domestic providers. This competitive dynamic is expected to deliver better and more reliable provision of existing services, the introduction of new varieties of services, and competitive pricing in the services sector. These are the main channels through which service trade liberalization can lead to increased productivity, value added, and jobs in the services sector, and improved economy-wide performance through inter-linkages between the productive sectors.

Figure II.25. Service Trade Reforms increase productivity

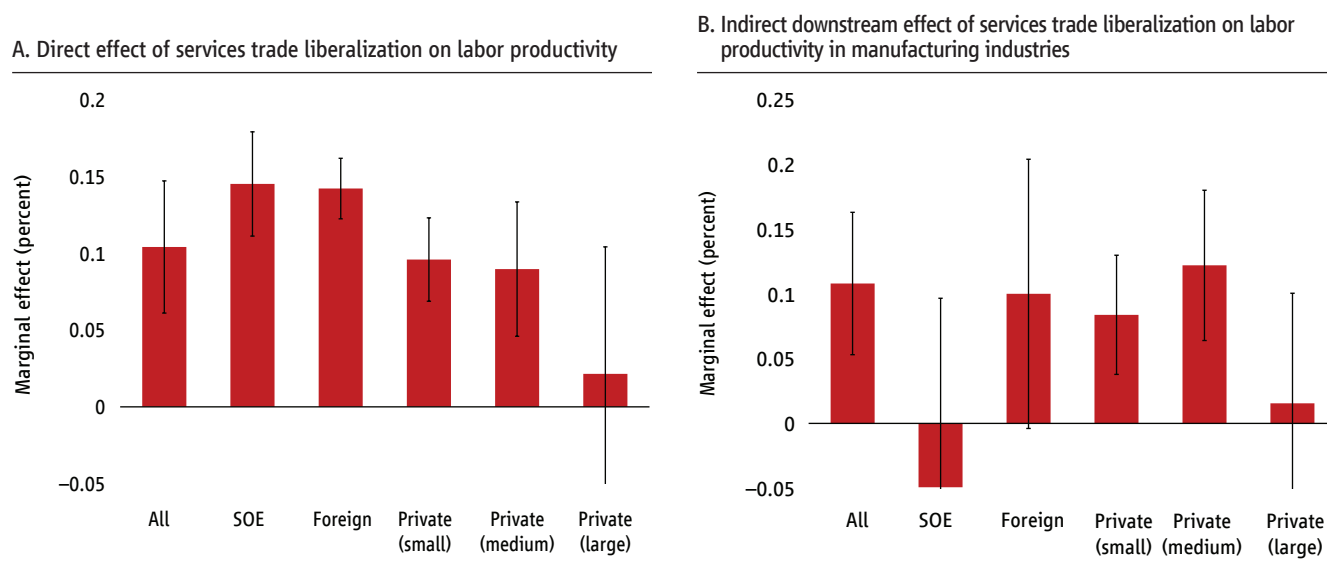


Source: World Bank staff analysis using WDI, PWT and WTO-WB STRI dataset.

Especially given the growing role of services in manufacturing, these positive productivity impacts extend beyond the direct impact on services to manufacturing firms that use services. The economic literature has investigated this “downstream effect”, finding positive effects of services trade liberalization on the productivity of downstream manufacturing firms (Mattoo et al., 2014).

Empirical evidence from EAP countries confirms these direct and indirect productivity gains. New firm level evidence for Vietnam confirms positive productivity effects of service trade liberalizations on both services firms as well as positive downstream productivity effects on manufacturing firms. Following the country’s accession to the WTO in 2007, Vietnam has made noticeable progress to liberalize services trade. Specifically, between 2008 and 2016, the services trade restrictiveness index (STRI) declined sharply in sectors such as Finance, Transport, and Professional services. This decline in service sector restrictiveness was associated with an average 2.9 percent annualized increase in value-added per worker in these own sectors (e.g., equivalent to a 23.5 percent increase in labor productivity over the 2008–2016 period) (figure II.26A). Furthermore, the same liberalization in services sectors is associated with a 3.1 percent increase in labor productivity of manufacturing enterprises that source services inputs, benefiting small and medium private enterprises most significantly (figure II.26B).

⁷ These qualifications are reminiscent of the findings of early studies on the impact of ICT technology adoptions, such as Bugamelli and Pagano (2004).

Figure II.26. Services trade liberalization have direct and indirect productivity gains

Source: World Bank staff estimation based on data from Vietnam enterprise surveys 2008 and 2016.

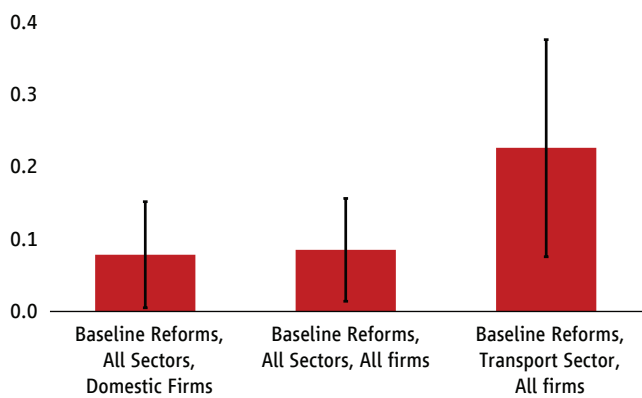
Note: OLS regression results. The dependent variable is the change in log value-added per worker between 2016 and 2008. The main explanatory variable is the change in STRI values in Trade, Transport, Finance, Professionals, and Telecommunication sectors between 2016 and 2008 in Panel A, and the change in the "downstream" STRI for manufacturing sectors in Panel B. The downstream STRI is a sector-specific measure for each 2-digit manufacturing sector, calculated by the average STRI of the above five services sectors weighted by the corresponding purchasing value from each manufacturing sectors. The regression sample in panel A consists of all enterprises operating in Trade, Transport, Finance, Professionals, and Telecommunication sectors, and all manufacturing enterprises in Panel B, in 2008 and 2016. All regressions control for firms' baseline revenue and employment. Standard errors clustered at the industry level.

The analysis also underlines how these productivity effects are heterogeneous across different firm types. In the case of the service sector firms, the stronger effects are found within the foreign firms and the SOE. When analyzing the downstream effects on the manufacturing sectors, small and medium sized private firms seem to benefit the most from the service trade liberalization.

Firm level evidence from Indonesia is also consistent with positive but heterogeneous productivity gains in both services and manufacturing from reforms that ease regulatory constraints in service sectors. First, relaxing restrictions on specific services sectors is systematically associated with improvements in the perception of performance of those sectors. Those sectors in which FDI restrictions were relaxed the most in the post AFC period, were those perceived as performing better, by their users in downstream sectors. Second, services sector reforms contributed to increased productivity of manufacturing firms that used services intensively. A ten-percentage point reduction in FDI restrictiveness in services is associated, on average with an increase in productivity by 8–9 percent (figure II.27). Considering the extent of services reforms during the period, our results reveal that these added 0.4 percentage points annually to productivity growth over the period 1997–2009, or about 8 percent of the total productivity growth during the period. The gains accrued to domestic and foreign firms alike,

Figure II.27. Relaxing restrictions to services FDI are associated with increased manufacturing productivity

Estimated effect of a 10-percentage point reduction in the FDI restrictiveness index on Services on TFP in downstream manufacturing



Source: World bank staff analysis based on work by Duggan, Rahardja, Varela (2013).

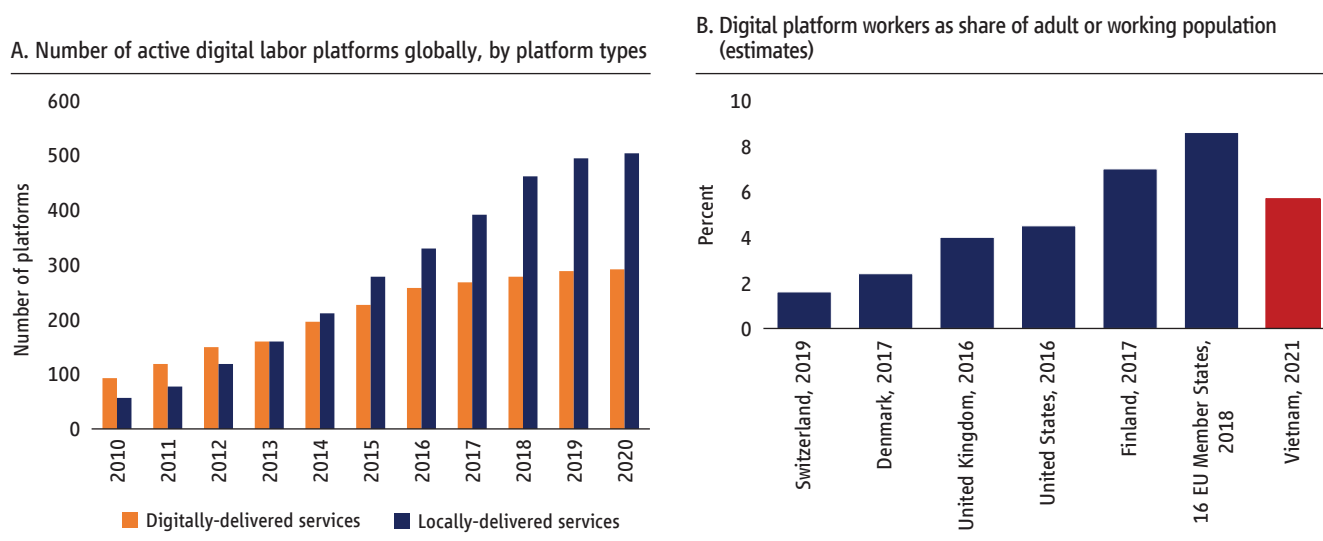
and disproportionately more to better performing ones. The top quartile of performers exhibited increases in productivity due to services sector reforms twice as large as those experienced by median performers. Likely, better performing firms had better capabilities and technologies to benefit from better services inputs.

3.2. Jobs

Digitization and reforms are also affecting jobs, in the service sector. Digitalization can generate employment through the creation of new tasks but also create employment losses as some tasks are replaced. For example, Digital platform firms have created employment for millions of people working as drivers for delivery and ride-hailing services at the low-skill end of the labor market, while also boosting demand for higher skilled labor, such as programmers and managers. At the same time, the emergence of these platforms can reduce jobs in traditional sectors.

Estimates from the International Labor Organization (ILO) show a rapid increase in the number of digital labor platforms over the last decade, with the number active platforms mediating locally delivered services (ride-sharing and deliveries services) nearing 500 globally, and those mediating digitally delivered services approaching 300 (figure II.28A). The rise in digital labor platforms has provided new employment opportunities for workers worldwide. Survey estimates, which vary significantly in estimation methodologies and currently available mostly for developed countries, suggest that the number of workers engaged on digital labor platforms either fulltime or partially could have surpassed 10 percent of the population in several EU Member States (Brancati et al. 2020), and exceeded 5 percent of the labor force in Vietnam (figure II.28B).

Figure II.28. Number of digital labor platforms for (i) locally-delivered and (ii) digitally-delivered services have increased significantly. Jobs obtained through digital labor platforms represent a non-trivial share of the workforce



Source: ILO 2021, based on Crunchbase database.

Note: A. Digitally-delivered services include microtask, freelance and competitive programming. Locally-delivered services include ridesharing and deliveries services. Statistics include only currently active platforms. B. Compilation based on surveys implemented with different methodologies: Switzerland FSO (2020), Ilsøe and Madsen (2017), CIPD (2017), Farrell, Greig and Hamoudi (2018), Statistics Finland (SF) (2018), Urzi Brancati, Pesole and Fernández Macías (2020), and World Bank staff estimation based on Vietnam’s LFS 2021. Vietnam’s estimate is for location-based platform jobs.

Digital platform-based jobs permeate across a diverse set of service sectors and therefore vary significantly in characteristics. One way to examine the heterogeneity of these jobs is by looking at differences in the level of skill intensity required. Survey statistics from a recent ILO global study show that workers on platform jobs for digitally-delivered services are generally

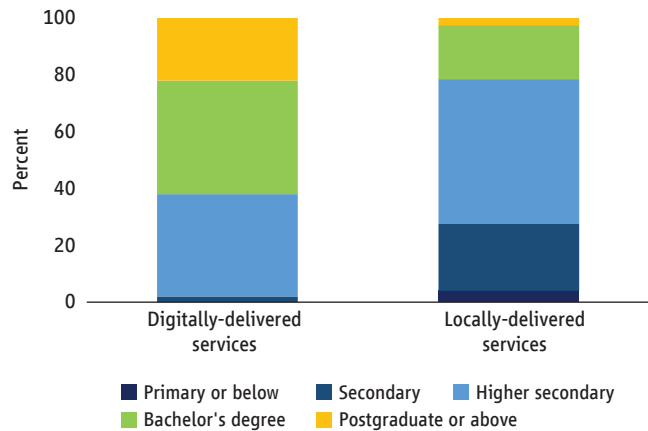
highly educated, with over 60 percent having obtained at least a bachelor’s degree (figure II.29). In contrast, jobs on locally-delivered services are dominated by the less-educated workforce, with only about 20 percent having obtained higher education.

Another way to observe the skill intensity, particularly of platform-based jobs for digitally delivered services, is by looking at the demand side, with measures such as the volume of job postings across task types. Job postings originated from EAP countries on the largest global platforms for digitally-delivered services—having grown rapidly since 2017 (figure II.30A)—are concentrated in high skilled-intensive service tasks such as software development and IT or creative and multimedia, and less so in lesser skilled sectors such as clerical and data entry, or sales and marketing support (figure II.30B).

We have not so far addressed the issue that new technologies, such as those embodied in digital platforms, both create new tasks and replace existing tasks. The Philippines data described in Section 2.1 provides a preliminary perspective on this issue. As shown in figure II.23, platforms lead to an increase in employment of the firms in the sectors in which platforms operate, but employment declines in sectors that use the services of the platforms. Platforms increasingly bundle many services, e.g., an e-commerce provider offers not only retail services, but also transport or marketing or finance or even data analytics services—with multi-channel platforms like Grab being a salient example of this. The downstream employment falls may reflect downstream firms substituting

Figure II.29. Platform jobs for digitally-delivered services often require higher education. Those for locally-delivered services are dominated by less-educated workforce

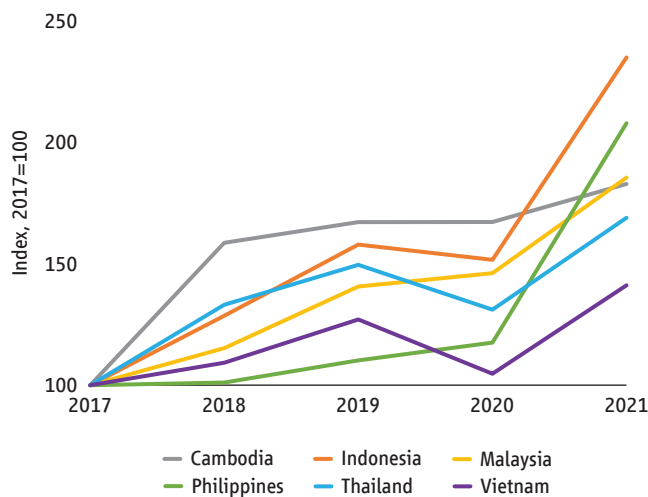
Share of workers on digital labor platforms, by education level and platform type



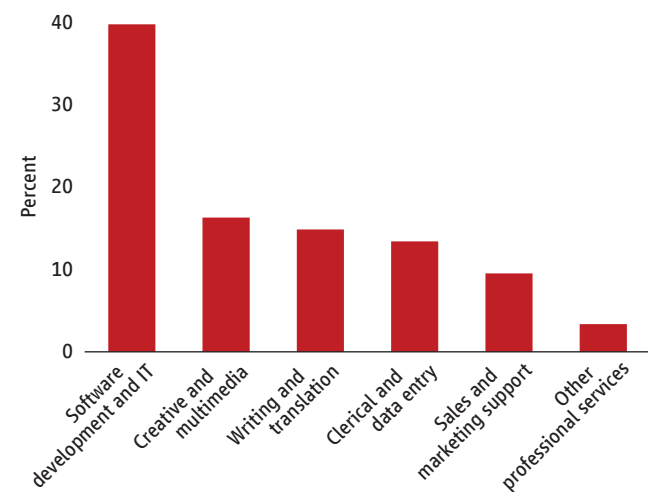
Source: ILO 2021.
 Note: digitally-delivered services include microtask, freelance and competitive programming. Locally-delivered services include taxi and physical delivery.

Figure II.30. Job postings on major labor platforms for digitally-delivered services have increased, especially for skilled-intensive services tasks

A. Growth in postings from EAP countries on major global labor platforms for digitally-delivered services



B. EAP-originated job postings on major global labor platforms for digitally-delivered services, by task types



Source: Oxford’s Online Labour Index (OLI).
 Note: World Bank staff calculation, using OLI’s statistics for the number job postings originated from EAP countries on the ten largest global digital labor platforms for digitally-delivered services.

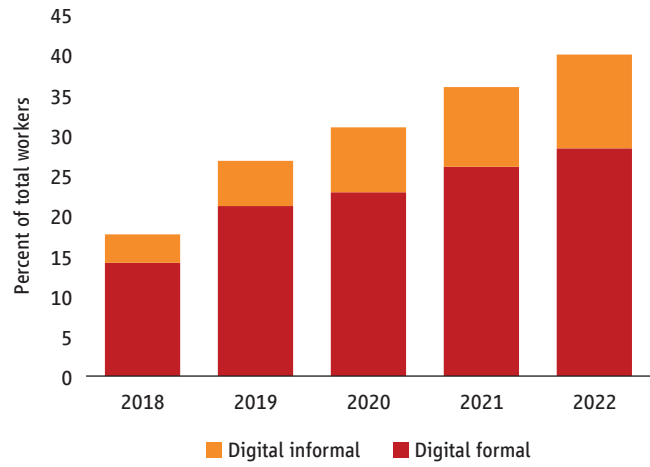
platform-provided services for services tasks that their own workers previously undertook. Note however, that the downstream job losses are more than offset by the direct own-sector employment creation—such that the net employment effect of platforms appears to be positive.

A deep dive study in Indonesia using multiple rounds of labor force surveys offers more granular insights into how digitalization is shaping employment in the region. Defining digital labor as workers who use digital technologies and internet for their primary work, statistics indicate a fast-paced increase in the share of digital employment in Indonesia’s labor force (figure II.31). Digital jobs account for nearly 40 percent of the workforce in 2022. Within digital employment, significant increase is noticeable in the informal sector—including the self-employed and individual contractors, which could be associated more directly with the rise in digital platform-based jobs.

Aggregate statistics across all sectors in Indonesia’s economy show that digital jobs, whether conducted in the formal or informal sectors, require higher level of education than jobs not involving digital technologies (figure II.32A). While close to 40 percent of formal digital workers have a university degree or above, only less than 20 percent of non-digital workers do so. Across economic sectors, digital employment represents a larger share in services than in agriculture and most manufacturing sectors (figure II.32B). In addition, there is also a noticeable heterogeneity within

Figure II.31. Indonesia focus: work involving digital technologies is growing rapidly

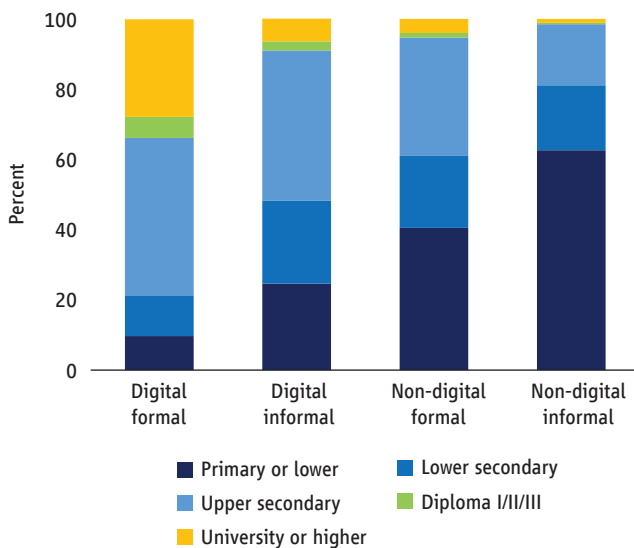
Share of workers using digital technology for work, in formal and informal sectors



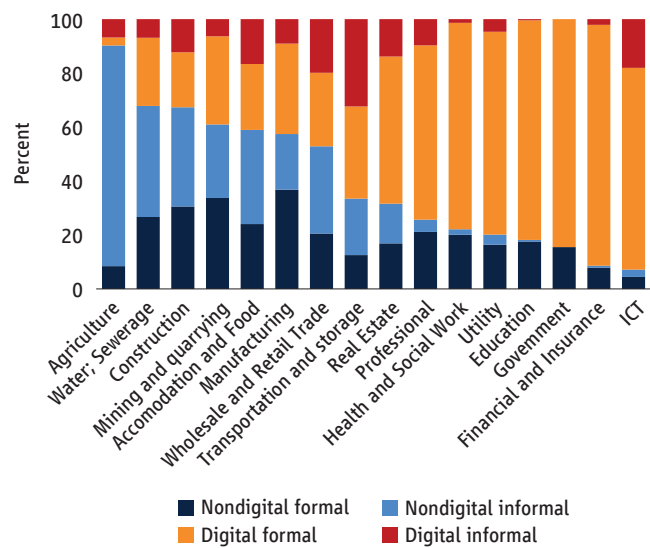
Source: EAPCE analysis using Indonesia’s Labor Force Surveys 2018–2022.
Note: Digital workers are defined as workers who use digital technologies and internet for work in primary job.

Figure II.32. In Indonesia, digital jobs often require higher level of education and dominate in more technical service sectors

A. Share of digital employment by educational levels



B. Share of jobs involving digital technologies, by sector (2022)



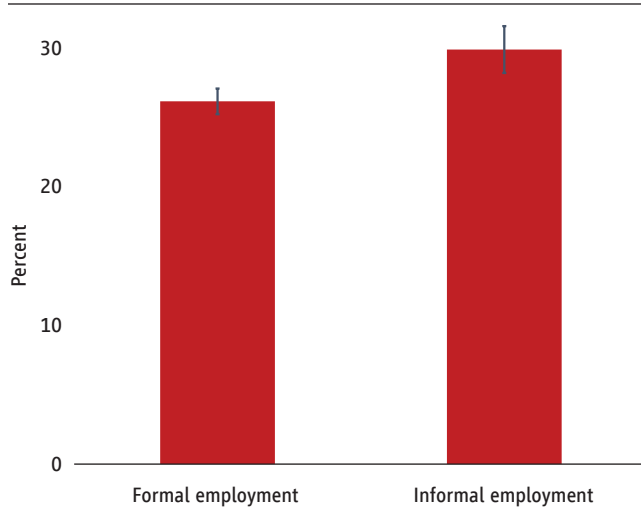
Source: EAPCE analysis using Indonesia’s Labor Force Surveys 2022.
Note: Digital workers are defined as workers who use digital technologies and internet for work in primary job.

the services sector. Digital employment contributes a higher share in more technical services such as ICT, financial, and insurance, and a lower share in less technical services, such as wholesale, retail, and transportation.

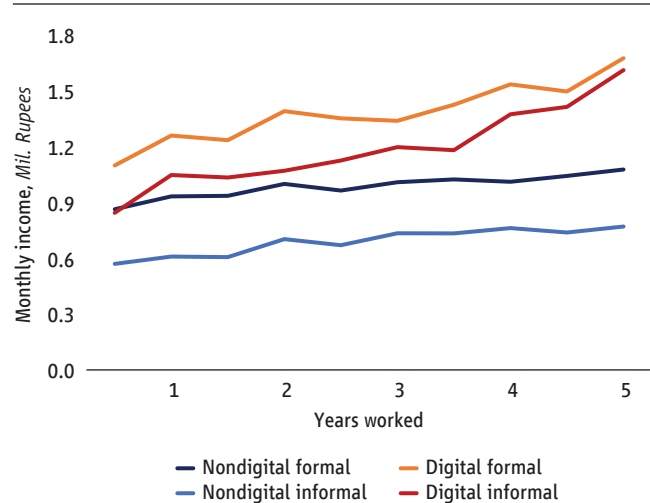
The skill premium for jobs involving digital technologies is likely transmitted into higher wage premium for digital employment. Estimates from an empirical exercise that control for various characteristics of the workers suggest a statistically significant conditional wage premia of above 20 percent for jobs that require digital technologies (figure II.33A). Such positive wage differential expands over the job tenure (figure II.33B).

Figure II.33. Indonesia focus: digital jobs earn a wage premium, which increases over time

A. Conditional wage premia of jobs involving digital technologies in formal and informal sectors



B. Average wages by job tenure



Source: EAPCE analysis using Indonesia's Labor Force Surveys 2019.

Note: Digital workers are defined as workers who use digital technologies and internet for work in primary job. Left panel shows conditional wage premia estimated from Ordinary Least Square regressions controlling for individual's age-group, gender, sector, location, education, and hours worked.

Finally, new technological developments, such as the diffusion of generative AI, could further affect the employment dynamics explored in this section. Box II.1 discusses AI and its potential impact on the labor market in more detail.

3.3. Access

Digitalization and reforms matter not only for jobs and productivity, but also for access to key services, such as education, health, and finance. In the present section, we explore how the interplay between technology and policy can provide both better access to these services, which are key to enhance the human capital (capacities) needed to harness the greater opportunities offered by the increase in productivity and the higher demand for skills explored in the previous sections.

3.3.1. Education

Investments in literacy and numeracy skills have been pivotal in spurring economy-wide productivity growth, serving as a cornerstone for East Asia's economic miracle (World Bank, forthcoming). However, future growth is at risk given low levels of learning in today's middle-income East Asia Pacific. Based on 2018 data, in eight countries within the region (Cambodia,

Box II.1. AI and jobs

Artificial Intelligence, or AI, is the latest, rapidly spreading digital technology associated with the ability of machines to perform tasks that are typically associated with human intelligence, such as learning and problem-solving.

Because AI has been compared to previous waves of computerization and automation. Several fundamental differences exist between these technologies. Novel computing capacities in areas such as image recognition, robotic manipulation, text processing, and pattern recognition, and, more generally, the ability to learn and improve rapidly in autonomous ways—represent a break from the hand-coded, rules-based programs of pre-AI technologies.

Related to AI's potential impact on jobs, occupations deemed vulnerable to pre-AI automation technologies often consist of routine and repetitive tasks, e.g., those in lower-skilled manufacturing and services sectors such as assembly line workers or office and administrative support. In contrast, occupations theoretically likely to be replaceable by AI include relatively higher-skilled services occupations, e.g., those utilized for intricate tasks that demand human-like judgment and intelligence, such as personal financial advisors, interpreters, and surgeons (Handel 2022, OECD 2019).

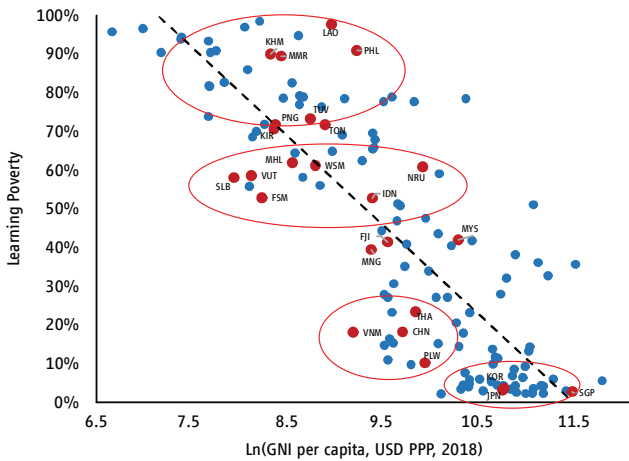
The theoretical impact of AI on labor demand is ambiguous in the literature. On the one hand, advances in machine learning could improve the quality of machines in solving tasks previously performed by human, which implies a displacement of labor. On the other hand, improvements in the task of prediction could complement labor demand via the creation of new tasks (Brynjolfsson et al. 2017, Cockburn et al. 2018, Agrawal et al. 2021). Empirical evidence regarding AI effects on the labor market is limited. While there is mixed evidence on the aggregate employment impact (due to the opposing job-creation vs. job-displacement effects), early firm-level evidence in the US and India suggest that establishments whose occupational structure is compatible with AI technologies increased their AI-related hiring while reducing their non-AI and overall hiring (Acemoglu et al. 2022, Copestake et al. 2023).

Kiribati, Lao PDR, Myanmar, Papua New Guinea, the Philippines, Tonga, and Tuvalu), more than two-thirds of the children struggled to read or understand age-appropriate texts. Notably, even in upper-middle-income countries like Malaysia, this figure exceeds 40 percent (figure II.34A). Conversely, high-income countries in the region such as Japan, Korea, Rep. and Singapore (represented as red dots) all report impressively low learning poverty rates, ranging between 3 and 4 percent. Even within the countries, students from disadvantaged socioeconomic backgrounds also demonstrated poorer foundational learning outcomes than their wealthier peers (figure II.34B).

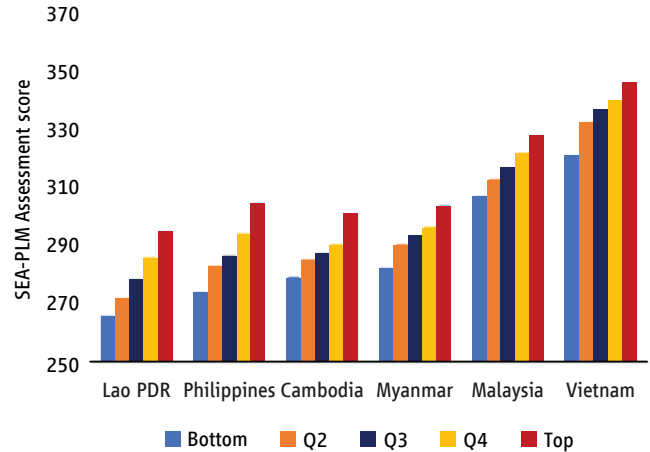
The growth of technological infrastructure and innovation holds the potential to help education systems improve student learning outcomes and help mitigate learning inequality. Technology is particularly helpful in making economic systems more productive; similarly, technology has the potential to help education systems produce more learning. However, this is only true if our education systems are both (i) aligned with student learning and (ii) have the capacity to use the technology effectively. This requires both education system capacity and system policy alignment with learning. Existing evaluations highlight the variable impacts of EdTech on student learning outcomes in middle-income countries of the region, from negative (–0.07 Standard deviation of outcomes; SD) to positive and large (0.98 SD) (figure II.35). Many of the available evaluations test the efficacy of tech treatments at small scales, rather than the effectiveness of EdTech programs implemented by ministries of education at large scale. As illustrated in the variety of impacts below, a mix of factors beyond the efficacy of a specific program led to significantly different impacts such as implementation capacity, teacher compliance, and usage intensity.

Figure II.34. Significant gaps in foundational learning outcomes exist between high- and middle-income countries in the region and among students of varying socio-economic statuses

A. Many middle-income EAP countries have learning poverty rates above the level their incomes would predict

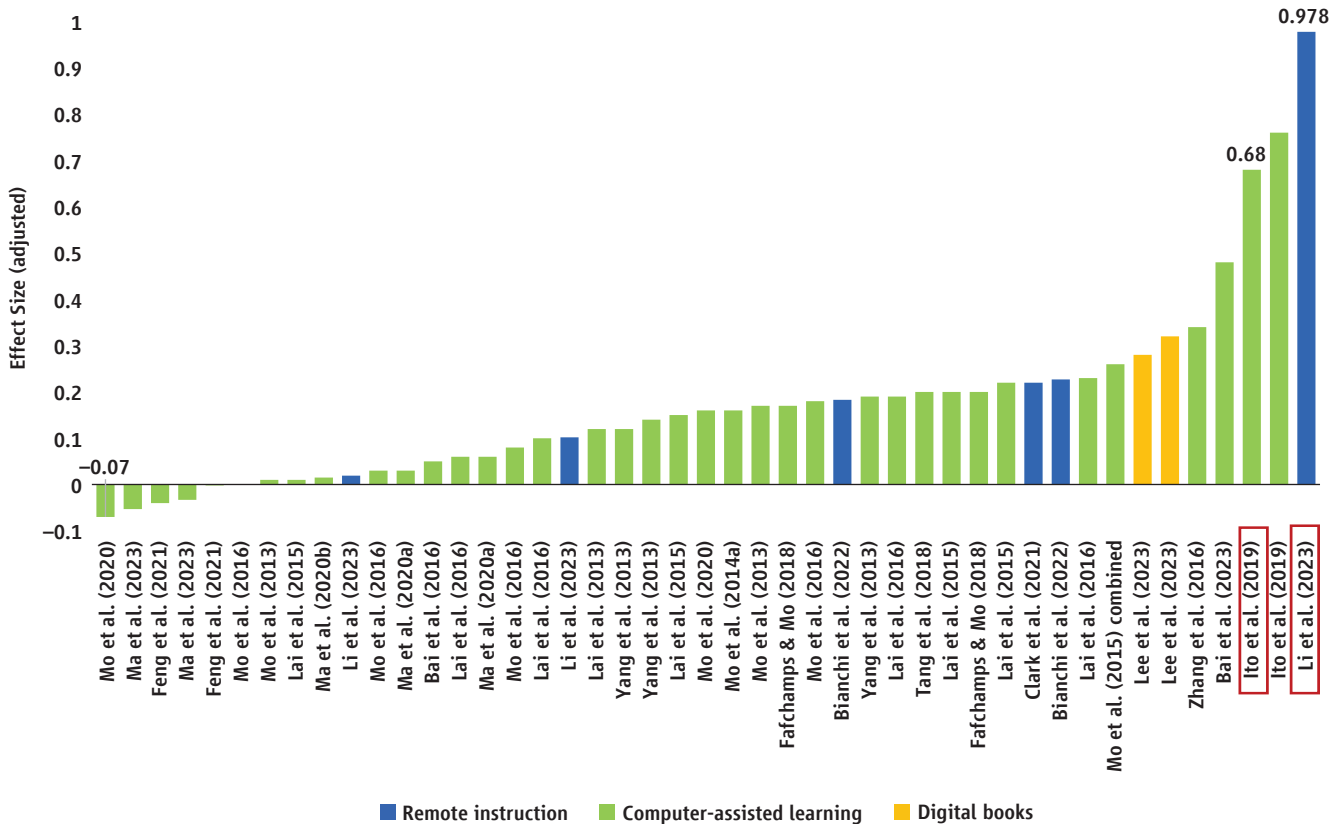


B. Poorer students in the region have poorer foundational learning outcomes than wealthier students



Source: World Bank, forthcoming.
 Note: B. Average proficiency score in SEA-PLM points by national quintiles of social factors.

Figure II.35. Existing studies from middle income countries in the EAP region show large variation in effect sizes on student learning of EdTech programs (-0.07 SD to 0.98 SD)



Source: Yarrow et al., forthcoming.

Among the studies above:

- An evaluation of a dual-teacher program in China shows the potential of computer-assisted instruction to improve student academic outcomes and, crucially, teacher instructional practices in poor and remote areas (Li et al., 2023). Lecture videos and teaching materials from urban elite schools were made available through the internet to more than 200 remote Chinese middle schools. Teachers in nine schools included in the evaluation spent an average of 5.25 to 7.25 hours per week watching these lecture videos for their class preparation, allowing them to improve their own teaching practices over the long term. In addition, a sub-set of students were shown expert-teacher lectures in addition to exposure to improved teaching practices. The difference-in-differences analysis found substantial improvement in learning outcomes—a 0.98 SD increase in student math scores over the three-year middle school education—a product of both the direct and indirect effects of computer-assisted instruction.
- Work with an innovative math learning program in Cambodia showed large impacts on student learning but was not implementable at scale (Ito et al., 2019). Working in five rural schools with 1,600 students, the evaluation found an impact of 0.68 SD increase in student math scores. However, program implementation required an additional person to provide in-class additional support as well as driving the computers to-and-from school each day, as the schools had no electricity to charge them. This example shows the importance of physical infrastructure (electricity) as well as teaching skills to effectively implement EdTech approaches, regardless of the merits of the approach itself.
- The government-led computer-assisted learning program (CAL) in rural China, examined by Mo et al. (2020), failed to improve student achievement or teacher training quality. Compared to schools that employed the same treatment but were implemented by an NGO, student scores decreased in the 40 government-implemented schools (–0.07 SD) after one academic year. Teachers in the government program tended to substitute the EdTech intervention for regular instruction and did not follow the required protocol. This was likely because government officials were less inclined to directly monitor the implementation process. In this context, institutional capacity and commitment played a determinant role, independent of the tech intervention itself.

Policymakers can learn from these experiences to better use EdTech interventions to improve public education service provision. The first example above demonstrates the importance of ensuring that EdTech programs are properly implemented and monitored, and do not crowd-out other learning activities. The second example shows the need for adequate infrastructure and improved teacher training, while the third is an example of an EdTech program that leverages top-performing teachers to bolster the teaching quality of their low-performing counterparts and enhance academic outcomes for rural students.

EdTech can be effectively incorporated into the three key policy levers aimed at enhancing foundational student learning outcomes identified in the World Bank’s Bridging the Basic Learning Gap flagship report (World Bank, forthcoming): strengthen teacher selection, enhance teacher capacity, and encourage greater teacher effort. Recruiting teachers who are committed to improving the learning outcomes of all students using a range of tools including tech can help improve system performance. Teacher capacity is an area that urgently requires attention, as the majority of teachers expected to be employed in the region by 2030 are already in the system (World Bank, forthcoming). Empirical evidence from the region indicates that EdTech can support improvements in teaching practice (e.g., Chen et al., 2020). Technologies can be combined with non-tech interventions, such as financial incentives and teacher performance scorecards, to foster teacher engagement with communities and elevate student learning outcomes (e.g., Gaduh et al., 2020).

David (1990) points to the delayed impact of technology on economic productivity, where computers and electricity among other inventions required networks and systems to be created before they could be observed in productivity statistics.

Similarly, EdTech holds significant potential for enhancing learning outcomes and, consequently, future economic growth, though widespread adoption of effective EdTech in EAP MIC school systems is still in its early stages (Yarrow et al., forthcoming). To maximize the benefits of EdTech in the long term, policymakers can support development, implementation and evaluation of EdTech programs at scale, aligned with the learning goals of each country.

3.2.2. Health

Good health is the foundation for not only individual well-being, but also countries' sustainable economic growth. When children are healthier, they are happier and learn better, and are more likely to become productive workers, live a long healthy life, and invest in health and education of their children. Investing in population health would build the platform for economic growth over generations (Bloom & Canning, 2008).

Chronic diseases such as diabetes, hypertension, and heart-related illnesses have emerged as the main causes of ill health in East Asia and the Pacific (EAP), partly due to aging and changing lifestyles. The share of chronic diseases in total years lost to illnesses and early deaths (disability-adjusted life years; DALYs) in developing EAP countries has increased from 54 to 80 percent over the period 1990–2019. For instance, 85 percent of total DALYs are related to chronic diseases in China, 72–77 percent in Fiji, Indonesia, Malaysia, Thailand, and Vietnam, and 60–65 percent in Cambodia, Myanmar, and Philippines in 2019 (Institute for Health Metrics and Evaluation, 2023). As societies are aging, chronic diseases have risen as the elderly tend to have multiple chronic conditions (Barnett et al., 2012). Also, lifestyles have changed in favor of chronic diseases, partly as high-calory foods become easily available and sedentary lifestyles prevail.

To cope with rising chronic diseases, primary health care is important as it can prevent and detect diseases early and provide person-focused care with continuity at affordable costs for a wide coverage of population. Prevention and early screening tests in primary care facilities avoid unnecessary medical procedures and costly hospitalization, and so are cost-effective than treatment of progressed symptoms in secondary and tertiary hospitals. Primary health facilities are available in most areas including rural and remote ones unlike hospitals that are generally in cities. Also, health care costs in primary care facilities are cheaper than in hospitals. Because primary health facilities are easily available and affordable, patients are more likely to build long-term relationships with health professionals, which is important in effectively managing chronic conditions (Gray et al., 2018).

Health care systems need to be restructured from disease-oriented fragmented to person-centered integrated systems, empowering primary health care. With aging, rising chronic diseases, and increasing health expenditure, people's demand for health care is changing in favor of comprehensive health care encompassing prevention to treatment and continuous care at affordable costs. To meet the demand, health care systems need to move from disease-oriented and fragmented toward team-based and integrated structures, so that patients can receive comprehensive care and be seamlessly referred to different tiers of health facilities based on the severity of diseases. Also, the role of primary care physicians as a gatekeeper or the usual source of care need to be reinforced, as it could lower the growth of health expenditure and enhance overall efficiency of health care systems (OECD, 2020; WHO, 2018).

Health information technology has the potential to accelerate reforms toward integrated health care systems, especially making data sharing easy. Digital technology enables create, manage, and analyze electronic medical records significantly quickly at lower costs as compared to traditional labor-intensive approaches. Secured electronic medical records can be shared and accessed among health service providers through health information exchange systems. This would help health professionals across primary to tertiary levels to access and discuss patients' records and collaborate more easily, ultimately leading to better health outcomes (see a China case study in Box II.2).

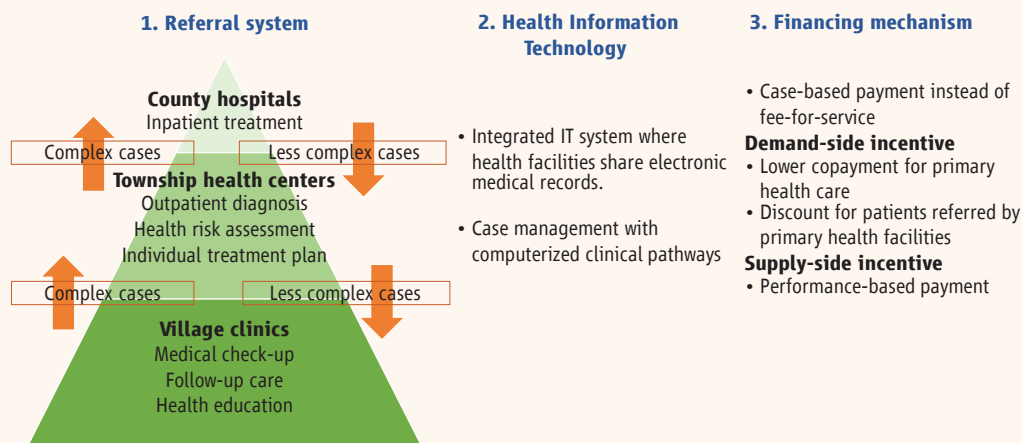
Box II.2. Integrated care intervention in Henan, China

In Henan province, China, an integrated care intervention using health information technology as a main component has enhanced the accessibility and continuity of health services and improved the chronic conditions of patients.

Issues: More and more people bypass primary health facilities and seek care in hospitals. This leads to inefficiency by diverting limited resources in hospitals to mild cases manageable in primary care facilities. Also, the contact between patients and health professionals in hospitals is limited, and it weakens the continuity of care which is important to effectively manage chronic conditions in the long run. Bypassing primary health facilities for hospitals also increases costs for both patients and health care systems.

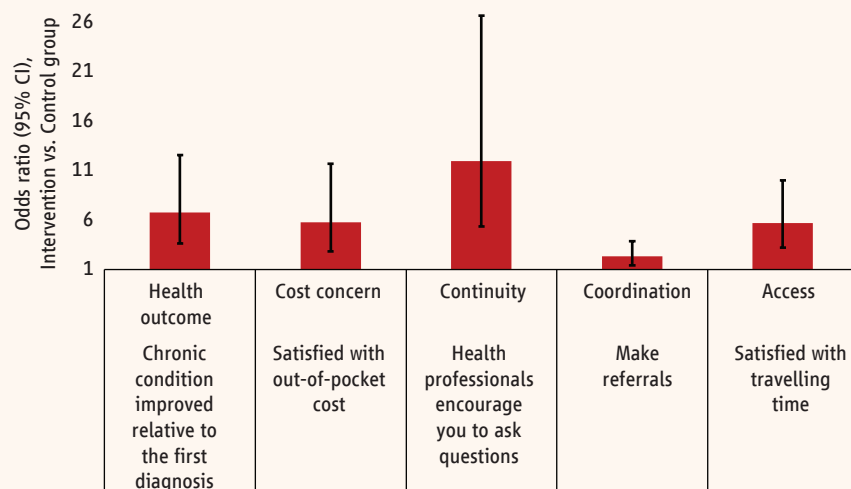
Intervention: Health facilities at primary, secondary, and tertiary levels are integrated (figure BII.2.1). According to the severity of cases, physicians refer patients to other levels of health facilities. Patients’ electronic medical records are shared among health facilities using a health information exchange system. Also, chronic cases are managed using computerized clinical pathways. Financing incentives are implemented. For care providers, performance-based payment is used. For patients, co-payment is significantly lowered for care in primary care facilities; and discount is applied if patients are referred from primary care facilities.

Figure BII.2.1. Integrated care delivery in Henan province, China (2008–2014)



Impacts: The conditions of patients with diabetes or hypertension in the intervention group significantly improved as compared to those in the control group (figure BII.2.2). Also, the share of patients who expressed concerns on costs significantly decreased. A higher share of patients responded that health professionals encouraged them to ask questions, which promotes the continuity of care. Patients’ satisfaction with travelling time improved. Cooperation via referrals across different tiers of health facilities has significantly improved.

(continued)

*(Box II.2. continued)***Figure BII.2.2.** Impact of the integrated care delivery in Henan province, China (Shi et al., 2015)

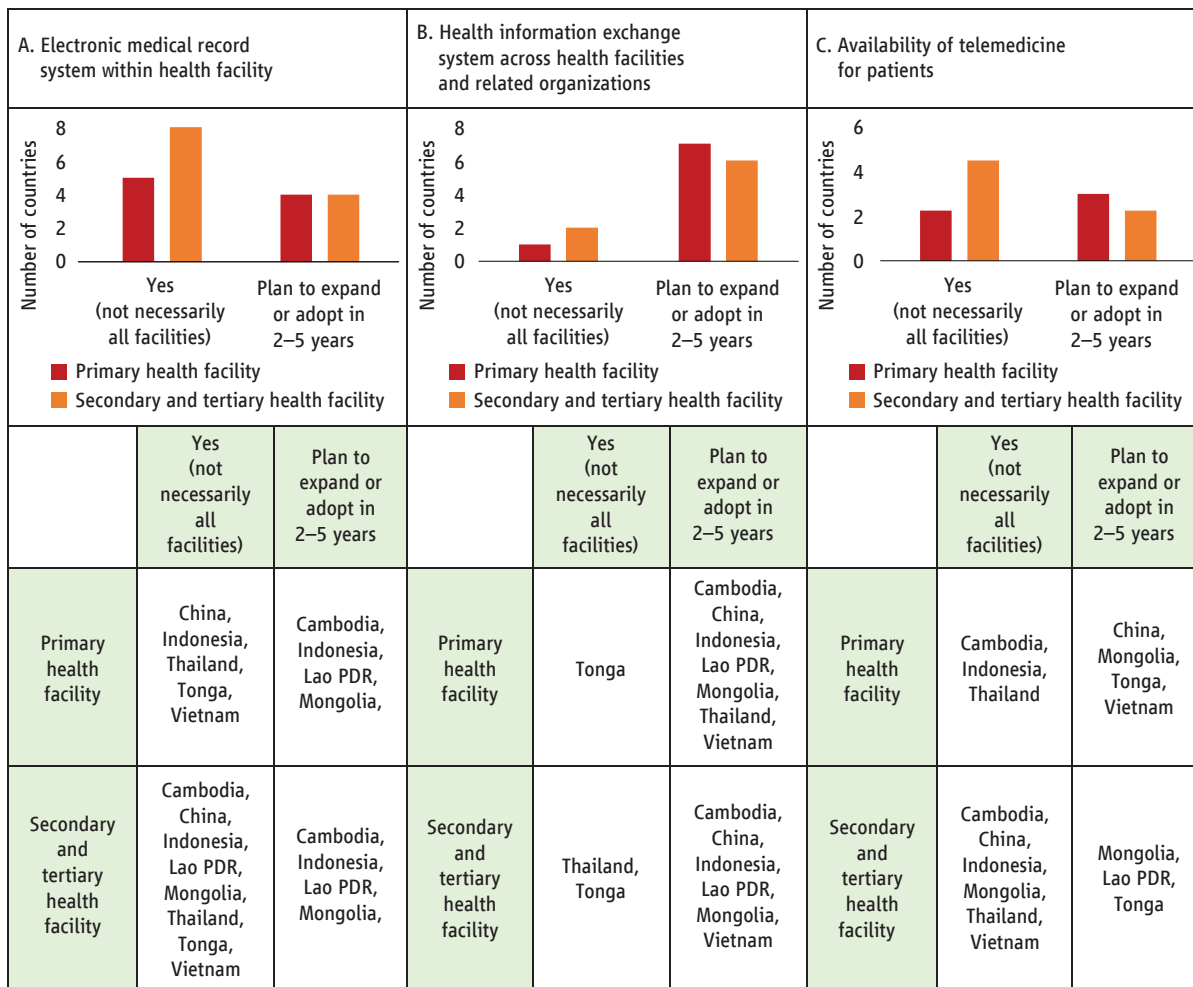
Note: The ranges represent 95% confidence intervals.

Health information technology could incentivize health service providers to be more person-centered and patients to seek and continue care. Electronic medical record systems would free health professionals from paper-based processes which take health professionals' time to write medical records, require physical spaces to store the hand-written records, and make sharing them difficult. Telemedicine based on electronic medical record systems would help health professionals save time from administrative works and instead focus more on communicating with patients over the screen. For the patient side, telemedicine would lower the barrier for health care access as patients can save time and money for visiting health facilities. This convenience could promote people to seek care at an early stage of diseases, and also motivate patients with chronic conditions to continue follow-up care in the long run.

EAP countries need to accelerate in implementing health information technology for more efficient health care systems and better population health. The World Bank survey in 2023 shows that developing EAP countries have started to adopt health information technology and have plans to adopt and expand it in the next five years. Currently, electronic medical record systems are implemented more widely for secondary and tertiary health facilities than primary health facilities (figure II.36A). For health information exchange systems that allow data sharing among health facilities and related organizations, few countries have adopted the systems, and most countries have plans to adopt them (figure II.36B). Telemedicine is available more in secondary and tertiary health facilities than in primary health facilities (figure II.36C).

Successful adoption and implementation of digital technology requires an overarching policy framework, sound governance, and sustained investment. Digital technologies are already available for use. Unlike other sectors such as finance and media, the health sector far lags in adopting technologies for meeting the changing needs of the public for integrated, person-centered, and affordable care. One of main barriers is long-standing fragmentation of health care systems, which causes reluctance and difficulty in communicating with other teams. Policy makers would need to develop a holistic policy framework for implementing digital technology in building integrated health care systems. Effective governance to overcome institutional barriers and implement the policy and sustained investment would be needed.

Figure II.36. Situation of health information technology in EAP countries



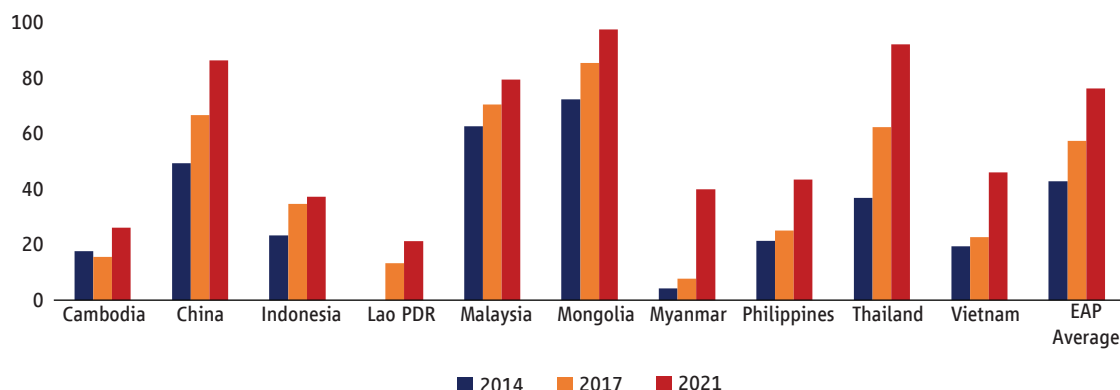
Source: World Bank survey, 2023.
 Note: Participants are eight countries: Cambodia, China, Indonesia, Lao PDR, Mongolia, Thailand, Tonga, and Vietnam.

3.2.3. Finance

Digital technologies are also rapidly transforming the financial sector landscape. EAP is one of the most dynamic regions when it comes to fintech.⁸ The use of digital payments—the most basic financial service—has been expanding rapidly over the past decade. In 2021, three quarters of the adult population reported to have received a digital payment, although with large variation across countries (figure II.37).

To put this into perspective, the EAP region accounted for half the world’s global payments revenue in 2021 and for 57 percent of global revenue growth, although much of this is concentrated in China which accounted for 88 percent of

8 Alongside Europe and Central Asia (ECA), and Sub-Saharan Africa (SSA).

Figure II.37. Adults who made or received a digital payment in the past year (2021)

Source: Global Findex Database, World Bank (2022).
Note: Data for adults aged 15+.

this growth. Fintech investments have also been high in the region—for example, in 2021, digital financial services took over as Southeast Asia’s⁹ top investment sector.¹⁰ But not all EAP countries exhibit high levels of fintech activity. While China stands out for its high fintech activity, Lao PDR and Myanmar appear at the bottom-5 developing countries, along with Ethiopia, Morocco, and Pakistan. Policy makers and regulators in the region have supported the expansion of digital financial services through various initiatives and regulatory sandboxes.

Digitally enabled financial services and business models are reshaping consumption patterns, enabling wider access and adoption, including among poorer consumers. For example, some 340.7 million adults or 20 percent of adult population

Box II.3. Innovation facilitators in the EAP region

Policymakers in EAP have been using ‘test and learn’ approaches to encourage fintech innovation through various innovation facilitators. The box below has a few examples of approaches that have been adopted by EAP policymakers to bring new firms and business models within the regulatory perimeter in a responsible and controlled manner.

In Malaysia, the Bank Negara Malaysia (BNM) first started supporting financial innovation by establishing a Financial Technology Enabler Group in June 2016. This group then launched a fintech regulatory sandbox in October 2016 that permits the testing of innovative products, services, and business models.

In Indonesia, both the central bank, Bank of Indonesia (since 2017), and the financial services authority, the OJK (since 2018), offer regulatory sandboxes, each for firms under their remit. In the first case, the sandbox focuses on “forward looking” fintech services while the OJK sandbox focuses on fintech firms helping support financial inclusion and literacy. The Bank of Indonesia also has a dedicated fintech office since November 2016.

(continued)

⁹ The list comprising Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam.
¹⁰ E-company SEA 2022, Bain & Co (2022).

(Box II.3. continued)

Other EAP jurisdictions with regulatory sandboxes include China (China Banking Regulatory Commission), Singapore (MAS), Korea, Rep. (Financial Supervisory Service), Philippines (Bangko Sentral Ng Philipinas or BSP), Taiwan, China (Financial Supervisory Commission), Hong Kong SAR, China (which has three, a Fintech Supervisory Sandbox, a Securities Sandbox, and an Insurtech Sandbox), Japan (Tokyo Metropolitan Government and Japan Financial Services Agency), and Thailand (which has three, Bank of Thailand, Securities and Exchange Commission’s KYC sandbox,¹¹ and Office of Insurance Commission).

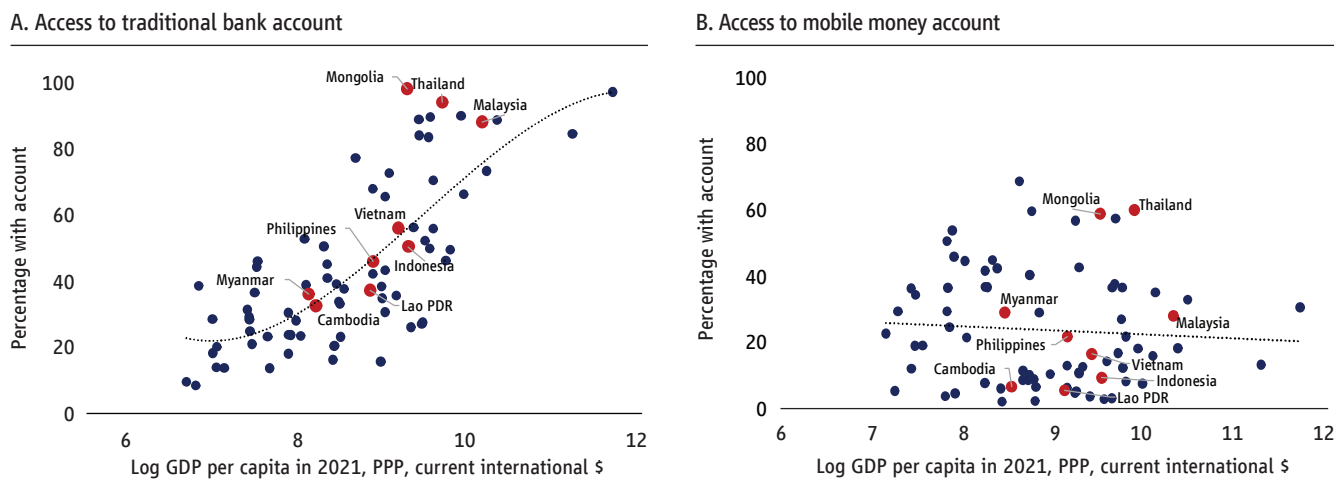
The Pacific Regional Regulatory Sandbox was launched 2020 for cross-border testing of fintech solutions. Members include Fiji, Papua New Guinea, Samoa, Seychelles, Solomon Islands, Timor-Leste, Tonga and Vanuatu.

Other EAP innovation facilitators include innovation hubs (Thailand/SEC, Singapore/MAS, Korea, Rep./Seoul Metropolitan Government, Malaysia/BNM, Japan/Bank of Japan and Japan Financial Services Agency, Hong Kong SAR, China/HKMA and SFC) and regtech accelerators (Thailand/BOT, Singapore/MAS, Philippines/BSP, Japan/Bank of Japan, Hong Kong SAR, China/HKMA and SFC).

(age 15+), in EAP do not have a traditional bank account. Reflecting costs and other barriers in traditional banking services, access to traditional bank accounts is strongly correlated with per capita income across countries (figure II.38). In contrast, the adoption rate for mobile money accounts does not seem to vary with per capita income levels across countries, enabling consumers in lower income economies to leapfrog.

The diffusion of fintech is uneven. For example, the use of digital payments—the most widely available digital financial service—is not uniform across the region. Cash is still the top in-person point-of-sale (POS) payment method in several countries including Thailand (where it accounts for 63 percent of POS transaction value), Vietnam (54 percent), Indonesia

Figure II.38. Leapfrogging in the adoption of digital finance

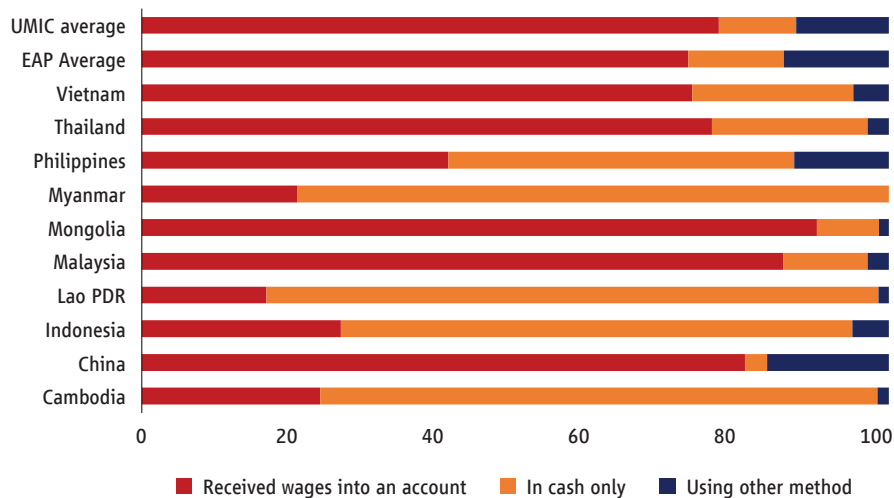


Source: World Bank’s Findex Database, WDI, orange dots = EAP countries.

11 Silk Legal, “SEC Introduces KYC Sandbox”.

(51 percent), and the Philippines (48 percent).¹² Although some EAP economies have achieved levels of digitalization of private wage payments, others still have room for growth. In China and Thailand, two upper-middle income economies, about 45 percent of adults received a private sector wage payment, and the vast majority (about 80 percent) received it into an account. In Cambodia, Indonesia, the Lao PDR, and the Philippines, all lower-middle-income economies, about a quarter of adults received a private sector wage payment, with the share of wage earners receiving the payment into an account ranging between 17 percent in Lao PDR and 41 percent in the Philippines (figure II.39).

Figure II.39. Digitalization of private sector wage payments across the EAP region (%), 2021



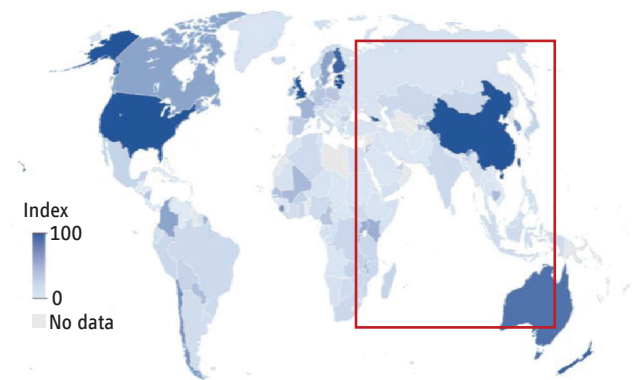
Source: Global Findex Database, World Bank (2022).

Note: The graph shows the mode of receipt of private sector wages by adults aged 15+ in 2021 (expressed as a percent of adults who received private sector wages).

Moreover, while digital payments have become ubiquitous in many countries, other financial services are also expanding but penetration remains lower. Fintech lending lags payments but is becoming significant worldwide but is again dominated by a few countries. While China, the U.S., Europe, and Australia have been leading in fintech activity worldwide, important levels of activity are emerging in other parts of EAP, Latin America, and Africa (figure II.40). Economies in EAP have historically had higher activity levels for finance app downloads, displaying high levels of both absolute and relative financial app downloads. P2P lending marketplaces are on the rise in especially in developed economies of the region like Australia, Republic of Korea, and Hong Kong SAR, China.

Technology companies—as opposed to traditional financial service providers, such as banks and insurance companies—are playing an increasingly prominent role as providers

Figure II.40. Usage of fintech credit



Source: Global Patterns of Fintech Activity and Enabling Factors (Fintech Activity note) by Tatiana Didier, Erik Feyen, Ruth Llovet Montanes, and Oya Ardic, Fintech and the Future of Finance Series, World Bank (2022)

Note: This map is based on an Index on the usage of fintech credit which was constructed based on a single indicator: the value of total new financing intermediated through electronic platforms, accumulated over the period 2014–2017 (measured as a percentage of GDP). The index covers 173 countries from all geographical regions and across all income groups.

¹² The global payments report, Worldpay, 2022.

of digital financial services. big platform firms have disrupted traditional financial service delivery, leveraging their superior technological capabilities and large existing customer base to achieve scale rapidly. This is particularly true in some jurisdictions in EAP—China (Alibaba, Tencent, and Baidu) and Indonesia (GO-JEK)—where these big platform firms offer a suite of financial services. Some jurisdictions in EAP (such as China, the Republic of Korea, and Singapore), have also allowed platform firms to be shareholders in digital banks. Credit provision by such non-traditional has shown accelerated growth in countries such as China and Indonesia, bringing a new set of challenges to regulators and supervisors.¹³

But traditional financial service providers are also embracing and emulating digital service delivery. A recent survey of Fintech market participants¹⁴ reveals that the future of the financial sector is likely to combine physical and digital (phygital) aspects. Across regions one message was clear—digitization does not spell the end of physical infrastructure for financial services. However, compared to regions like the Middle East and North Africa (MENA) (66 percent) and ECA (61 percent), fewer traditional financial institutions in the EAP region (38 percent) believe that physical branches will dominate financial service delivery, which signifies a greater intent to adapt to the ongoing changes.

The rapid expansion of digital financial services gives rise to important policy trade-offs. The fast pace and disruptive nature of these technological advances and emerging business models can make it more challenging for policy makers and regulators to ensure market outcomes remain aligned with core policy objectives. At lower levels of fintech development, providing basic policy support for innovation and mitigating immediate risks, such as illicit activity and protection of customer funds, may yield good short-term outcomes as policy makers aim to reap innovation, inclusion, and efficiency gains. Policy makers however need to be aware that adoption can increase rapidly, and will need to improve their monitoring tools and be ready to step in. Strengthening or clarifying policy frameworks and improving financial infrastructures become increasingly important to continue to safely support fintech adoption, as fintech reaches more consumers, increases volume and dependence on user data, and as certain providers reach scale, an issue that will be elaborated in more detail in the following section.

4. What should be done?

To unleash the virtuous cycle between opportunity and capacity, and to ensure that services development is inclusive and sustainable, EAP countries must take three pairs of policy actions.

- First, they must strike a balance between liberalization and regulation. That requires removing the many policy distortions that inhibit entry and competition in their services markets while instituting a regulatory framework that addresses old and new market distortions, including the concentration and data abuse that can arise in markets where digital platforms dominate.
- Second, they must strike a balance between the state and the market in creating the infrastructure and skills needed to take advantage of the opportunities that are emerging. Over the last decades, the democratization of access to mobile telephony provided by competing private firms seemed to have obviated the need for the fixed line networks created by plodding public sector monopolies. But the digital benefits of access to high-speed broadband have revived the question of how the state can ensure adequate access for the poor and remote. Countries must also wrestle with the question of how far the market and private institutions can be relied on to deliver the skills needed by the digital services economy and what role the state must play in ensuring the appropriate scale, composition, quality and access.

¹³ FSB 2019; IMF-WB 2019, Crisanto and Ehrentraud 2021.

¹⁴ The *Fintech Market Participants Survey* under the Future of Finance series 2022.

- Third, EAP and other countries must strike a balance between unilateral domestic reform and cooperative international action to address services market failures that have a transborder dimension. One example is the need to ensure that data flows that are central to the global services economy are not impeded by the heterogeneity in national regulatory approaches to privacy and cybersecurity. Another example is the need to ensure that international transport that is central to global trade and tourism does not continue to add CO2 emissions to the atmosphere. In both these cases, countries are beginning to take cooperate meaningfully in both regional and multilateral fora.

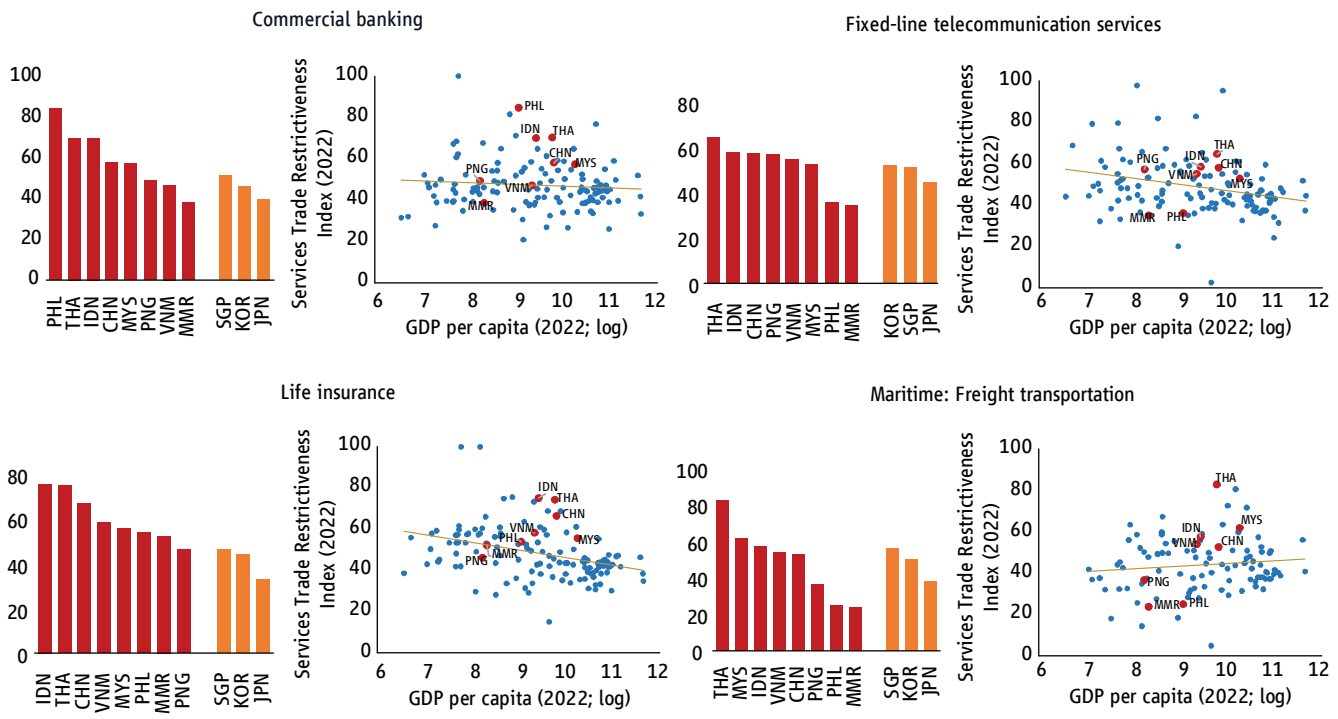
▸ 4.1. Balancing liberalization and regulation

EAP countries must create competitive conditions where consumers of services benefit. That requires dealing with both policy distortions and market distortions.

4.1.1. The unfinished business of services liberalization

Despite the progress of reform in EAP’s services sectors described in previous sections, new data from the World Bank-WTO STRI for 2022 reveals that this is still an unfinished business. Figure II.41 reports the STRI value recorded in several services sectors—commercial banking, telecommunication, life insurance, and maritime transportation—by the larger EAP countries,

Figure II.41. Most EAP countries restrict services trade more than other countries at comparable levels of development



Source: WTO-WB STRI Database and WDI (2022).

as well as by three Asian advanced economies: Japan; Korea, Rep.; and Singapore. For each sector, accompanied scattered plots are also presented, featuring the STRI index for the sectors against the level of development (measured as the logarithm of the GDP per capita).

As of 2022, EAP countries are still characterized by relatively restrictive regimes for services trade in most of the sectors. Moreover, compared to other countries, this restrictiveness is higher than what would be expected on the basis of the level of development.

To further examine the specific policy measures lying behind the numerical values for each sector and for each mode of delivery, we first consider the restrictions applied to cross-border trade (mode 1) and commercial presence (mode 3), as they are the most prevalent for the subsectors we consider.¹⁵ Annex 4 reports the main restrictions applied from the larger EAP countries in different sectors. Table A4.1 refers to the restrictions on mode 1. The most prevalent restriction to cross border trade is the commercial presence requirement, namely the need to establish a branch or an affiliate to be able to serve the market. Table A4.2 refers instead to the restrictions to services trade to mode 3. As the tables highlight, the most common restrictions applied to the establishment of a commercial presence are maximum percentage allowed of foreign equity, as well as discriminatory licensing.

For instance, Malaysia, Thailand and Vietnam restrict foreign ownership in telecommunications and maritime transport, Malaysia and Thailand also in commercial banking and insurance. Indonesia requires joint ventures in banking and insurance. Many countries also apply “economic needs tests,” that is, issue new licenses only when they feel they need new firms and do so in a way that is not transparent or based on objective criteria. Several countries, e.g., Indonesia, Malaysia, Thailand and Vietnam, restrict cross-border flows of financial, transport and other services, and impose strict conditions on international data flows.

Box II.4 examines more specifically the state of restrictions in services trade for the Pacific Island, highlighting how liberalization is particularly important in countries characterized by small market sizes and remoteness.

4.1.2. Recent reforms in EAP

Two recent policy developments in Indonesia and the Philippines highlight EAP progress in closing the services reform gaps: 1) the Financial Sector Omnibus Law in Indonesia and 2) the amendment to the Public Service Act in the Philippines. We discuss the estimated economic impacts of these reforms below:

a. Services liberalization in the Indonesian financial sector: Financial Sector Omnibus Law

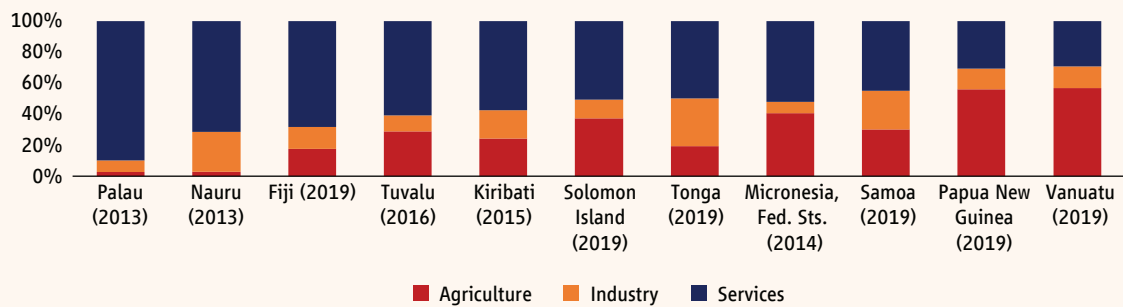
After almost two years of preparation, the Financial Sector Omnibus Law (FSOL) was passed in early 2023. The FSOL integrates 17 institutional and sectoral laws underpinning the financial sector and includes key institutional architecture reforms in the areas of financial stability, long-term finance, sustainable finance, financial innovation, consumer protection, and access to finance. It complements both the Omnibus Law on Job creation of 2021, and the recent Health Omnibus Law of June 2023.

¹⁵ The WTO defines four modes of delivery of a service: Mode 1: cross-border trade (i.e., digitally delivered services); Mode 2: consumption abroad (i.e., patients travelling for health services or tourism); Mode 3: commercial presence (i.e., FDI in the service sectors); Mode 4: movement of natural person (i.e., a professional delivering the service).

Box II.4. Services for the Pacific

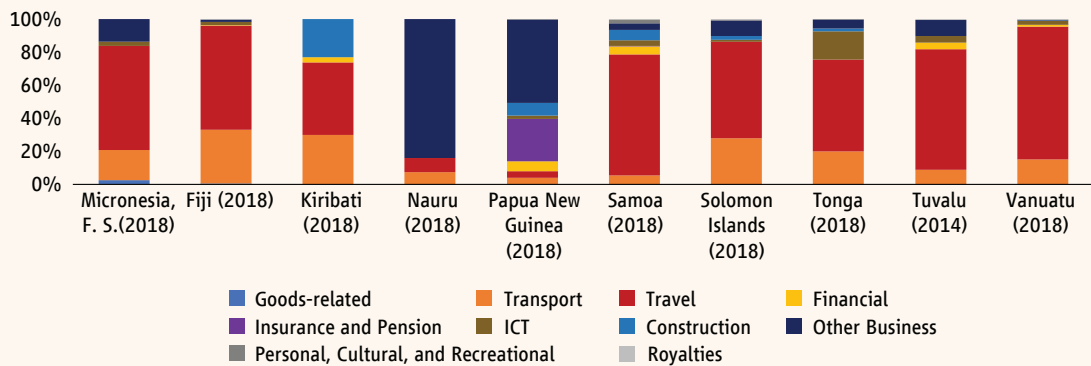
For countries at their stage of development, Pacific economies tend to be heavily reliant on their service sectors for employment and growth. At the regional level, the contribution of services to GDP in 2018 stood at 59 percent, while employing nearly 48 percent of the labor force, although this varied across the region (figure BII.4.1). Many PICs have become heavily vested in services and even maintain a service trade surpluses, allowing services to emerge as drivers of growth in the Pacific. Yet *imports* are often just as crucial to growth. In the Pacific, service *import* composition is mostly concentrated in Transport services (49.9 percent of total services imports in 2018), followed by travel services (20.4 percent), and other business services (13 percent) (figure BII.4.2).

Figure BII.4.1. Contribution of services to Employment in PICs and PNG



Sources: World Development Indicators, FSM Statistics, International Labor Organization.

Figure BII.4.2. PICs' services imports are concentrated in transport, travel, and other business services



Source: World Bank staff estimates based on data from UNCTAD.

(continued)

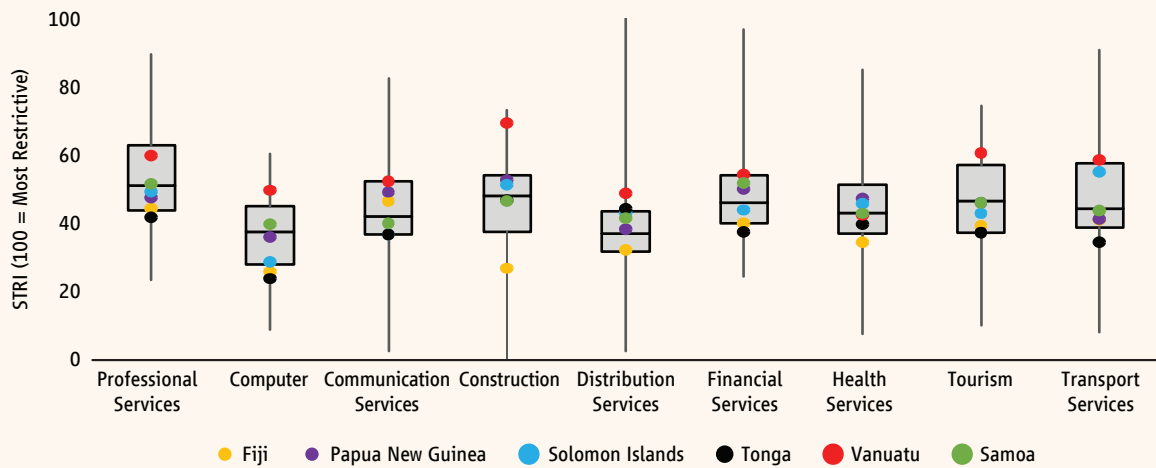
(Box II.4. continued)

Growth of service industries in the Pacific are limited by both the scale of operation and the scale of its internal markets, thus causing challenges in ensuring effective competition. In some circumstances, these small market sizes can force concentration to dangerously high levels, thereby increasing the risk that these providers can create monopolies, form cartels, or abuse their dominance in some other way.

Opening the Pacific to trade in services can help alleviate artificially induced constraints on market size by expanding the scope and intensity of competition or by easing market concentration. However, currently many countries in the region have a variety of hidden restrictions which limit the ability of firms to operate across borders in an integrated market of any significant scale.

The Service Trade Restriction Index (STRI) was recently compiled for the first time for six PICs, following a regulatory audit of discriminatory measures in the countries' service sectors (Figure BII.4.3). While countries in the region perform moderately on the STRI scale (relative to the global sample), their economies are also much smaller than most, meaning the effects of every trade restrictive measure can often impact market outcomes to a much greater degree. As a result, certain restrictions often deepen their isolation and give monopolies to a small set of domestic incumbents. This is particularly damaging to the economy in service sectors which either; (i) enhance connectivity and integration into the global economy (such as Transport or Communication Services), or (ii) where linkages of the service to other domestic industries are strong (e.g., Financial and Professional Services).

Figure BII.4.3. STRI Outcome in the PICs by Broad Sector



Source: I-TIP.

(continued)

(Box II.4. continued)

For instance, a disaggregated review of the STRI by Transport subsector and modes of delivery shows that some countries in the region are relatively restricted by one or more measures. Maritime transport connectivity is especially essential for the region's economy. Yet, countries like the Solomon Islands have effectively maintained a complete sector closure to trade in some of those services. As a result of this, the rising cost of port services have been an increasing concern in the Solomons (Kekea, 2021), even in the face of state control over pricing. In fact, a comparative analysis of port charges shows that Honiara became the highest in the region following a port tariff increase in 2015. While state management of port services is an attempt to manage what could otherwise be a *private* monopoly of an essential facility, there may be more efficient ways to tender out a concession for the operation of wharfage and stevedoring services in a way that maintains ownership of the facility, while better controlling cost of their services (ADB, 2007).

For instance, a disaggregated review of the STRI by Transport subsector and modes of delivery shows that some countries in the region are relatively restricted by one or more measures. Maritime transport connectivity is especially essential for the region's economy. Yet, countries like the Solomon Islands have effectively maintained a complete sector closure to trade in some of those services. As a result of this, the rising cost of port services have been an increasing concern in the Solomons (Kekea, 2021), even in the face of state control over pricing. In fact, a comparative analysis of port charges shows that Honiara became the highest in the region following a port tariff increase in 2015. While state management of port services is an attempt to manage what could otherwise be a *private* monopoly of an essential facility, there may be more efficient ways to tender out a concession for the operation of wharfage and stevedoring services in a way that maintains ownership of the facility, while better controlling cost of their services (ADB, 2007).

<i>Country Port Name</i>	<i>Amount (\$)</i>
Honiara, Solomon Islands	17,266.19
Lae, Papua New Guinea	10,471.55
Lautoka, Fiji	10,157.28
Nuku'alofa, Tonga	9,277.93
Port Vila, Vanuatu	5,581.99
Apia, Samoa	5,050.21
Average not including Honiara	8,107.79

Source: (ADB, 2016).

Air transport also plays an important role in the connectivity of the region given the geographical conditions of many islands and the linkages to tourism. However, air transport services in the region faces similar restrictions to foreign entry. For instance, in Fiji the *Civil Aviation Act of 2012* prevents majority ownership of foreign investors in locally incorporated air passenger companies. While such regulations do not necessarily prohibit foreign provision of international connections (foreign airlines can still fly *into* the country), these rules do effectively protect domestic routes from foreign competition. This leaves such routes to be serviced only by domestic carriers. Because the serviceable market is constrained by regulation, the average fixed costs of establishing an airline to service this market are high. Pro-competitive efforts to liberalize the aviation sector would expand the scope of the market demand by eliminating discriminatory measures imposed on foreign investors. Such efforts

(continued)

(Box II.4. continued)

were taken seriously in 2003 with the *Pacific Islands Air Service Agreement*, which was designed to establish a framework for gradual integration of aviation services, but these efforts stalled. Establishing a unified market would increase market size, which could make investment scale less of a binding constraint to the provision of new service.

Retail distribution services represents another sector that is both geared towards domestic markets and subject to many of the scale challenges when the market is limited to national boundaries. For instance, in Samoa the *Foreign Investment Act* (FIA) of 2000 specifically reserves grocery retailing for domestic investors. However, these FDI restrictions in retail distribution can impede competition. This might have resulted in food price inflation far outstripping general inflation, a rate much above other Pacific Island Countries.

Lastly, in the travel sector, the attempts to shield small domestic accommodation providers from competition may prevent the emergence of high-value tourism models. For instance, in Vanuatu, foreign direct investment in accommodation service providers with less than 10 rooms are reserved for domestic investors. Since the prevalent tourism models in the country are focused on *cruise* or *sun & sand* tourism – both of which are models characterized by large scale investment in accommodation and vertical integration of services – the incumbent industries have not been affected by these restrictions. Yet, the emergence of higher value tourism segments may be inhibited by rules that restrict the scale of investment in accommodation services. For instance, accommodation services for *experiential tourism* segments are driven by product uniqueness and ability to service the specific interest of their target niche (e.g., scuba, sailing, etc.). Foreign investment in small scale accommodations – relative to the sun and sand resorts – is often more capable of servicing these demands, which local investors are not. However, the investment restriction on this service sector may create diseconomies of scale, which could harm both the competitive position and product quality for such niche segments. Therefore, the presence of an investment restriction may be preventing the emergence of high value tourism clusters that could generate improved sectoral productivity.

All these examples reveal how enhanced openness to trade in services could help the PICs improve both market efficiency and competitiveness. The political economy constraints, posed by the incumbents, could be addressed by a sequencing of reforms that starts from the areas where the local businesses potential losses are likely to be smaller.

The FSOL is expected to promote the deepening of the financial sector, with increased availability and diversification of financial products and services. This is facilitated through: (i) the mandatory provision of commercial bank loans to under-served sectors/areas, e.g., MSME, inclusive financing, and/or sustainability financing; (ii) new emerging financial products, e.g., carbon trading, bullion for gold investment, crypto; (iii) expansion of general insurance and life insurance business scope; and (iv) additional access through variety of providers, including Cooperatives and Micro Finance Institutions (MFI).

The FSOL also aims to enhance financial sector efficiency, by enabling advanced technology in financial sector, such as digital banking, peer to peer lending, etc.; all of which are expected to make easier access to financial services. Moreover, the FSOL strengthens consumer protection in unregulated fintech activities and financial business providers and provides alternate dispute resolution mechanisms. At the same time, FSOL establishes insurance policyholder protection plan, while encouraging financial literacy; thereby attracting more people to access financial services.

Finally, the FSOL is expected to increase financial resilience through more effective approaches towards supervision and regulation of the financial sector overall; resolution of banks and insurance companies; early interventions and inspections; consolidated supervision of financial conglomerates; macroprudential policies; legal protection of financial supervisors; and coordination in oversight and regulation of Fintech. Enhanced financial resilience helps ensure the availability of resources and flexibility to mitigate and respond to a range of shocks; thereby supporting continued provision of financial sector services to the economy, including firms, households and individuals in the longer run.

b. Amendment to the Philippine's Public Service Act (PSA)

Until recently, the ambiguity in the legal definition of what constitutes a 'public utility' has restricted foreign entry into certain service sectors in the Philippines with implications on competitiveness. A recent amendment of the Public Services Act has addressed this ambiguity, opening key enabling services sectors to increased competition. While some restrictions remain for specific public services, public services other than critical infrastructure are no longer subject to foreign equity limitation. Indeed, the Amended Public Service Act would now allow 100 percent foreign ownership in telecommunications, domestic shipping, airlines, railways and subways, expressways, and tollways, among key public services, as these are now excluded from the definition of public utility, and therefore no longer be subject to the 40 percent foreign ownership cap for public utilities provided for in the Philippine Constitution.¹⁶

The PSA amendment is a continuation of an FDI liberalization process taking place in Philippines. The PSA reform is proposed in the context of other recent liberalizations which include the Retail Trade Liberalization Act (December 2021), the Foreign Investment Act (March 2022) and the Renewable Energy Act (November 2022).

Box II.5 presents an analysis of the potential economic effects of the amendments to the PSA act. A fully and effectively implemented PSA Amendment is estimated to increase total factor productivity by 3.2 percent on average, and up to 6.4 percent in electrical machinery related sectors, that rely intensively on telecom and transport inputs.

The amendment of the PSA act also represents an interesting case in terms of political economy of reforms. The economic crisis presented an opportunity to push for reforms. The economic cabinet secretaries championed the reform aiming at jumpstarting investments for an economy that was hit hard by pandemic lockdowns and by a decelerating global economy. The effort was met by a receptive legislature, which was eager to demonstrate bold action to boost growth. In its last remaining months in power, the previous administration successfully marshalled its majority coalition in the Philippine Congress to pass this landmark liberalization reform. To address the criticism that the reform would endanger national security by allowing foreigners to assume control of key sectors, the measure empowered the President to prohibit investments in public services in the interest of national security. The momentum for reform has continued under the current administration.

The National Economic Development Authority issued the Implementing Rules and Regulations of the amended Public Service Act in April 2023. As full implementation materializes, beyond the productivity effects analyzed in Box II.5, the reform is also likely to contribute to lower food prices, as food producing sectors rely on transport services for their supply chain management. This, in turn, might also increase the public support for the reforms.

¹⁶ On the other hand, under the Amended Public Service Act, the following sectors will continue to be categorized as public utilities and thus subjected to the 40 percent foreign ownership cap: distribution and transmission of electricity, petroleum pipeline transmission systems, water distribution systems, seaports, and public utility vehicles.

Box II.5. Quantifying the potential impact of a fully implemented PSA amendment

The elimination of foreign equity restrictions in the PSA Amendment can potentially cut the FDI restrictiveness in the transport and in the communications sectors by 75 percent. The reform would make these sectors some of the least restricted services in the economy. More open transport and telecom sectors are likely to lead to improved services provision, either through lower prices, improved quality, or increased varieties. These changes will benefit those sectors that are most reliant on transport and telecom services as inputs.

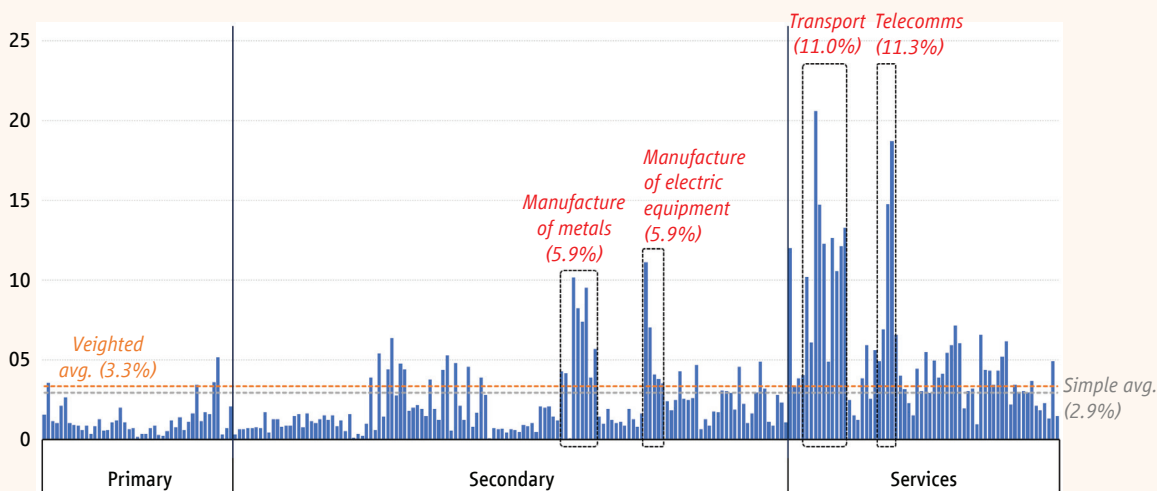
Based on the most recent input-output table for the Philippines (2018), we estimate the input share of liberalized services in downstream activities. We calculate for each sector of the Philippine economy, the share of its input bill that is accounted for by transport and telecom, and then identify how relevant FDI restrictions in upstream sectors are for a given sector operating upstream. We match each input with its corresponding Index score, and then calculate the weighted average score, using the share in the sector’s total input bill as weight.

Using this data, we perform a back-of-the-envelope calculation of the impact of a fully implemented PSA reform on productivity of downstream sectors. For these purposes we rely on the elasticities of downstream productivity with respect to changes in FDI regulatory restrictiveness in upstream services sectors from Indonesia (Duggan et al. 2013). Because these elasticities are estimated by type of reform – including reforms that focus on changes in foreign equity limits, they are well suited to simulate the economy wide impact of this reform if firms in Philippines would react in a similar way to Indonesian ones when they face changes in upstream FDI restrictiveness.

The PSA reform is estimated to increase total factor productivity by 3.2 percent on average, as it boosts competition in key enabling sectors and facilitates technology spillovers. The sectors with the largest shares of transport and telecom in their input mix are those with the largest productivity increases. These are metals and electronics, that would experience double the productivity boost than the average sector (6.4 percent), would the PSA reform to be fully implemented.

Figure BII.5.1. Impact of public service act reform on productivity

*Change in upstream FDI restrictiveness index*semi-elasticity of productivity to changes in FDI foreign equity restrictiveness (–0.975), in percent*



Source: 2018 Input-Output Accounts of the Philippines in million Philippine Pesos and OECD FDI Regulatory Restrictiveness Index available in OECD.stats. Note: Warehouse, support activities for transportation and postal and courier activities are assigned the average FDI index of transport services.

▸ 4.2. The emerging business of regulating the digital economy

The digital service economy gives rise to new sources of market failures and regulatory challenges. Policymakers will need to strengthen regulation to ensure digital firms do not engage in anti-competitive behavior to the detriment of their consumers and workers, respect prudential concerns, e.g., in financial markets, and address data protection and cybersecurity risks.

4.2.1. Fintech

Policymakers and financial regulators are eager to foster the benefits of digital transformation but are also mindful of various regulator challenges that emerge. Fintech can promote poverty alleviation and economic growth by enhancing financial efficiency, inclusion, competition, and innovation, but these benefits need to be carefully weighed against challenges and risks associated with financial stability and integrity; cyber and operational risks; data, consumer and investor protection; fair competition; and regulatory arbitrage. All forms of financial services provision ultimately may give rise to similar risks – for example, fintech firms might become too big and systemically important, leading to the same financial stability concerns that large banks pose.

Concerns about market concentration need to be addressed in a balanced way. In some markets, entry of new large and well-resourced players—for e.g., platform firms (which are also discussed in the next section)—can lead to more intense beneficial competition, with positive impact on price and quality. However, the business models of some new entrants also grant significant control over access to a marketplace or to large troves of personal data to unregulated entities, and abuses have occurred in some markets. Furthermore, BigTech crossovers into finance mean that monopoly power that might have been beneficial in one market can now be wielded, potentially detrimentally, in another. China’s recent regulatory crackdown on BigTechs has been at least partly motivated by the fact that these firms had grown too big within a short period of time, providing among others extensive financial services without being properly regulated.

There have been three prominent approaches to fintech regulation - regulate, “wait and see”, or “test and learn”. EAP regulators have taken a variety of approaches to fintech activities. Overall, we observe a more cautious approach to “first generation” fintech activities such as mobile payments and e-money, and a more active, hands-on approach to newer fintech business models such as digital lending and equity crowdfunding. The first attempts of EAP regulators to regulate mobile money and extend agent banking mirror, to a certain extent, the approaches African regulators have taken. China’s approach to mobile payments can be best characterized as “wait and see”. The Philippines took a similar approach to mobile money, allowing MNOs Globe and PLDT (through its subsidiary Smart) to pilot new mobile money products to their customers in 2004. These pilots were closely supervised by the BSP, but the BSP undertook regulatory action only five years later.

While the “wait and see” approach has worked for digital payments, more proactive regulatory interventions have been warranted for credit products. For instance, P2P lending in China reached significant volumes before the regulatory crackdown began in 2017. This culminated in the November 2019 requirement that all platforms close or convert to regulated small loan providers within two years. Numerous instances of fraud and ponzi schemes (by some accounts up to 40 percent of platforms were problematic) had resulted in customer losses. Oversight was tightened, the industry shrank, and eventually P2P marketplaces were mandated to convert to regulated small loan providers. When BigTechs reached the level of systemic importance (too-big-to-fail) in some economies, notably in China, authorities are actively formulated regulatory responses to these risks.

EAP authorities are also starting to issue new regulations or adapting their existing regulatory frameworks to changing needs. Open banking regulations are a proactive attempt by regulators to foster entry of new business models and entrants and

bring these activities within the regulatory perimeter. The key motivation for open banking has been to foster competition and provide a pathway for fintech firms to offer services efficiently instead of having to rely on unreliable and risky processes such as screen scrapping. In the region, most open banking regimes are regulatory driven, except for the Republic of Korea and Singapore whose regimes are market driven. EAP authorities have adapted their existing frameworks and issued specific licensing frameworks for digital-only banks. For example, virtual banks in Hong Kong SAR, China; internet-only banks in Republic of Korea and Taiwan, China; and digital banks in Singapore, have restrictions on physical presence and a focus on financial inclusion while leaving in place the fundamental requirements for banks (that is, AML/CFT and consumer protection rules, risk management, and certain prudential requirements like minimum capital).

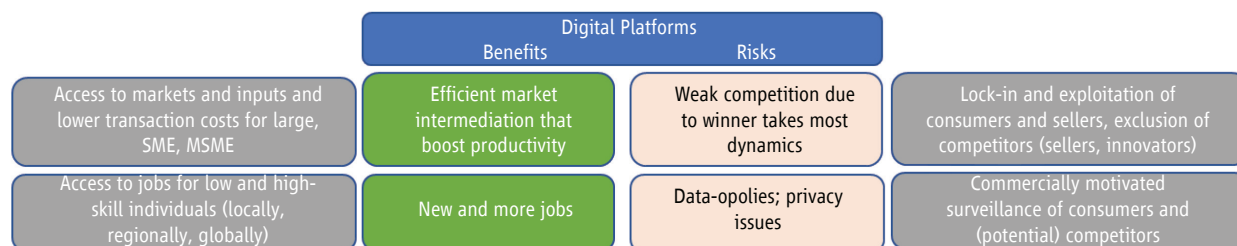
But bringing these new activities and business models within an authority's regulatory ambit also has an impact on supervisory approaches. Establishing a risk-based framework to prioritize supervisory actions and calibrate supervisory intensity becomes relevant. Further, supervisors will need to marshal new skills through strategic staffing, partnerships, and industry collaborations. Strengthening and expanding data-sharing and collaboration frameworks among domestic authorities and at the international level are important. As the fintech market evolves, ensuring an orderly exit of unviable market players could become critical necessitating strengthening of wind-down processes and tools and financial sector safeguards.

Finally, in addition to adjusting prudential and supervisory frameworks, the design and governance of financial infrastructure is a key policy lever to fully harness efficiency gains and safeguard competition. Ensuring open, fair, and transparent access to these infrastructures become critical to provide a level playing field and allow new entrants a fair chance to compete with incumbents. First, this includes efficient and open payment systems. All ASEAN economies have either already implemented or are in the process of implementing a fast payment system; thus, supporting their integration would be an effective way of improving cross-border payments. Specific cross-border QR payments linkages have been established with Thailand, Malaysia, and Singapore through pilot projects, which are now being expanded to cover other economies as well. Secondly, financial services, especially beyond basic payments, require effective digital ID systems. Australia, Japan, Hong Kong SAR, China, Indonesia, Malaysia, Mongolia, Philippines, Singapore and Thailand have introduced digital identification systems. The Government of Singapore introduced Singpass in 2003 to enable Singaporeans to access government services online. In 2017, Singpass evolved to be part of the country's national digital ID service. The Philippine Statistics Authority launched PhilSys as the country's foundational digital ID system. As of April 2023, more than 78.2 million citizens are registered on the PhilSys.

4.2.2. Digital platforms

While digital platform firms can generate significant economic benefits in terms of productivity, jobs and access, there are also risks associated with market concentration and data security and privacy. Lack of product market competition and misuse of data (commercially motivated surveillance) to generate rents are among the most salient concerns related to the platform revolution. Unless regulated, the expected benefits of platform firms can reverse course. In the short run, digital platforms can generate rents at the expense of decreasing consumers' surplus or gains for small suppliers, as well as business opportunities for innovators. In the long run, digital platforms can discourage innovation (figure II.42).¹⁷

¹⁷ This section is based on World Bank, *Digital Platforms in Developing Economies: Options to Mitigate Competition Risks*, 2023, unpublished and World Bank, *Navigating Conglomerates in East Asia's Digital Markets: Enhancing Competition Policies and Regulations* (forthcoming).

Figure II.42. Digital platforms-benefits and risks

Note: Other economic and social issues include taxation, labor and social protection, as well as psychological effects of social network platforms, political polarization, fake news and freedom of speech, among others.

4.2.2.1. Competition

Risks to competition by digital platforms vary by platform business model, stage in the platform lifecycle, and digital maturity of the country. On all three fronts, digital platforms in EAP have considerable country variation, particularly with respect to regulations (e.g., competition, data) and country income level. Moreover, weaker competitive pressures affect a variety of actors in different ways - consumers, suppliers, and competitors.

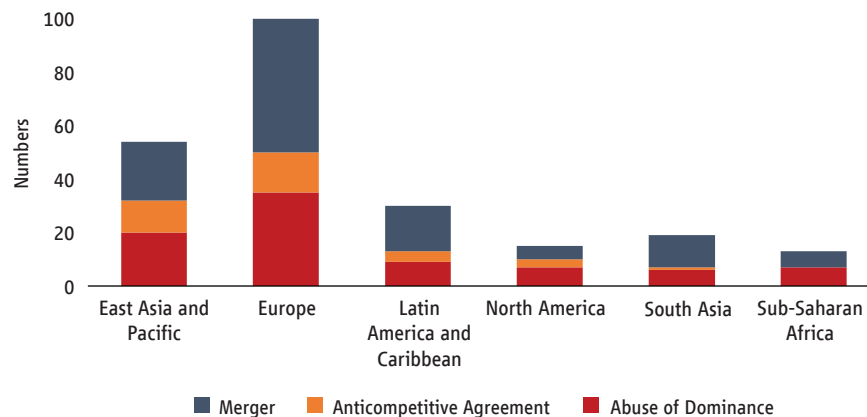
Risks to competition are primary associated with entry barriers and rivalry constraints that arise from network effects, self-regulation, and data collection. Direct network effects (benefits to consumers on the same side of the network) and indirect network effects (where the value of the platform to one group depends on how many members of another group participate) lead to monopolistic (i.e., winner-take-all or winner-take-most) structures. Dominant players emerge due to a combination of these network effects, their ability to set the rules of the games for interactions on the platform and access to data. Scale additionally may translate to greater volume of data, while scope may increase variety of data. Both help accelerate existing feedback loops further strengthening the dominant player.

Consumers face risk of lock-in and data exploitation when dominant platforms emerge. Customer lock-in may be driven by direct network effects (enhanced platform experience as users grow) and indirect network effects (larger platforms attract more third-party participants). Network effects reap greatest benefits at scale economies (number of users and volume of data) which are then difficult to transfer or multi-home across networks. Switching costs or even barriers can be enforced by dominant networks through limiting data portability and interoperability, which raises additional concerns over data privacy and access for users.

Suppliers also face lock-in risks as well as self-preferencing risks posed by vertically integrated platform operators. Dominant platforms may harm third party sellers and advertisers as economies of scope begin to take shape in forming a dominant ecosystem. The platform operator serves as a nexus of multiple party interactions, and through this, it can exploit market intelligence asymmetries. In addition to information asymmetries, platforms may simply engage in self-preferencing over competing participants or restricting alternative options for their users. For example, in 2018 the Fair Trade Commission in Japan ruled that Airbnb restricted listings of houses in platforms other than Airbnb.

These challenges associated with digital markets have triggered antitrust enforcement (figure II.43). As of September 2022, competition authorities in EAP had finalized 20 abuse of dominance cases and 12 anticompetitive agreements, only 9 cases in middle income countries (China, Indonesia, Malaysia, Philippines and Vietnam). The WBG digital antitrust database confirms that competition cases in the region have mostly focused on inter-platform competition and pricing in high income countries as compared to offline vs online competition in middle income countries. For instance, the Malaysia

Figure II.43. Digital antitrust cases in EAP and other regions (cumulative as of Sep. 2023)



Source: World Bank Global Digital Antitrust Database, updated as of September 2022.

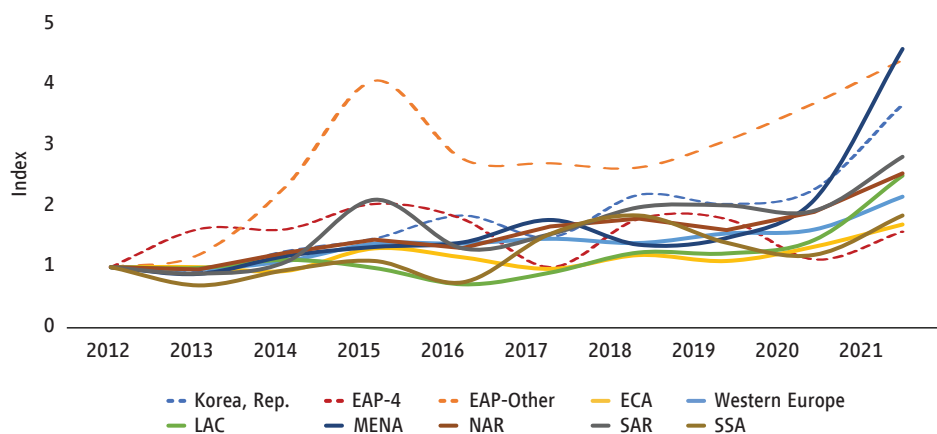
Competition Commission (MyCC) sanctioned the company providing access to the *National Single Window* for requiring users to access through its own electronic mailbox. Regarding licensing practices, the Korean Fair Trade Commission (KFTC) concluded in 2021 that Google had banned manufacturers from releasing devices that run on rival operating systems as a prerequisite for licensing Play Store. Finally, the KFTC sanctioned Naver, a popular search platform, for altering its algorithm to preference products offered on its own “open market.” This behavior harmed non-associated vendors whose products were demoted to lower positions on Naver’s ranking. The integration of Naver into different markets was key for its ability to self-preference.

Mergers and acquisitions, often targeting innovating rivals, have also been used by digital platforms in the region to reinforce positions of dominance and expand into digital conglomerates. Global Digital platforms, including Amazon, Apple, Facebook, Google, and Microsoft, have undertaken an intense merger strategy, often through conglomerate mergers, that, in the earliest merger, has gone under the radar of Antitrust Authorities or benefited from lighter reviews (Motta & Peitz, 2021). The EAP region has seen the highest number of conglomerate mergers and acquisitions of all regions, with a growing share of digital mergers each year between 2012–2021. Over the same time period, digital mergers in Korea, Rep. tripled and rose by 60 percent in the remaining EAP-5 countries (figure II.44).¹⁸ Content generation and software design are the top digital industries targeted by conglomerate acquirers. However, as of September 2022, competition authorities in EAP had reviewed only 22 mergers. Lack of ex ante merger control frameworks as well as digital mergers often remaining below merger notification thresholds have prevented countries from reviewing mergers with likely anticompetitive effects and setting appropriate remedies. The acquisition of Uber by Grab exposed these challenges, including notification thresholds that did not capture relevant concentration operations, delayed resolutions, and limited coordination between competition authorities in the region. Even though it brought together the largest two players in ride-hailing, the transaction did not require ex ante merger notification in any of these countries.

4.2.2.2. Data

Personal data lies at the heart of digital platforms and contains inherent market value for platform optimization and third parties such as advertisers. User data comes with unique responsibilities pertaining to privacy and morality. Threats of misuse

¹⁸ Digital Mergers and Conglomerates in EAP, Seidu Dauda 2023. World Bank staff analysis based on 2012–2021 Mergers and Acquisition data from Refinitiv (previously Thomson Reuters).

Figure II.44. Evolution of Conglomerate Digital Mergers, 2012–2021

Source: World Bank, Navigating Conglomerates in East Asia's Digital Markets: Enhancing Competition Policies and Regulations (forthcoming).

for commercial purposes, exploitation, and cyber security are some of the most prominent risks to users. Misuse can be incentivized by value of market intelligence and interest by third parties. Conflicting challenges also emerge with respect to benefits of data mobility and interoperability for fostering competition, versus ensuring consumer privacy and security.

Market intelligence on competitor insights and consumer data intersect with competition concerns. Digital platforms may use data to exploit both customers and competitors (in the case of vertically integrated platforms). Digital platforms may engage in price fixing by algorithms to exploit consumer willingness to pay. On the other hand, platforms may use their superior market intelligence data arising from buyer seller interactions to unfairly outperform competitors.

There is evidence of positive feedback loops between pro-competitive efforts and data privacy. Although digital platforms are incentivized to collect as much data as possible, both for optimizing their own services for users benefits or for selling to third parties. In contestable markets, with non-myopic consumers, market players will be incentivized to retain consumer data in the most responsible manner possible. Otherwise, they risk losing participants. Concerns about autonomy, service quality, and privacy are often addressed to retain the consumers.¹⁹

In EAP, authorities have already started investigating cases related to personal data protection and data management involving digital platforms. By September 2022, 32 cases of infringements of data protection rules involving digital platforms were analyzed in China, Philippines, Singapore, and Korea, Rep. (Barzelay, 2022), while competition authorities analyzed data transparency and data as a barrier to entry in 6 abuse of dominance cases.

A number of EAP countries have approved proposals for regulation of digital platforms in recent years. Japan in 2020 approved Act on Improving Transparency and Fairness of Specific Digital Platforms. Australia has approved the News Media and Digital Platforms Mandatory Bargaining Code in 2021 and has proposed to develop codes for specific types of platforms such as retail. Thailand has recently adopted a law requiring registration of digital platforms. While as of 2021 Korea, Rep. has proposed Act on Fairness in Online Platform Intermediary Transactions and Vietnam is drafting a law to regulate platforms.

¹⁹ This may not be the case when behavioral advertising is the sector's prevailing business model. Stucke E. M. & Ezrachi A. (2020).

Looking ahead, the main challenges to ensuring competitive dynamics relate to adopting competition frameworks to the realities of the digital economy. Antitrust frameworks for abuse of dominance, agreements among competitors and merger control may also need to be updated to reflect the unique features of digital platforms, including additional aspects such as data privacy exploitation and the use of data as a competition variable. Depending on the competition issues in the country, the capacity to use antitrust enforcement to address them or benefit indirectly from decisions in other jurisdictions, countries might need ex ante regulations to complement antitrust enforcement (Nyman et al., 2023).

Some traditional antitrust tools require adaptation when it comes to digital markets. Cases involving digital platforms require competition authorities to tailor their analyses to multisided markets and consider the impact of the control of data in their assessments. This complicates the definition of markets as well as the assessment of market shares, market power/dominance, and the effect of anticompetitive practices. Most common frameworks for defining markets, which typically rely on price, such as the hypothetical monopolist test, can be more difficult to apply to digital platforms which provide nominally-free products. Therefore, competition analysis in digital markets may need to: 1) broaden the concept of consumer welfare beyond prices; and 2) consider new dimensions of competition, such as personal data protection. In addition, platforms typically exist in a digital ecosystem where providers of complementary digital products interconnect and regularly exchange data to provide consumer products. Thus, competition authorities need to understand how competition restrictions affect these complementary products alongside the direct effects on the users of a platform.

State capacity and government institutions will need to be bolstered to address these often complex cases. First coordination among a diverse set of institutions (e.g., competition authority, data protection authority, consumer protection authority, sectoral regulators) is needed to use the best available instruments to address risks. Given the dynamic nature of digital technologies and business models, frequent interaction and knowledge exchange between public institutions and private sector is needed for agile regulation. Coordination amongst local institutions is relevant in particular for cases of large international players, where coordination between countries will play a key role in developing appropriate frameworks. Take the example of Grab acquiring Uber's operations in Southeast Asia which at the time spanned eight countries.²⁰ Competition authorities in Singapore and the Philippines collaborated to undertake a full analysis of the merger, both finding risks to prices and barriers to entry. Singapore decided to impose structural remedies while the Philippines did not.²¹

Finally, contestability of markets can be supported through non-competition specific regulation and through non regulatory means. Data access and exchange initiative can enable competition; this is the case in the financial sector where open banking facilitates the growth of Fintech, some of them based on digital platforms (multi-sided markets) business models. Non-regulatory interventions include supporting local digital ecosystems to prevent markets from tipping, and through competition neutral government platforms to support interoperability (for example for payments and digital identification).

▸ 4.3. Building skills and infrastructure

Equipping people to take advantage of the new opportunities requires investing in the relevant skills and the appropriate infrastructure. A key challenge is determining how far the market and private institutions can be relied on to deliver the skills and infrastructure needed by the digital services economy and what role the state must play.

²⁰ Cambodia, Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

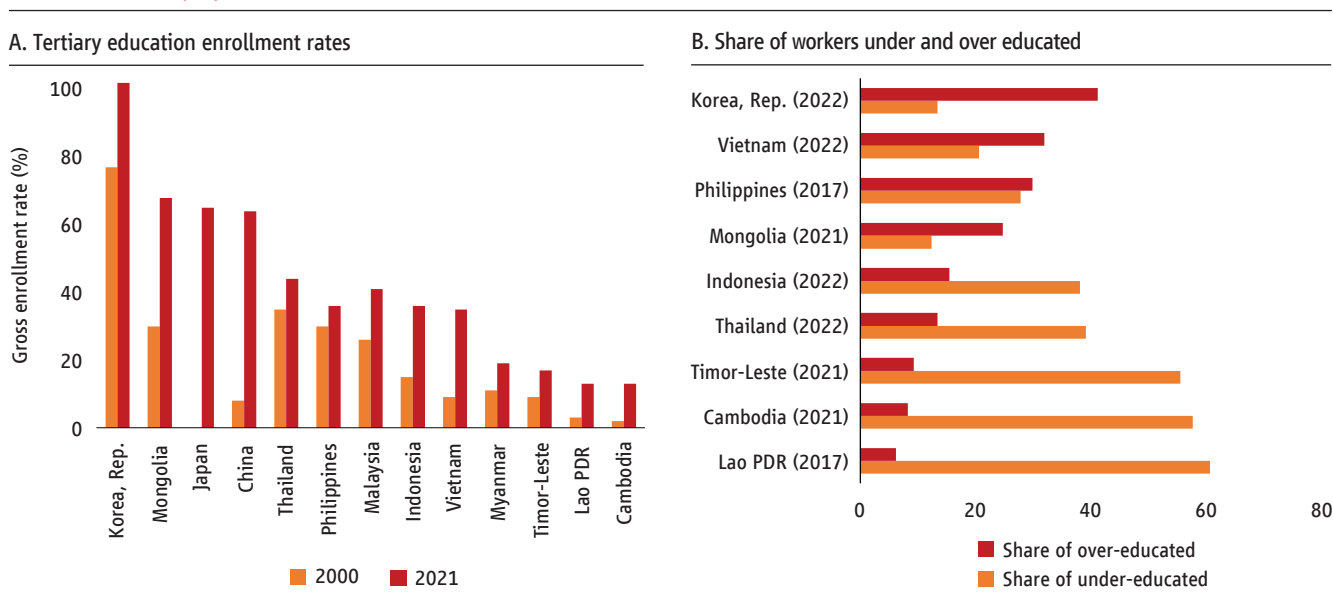
²¹ "Grab Merges with Uber in Southeast Asia" Singapore and San Francisco – March 26, 2018, <https://www.grab.com/sg/press/business/grab-merges-with-uber-in-southeast-asia/>.

4.3.1. Skills

Harnessing the digital revolution involves also empowering people with the right set of skills. Two aspects of particular importance here are the relevance of higher education, as well as of digital skills.

Enrolment rates in tertiary education have grown considerably in every country in the region in the past two decades, as shown in figure II.45A. Most interestingly, however, the mismatch between capacities and opportunities seems pronounced in most Asian countries. The ILO matches occupation types with education levels to establish whether workers are over-educated or under-educated. For instance, an individual with a doctoral degree working as a clerk would be considered over-educated, while an individual with primary education working as a manager, would be considered under-educated. Figure II.45B reports evidence for several EAP countries, showing in most cases a prevalence of under-education. Interesting exceptions are represented by the Republic of Korea, Mongolia, and Vietnam.

Figure II.45. Emerging signs that several EAP countries are struggling to keep up with the pace of demand for high-skilled employment



Source: ILOSTAT (2022).

Figure II.46 plots the tertiary enrollment rates and the level of development, measured by the GDP per capita. The countries in the region that exhibit enrollment rates well beyond the levels predicted by their level of development are precisely the Republic of Korea and Mongolia (together with China, which due to data availability is not included in Figure II.44B).

While Vietnam might seem to pose a puzzle, it is important also to explore at which level of occupation and education these mismatches occur. For instance, while Mongolia and Vietnam both have unusually large shares of jobs filled by overeducated workers, the two countries differ crucially in the composition of those overeducated workers. In Vietnam, 72 percent of those deemed overeducated for their jobs are individuals in an “elementary occupation” who hold either a primary or secondary education (by comparison, this figure is only 30 percent for Mongolia). By contrast, in Mongolia, two-thirds of the overeducated are workers holding tertiary degrees employed in occupations deemed to require only a secondary education. In Mongolia’s case, the data suggest that Mongolia’s supply of tertiary graduates may have outpaced demand for such skills. By contrast, in Vietnam, the overeducation might reflect the overall success of the education system (managing to ensure at least

a primary education for all), combined with the fact that many workers are still employed in elementary occupations, requiring little or no education.

As illustrated above, however, most of the EAP countries appears to have the opposite problem, namely a labor force less educated than required by the jobs. Given the need to re-equilibrate demand and supply of skills, the private sector could offer an increase in the supply of higher education. However, as figure II.47 shows, the share of student enrolled in tertiary education that are attending a private institution is large only in Cambodia, Indonesia, and the Philippines. In the case of these last two countries, such share has decreased over time. Understanding the factors that inhibit further unleash of higher education supply from the private sector will be an important avenue of future policy discussion. Again, reforms towards a greater openness (perhaps even to foreign institutions) might go in the right direction.

A second relevant element is represented more narrowly by the incidence of digital skills. Data from the ITU, presented in figure II.48A, confirms how EAP countries lags countries like the Republic of Korea, Japan and Singapore in terms of both basic digital skills (sending emails or copy and paste in a document) and advanced digital skills (like using a spreadsheet or preparing slides for a presentation). Moreover, figure II.48B reveals an interesting age divide in the countries for which the data are available: digital skills are much scarcer among the age group 25–74 than among younger people. This is relevant, because it reveals that it is not only important to equip the future workers with the skills that will be demanded tomorrow. It is urgent to equip the current workers with the skills that are demanded today.

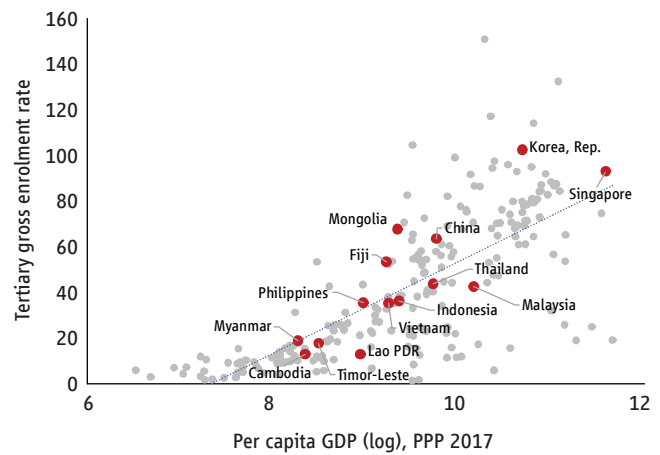
From this perspective, the experience of the *SkillFuture* program in Singapore, based on “competencies” and “life-long learning” might be a good example of an approach that support continuous learning and skills upgrading.

4.3.2. Digital infrastructure

Digital connectivity, especially through mobile technology has expanded dramatically in the last decade. Today, the EAP region is home to 1.5 billion active internet users, accounting for over 70 percent of the total population (figure II.49A).²²

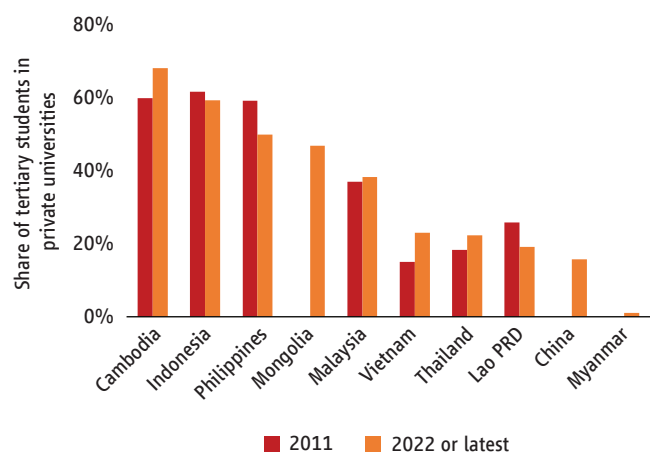
²² Proportion of population owning a smartphone has reached about 80 percent in the EAP region in 2021, compared to just over 50 percent in 2016, ranking the top among the low- and middle- income countries (GSMA 2022).

Figure II.46. Most EAP countries have levels of tertiary education enrollment smaller than countries at similar levels of development, except Korea, Rep., China and Mongolia



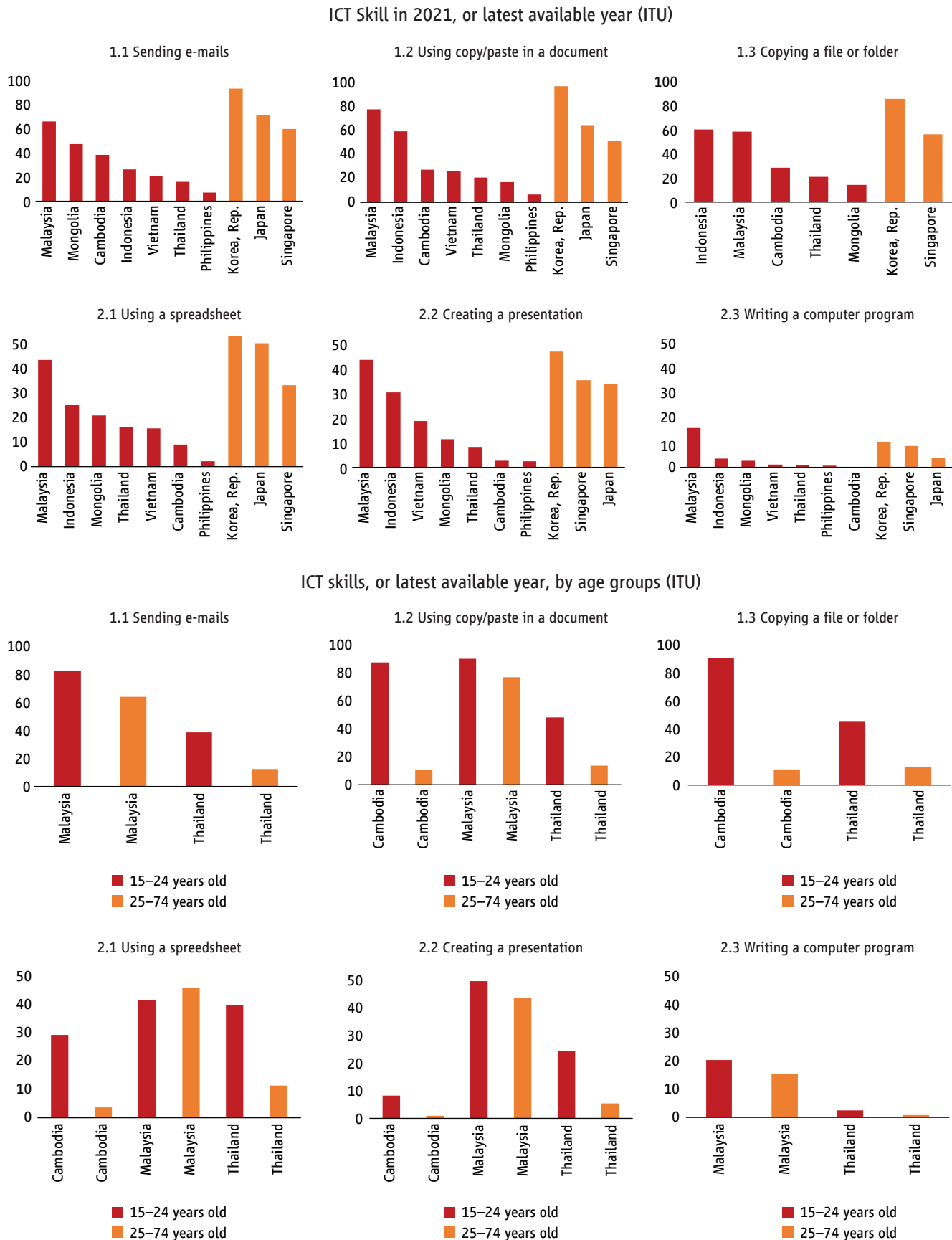
Source: ILOSTAT and WDI.

Figure II.47. Enrollment in private universities: large in Indonesia and Philippines (but decreasing), small in Vietnam and Thailand (but increasing)



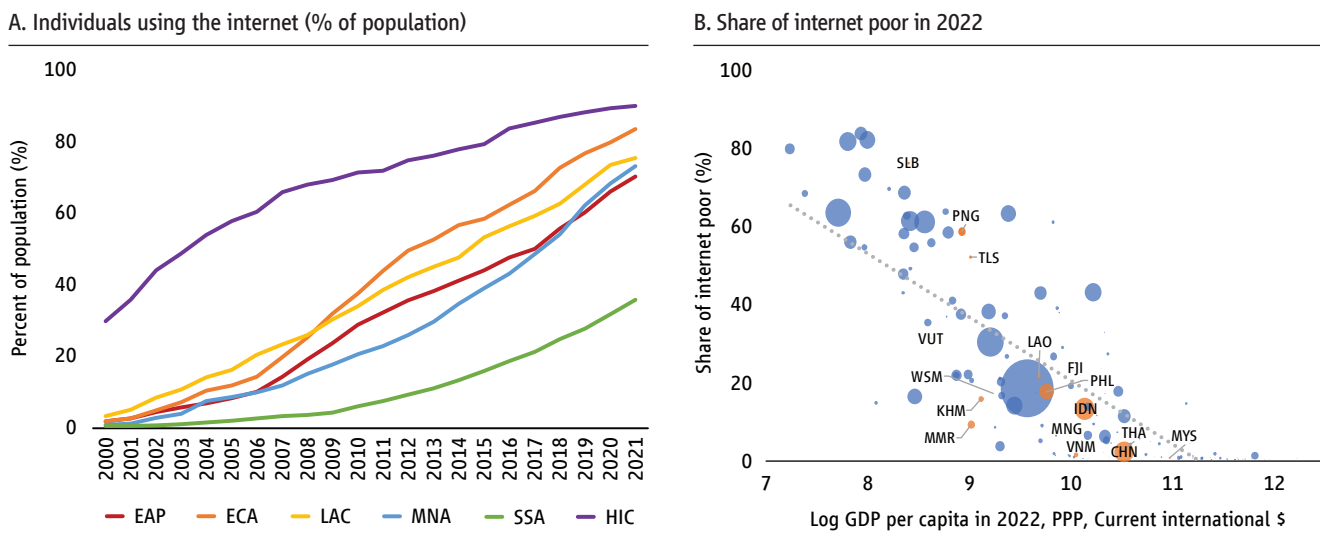
Source: ILOSTAT (2022).
Note: 2011 data unavailable for China and Myanmar.

Figure II.48. EAP countries register still low level of digital skills, both basic and advanced, if compared to developed Asian economies



Source: ITU. The proportion of youth and adults with ICT skills, by type of skill, is defined as the percentage of individuals that have undertaken certain ICT-related activities in the last 3 months. The indicator is expressed as a percentage. Last available years: Cambodia (2017), Indonesia (2017), Japan (2021), Malaysia (2021), Mongolia (2021), Philippines (2019), Korea, Rep. (2021), Singapore (2021), Thailand (2019), Vietnam (2021).

Figure II.49. Internet usage (2022)



Source: ITU, World Data Lab.
The size of the bubbles represents the population in internet poverty. "Internet Poverty" is defined as the number of people unable to afford a minimum package of mobile internet, i.e. 1GB per month, 10Mbps download speed, for 10 percent of total individual spending.

While growth in mobile broadband subscriptions has expanded rapidly with subscriptions increasing from 437 million in 2013 to 2.0 billion in 2021, only 28.2 percent of the EAP population have access to fixed broadband subscriptions, fewer than in North America, Europe and Latin America, but well above the level in the Middle East and North Africa, South Asia, and Sub-Saharan regions. Moreover, data on the cost of different bundles of broadband services suggest that fixed line broadband services tends to be much more expensive in EAP and in many countries exceed 2 percent of average national incomes, the target that has been set by the Broadband Commission.

Despite progress in expanding digital connectivity, there are remaining gaps in access -both within and across countries. According to data from the International Telecommunications Union, over a quarter of the population in EAP remains unconnected in 2021 with poorer household more likely to suffer from limited access.

In fact, data shows that the poorest 20 percent of households in EAP are 43 percent less likely to access the internet than the richest 20 percent. In total, 111.3 million people—5.3 percent of total EAP population—live in "internet poverty", meaning they are unable to afford access to a basic a minimum package of mobile internet access (1GB per month, 10Mbps download speed) for 10 percent of total individual spending (figure II.49B). Access gaps and internet poverty are most pronounced in small-island countries in the Pacific, but even in Indonesia, Cambodia, Philippines and Lao PDR, where 15 to 20 percent of the population is currently unable to afford a basic mobile internet plan. In contrast, more than 97 percent of the population can afford a minimum package of mobile internet in Malaysia, Vietnam, China and Thailand.

Within countries, there are often regional differences in infrastructure development and connectivity. For example, in Indonesia, there are large infrastructure gaps between the western and eastern parts, leading to a higher concentration of internet users in Java, Kalimantan and Sumatra, whereas a lower proportion in Maluku, Nusa Tenggara and Papua (World Bank 2021). The digital divide is particularly acute for the underserved population. As of January 2022, more than 12,500 villages and 104,000 schools across Indonesia still have no internet access (CIPS 2022).

In addition, limited network speed also remains a constraint. Download speed in EAP averages only 40 percent of the average in high income economies, again with stark differences within and across countries. Although mobile-cellular coverage is high, high speed mobile coverage rate, i.e., population covered by at least a 4G mobile network, averaged only about 65 percent across countries, lower than the average of 69 percent in low- and middle- income countries. There are stark differences across countries between early adopters and slow starters as mobile technology evolved from 3G to 5G. In the case of 4G, countries like Malaysia and Thailand reached penetration levels comparable to the most advanced economies, with the rest of ASEAN performing between the levels of South Asia and Western Europe, while others like Pacific Islands remaining at the level of Sub-Saharan Africa or below.

Moreover, the relatively low penetration of fixed internet technologies also constrains access to high-speed internet. As a result of the quality of both mobile and fixed infrastructure, there exist wide gaps in internet coverage, quality (measured by download speed), and cost (measured as basket price as % of GNI per capita) across countries (figures II.50). For example, mobile internet and fixed broadband internet speeds in the Philippines were more than 55 percent slower than the global averages for these services, according to the Ookla Speedtest Global Index in 2020. This placed the country in the 111th rank out of 139 countries for mobile internet speed, and in the 107th rank out of 176 countries for fixed broadband speed (Gómez 2021).

Figure II.50. Fixed and mobile broadband Internet in EAP: access, quality, and cost

	Fixed Broadband			Mobile Broadband		
	Access Fixed broadband household penetration (%)	Quality Median download speed (Mbps)	Cost Fixed broadband basket as % of GNI per capita	Access Active mobile-broadband subscribers per 100 habitats	Quality Median download speed (Mbps)	Cost Mobile broadband basket as % of GNI per capita
China	113	194	0.5	102	95	0.5
Vietnam	76	94	3.5	88	48	0.5
Thailand	58	211	3.5	112	41	1.4
Mongolia	52	57	1.9	116	15	1.9
Malaysia	50	96	2.3	125	49	1.0
Fiji	44	15	4.7	76	22	3.0
Philippines	33	92	11.6	62	26	2.0
Indonesia	18	27	7.6	115	24	0.9
Lao PDR	12	32	9.0	56	30	2.7
Cambodia	10	22	12.1	106	24	2.4
Myanmar	8	19	12.4	110	23	1.7
Solomon Islands	1	N/A	47.4	18	N/A	8.9
PNG	1	16	13.4	11	20	18.8
Timore-Leste	1	6	32.1	30	N/A	4.6
PIC-9 average	25		13.8	21		4.4

Source: ITU, TeleGeography, Ookla.

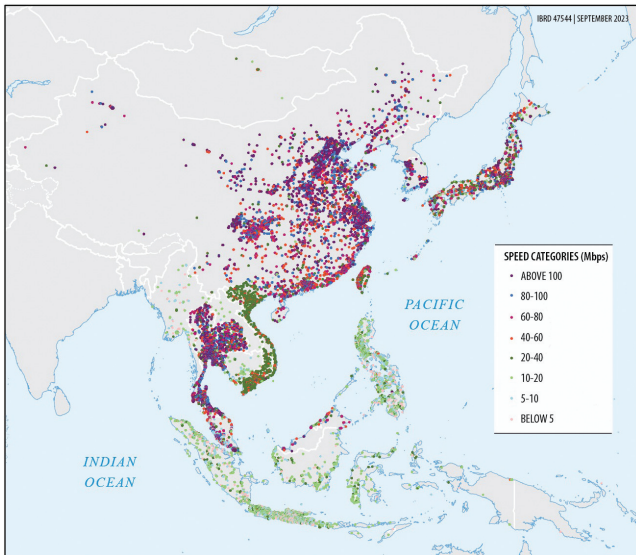
Note: PIC-9 includes Kiribati, Marshall Islands, Micronesia, Nauru, Palau, Samoa, Tonga, Tuvalu, and Vanuatu. Data availability is incomplete. The graphs show numerical average of the available data points for PIC-9.

Figure II.51 demonstrates the progress in speed connectivity between the end of 2019 and the beginning of the 2023. The Philippines, Vietnam and Malaysia register a strong increase in the speed of the connections. In addition to the differences across EAP countries, there also exists a large within-country heterogeneity in internet coverage and speed, with better internet quality taking place mostly in urban and larger cities (figure II.51), especially for the case of fixed line broadband internet connection.

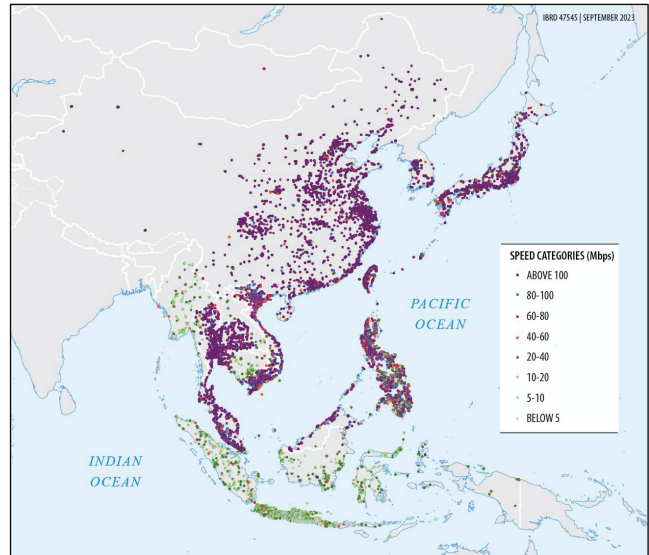
While attenuated in most recent times, these physical access and infrastructure gaps amplify other inequalities in terms of digital skills and together dampen the potential to reap digital dividends. The relatively low penetration with high-speed mobile (G4/G5) and broadband fixed lines reduced the ability to run the most advanced digital applications—for example, cloud computing—especially in business-to-business services, a key driver to higher productivity growth. The limited access in poorer countries and, within countries, among lower income households constrains the potential of poorer people and communities to benefit from increased access to public services and economic opportunities. Therefore, it is important to

Figure II.51. Internet connection speed within and across EAP countries

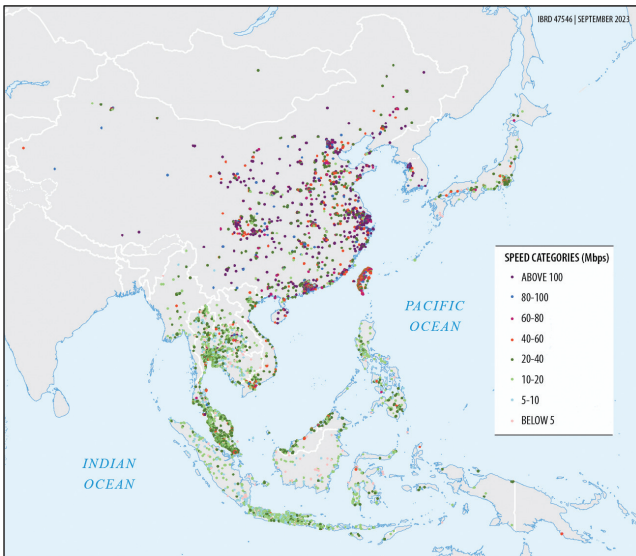
A. Broadband fixed line internet speed 2019-Q4



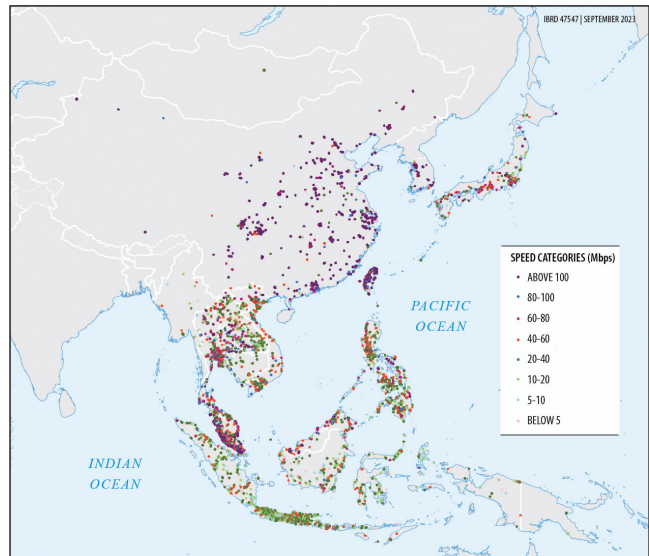
B. Broadband fixed line internet speed 2023-Q2



C. Broadband mobile line internet speed 2019-Q4



D. Broadband mobile line internet speed 2023-Q2



Source: Ookla.

promote investment in expanding and upgrading those networks. This requires a multifaceted policy response, and the involvement of both the public and private sector.

First, the regulatory environment is crucial for attracting private investment into network infrastructure. There are legitimate reasons to regulate telecommunications services, including overcrowding of radio frequencies, network and data security, and consumer protection, ensuring regulations do not create undue barriers to market entry and competition is key. In general, if the telecom sector is not liberalized and there are barriers to entry, incumbent companies—which in several countries

remain state owned, vertically integrated telecommunication companies—have reduced incentives to expand and preserve the quality of the infrastructure since they are able to squeeze their captive consumer base without the fear of them going to alternative providers, often leading to high prices and low quality services for consumers. The negative effects of such reduced competition and contestability could also be exacerbated by the possible presence of intrinsic weaknesses in the country’s “business climate” which exposes investors to risks of expropriation (for example, through excessive taxation).

Second, irrespective of such institutional constraints, network coverage might still be limited because reaching less densely populated areas or those that are intrinsically high-cost (like remote islands) might not make business sense due to the fact that the costs are above expected revenues. In this case, there is a rationale for the governments to subsidize such investments in last-mile connectivity. Indeed, there are social cohesion reasons (allowing all the population to enjoy a minimum level of digital services) and economic efficiency motivations (internalizing the positive network externalities associated with the expansion of telecom services, or de-risking investments in areas that are particularly prone to natural disasters) that could be easily invoked. Interventions could take the form of the creation of Universal Service Funds, that are replenished either through the public finances or with special contributions on telecom bills.

Finally, constraints arising from the demand side are also important in many countries. First, when large fractions of the population are poor, affordability is a major concern. The policy solution to the affordability problem would be to support financially the poorest segments of society to access digital technologies. Additional demand-side constraints could be generated by the insufficient level of digital skills and the lack of content that is considered useful by potential users. The first problem requires governments to invest in training and education. Digital skills are becoming essential for learning recovery and productivity growth, but there are still significant skills gaps particularly in developing EAP countries, as we saw in the previous section. The second could be mitigated by subsidizing developers that produce apps that are relevant for the context (for example, those that rely less on text in countries where lack of literacy is a major constraint).

▸ 4.4. Regional cooperation on data flows and decarbonization

Beyond domestic policy action and regulations at the country level, some aspects of the digital service economy provide both the scope and necessity for regional cooperation. While not an all-inclusive list, two examples are related to cross-border data flows and policy action to reduce carbon emissions from cross-border transport services.

4.4.1. Cross-border data flows

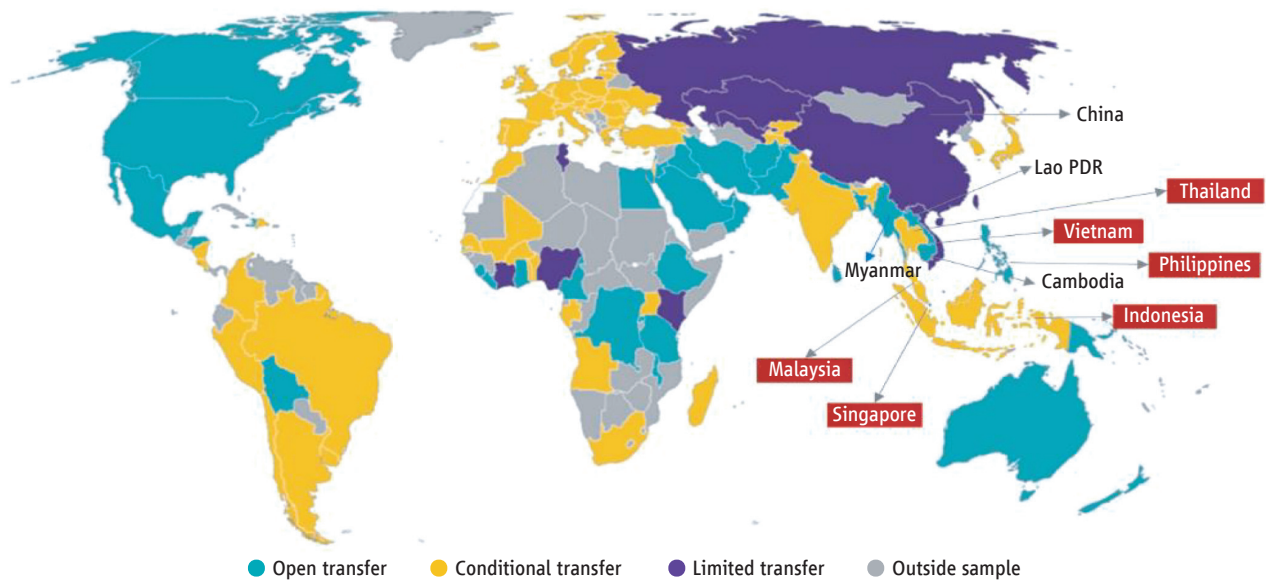
The rapid digitalization of everyday life has ushered in a new kind of globalization in which cross-border data flows have emerged alongside traditional flows of goods, services, and capital as a new pillar of the global economy (Manyika et al. 2016). The ability to use, share, and access data across borders is instrumental in stimulating innovation, enabling data-driven products and services, and fueling economic growth and ideas.

In order to reap the full benefits of digital trade and commerce while upholding and strengthening data security and privacy, governments need to foster trust in digital transactions both domestically and across borders. One way to support this is to improve regulatory predictability for both those who process personal data and individuals providing their data. Developing common approaches to enable cross-border data flows of a broad variety of personal and nonpersonal data with the appropriate safeguards while minimizing the compliance burdens can help support these objectives.

The World Development Report 2021 identifies three regulatory approaches to cross-border data flows: open transfer, conditional transfer, and limited transfer (WDI 2021). Applying this framework to the regulatory landscape governing cross-

border data flows in EAP shows that countries of the region adopt all three approaches. The Philippines and Singapore fall within the “open transfer” approach where data transfers are permitted in principle but require companies transferring personal data to overseas recipients to handle personal information in a manner that is consistent with the requirements of local laws. Indonesia, Malaysia, and Thailand take the “conditional transfer” approach, where legal provisions are formulated as general prohibitions, subject to a list of exceptions. These primarily include obtaining the individual’s consent to the transfer (“consent-first” regimes) or sending data to jurisdictions with an “adequate” or “comparable” level of protection. Vietnam falls in the ‘limited transfer’ approach and imposes stringent controls over the processing and transfer of personal data, including requiring government inspection and restricting access to data to protect national security and public order (figure II.52).

Figure II.52. Regulatory approaches in selected EAP countries



Source: World Development Report 2020, updated for SEA-6 countries in June 2023.

Although the principles underpinning data protection laws in the region are generally consistent across jurisdictions, substantial variance is found in implementing regulations and practices. The interoperability of regulatory regimes across the region is further affected by the diversity of regulatory implementation mechanisms, which includes the APEC/Global Cross-Border Privacy Rules (CBPR) certification schemes, standard contractual agreements, and technical and organizational measures (data sandboxes and dataspace). A key challenge is ensuring that regulators facilitate compliance with legal requirements by developing clear guidelines and other tools that parties conducting a cross-border data transaction can rely on.

Given the divergence in regulatory approaches and implementation practices, there is no one-size-fits-all solution, but the following broad reform directions could guide action across the region.

First, fostering institutional collaboration to support a harmonized governance framework.

- Engage in multistakeholder cooperation through participation in intergovernmental (G20); global (the World Trade Organization (WTO); multilateral (OECD, World Bank); regional (ASEAN,²³ Council of Europe Data Protection

²³ ASEAN member states are Brunei Darussalam, Cambodia, Indonesia, the People’s Democratic Republic of Lao, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

Convention 108+); and bilateral and multilateral trade forums (EU–UK Trade and Cooperation Agreement and the proposed ASEAN-Digital Economy Framework Agreement).

- Strengthen institutional capacity by providing data protection regulators with the resources needed to upgrade their skills and capacity to address regulatory bottlenecks, improve coordination, and provide greater guidance to businesses.
- Establish and expand on regional platforms for better coordination and cooperation among regulators across countries, promote the sharing of knowledge and best practices, improve coordination of enforcement efforts, and achieve more effective responses to cross-border data breaches. The ASEAN Data Protection and Privacy Forum is one such platform.

Second, enhancing *regulatory predictability in the region through transaction-level measures*.

- Achieve better interoperability across data protection regimes by:
 - Increasing the uptake and use of standard contractual clauses such as the ASEAN Model Contractual Clauses (MCCs) to promote legal interoperability across regulatory regimes.
 - Adopting accountability-based mechanisms such as the APEC/Global CBPRs system to support further harmonization of data protection regimes and practices as a complement to national legal obligations and the MCCs.
- Develop capacity and raise awareness to help organizations—particularly micro, small, and medium enterprises—to understand their roles and responsibility in protecting personal data, their regulatory obligations for different jurisdictions, and the purposes and effects of the MCCs and APEC’s CBPRs.
- Consider the development of cross-border dataspace and greater use of data sandboxes, which provide trusted environments for the trusted and secure transfer of data.

4.4.2. Decarbonizing maritime transportation services

International maritime transport is the backbone of international trade, as more than 80 percent of global trade by volume is transported by sea (UNCTAD 2022). In 2021, developing countries accounted for 55 percent of seaborne exports and 61 percent of imports by sea globally. Maritime transport is particularly important to Asian economies. According to UNCTAD (2022), Asia remains the main loading and discharge center, turning around 42 percent and 64 percent of all global exports and imports, respectively. At the same time, shipping accounts for a significant and growing share of global anthropogenic greenhouse gas (GHG) emissions, contributing around three percent of the total GHG emissions in 2018 (Faber et al. 2020).

In July 2023, the 175 member states of the International Maritime Organization (IMO) unanimously adopted the 2023 IMO GHG Strategy (IMO 2023). This multilateral effort is a landmark agreement which replaces the 2018 Initial Strategy and significantly strengthens shipping’s GHG reduction targets. Concretely, IMO member states agreed to reach net-zero GHG emissions from international shipping by or around 2050 including interim checkpoints of 20–30 percent reductions by 2030 and 70–80 percent by 2040, respectively (figure II.53).

In addition, IMO’s ambition to make zero- or near-zero GHG energy, fuels, and technologies 5–10 percent of shipping’s energy mix by 2030 will change the wider fuel landscape significantly. Annually, international shipping combusts

Box II.6. Global initiatives to optimize cross-border data flows

There are several initiatives by international policy community to facilitate a more interoperable regime for enabling cross-border data flows by establishing a “trust framework” for governing the way personal data are securely processed and shared, especially across borders.

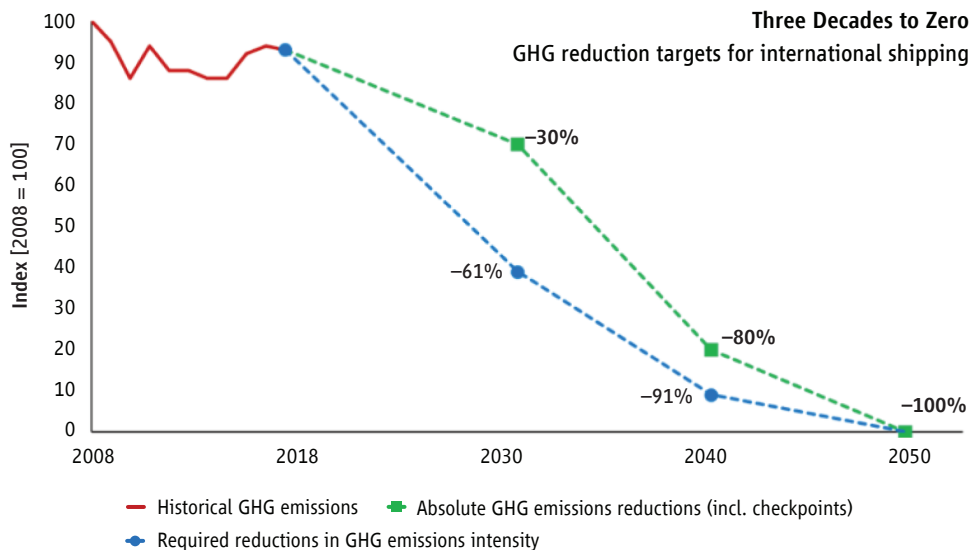
At the global level, the G7 and G20 are developing common strategies, principles, and norms aimed at providing an overarching framework that can be distilled into national policy and regulatory frameworks. Such initiatives have been promoted through regional organizations (ASEAN and the African Union) and bilateral trade agreements (the EU–UK Trade and Cooperation Agreement and the proposed ASEAN Digital Economy Framework Agreement and conventions (such as Convention 108 and 108+).

At the multilateral and bilateral level, several preferential trade and digital economy agreements are also addressing cross-border data flows and trust. These agreements include nonbinding guidance on data flows, with broad provisions affirming the importance of working to maintain cross-border data flows (examples include the Korea-Peru Free Trade Agreement, and the Central America-Mexico FTA). Others contain binding commitments on data flows (of all types of data). Examples include the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP); the United States, Mexico, and Canada Agreement (USMCA); and the EU–UK Trade and Cooperation Agreement.

The trade agreement led by ASEAN, the Regional Comprehensive Economic Partnership (RCEP), has several features that are relevant for cross-border data flows.²⁴ For example, Digital Economy Framework Agreement (DEFA) are treaties that promote cooperation in regulatory approaches in areas such as AI and electronic identification (eID), ensuring trusted cross-border data flows in compliance with data protection rules and other public policy objectives and promoting information exchange and cooperation in the field of cybersecurity.

²⁴ RCEP is the world’s largest FTA, accounting for about 30 percent of global GDP. See <https://www.mti.gov.sg/Trade/Free-Trade-Agreements/RCEP>.

Figure II.53. GHG emissions reductions in international shipping from 2008–2050



Source: Englert et al. (2023).

around 300 million tons of mainly heavy and distillate fuel oils, which would need to be gradually replaced (Faber et al. 2020). The most promising candidate fuel types with zero- or near-zero GHG emissions are hydrogen-derived fuels produced with renewable energy, such as green ammonia or green methanol (Englert et al. 2021). Meeting the new reduction targets also requires improving the energy efficiency of the fleet, which can be achieved through operational measures, such as speed reductions, or technical measures, such as modifications to the ship's power plant, hull, and propeller.

Robust policies will be needed to meet the IMO's GHG targets. The IMO plans to develop a basket of policy measures consisting of both technical and economic elements. The technical element will be a marine fuel standard mandating the phased reduction of the GHG intensity of the energy used on board ships. This standard is expected to be key to driving the effective uptake of zero- and near-zero GHG fuels in a timely manner. The specific nature of the economic element still needs to be defined but it will likely be based on GHG emissions pricing, such as a carbon price on ship emissions. The latter would represent the very first carbon pricing instrument covering all GHG emissions of an entire sector globally. These measures are to be adopted in 2025, with an envisaged entry into force in 2027.

The key role of an economic measure for international shipping is to incentivize reductions in GHG emissions in shipping. According to several studies, economic instruments like carbon pricing have the potential to stimulate the production and uptake of alternative fuels and promote improvements in technical and operational measures on vessels (ITF 2022; Parry et al. 2018). In addition to yielding GHG emissions abatements, they can generate considerable revenues. Estimates indicate that a carbon price applied to international shipping could raise up to \$3.7 trillion by 2050, depending on assumptions related to the carbon price and the emissions reduction trajectory, among others (Baresic et al. 2022; Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping 2021). This corresponds to an annual average of \$40 billion to \$60 billion between 2025 and 2050 in collected carbon revenues (Dominioni et al. 2022).

Policy measures to reduce GHG emissions from international shipping can affect the trade of remote countries. A UN Conference on Trade and Development (UNCTAD) study suggests that the policy's global impact on maritime logistics costs would be small when contrasted with the typical fluctuations in freight rates (UNCTAD 2021). The global impact on GDP and trade flows could also be considered small. But developing coastal countries, including SIDS and LDCs, would experience a more significant reduction in their GDP, import, and export flows than developed coastal countries. Furthermore, the impacts of some measures the IMO is currently considering, namely a marine fuel standard and a GHG emissions pricing instrument may be more significant than those of the energy efficiency measure UNCTAD previously examined because these measures must drive the uptake of more expensive zero-carbon bunker fuels.

The IMO has agreed that shipping's decarbonization should be just and equitable. Many IMO member states recognize that carbon pricing cannot only reduce GHG emissions but can also address equity concerns. This can be the case when revenues are strategically channeled back to those countries which may struggle the most with shipping's decarbonization and/or climate change—most often developing countries, specifically small island developing states and least developed countries. They could also be used to enhance maritime transport infrastructure and capacity which can lower countries' maritime transport costs. Another way would be to channel carbon revenues to countries affected by disproportionately negative impacts as a way to offset (some of) these impacts.

EAP countries have a stake in the IMO discussions because they are vulnerable to climate change and have an interest in reducing emissions. They are also likely to be affected by the increase in the cost of transport as traders dependent on shipping. Therefore, they must engage in cooperative discussions both to ensure meaningful climate action and an equitable distribution of the cost of such action.

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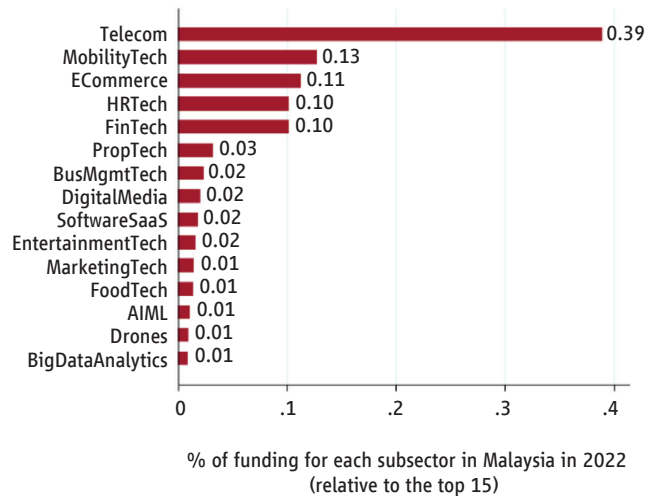
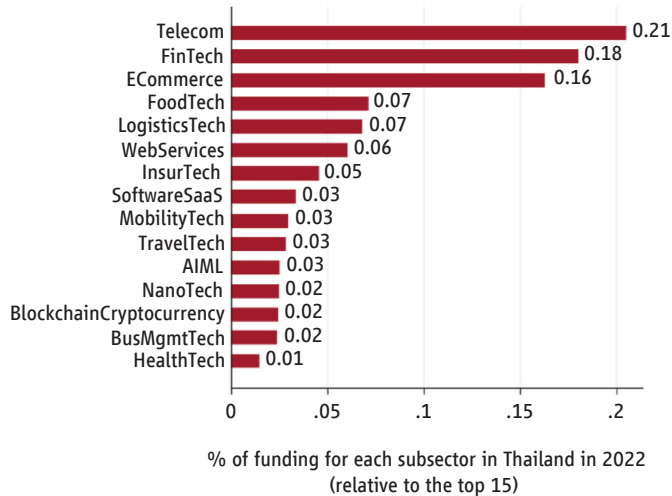
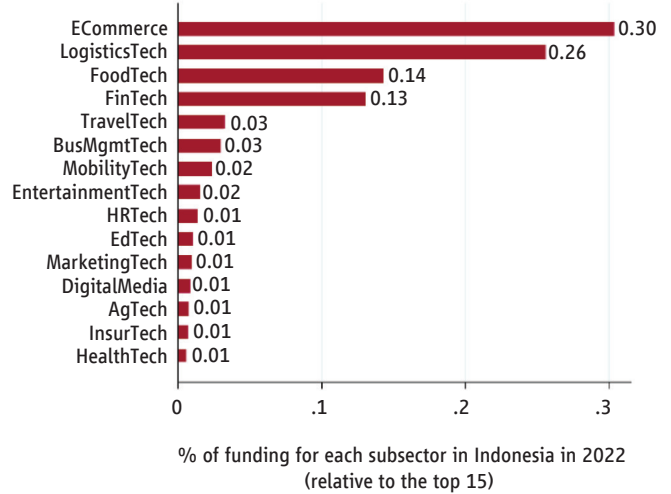
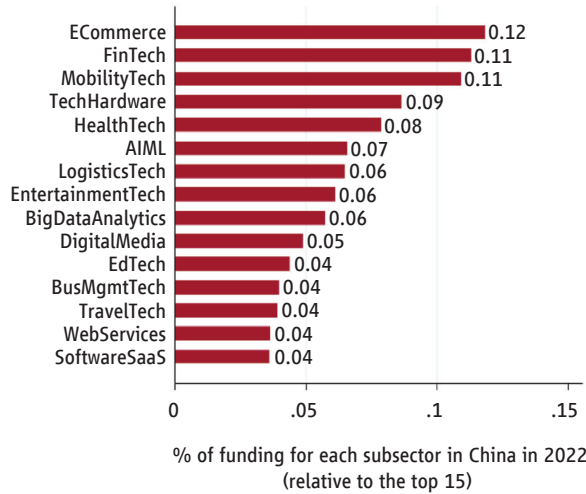
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Annexes

Annex 1

Shares of venture funds by sub-sectors in selective EAP countries



Annex 2

Definitions of the 44 digital subsectors reported in the FCI DBD

<i>Subsector</i>	<i>Definition</i>
3D printing	Developing and using 3D printing, or additive manufacturing, refers to the manufacturing process and the technology related to printing a three-dimensional object. This sector encompasses the actual printer as well as software related to 3D printing.
Aerospace tech	Developing and using technology to provides services, research, and innovation related to space flight, aviation, satellite, and space exploration. This subsector includes but is not limited to satellite operations management software, products enabled by satellite connection (such as real-time aerial mapping), spacecraft and aircraft development software, and spatial communication technology.
Agtech	Developing and using digital technologies to enable the agriculture technology value chain, including but not limited to digital agriculture software and hardware (sensors, imagery, precision ag); mixed and integrated agricultural innovation; plant and crop science; animal and livestock science;; post-farm agriculture value chain (agri marketplace, delivery, logistics, supply chain innovation); and agricultural waste management.
Artificial intelligence	Developing and using technology for machines to autonomously learn and act through data analytics. This sector will inevitably be closely related to big data and analytics, since AI utilizes a large quantity of data to perform their given functions.
Big data and analytics	Developing and using technology for recording, collection, distribution, and use of large volumes of data. Big data refers to data that is too large, too fast, or too complex to process using traditional methods. This sector includes firms that use data as a service, data analysis and visualization services, and data collection services.
Biotech	Developing and using biotechnology to create products that are dependent upon developing and creating new products by using and manipulating biological systems and living organisms. This subsector includes firms developing databases for biotech research and IoT devices for biotech.
Blockchain and cryptocurrency	Developing and using technology to use blockchain applications and distributed ledger technology. This subsector includes but is not limited to firms using smart contracts, crowd funding, supply chain auditing, cryptocurrency, identity management, intellectual property, file storage, etc. The cryptocurrency space includes companies providing services or developing technology related to the exchange, storage, facilitation of payments, and securing cryptocurrency.
Business management tech	Developing and using technology to improve business operations. This subsector includes but is not limited to operations management/optimization software, customer relations management (CRM), customer service tools, enterprise resource planning (ERP) products, and corporate digitization consulting.
Civic tech	Developing and using technology to improve and aid the relationship between civil society, governmental functions, and humanitarian well-being. This subsector includes but is not limited to government management systems, data analytics on political and governance processes, taxation management, civil society reporting systems, and monitoring products and services
Clean tech	Developing and using technology to improve the creation, distribution, use and monitoring of clean and sustainable products and services. This subsector includes but is not limited to digitally-enabled clean energy products and services, sustainable product e-commerce, clean technology logistics technology, and recycling and waste management technology.
Construction tech	Developing and using technology to improve construction value chain. This subsector includes but is not limited to construction operation management software, construction safety IoT services, and construction logistics software.
Digital media	Developing and using technology to improve the creation, editing, storage, access, distribution, publishing, analysis and delivery of media on digital settings. This subsector includes but is not limited to digital journalism, social media, e-media searching and subscription platforms, and publishing logistics management products and services.
Drones	Developing the technology, and using, servicing, and delivering automated or remote-controlled mechanical devices and technology, including unmanned aerial vehicles, subsea vehicles, and land vehicles.
E-commerce	Developing and using digital technology to facilitate and improve the sale of products over internet networks. BEA considers e-commerce to include digitally-ordered, digitally-delivered, or platform-enabled transactions (BEA, Barefoot et al 2018). This subsector includes but is not limited to online marketplaces, aggregator e-commerce, e-commerce analytics, e-commerce transactions, and e-commerce logistics.

(continues)

<i>Subsector</i>	<i>Definition</i>
Edtech	Developing and using technology to enhance teaching, learning, and training both inside and outside of classrooms. This subsector includes but is not limited to learning devices (tablets and interactive “smart” boards), educational institution management systems, virtual learning products and services, remote learning products and services, and instructor and student assistance programs.
Entertainment tech	Developing and using technology to improve the creation, distribution, delivery, analysis, and use of entertainment products and services. This subsector includes but is not limited to e-sports, e-casino, movies, animation studios and gaming (hardware and software) products, music and video streaming platforms and services, arts, music algorithm software, online management of entertainment events, and entertainment-oriented social media.
Fintech	Developing and using technology for financial services that is usually offered by traditional banks. This includes loans, payments, and wealth and investment management, as well as software providers of automating financial processes or products that address the core business needs of financial firms.
Food tech	Developing and using technology to improve food and beverage production, distribution, purchasing, and consumption. This subsector includes but is not limited to restaurant aggregator/ review platforms, food e-marketplaces, and food lifestyle media, as well as prepackaged food subscription firms.
Gig economy	Developing and using technology to connect gig-economy workers to gig-economy opportunities, including the sharing of economic opportunities. This subsector includes but is not limited to freelancer/gig-worker hiring platforms, gig worker workflow management software, and gig worker insurance platforms.
Health tech	Developing and using technology to improve the creation, facilitation, delivery, safety, reliability, and analysis of healthcare services. This subsector includes but is not limited to telehealth, e-health platforms, pharmatech, technical medical device development, medical laboratory management, and diagnostic algorithm development.
HR tech	Developing and using technology to improve the management, research, analysis, and organization of human resource functions. This subsector includes but is not limited to human resource management software/ platform, recruitment algorithms, job posting platforms, employee performance and time tracking, employee training (remote and/or virtual), and reporting tools.
Insurance tech	Developing and using technology to improve the creation, distribution, delivery, use, and analysis of insurance products and services.
Internet of things	Developing, producing, and using internet of things (IoT) devices (physical objects that are embedded with sensors that monitor, store, and send data for use in the physical space).
Legal tech	Developing and using technology to improve creating, distributing, using, interpreting, organizing and assessing legal products and services. This subsector includes but is not limited to telelegal services, legal service aggregators, algorithmic legal services, and caseload management solutions.
Logistics tech	Developing and using technology to improve the movement of goods. This subsector includes but is not limited to digital supply chain management, cargo management software, supply chain tracking, and operation management software.
Manufacturing tech	Developing and using technology to improve the operation and management of the manufacturing value chain. This subsector includes but is not limited to automation solutions, “smart” factory products, and data-based production analytics tools.
Marketing tech	Developing and using technology to improve the marketing value chain. This subsector includes but is not limited to digital marketing content creation, digital marketing consultancy, marketing data and analytics, search engine optimization (SEO) technology, and customer tracking and interaction products and services.
Mining tech	Developing and using technology to improve the mining value chain. This subsector includes but is not limited to seismic data analytics, mining operation optimization, supply chain management software, and risk detection technologies.
Mobility tech	Developing and using technology to improve the movement of people. This subsector includes but is not limited to passenger transportation logistics (for travel by air, train, and automobile), traffic monitoring and tracking, on-demand ride share and hauling (for both motorized and nonmotorized transportation), passenger transportation repair platforms, and online maps.
Nanotech	Developing and using nanotechnology to create products that are dependent upon the ability to manipulate materials at an atomic level, usually due to the materials exhibiting novel properties at the subatomic level.

<i>Subsector</i>	<i>Definition</i>
Pet tech	Developing and using technology to improve products and services for animal and pet care. This subsector includes but is not limited to animal care matching platforms, televet care, animal product e-Commerce, animal monitoring IoT and wearables, and animal care social media.
Property tech	Developing and using technology to improve the real estate and property development value chain. This subsector includes but is not limited to property sale and renting platforms, property management software, renter verification software, and smart home applications.
Quantum tech	Developing and using digital technology through quantum computing principals (using Qubits instead of normal computer bits of either 0 or 1). This subsector includes the hardware and software components of quantum computing.
Reality tech	Developing and using technology that provides user experiences in a different reality environment. This includes both virtual and augmented reality.
Robotics	Developing and using technology for remote-controlled mechanical devices, including machines programmed to perform repetitive and precision tasks.
Security tech	Developing and using technology to improve safety and security products and services. This subsector includes but is not limited to cybersecurity-related products and services, security monitoring and security IoTs, and wearables.
Social network	Developing and using technology to enable users to connect and communicate with each other by posting information, comments, messages, and/or images through a dedicated website or application. This subsector includes social media, messaging platforms, services conducted through social media, and content-sharing platforms.
Software and SaaS	Developing and using technology to offer software as a service (SaaS) or product. This subsector includes but is not limited to digital infrastructure software, application and web design/coding, industry-specific software, etc.
Tech hardware	Producing or contributing to the process of producing the physical parts of computer, machinery, and related devices that enable digital infrastructure and digital use. Includes firms making or servicing internal and external hardware for devices that enable digital connectivity and software installment.
Telecom	Developing and deploying telecommunication technology to enable digital infrastructure and digital connectivity. This subsector includes but is not limited to telecommunication service providers, telecom infrastructure developers (tech hardware related to broadband and fiber optics), and internet connectivity services (internet and mobile network services) for both individual consumers and businesses.
Travel tech	Developing and using technology to improve the travel and tourism value chain. This subsector includes but is not limited to travel booking platforms, travel review and discovery platforms, and travel security software.
Utilities tech	Developing and using technology to improve the utility value chain, including water and waste management utilities. This subsector includes but is not limited to utility management software, utilities monitoring and tracking services, mobile payment for utilities, leak detection IoTs, technology-enabled toilets, sanitation IoTs, sanitation monitoring tools, and sanitation-related telehealth products and services.
Wearables	Developing and using wearable devices with sensors that collect and analyze data based on the user's activities. This subsector includes firms developing software and hardware related to wearable technology.
Web services	Developing and using technologies to connect users to web-based application and data sources via standard web protocol. This subsector includes but is not limited to hosting services, cloud services, web and application development, web application engineering, and ICT connectivity solution providers.

Annex 3

Box A3. Shaping tourism development: The impact of digitization and new technology dynamics in EAP

In 2019, travel and tourism generated 9.8 percent of GDP and 184.3 million jobs in Asia Pacific, the region with the highest tourism contribution in absolute terms and the second in relative terms after the Caribbean (WTTC 2023). For some countries in the region, the relevance of the tourism sector was even higher: Vanuatu, Fiji and Cambodia derived 32.7, 31.3 and 25.8 percent of their GDP from tourism (Figure A3.1). China, on the other hand, represented the world’s largest outbound tourism market, both in terms of departures and tourism spending, generating a total of US\$ 255 billion for the global economy (UNWTO 2023).

Figure A3.1. Tourism as a share of GDP and Employment in 2019, selected low- and middle-income countries in EAP



Source: WTTC.

How is tourism industry is being shaped by digital technologies in EAP?

The digitization of tourism distribution channels, driven by Online Travel Agencies (OTAs) and online aggregators, has led to lower consumer prices for airline tickets and hotel rooms. It has simplified product and service comparisons, intensifying market competition and naturally reducing prices (Orlov 2011). In the EU, OTAs lowered average daily hotel rates by €9.40 per room night (7.1 percent reduction) between 2014 and 2019, while also contributing to 134.1 million additional hotel nights in 2019 (Tourism Economics 2021). Peer-to-peer (P2P) accommodation platforms that allow individual short-term rentals, like Airbnb and VRBO, have enabled increased choice and competition, and have also lowered hotel prices. In the 50 largest U.S. cities, hotels experienced a 1.6 percent revenue decrease and up to a 2.8 percent reduction in variable profits due to Airbnb in 2014. The impact varied by segment, location, and date, with a stronger negative effect in cities with limited hotel capacity (Farronato & Fradkin 2022). Similarly, Airbnb’s impact is more noticeable in low-end and Asian markets, compared to Europe, where hotels can offer more customized and authentic experiences (Yang et al. 2021).

(continued)

(Annex A3. continued)

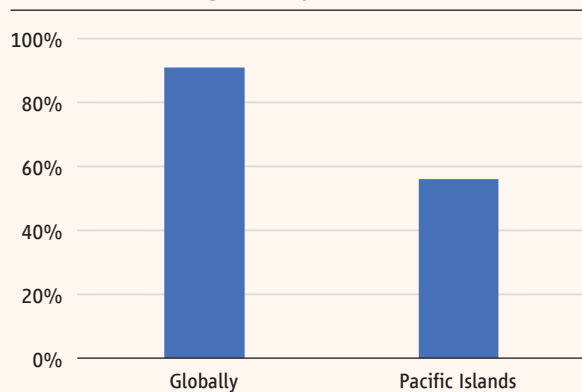
Technology also impacts the quality of service in the tourism industry in three ways: review sites; AI technology supporting customer service; and greater inclusion for visitors. Reviews have a high impact on consumer decisions - Expedia found that 39 percent travelers use review sites for planning their trip (Expedia 2017). Similarly, a 2014 survey by TrustYou found that consumers are 3.9 times more likely to book a hotel with higher review scores with equal prices (TrustYou 2014). The industry makes use of AI technology to support several customer service functions and improve customer experience, including: facial recognition in airports; chatbot software for queries, immediate support and personalized recommendations; and optimization for recommendations on timing of purchases based on past dynamic pricing trends (Samala et al. 2020). Finally, digital technology can boost inclusiveness and accessibility for visitors with visual, auditory and cognitive impairments (Michopoulou & Buhalis).

Is the tourism industry in EAP adapting to digital adoption?

Digital technologies in the tourism sector in EAP are primarily employed for basic front-end business functions, such as advertising. Few firms possess the capacity to conduct end-to-end digital transactions, including property management systems, payments, or utilize digital tools for essential back-end functions such as customer relations management, inventory, finance, and accounting. An (unpublished) business survey conducted by the World Bank across seven PICs (Fiji, Kiribati, PNG, Samoa, Solomon Islands, Tonga, Vanuatu) in 2020 revealed that while most firms had Internet access and used social media for business purposes, very few engaged in online sales, and even fewer could execute complete digital transactions, including payments. Data from a WBG Firm Technology Adoption Survey in Cambodia of 66 accommodation firms showed low levels of technological sophistication in all specific business functions, with a preponderance of either manual systems or the use of standard software, as opposed to specific digital solutions.

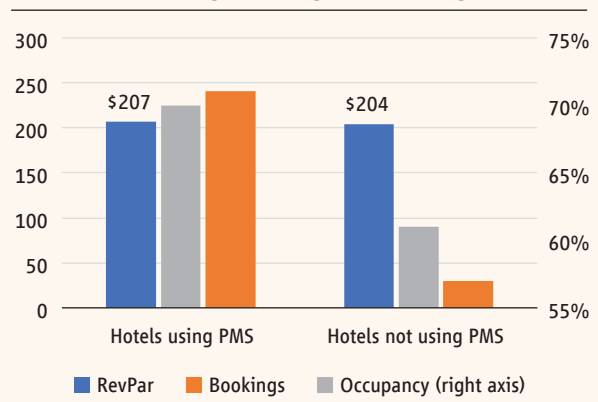
A 2022 survey of more than 130 hotels in the Pacific found that they paid 211 percent more for international transactions than their peers in other regions and that 54 percent of them did not offer card payment at the time of booking (Kovena 2022). The same study pointed at the impact on bookings and occupancy rates that the lack of property management systems has on hotels.

Figure A3.2. Share of hotels using Property Management Systems (PMS)



Source: (Kovena 2022)

Figure A3.3. Performance difference by property management digitalization degree



(continued)

(Annex A3. continued)

Low technology adoption responds to a multiplicity of factors. Internet penetration in Asia Pacific is lower (48 percent) than in the rest of the world (62 percent) (Oxford Economics and Pacific Asia Travel Association 2018). Infrastructure challenges, geographical diversity or economic barriers could be contributing to that. Within the region, there is a clear correlation between internet penetration and average income (Ibid). Nearly half of SMEs and around 30 percent of large firms in emerging Asia struggle to digitize due to financing challenges (Dabla-Norris, et al. 2023). Other barriers are a skilled workforce shortage, and legal limitations in data protection and intellectual property rights (Sayeh et al. 2023).

Risks associated with use of digital technologies in tourism.

The dominance of digital platforms and solutions in tourism, like Priceline Group, Expedia, Travelport, Amadeus, and Sabre, can bring benefits but also raises concerns due to network effects. These companies hold up to 95–99 percent market share, potentially generating market inefficiencies that increase costs for businesses and prices for consumers. (McComb 2022).

The relationship between digital platforms and accommodation providers in the tourism sector raises antitrust and vertical restraint concerns, which are prevalent due to the sector's reliance on small businesses. Most Favored Nation (MFN) clauses used by these platforms can drive up prices for sellers and platform fees, discouraging new entrants and stifling innovation. This issue is reflected in a significant portion of national antitrust cases, accounting for around 13 percent in developed countries and approximately 10 percent in developing nations from 2006 to 2019. These cases primarily focus on examining pricing dynamics. (World Bank Group 2021)

Annex 4

The Service Trade Policy Database includes a broad set of measures affecting services trade both by sectors and mode of delivery. About 150 of these indicators are then used in the construction of the STRI index. These indicators belong to five distinct areas of policy measures: i) Conditions of market entry, ii) Conditions of operation, iii) Measures affecting competition, iv) administrative procedures. The STRI is first defined at sector-mode level, and then aggregated at the sector level. In the following

Table A4.1. STRI Restrictions on Mode 1

	<i>China</i>	<i>Indonesia</i>	<i>Malaysia</i>	<i>Myanmar</i>	<i>Philippines</i>	<i>Thailand</i>	<i>Vietnam</i>
Fixed Line Telecom	Com. Pres.; Other	Com. Pres.	Com. Pres.; Other	Other	Other	Closed	Com. Pres.; Res. Int.
Mobile Telecom	Com. Pres.; Other	Com. Pres.	Com. Pres.; Other	Other	Other	Closed	Com. Pres.; Res. Int.; Other
Commercial Banking	Com. Pres.; Other	Com. Pres.	Com. Pres.; Scope	Other	Com. Pres.	Closed	Com. Pres.
Life Insurance	Com. Pres.	Com. Pres.; Other	Closed	Closed	Com. Pres.; Res. Int.; Other	Closed	Closed
Non-Life Insurance	Com. Pres.	Com. Pres.; Other	Com. Pres.; Scope	Closed	Com. Pres.; Res. Int.; Other	Closed	Com. Pres.
Wholesale Services	Other	Com. Pres.; Other	Closed	Scope			Com. Pres.; Other
Retail Services	Other	Com. Pres.; Other	Closed		Other		Com. Pres.; Other
Maritime Freight	Scope; Other	Scope; Res. Int.; Other	Com. Pres.; Scope; Other	Other	Scope	Closed	Other

DEFINITIONS: **Closed:** Cross-border supply is not possible. Most of the time, the company must be incorporated/have its headquarters in the host country to supply services **Com. Pres.:** Establishment of a branch or a representative office is required to provide cross-border services **Data:** Prohibition or constraint to transfer data to, or accessed from, abroad; Local data storage is a condition to supply services **ENT:** Requirement to demonstrate domestic unavailability of the service in mode 1 **Res. Int.:** Requirement to use the services of a resident intermediary **Other:** Sector-specific measures **Scope:** Limits on the scope of the service.

Table A4.2. STRI Restrictions on Mode 3

	<i>China</i>	<i>Indonesia</i>	<i>Malaysia</i>	<i>Philippines</i>	<i>Thailand</i>	<i>Vietnam</i>
Fixed Line Telecom	FelG (49); FelA (49); JV; Other	Other	FelG (70); FelA (70); Screening; Other	Other	FelG (49); FelA (49); Man; Other	FelG (49); FelA (49); JV; Screening; Other
Mobile Telecom	FelG (49); FelA (49); JV; Other	Other	FelG (70); FelA (70); Screening; Other	Other	FelG (49); FelA (49); Man; Other	FelG (49); FelA (49); JV; Screening; Other
Commercial Banking	FelA (25); Other	FelG (99); FelA (99); ENT; BoD; Other	ENT; Other	FelG (Rec, 0); FelA (Rec, 0); ENT; Other	FelG (25); FelA (25); Other	Screening; Other
Life Insurance	JV; ENT; Other	FelG (80); FelA (80); JV; BoD; Other	FelG (70); FelA (70); ENT	Other	FelG (25); FelA (25); JV; ENT	ENT; Screening; Other
Non-Life Insurance	ENT; Other	FelG (80); FelA (80); JV; BoD; Other	FelG (70); FelA (70); ENT	Other	FelG (25); FelA (25); JV; ENT	ENT; Screening; Other
Wholesale Services		Other	Screening; Emp; Other		ENT	
Retail Services		ENT; Scope; Other	FelG (70); FelA (70); ENT; Screening; Emp	Scope; Screening; Other	ENT	
Maritime Freight	Scope; Other	FelG (OF, 49); JV (OF); Scope (OF); Other	FelG (NF, 49); FelA (NF, 49); BoD (NF); Emp (NF); Other		FelG (NF, 75); FelA (NF, 75); Scope (OF); Other	FelG (49); FelA (49); JV (NF); Man (NF); Emp (NF); Screening; Other

DEFINITIONS Closed: Foreign establishment is prohibited **BoD**: Majority of the board of directors must be residents/nationals **Data**: Prohibition or constraint to transfer data to, or accessed from, abroad; Local data storage is a condition to supply services **Emp**: Minimum percentage of national employees required **ENT**: Number of suppliers/licences is determined through economic needs tests **FelA (%)**: Maximum aggregate foreign ownership allowed for the acquisition of an existing domestic entity (%) **FelG (%)**: Maximum foreign ownership allowed in a new locally incorporated company (%) **JV**: Establishment as joint-venture is required **Land**: Acquisition and use of land and real estate by foreigners is restricted **Man**: Managers must be nationals **NF/OF**: (Only applicable to the maritime sector) When the measure is only captured under the National Flag section or for Other Forms of Commercial Presence, respectively. **Other**: Sector-specific measures. **Quotas**: Number of firms or suppliers is restricted by quantitative limits. **Rec**: Reciprocity requirements **Scope**: Limits on the scope of the service. **Screening**: Investment is screened subject to evidence of economic benefits. **Transfer**: Restrictions on subsequent transfer of capital and investment



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