

LONG COVID: SUPPORTING ANALYSIS



Long COVID: Supporting Analysis

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List of Abbreviations

AMC	Advanced Market Commitment
DSA	Debt sustainability analysis
DSSI	Debt Service Suspension Initiative
EAP	East Asia and the Pacific
ECQ	Enhanced Community Quarantine
EIU	Economist Intelligence Unit
EMDE	Emerging Markets and Developing Countries
FDI	Foreign Direct Investment
GDP	Gross domestic product
GEP	Global Economic Prospects
GVC	Global Value Chain
IDS	International Debt Statistics
IMF	International Monetary Fund
LAYS	Learning-Adjusted Years of Schooling
LPM	Local projection method

MFN	Most Favored Nation
NBFI	Nonbank Financial Institutions
NPL	Nonperforming loans
OECD	Organisation for Economic Co-operation and Development
PBOC	People's Bank of China
PPEs	Personal protective equipment
PPG	Public and Publicly Guaranteed
PPP	Purchasing power parity
R&D	Research and Development
STRI	Services Trade Restrictions Index
SME	Small and medium enterprise
TFP	Total factor productivity
US	United States
WHO	World Health 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

Country Abbreviations

AUS	Australia
BRA	Brazil
BRN	Brunei Darussalam
CAN	Canada
CHN	China
FJI	Fiji
FSM	Federated States of Micronesia
IDN	Indonesia
IND	India
JPN	Japan
KHM	Cambodia
KIR	Kiribati
KOR	Republic of Korea

LAO	Lao People's Democratic Republic
MEX	Mexico
MNG	Mongolia
MMR	Myanmar
MYS	Malaysia
NRU	Nauru
PHL	Philippines
PLW	Palau
PNG	Papua New Guinea
RMI	Republic of the Marshall Islands
RUS	Russia
SGP	Singapore
SLB	Solomon Islands
THA	Thailand
TLS	Timor-Leste

List of Abbreviations continued

TON	Tonga
TUR	Turkey
TUV	Tuvalu
UK	United Kingdom

USA	United States
VNM	Vietnam
VUT	Vanuatu
WSM	Samoa

<i>Currency Units</i>	
A\$	Australian dollar
\$NZ	New Zealand dollar
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

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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 16, 2021.

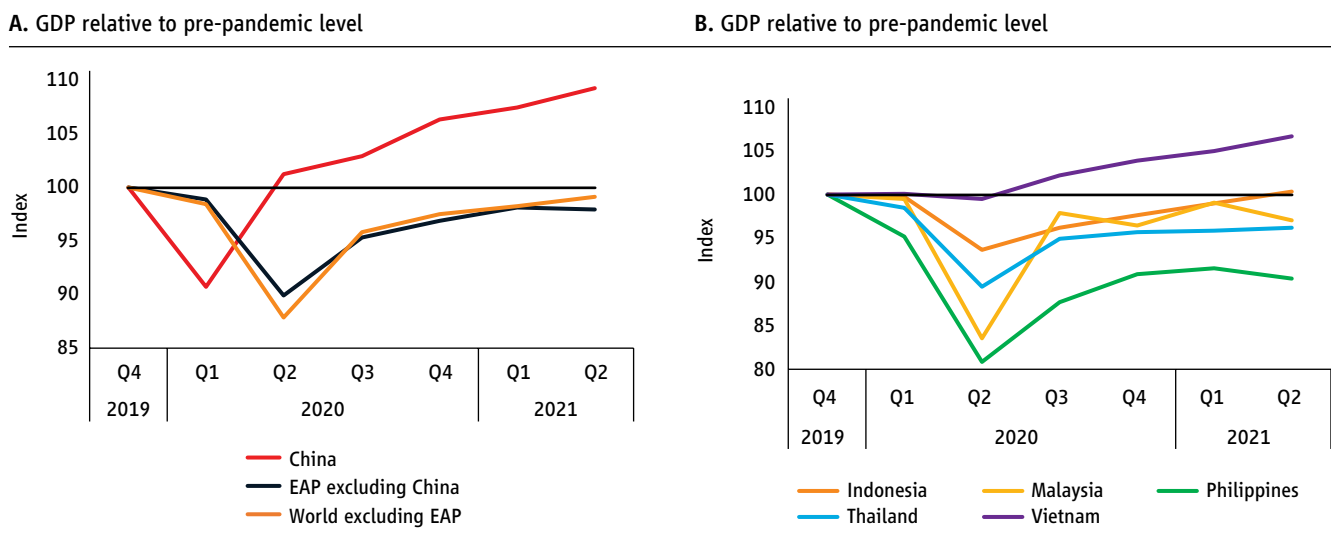
Part I. Recent Developments

Growth, Employment, and Poverty

The EAP region, which was leading the global economic recovery, now confronts serious challenges. First, early success in controlling the COVID-19 infections has been undermined by the spread of the Delta variant in countries with still low vaccination rates. And several countries have been forced once again to impose economically costly restrictions. Second, while goods trade has recovered, the surge of infections has further worsened the outlook for tourism-dependent economies. Third, overextended governments are finding it hard to sustain economic support. The risk is slower growth, higher poverty, and increased inequality. To prevent such an adverse outcome, countries need to accelerate vaccinations, adapt to the prolonged pandemic, and exploit the technological opportunities created by the pandemic through bold economic reforms and meaningful international cooperation.

The multispeed recovery is continuing, albeit at a slower pace. The region’s economies are following divergent recovery paths from the recession in the first half of 2020. Outputs in China and Vietnam had already recovered to pre-pandemic levels in 2020, were well above 9.3 and 6.7 percent, respectively, their pre-pandemic level by the end of the second quarter of 2021, and growth had returned to its pre-pandemic trajectory (figure I.1). Output is also now close to the pre-pandemic level in Indonesia but remains below that level in the rest of the regional economies, including Malaysia, Thailand, and the Philippines (in the Philippines by as much as 9.7 percentage points). The worst affected and the slowest recovering are Myanmar and several Pacific Island Countries. The pace of recovery is now slowing throughout the region. While China has so far resisted the onslaught of new variants, other countries in the region, including Vietnam, have been less successful, and the introduction of restrictions is beginning to drag on growth.

Figure I.1. Output in China and Vietnam had significantly surpassed its pre-pandemic level by 2021-Q2, but was still below its pre-pandemic level in most other countries

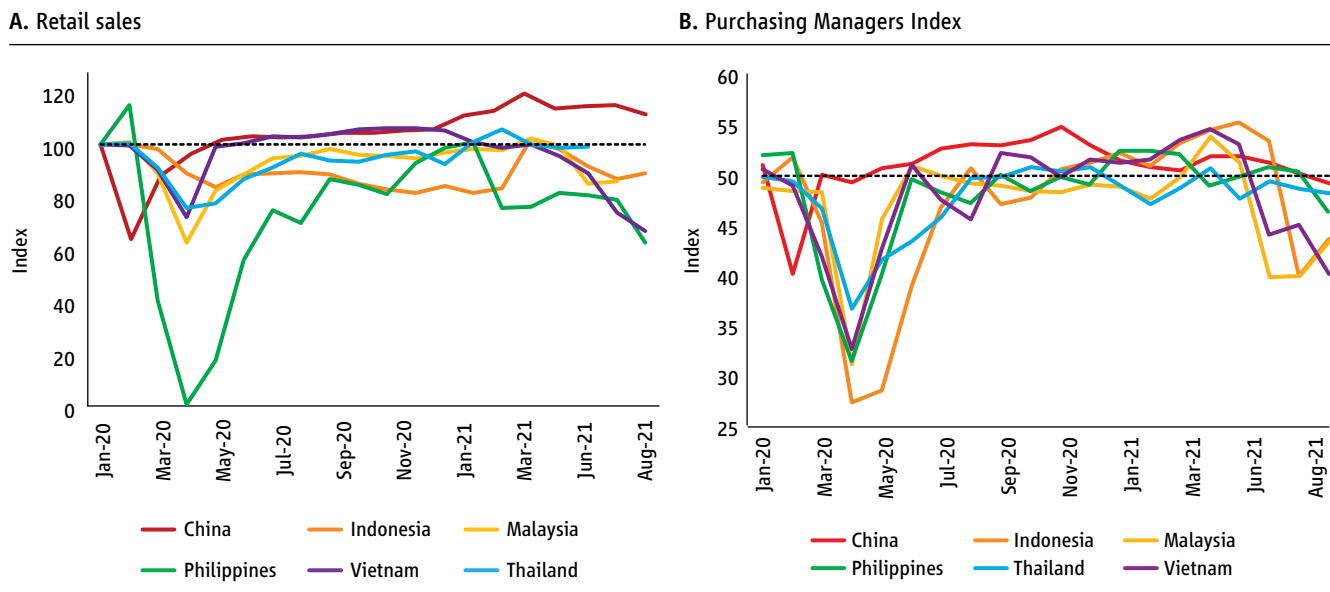


Source: Haver Analytics/World Bank.
 Note: Figures show seasonally adjusted real GDP indexed to 2019-Q4 (100 A. Index: 2019-Q4 = 100. B. Index: 2019-Q4 = 100).

High frequency indicators show a slowdown of activity but so far by less than in the previous waves of infection.

Resurgence of new COVID-19 cases due to the more transmissible Delta variant and related mobility restrictions are dampening the recovery across many economies in the region in 2021. Retail sales have dropped in all major economies (figure I.2). The manufacturing Purchasing Managers Index (PMI) has also declined sharply in Indonesia, Malaysia and Vietnam with the reintroduction of stricter curbs. High frequency indicators point to a slowdown in economic activity 2021-Q3. But domestic economic activity across the region has so far been less sensitive to infections and mobility restrictions than during the initial outbreak of COVID-19 in early 2020 (see the section).

Figure I.2. High frequency indicators of consumer and producer sentiment are turning downward



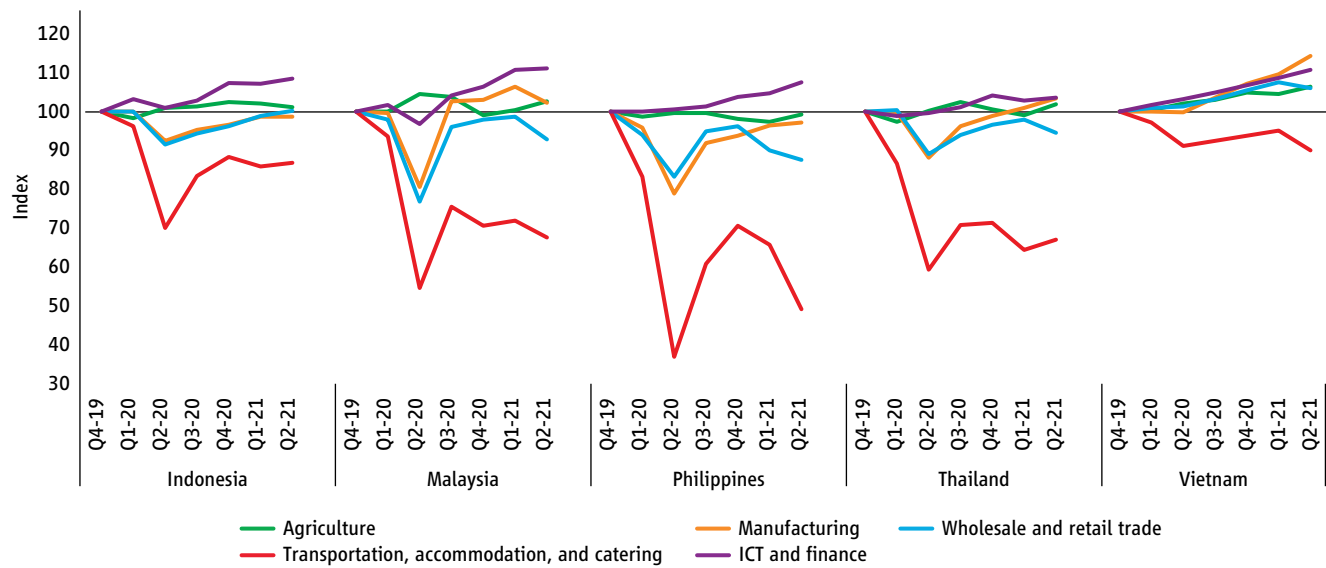
Source: Haver Analytics.

Note: A. Figure shows seasonally adjusted retail sales indexed to January 2020 (100). Indonesia, Malaysia and Thailand are volume-based indices; China and Vietnam are value-based indices. Data for the Philippines show the seasonally adjusted auto sales based on the units. Index: 100 = January 2020. B. Figure shows seasonally adjusted Purchasing Managers Index (PMI) for manufacturing from IHS Markit/Haver Analytics. China's PMI figure is from the Caixin China General Manufacturing PMI. 50+ = expansion.

The COVID-19 shock has had a varied impact on economic activity across sectors. Sectors dependent on mobility and social interaction—transportation, accommodation, and catering—have been among the most severely hit sectors, with activity remaining subdued throughout 2020 (figure I.3). These sectors are now experiencing further declines, along with the wholesale and retail trade sectors. Other sectors, including agriculture, information and communication technology (ICT), and finance have generally demonstrated greater resilience, reflecting less disruption in production processes and sustained demand. The recovery in the manufacturing sector remains intact, reflecting continued strength of foreign demand.

Figure I.3. Plunging transportation, accommodation, and catering activity contrasts with resilient ICT, finance, and agriculture

Value added, selected sectors (index)

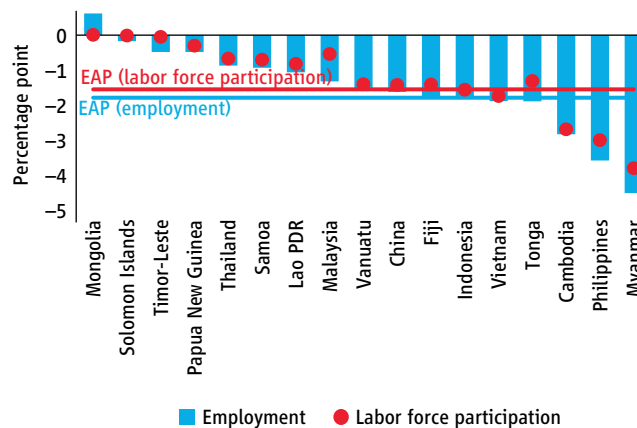


Source: Haver Analytics.
 Note: Figure shows seasonally adjusted real gross value added indexed to 2019-Q4. Wholesale and retail trade; transportation, accommodation and catering; and ICT and finance data for Vietnam in 2019-Q4, 2020-Q3, and 2020-Q4 have been linearly interpolated. Index: 100 = 2019-Q4.

The COVID-19 shock has led to a decline in labor force participation and employment. The regional employment rate dropped by about 2 percentage points on average in 2020 compared to 2019, with the sharpest declines observed in Cambodia, the Philippines, and Myanmar (figure I.4). The decline in employment was attributable to a 1.5 percentage drop in labor force participation and a 0.5 percentage point increase in the unemployment rate, implying that a relatively large proportion of workers moved directly from employment to inactivity (see discussion in the next section on inequality). Anecdotal evidence suggests that workers who lost their jobs were not able to search for new jobs due to restrictions or were discouraged from job searches due to dire economic conditions.

Figure I.4. The region experienced a decline in labor force participation and in employment

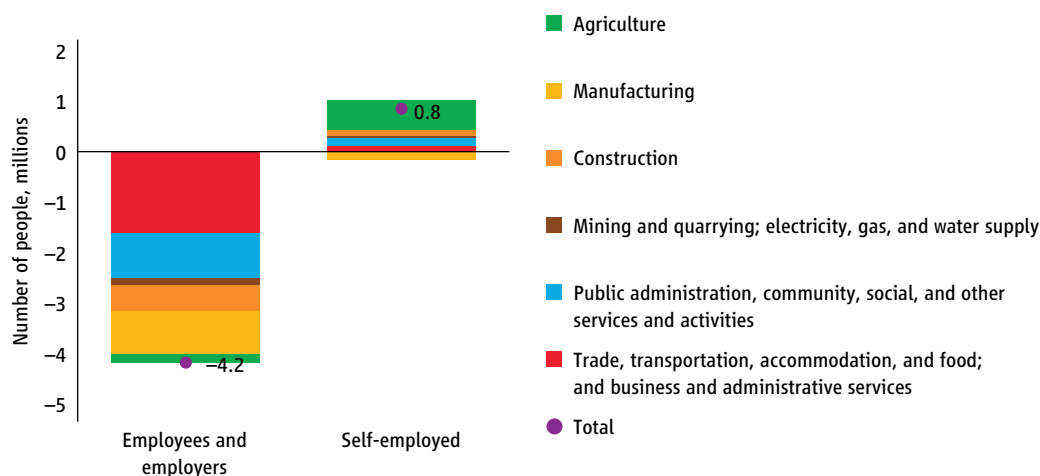
Change, 2019–2020



Source: World Development Indicators/ILO modeled estimates.

The region has been also observing a shift from formal to informal employment. Job losses in 2020 were most significant in services and manufacturing sectors. Those who lost jobs have been partly absorbed by self-employment in the informal sector, especially in agriculture (figure I.5). This trend is consistent with the anecdotal evidence that urban workers who lost their jobs due to the pandemic had returned to their home regions and were now occupied in farming.

Figure I.5. Diminished formal and increased informal employment (2019–2020)



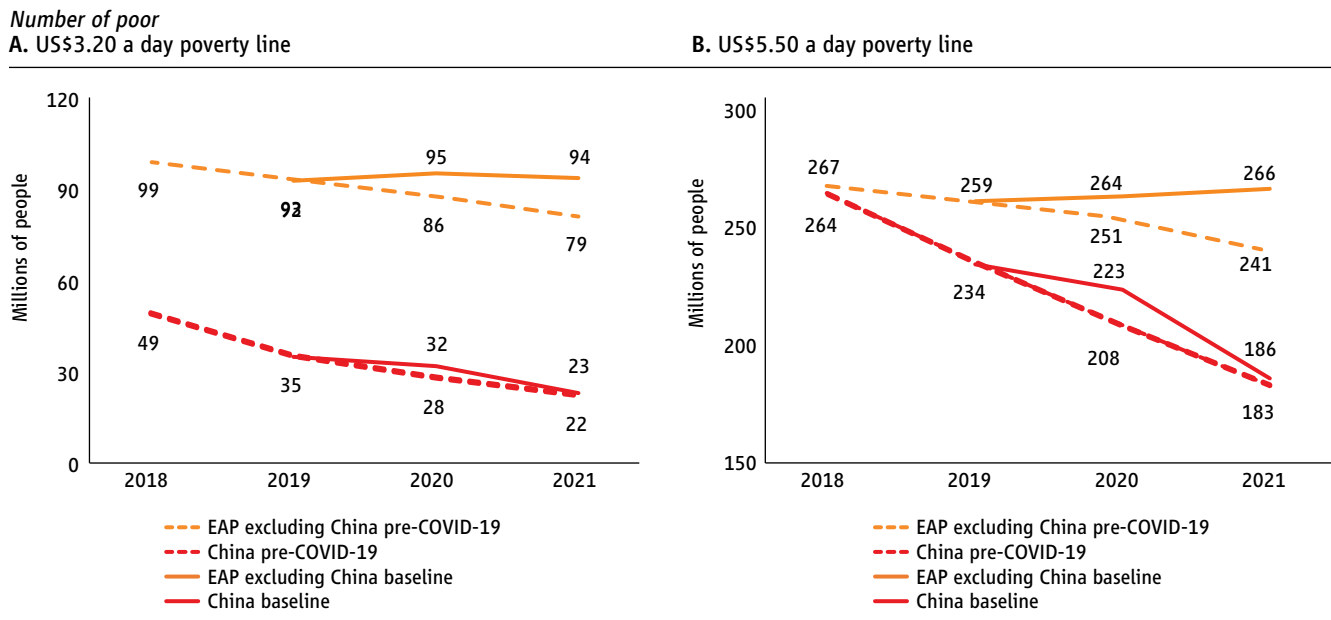
Source: International Labor Organization; World Bank staff calculations.

Note: Figure shows annual change in the employment in Indonesia, Mongolia, the Philippines, Thailand, and Vietnam (sum). Self-employed includes own-account workers, members of producers' cooperatives, and contributing family workers (ICSE-93).

Poverty reduction will remain stalled across developing East Asia and Pacific (EAP) in 2021, except in China. COVID-19 set back progress in poverty reduction in 2020 for the first time in two decades, with up to 29 million *more* poor in the region relative to forecasts prior to the pandemic (figure I.6).¹ In 2021, the estimated number of poor for China is expected to drop to the level projected pre-COVID-19 for 2021. However, in the rest of developing EAP, there will be 15 and 24 million more poor people in 2021 than in the pre-COVID-19 scenario, based on the US\$3.20/day and US\$5.50/day poverty lines, respectively. Given their population size and slower recovery in gross domestic product (GDP), more than 90 percent of those additional poor are expected to come from Indonesia, Myanmar, and the Philippines. Indeed, Myanmar is the only country in the region that is projected to experience a significant increase in the absolute number of poor people from 2020 to 2021.

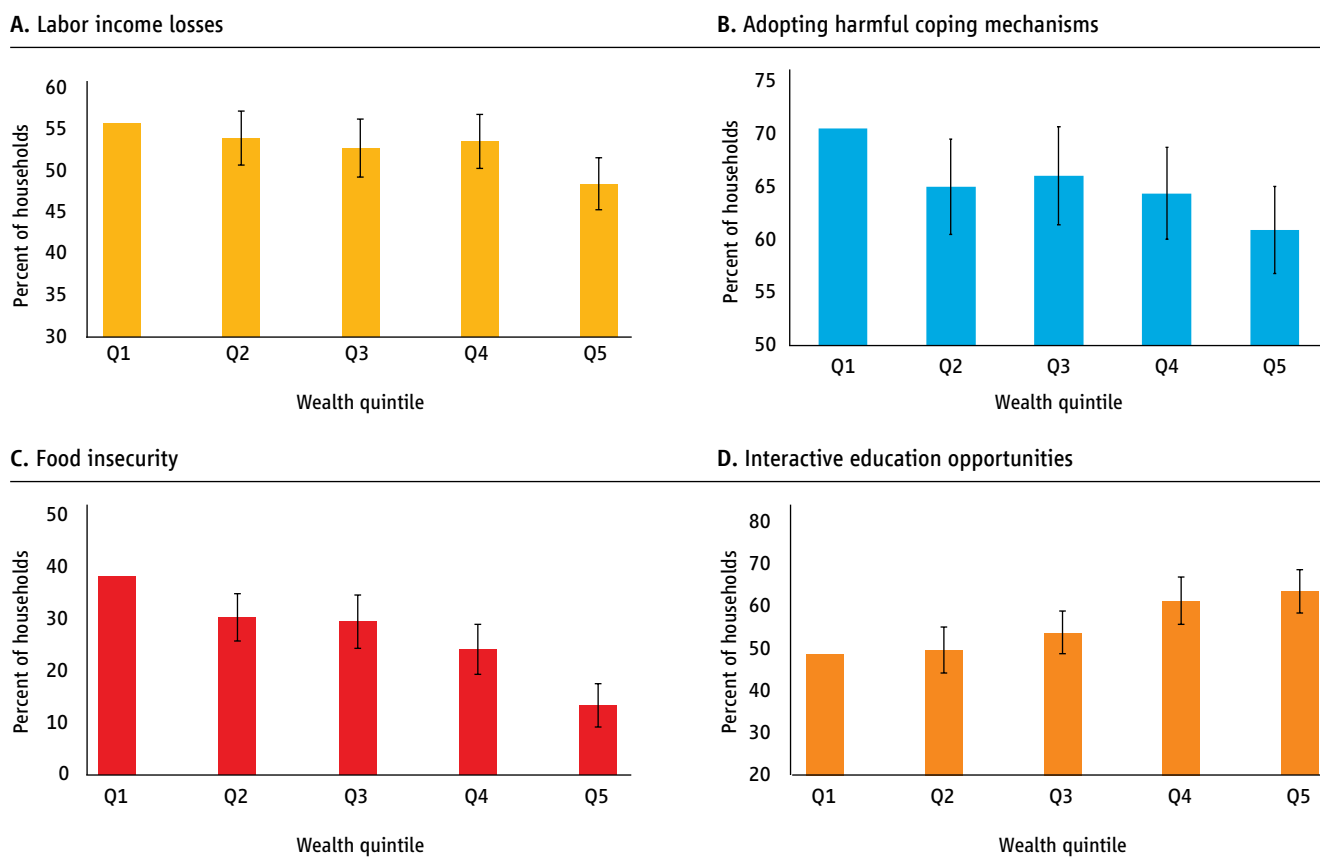
¹ At the US\$5.50/day poverty line, the number of poor in the developing EAP for 2020 was projected to be 459 million (251 and 208 million for EAP excluding China, and China, respectively) in the projection made prior to the COVID-19 pandemic. Based on the post-COVID-19 baseline scenario, it was estimated to be 488 million (264 million and 223 million for EAP excluding China, and China, respectively), indicating 29 million *more* poor people in the region than in the pre-COVID-19 scenario.

Figure I.6. Poverty reduction has stalled across developing EAP while China’s recovery will return poverty to the levels projected pre-COVID-19



Source: World Bank staff estimations. Poverty estimates are based on growth forecasts, population projections, and historical growth elasticities of poverty.
 Note: The baseline forecasts are as of September 15, 2021. US\$3.20 per-person-per-day and US\$5.50 per-person-per-day poverty lines (2011 PPP) represent the typical value of poverty lines found in lower-middle-income and upper-middle-income countries, respectively (World Bank, 2018).

COVID-19 is increasing inequality in the region across a number of dimensions with potentially long-lasting consequences. While many households in East Asia and Pacific, regardless of the welfare status, have experienced income shocks during the pandemic, poorer households have been significantly more likely to experience a loss of income than wealthier households (figure I.7). Income shocks among the poor are also more likely to have devastating long-term consequences. With little or no savings, poorer households have more often resorted to harmful coping mechanisms, such as the distress sale of assets and increased debt. COVID-19–related income shocks have also increased food insecurity in the region, most significantly among the poorest households. Greater food insecurity raises the risk of increased child malnutrition and stunting which, in turn, can impede children’s cognitive development and learning, and ultimately, productivity and earnings as adults. And as schools closed and countries introduced distance learning alternatives, children in poorer households were less likely to engage in online or other forms of interactive learning, raising the risk of long-term losses in human capital and, with it, economic opportunity.

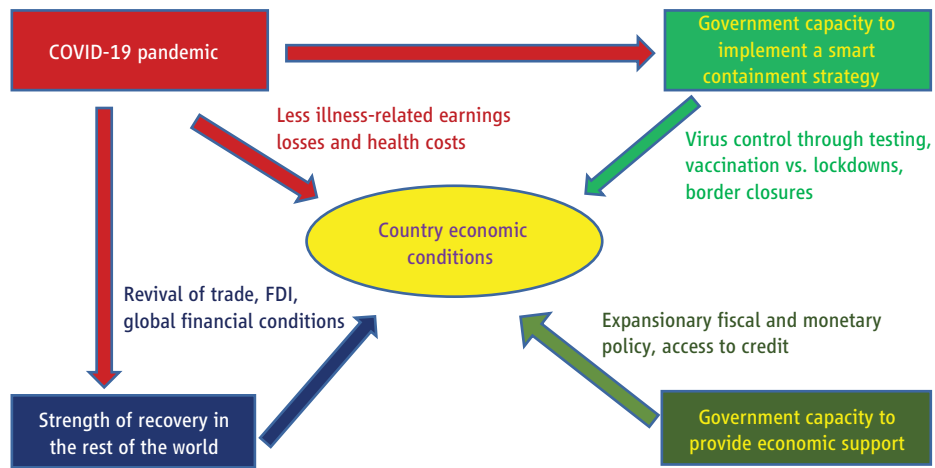
Figure I.7. Inequality is rising across a number of dimensions

Source: Kim et al. forthcoming, using high frequency phone survey (HFPS) data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2020/11/11/covid-19-high-frequency-monitoring-dashboard>. Note: Confidence intervals for comparison with Q1. A. Share of households with wage/business income that experienced a reduction since the previous survey round. B. Share of households that engaged in coping mechanisms that increased indebtedness or sold assets since previous round. C. Share of households that are food insecure and experienced labor income losses. Food insecurity is defined as having ran out of food, gone hungry, or was hungry but did not eat due to a lack of money or resources. D. Share of households with school-enrolled children pre-pandemic that engaged in interactive distance learning.

What Explains the Recent Economic Performance?

While the channels through which the COVID-19 shock affects economic performance are the same as in previous outbreaks, the nature of the impact is different. As discussed in the previous updates, COVID-19 affects economic activity within a country directly through the loss of earnings and illness and indirectly by provoking restrictive public health measures (figure I.8). The shock also affects the rest of the world and hence a specific country by affecting its international trade, foreign direct investment (FDI), remittances, and financial flows. The region is witnessing a reversal of fortune. In 2020, many EAP countries had successfully contained the spread of COVID-19 and domestic economic activity had revived, but the recession in the industrial world, which was still struggling with the disease, dampened exports. Now in 2021, it is the region which is being hit by the disease while the industrial world is on the path to recovery. Preliminary evidence suggests that there are two key differences between the present outbreak and the first wave in 2020. First, domestic economic activity is less sensitive to infections—because the public health measures provoked by the outbreak are less stringent in terms of their impact on mobility and because economic agents have learned to function in the face of infections and restrictions. Second, the external environment is more supportive thanks to greater success in containing COVID-19 and the stronger stimulus provided by major country governments, and that is boosting regional exports—even though the disease may be limiting countries’ export production.

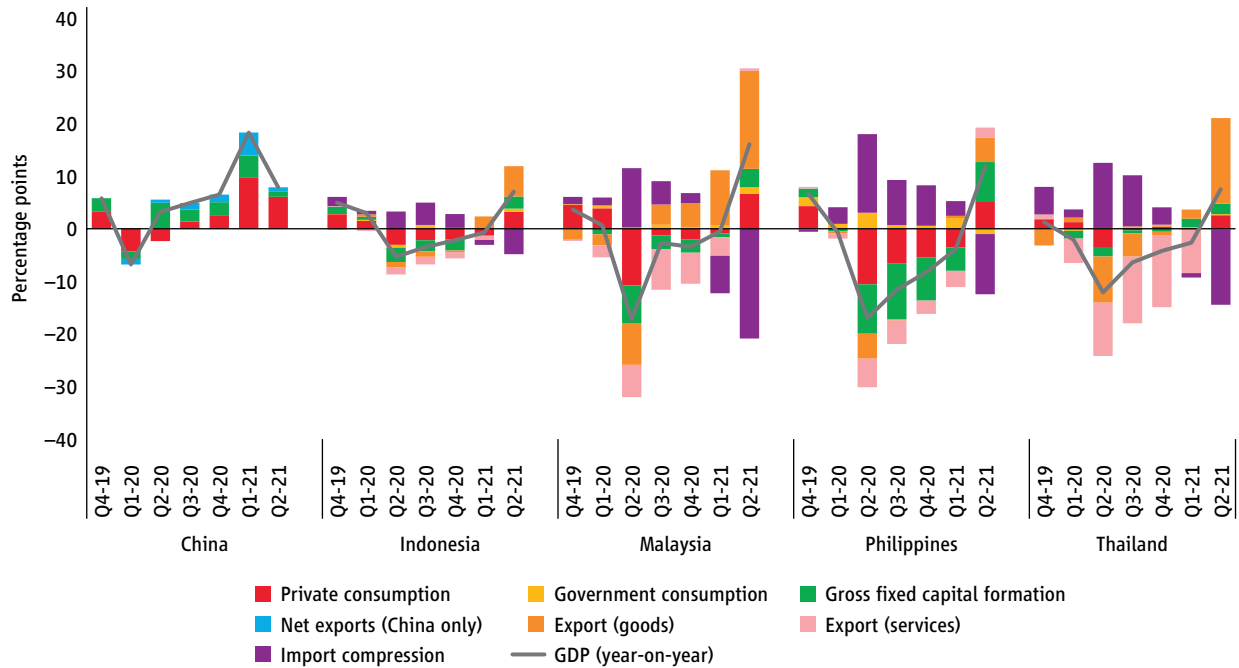
Figure I.8. COVID-19 continues to hit countries with direct and indirect shocks which governments have been trying to mitigate



Source: World Bank staff elaboration.
 Note: FDI = foreign direct investment.

By 2021-Q2, annual growth resumed in all major economies in the region, reflecting a broad-based improvement in domestic demand and robust goods exports, but momentum slowed due to severe COVID-19 outbreaks and tight mobility restrictions. Strong regional annual GDP growth outturns in 2021-Q2 largely reflected the low base effect from the sharp contraction during the similar period last year. The recovery has been broad based and supported by expansion of all components of domestic demand (figure I.9). Goods exports have been buoyant; however, services exports have bucked the upward trend and have remained depressed. Malaysia has seen the strongest recovery with the expansion led by private consumption and exports. In the other economies excluding China, the contribution of domestic demand to growth has also turned positive, including in the Philippines, led by a recovery in private consumption and investment. While strong goods’ exports have supported growth, services exports have dragged down growth in tourist-dependent economies of the Philippines and Thailand. In China, GDP growth has moderated as fiscal and monetary policy support packages have been gradually unwound. Despite strong annual growth outturns, the region excluding China has experienced a broad-based sequential slowdown, with quarterly growth declining sharply from over 5.0 percent quarter by quarter Seasonally Adjusted Annual Rate (SAAR) in 2021-Q1 to 0.7 percent in 2021-Q2 and contracting in Malaysia and the Philippines.

Figure I.9. An overview of contributions to GDP growth



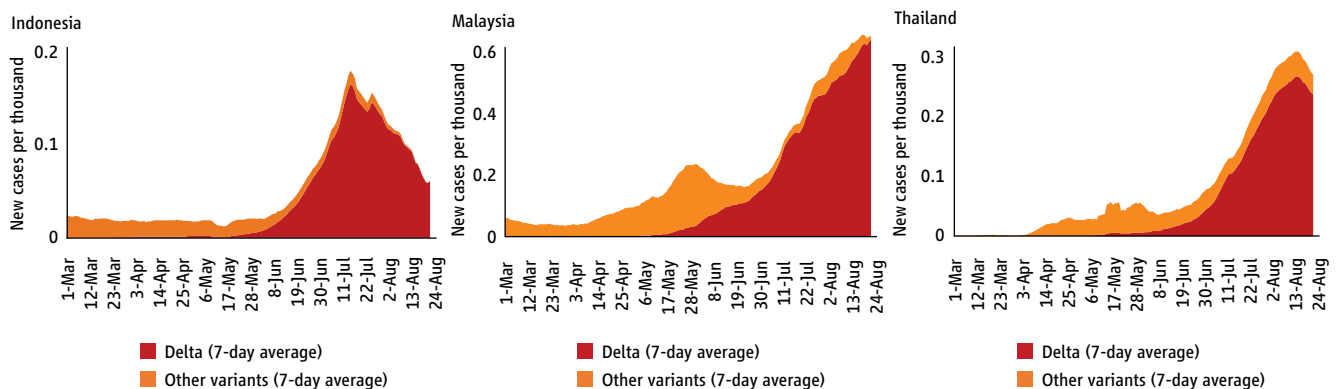
Source: Haver Analytics.
 Note: For China, consumption includes both private and government consumption.

Domestic determinants: The COVID-19 shock and public health policy response

• Resurgence of the Delta variant

The Delta variant is spreading rapidly in the region, fueling new and serious outbreaks. The first cases of the B.1.617.2 (“Delta”) variant were detected in April 2021 and have quickly become the dominant variant across countries in the region. The latest publicly available data points from countries with frequently reported genome sequencing show that Delta currently accounts for over 97 percent of total new COVID-19 cases in Indonesia and Malaysia, and over 80 percent in Thailand (figure I.10).

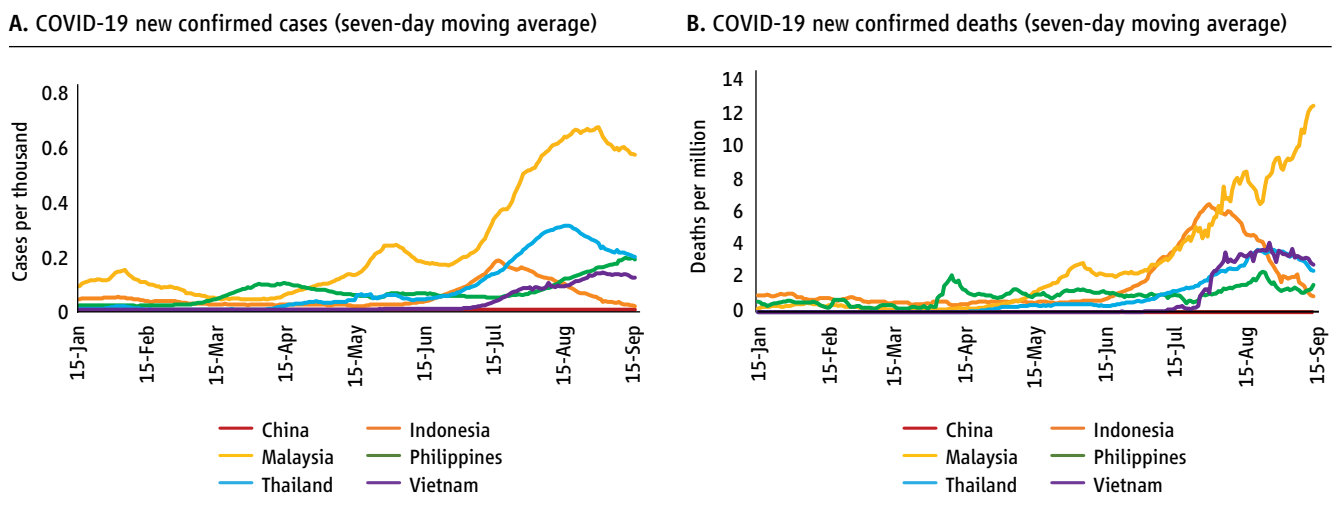
Figure I.10. The resurgence of COVID-19 is driven by the Delta variant



Source: Our World in Data. World Bank staff’s linear interpolations on discrete data points for EAP countries with sufficient data. Latest data points available as of September 20, 2021.
 Note: The Philippines has limited genomic sequencing capacity, and therefore comparable data on the Delta variant are not readily available.

All major EAP economies, except China, are suffering from the largest COVID-19 outbreaks of infection and increase in mortality since the beginning of the pandemic. The number of COVID-19 cases and deaths started to accelerate in Q2-2021 following the arrival of the Delta variant in the region. Both infection rates (number of cases per 1,000 people) and mortality rates (number of deaths per 1 million people) are raising rapidly in Malaysia, the Philippines, Thailand, and Vietnam (figure I.11). Indonesia's number of new COVID-19-related cases and deaths peaked in July 2021 and have started declining, while the mortality rates remain high. China is the only country that still has COVID-19 largely under control.

Figure I.11. Delta variant has accelerated infection and mortality rates in all major EAP economies except China



Source: Johns Hopkins University, Center for Systems Science and Engineering COVID-19 Dashboard.

Note: The figure shows a seven-day moving average of daily cases per thousand and deaths per million between January 1, 2021 and September 13, 2021.

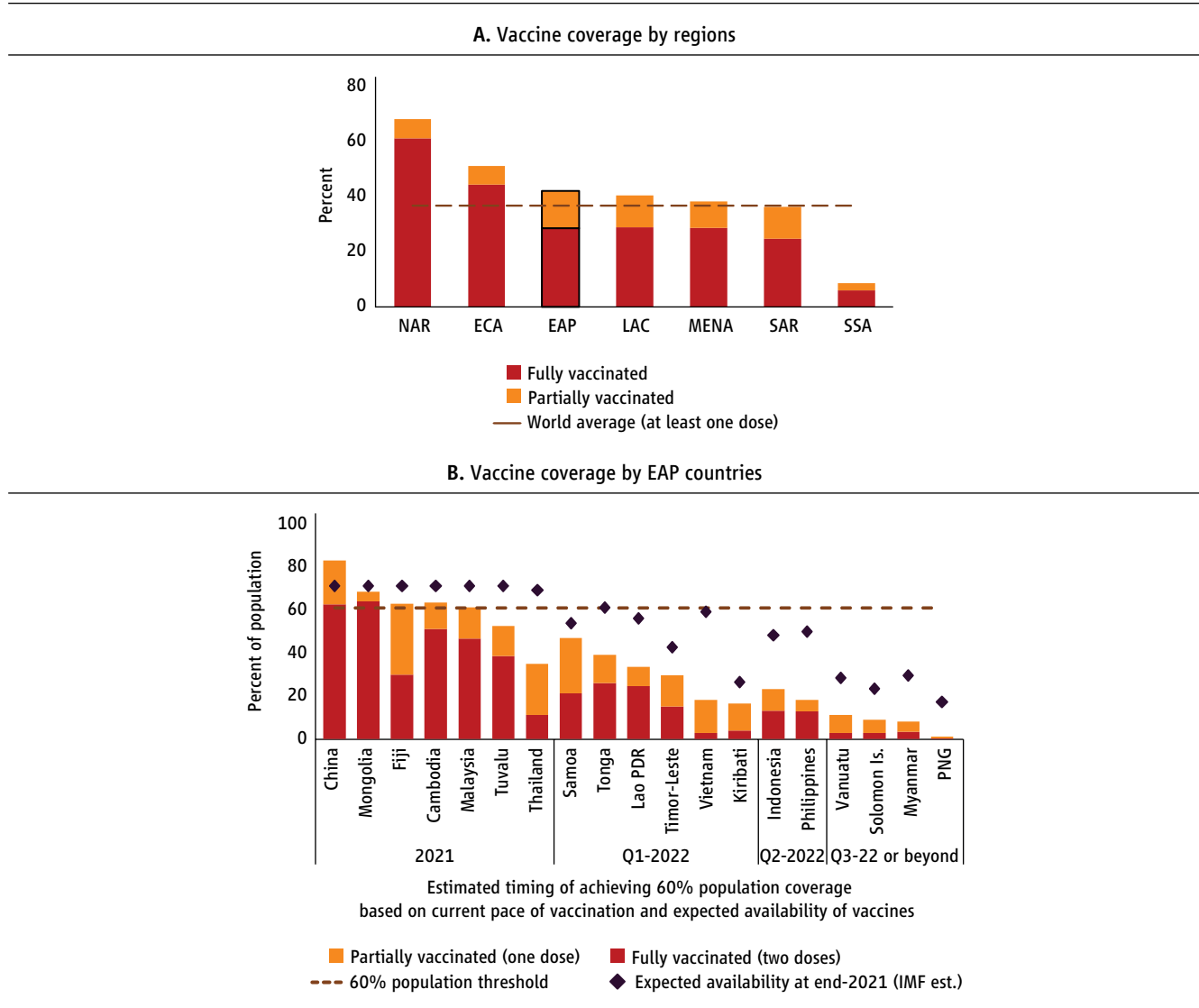
• Containment

Several countries in the region had succeeded in containing earlier waves of COVID-19 using a combination of public health measures. Countries can use, in principle, four types of measures to contain COVID-19: two economically disruptive measures—restrictions on domestic mobility and border controls, and two non-disruptive measures—virus control through testing-tracing-isolation and vaccination. In the pre-COVID-19 vaccine era, most countries in the region imposed, initially and in subsequent outbreaks, stringent restrictions on domestic and international mobility. Once infections had been reduced, the restrictions were phased out and countries relied more on intensive testing-tracing-isolation and international screening/quarantining to prevent or detect further outbreaks early enough to control them. This approach proved very effective and was implemented with varying degrees of success in Cambodia, Lao PDR, and Vietnam, which were able to allow domestic economic activity to resume relatively early while suffering the smaller economic costs of border controls. In most countries, such as Indonesia and the Philippines, the strategy was not implemented effectively.

Accelerated vaccination should be a priority in the region's strategy to contain COVID-19. Previous strategies were either not well equipped or sufficiently intensive to cope with the highly infectious Delta variant, and countries were therefore being forced to impose costly restrictions on mobility. China's experience so far suggests that more effective and

less economically disruptive containment can be achieved by complementing a sustained emphasis on testing-tracing-isolation with accelerated vaccinations. Only 25 percent of the EAP population have been fully vaccinated as of August 2021, a number below the world’s average (27 percent) (figure I.12). Within the region, China, Cambodia, Malaysia, and Mongolia are the countries that have fully vaccinated more than 50 percent of their population, while the coverage rates are still well below 30 percent in most countries. A cross-country econometric analysis (box I.1) suggests the urgency to vaccinate may have been lower in countries such as Vietnam that suffered less from the disease in terms of infections and mortality and were able to contain COVID-19 through less economically burdensome instruments such as border controls—and, plausibly, testing-tracing-isolation, though the results are not significant. Further cross-country analysis suggests a positive link between vaccination and economic activity: a 10 percent increase in the country’s vaccination coverage is associated with an approximately one-half a percentage point increase in quarterly GDP (box I.2). A survey (box I.3) reveals that vaccine availability is now perceived to be the binding constraint on vaccination in the larger EAP countries such as Indonesia, the Philippines, and Vietnam, while the domestic distribution capacity is the binding constraint in some of the smaller and poorer EAP countries, such as Papua New Guinea.

Figure I.12. Many economies in the EAP region are lagging in vaccinations

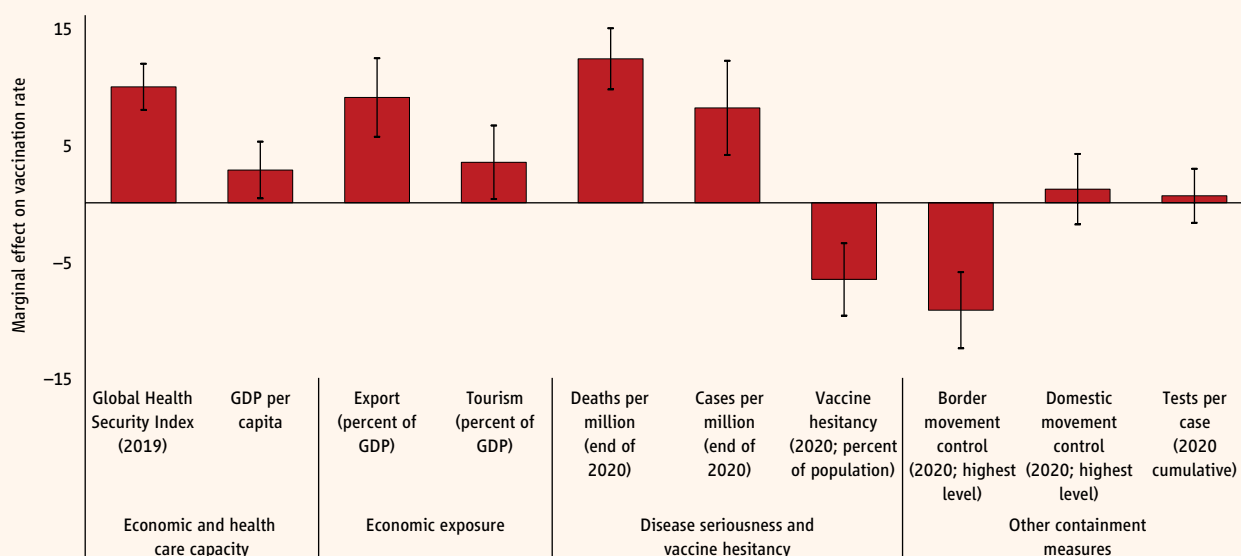


Source: EAP staff calculation. Oxford Covid-19 Government Response Tracker (OxCGRT) and Agarwal and Gopinath (2021).
 Note: Latest available vaccination data at end of August 2021 from OxCGRT. Expected availability at end-2021 refers to provisional estimates from Agarwal and Gopinath (2021) (or “IMF estimates”). It is defined as vaccine doses expected to be delivered by end-2021 per 100 people, divided by 2, and corresponds to a notional concept of the share of population that is fully vaccinated. The estimates are top coded at 70 percent share of population fully vaccinated. Estimated timing of 60 percent population coverage is calculated based on current vaccine coverage (fully and partially) at the end of August 2021, IMF’s estimates of expected vaccine availability, and the average daily vaccines administered in August 2021, assuming nonbinding constraints on vaccine availability and administration. Estimated timing, therefore, might differ from actual timing. EAP = East Asia and Pacific; ECA = Economic Commission for Africa; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; NAR = North America; SAR = South Asia; SSA = Sub-Saharan Africa.

Box I.1. What explains the slow pace of vaccination?

This box assesses the determinants of vaccination rates during the first half of 2021. It explores four country-specific factors that are likely to be related to the speed of vaccination: (1) the capacity to acquire and distribute vaccines, respectively proxied by the 2019 gross domestic output per capita and the diphtheria-tetanus-pertussis 3 doses (DTP3) vaccination rates; (2) exposure to the global recession, proxied by the country’s dependence on tourism and exports in 2019; (3) the severity of the coronavirus situation in the country, measured by the infection rate (COVID-19–related cases per million) and mortality rate (COVID-19–related deaths per million) in 2020, and the extent of vaccine hesitancy within the population; and (4) the stringency of other containment measures that the government imposed in 2020, such as domestic and international movement controls, as well as COVID-19 testing (figure BI.1.1). The results show that countries that have vaccinated their populations more rapidly are those with a stronger economic capacity (reflecting the ability to pay in advance for vaccines) and a more developed vaccine distribution infrastructure. In addition, those who have been vaccinated with relatively more urgency are on average more dependent on earnings from export and tourism, experienced more severe COVID-19 infections and mortality, had less vaccine hesitant populations, and imposed less stringent international border restrictions. The intensity of COVID-19 testing does not emerge as a significant determinant, perhaps because its impact is already captured by the diminished severity of the COVID-19 situation.

Figure BI.1.1. Determinants of vaccination progress

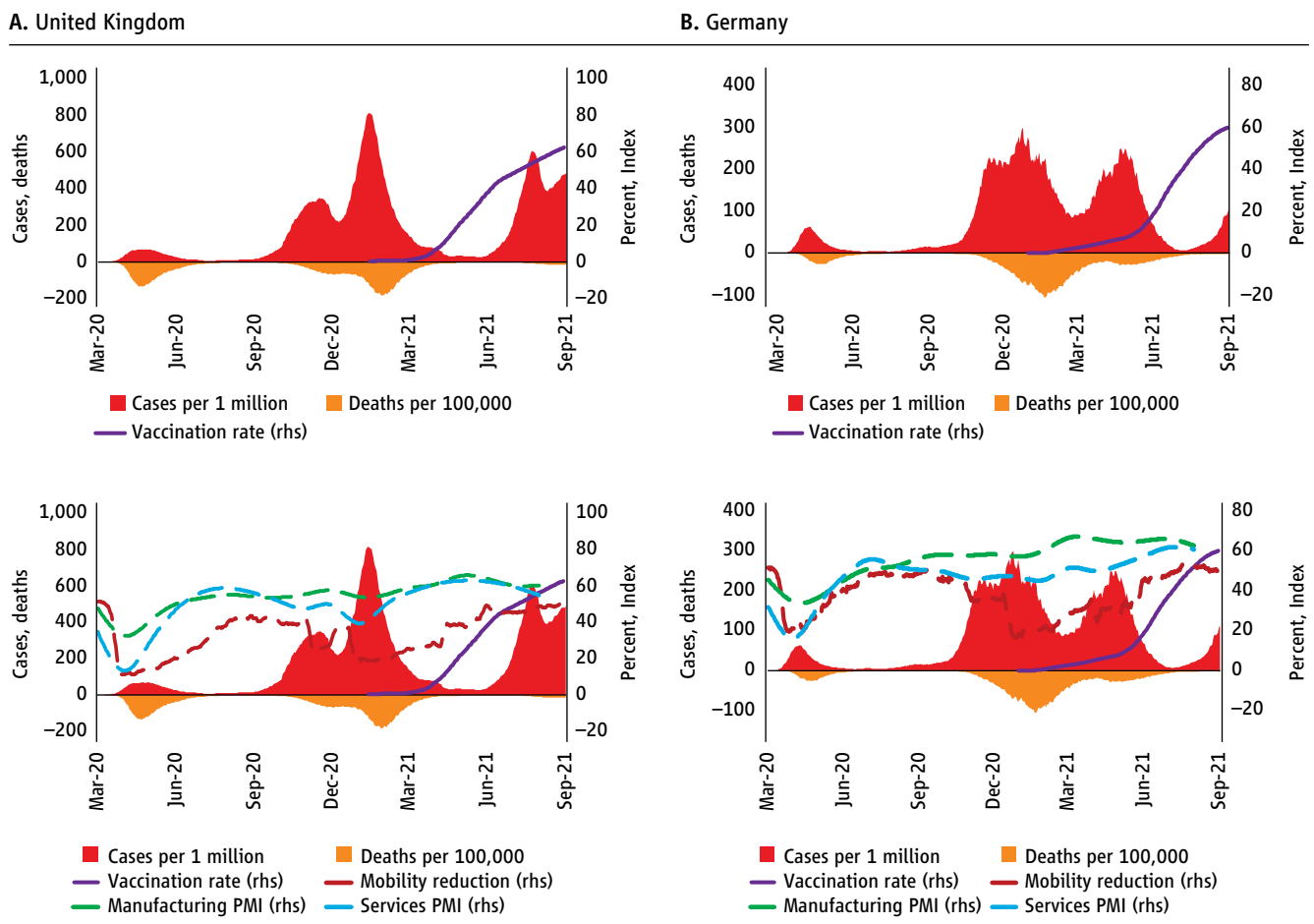


Source: EAP staff research, based on data from the World Development Indicators, Global Economic Monitoring, IMF’s World Economic Outlook, Worldometer, Oxford Covid-19 Government Response Tracker (OxCGRT), and UMD Global CTIS.

Note: The figure presents point estimates from cross-country regressions of the vaccination rate on the respective independent regressors shown on the horizontal axis. All regressors are standardized as units of deviation from the global average. Each regression controls for population size and pre-COVID-19 GDP per capita (2019). The vaccination rate is measured as the cumulative share of the population vaccinated with at least one dose in 2021-H1. Vaccine hesitancy is collected from the Global COVID-19 Trends and Impact Survey and measured as the average 2020 daily share of respondents who were not definitely or probably choosing to get vaccinated if a COVID-19 vaccine was offered to them. Border control and domestic movement control are categorical indicators obtained from the OxCGRT database; indicators of highest level imposed in 2020 are used in the regressions. Domestic movement control is the weighted average of five OxCGRT’s subindicators, including school closure, workplace closure, cancellation of public events, restriction on social gatherings, and restriction on internal travelling. GDP per capita, Global Health Security Index, export (share of GDP), and tourism (share of GDP) are pre-COVID-19 indicators (2019). Bar heights represent the sizes of the estimated coefficients. Whiskers represent 95 percent confidence intervals of the estimates.

The experience of high vaccination rates in countries suggests that it may be possible for countries to transition from the more malignant phase of the disease to a relatively benign phase of “managed endemicity.” Like most other countries, the UK initially suffered recurrent waves of the pandemic which were associated with high levels of infection and significant mortality. As vaccination rates surpassed 60 percent, the UK relaxed social restrictions, allowing for a resumption of economic activity (figure I.13). The expectation was that a certain threshold level of immunity, due to a combination of vaccinations and infections, would usher in a phase where waves of infection are seen, but with less severe illness and mortality. The reason is that vaccines do not offer sterilizing immunity, critical for preventing transmission, and different types differ in their efficacy as far as infection and mild illness are concerned, but most offer high levels of protection against hospitalization and death and differ much less in this respect. The current situation is in line with expectations except that high levels of transmission have led to significant deaths even though case fatality is low—mortality in the UK is higher than a year ago when nobody was vaccinated but less infectious variants prevailed. The country has found the sustainability of this benign phase is conditional on vaccinations staying a step ahead of the disease, in terms of immunity offered across people and over time against old and new variants. The recent upturn in mortality in the UK suggest (1) immunity wanes after a certain period and may require booster shots to sustain it; and (2) absent other measures to suppress transmission, new variants can lead to increased levels of infection and hence mortality putting pressure on health systems even though case fatality rates are low.

Figure I.13. Increases in the vaccination rate reduce mortality but not necessarily infections, and vaccinations above certain thresholds are associated with increased mobility and economic activity



Source: Haver Analytics; Oxford Covid-19 Government Response Tracker (OxCGRT).

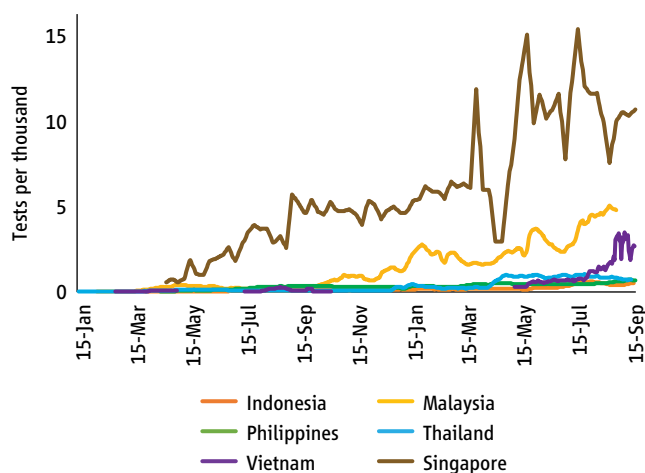
Note: Cases show new cases per million. Deaths show new death per thousand. Latest available data on September 15, 2021. PMI = Purchasing Managers Index.

Despite the limited availability of vaccines in the near term, many of the EAP countries could achieve more than 60 percent coverage by the end of June 2022. Coverage is still low in several EAP countries, such as Indonesia, the Philippines, and Vietnam, and availability is still an issue because of limited global production capacity and the decision to provide booster vaccines in industrial countries. However, at the current pace of vaccine administration, and given estimates of availability, several EAP economies could, in principle, reach 60 percent share of population that is fully vaccinated over the course of the next nine months, with China and Mongolia already there and Indonesia and the Philippines likely to get there in the first half of next year. However, as vaccination rates increase, distribution to more remote areas varies and vaccine hesitancy are likely to become binding constraints, as has been the case even in industrial countries. Therefore, the attainment of these goals cannot be taken for granted and will continue to require a special effort to acquire vaccines, distribute them, and persuade people to be vaccinated.

While the zero COVID-19 approach may no longer be sustainable, countries will need to learn to manage the disease, and the recently announced reopening plans of Singapore may offer a way forward. The current crisis in Australia is a sign that in the face of highly infectious variants, benign containment measures like testing, tracing, and isolation have limited impact, and the economic cost of the shutdowns needed to eliminate COVID-19 may be unacceptable even for rich countries. It is not clear whether high levels of vaccination, e.g., in China, can reduce the economic cost of a zero COVID-19 approach to an acceptable level. In any case, herd immunity through immunization may not be feasible in the foreseeable future for many low- and middle-income countries. In these circumstances, countries will need to adapt to persistent COVID-19 and the priority will be to strengthen the health systems. Data on hospitalizations and deaths will be much more important to guide the response than the number of cases. Vaccination (and eventually re-vaccination) of the high-risk groups is critical, but so is support for managing underlying health conditions that enhance vulnerability to COVID-19. Countries may also explore options for the early treatment of COVID-19 rather than doing nothing for mild cases, wait for them to get worse, and then manage their complications (including respiratory distress).

Most importantly, EAP countries must sustain emphasis on non-pharmaceutical interventions, especially enhance testing and encourage precautionary behavior. The evidence presented above demonstrates the need for continued emphasis on public health measures to contain the spread of infections and hence limit mortality. Precautionary behavior, such as some levels of social distancing and masks in crowded spaces, will need to continue. Some countries, such as Germany, are likely to have kept mortality rates much lower in the current wave despite lagging on vaccinations, because their other public health measures were strong. In the EAP region also, a group of high vaccination/high testing countries is emerging, of which China, Chinese Taipei, New Zealand, and Singapore are the best examples. Singapore is aiming to manage with selective border controls, very high levels of testing and isolation, and so forth. Unfortunately, COVID-19 testing coverage and pace are uneven in the region. Among ASEAN-5 countries, Malaysia and Vietnam have been ramping up COVID-19 mass testing in an effort to trace and isolate the growing new COVID-19 positive cases in the community (figure I.14). Testing coverage has increased to a lesser extent in Indonesia, Thailand, and the Philippines since Q2-2021, and is plateauing.

Singapore is phasing in a transition plan for reopening its economy on the premise that COVID-19 will become endemic. This plan involves widespread testing, tracing, and vaccination of the population; gradual easing of movement restrictions; and differentiated rules based on vaccination status. Testing has become more widespread, including rostered routine testing of high-risk settings and individuals, rather than just testing of suspected cases. A more aggressive approach to contact tracing will require isolation of household members of first-degree contacts of suspected COVID-19 cases to shut down clusters more quickly and lead to fewer infections. Health care protocols have been updated, including the earlier discharge of fully vaccinated COVID-19 patients to community care facilities and piloting home isolation as a care model for fully vaccinated COVID-19 patients without severe symptoms. Domestically, group size limits for social gatherings are differentiated based on vaccination status, while border controls have been eased gradually, including the resumption of entry approvals for fully vaccinated work pass holders and quarantine-free travel lanes established with selected countries for fully vaccinated persons.

Figure I.14. Testing coverage is uneven across EAP countries and plateauing in some

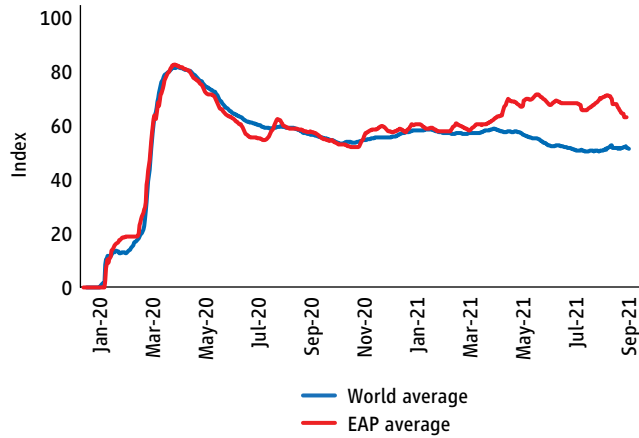
Source: EAP staff illustrative, based on latest testing data from OurWorldinData.
 Note: Daily tests per one thousand (seven-day moving average). Latest observation is September 15, 2021.

In parallel, the regional production of vaccines needs to be accelerated because global supply remains unreliable and regional demand will remain high. The previous update had argued that global cooperation in the allocation of vaccines would depend on global cooperation in the production of vaccines—because sharing would only be nationally rational if international suppression were credible. However, even though the case for global cooperation remains strong, little has materialized, and it would be naïve to rely on supplies from industrial countries because their political incentive to share is likely to be weaker than the political imperative to vaccinate and re-vaccinate their populations. Uncertain supply is an issue because the state of “managed endemicity” will require large and predictable supplies of vaccines in the foreseeable future, given the evidence of waning immunity. Greater effort must therefore be made to expand regional production by acquiring technology, repurposing production lines, and facilitating operation of supply chains. While the scope for expanding production of mRNA vaccines may be limited because of the difficulty in transferring technology (though Indonesia is said to be speaking with one of the mRNA producers about technology transfer to BioPharma), there is greater scope for the expansion of vector vaccines, like Oxford-AstraZeneca, and protein adjuvant vaccines, like Novavax. Production of AstraZeneca has already been initiated in China, the Republic of Korea, and Thailand. Through an agreement signed by COVAX co-lead, Gavi, China-based Clover is set to make over 400 million doses of its vaccine candidate available for procurement in 2021 and 2022, pending an Emergency Use Listing (EUL) from the World Health Organization (WHO). Other initiatives are underway; for example, Thailand is also looking at domestic production options for both mRNA and subunit protein vaccines (e.g., Novavax).

• How is COVID-19 resurgence affecting economic activity?

Because of the slow pace of vaccinations, countries have had to rely on blunt restrictions to cope with the new variant, which have depressed domestic mobility. Relative to high vaccinated countries in the rest of the world that have gradually relaxed mobility restrictions, the average stringency in EAP countries remains high following the waves of infection outbreaks driven by the Delta variant (figure I.15). The de facto community mobility to destinations such as retail, recreation, and workplace continue to hover around 30 percent below the pre-pandemic volume (figure I.16).

Figure I.15. Government restrictions have been increasing in the EAP

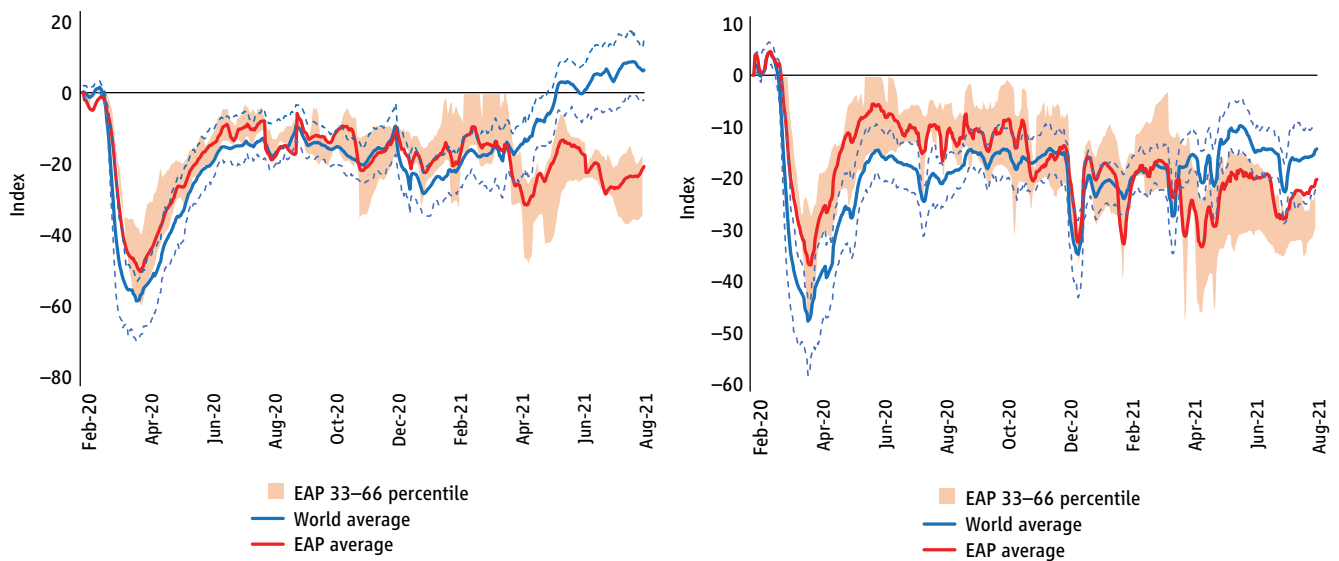


Source: Oxford COVID-19 Government Response Tracker (OxCGRT).
 Note: Stringency index is an aggregate policy score based on the number and strictness of government policies. 0 to 100, 100 = strictest. Last observation is September 9, 2021.

Figure I.16. Mobility has decreased in the EAP

A. Mobility to retail and recreation

B. Mobility to workplace



Source: Google Mobility Reports.
 Note: Averages. Relative volume of direction requests compared to a baseline volume between January 1 and February 6, 2020 (baseline = 100). Last observation is September 9, 2021.

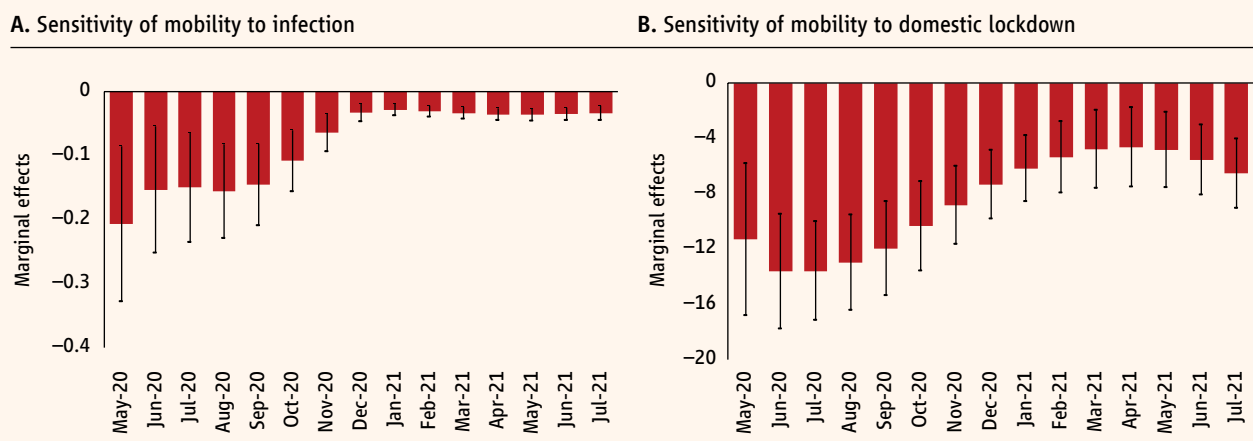
But domestic economic activity has so far been less sensitive to the increase in infections and the reduction in mobility. There are signs that in most countries, the public health measures provoked by the outbreak restrict overall mobility less, and economic agents may have learned to function in the face of infections and diminished mobility. Box I.4 presents evidence that community mobility has gradually become less sensitive, both to the severity of infection and to the intensity of domestic lockdowns. While every 10 additional infected cases per 1 million were on average correlated with over a 2 percent reduction in mobility during the first half of 2020, the reduction was less than one-half a percent a year later. Similarly, countries imposing a stricter degree of domestic lockdown experienced an over 10 percent reduction in mobility in all months prior to December 2020, but the impact was 50 percent as strong in the first half of 2021.

Box I.4. COVID-19 adaptation

The emergence of new COVID-19 coronavirus variants—notably the highly infectious Delta variant—has greatly increased the likelihood of a prolonged pandemic. While countries continue their fight to curb the disease, early empirical evidence suggests that they are also starting to adapt to the new normal.

Results from a set of rolling panel-data regressions with monthly country-level observations between March 2020 and July 2021, indicate that community mobility has gradually become less sensitive to both the severity of infection (measured by the monthly cumulative cases per one million people) and to the intensity of domestic lockdowns (measured by a monthly average index of daily domestic movement control indicators) (figure BI.4.1). While every ten additional infected cases per one million were on average correlated with over a 2 percent reduction in mobility during the first half of 2020, the reduction was less than one-half a percent a year later. Similarly, countries imposing a stricter degree of domestic lockdown experienced an over 10 percent reduction in mobility in all months prior to December 2020, but the impact was 50 percent as strong in the first half of 2021.

Figure BI.4.1. Mobility has become less sensitive to disease severity and lockdown intensity



Source: EAP staff illustrative, based on data from Oxford Covid-19 Government Response Tracker (OxCGRT), and Google Community Mobility Reports.

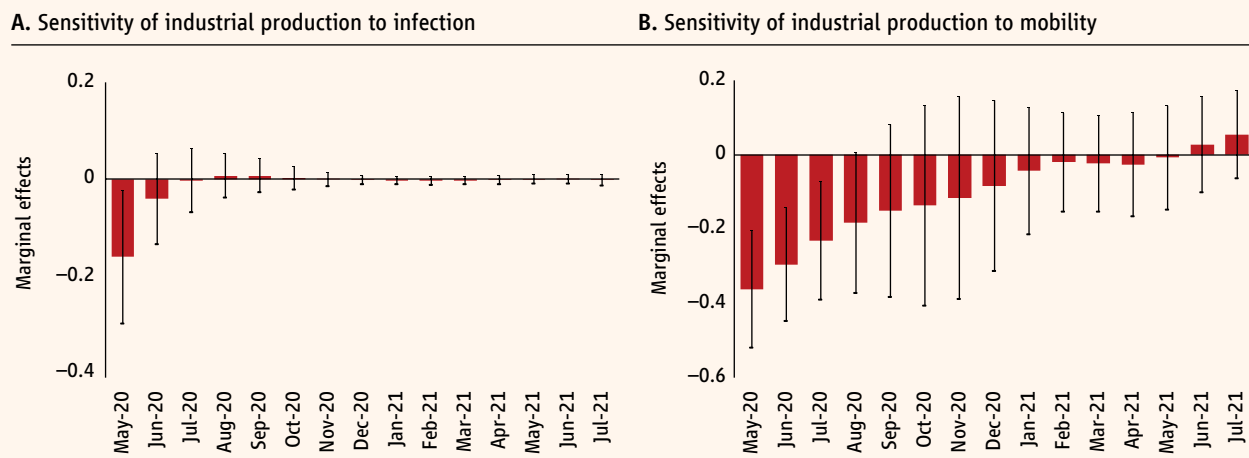
Note: The figure presents point estimates from a set of rolling country-level panel-data regressions of a monthly average mobility index on cumulative monthly COVID-19 cases per one thousand people (figure BI.4.1, panel A) and a monthly average intensity of domestic movement control (figure BI.4.1, panel B). The rolling window for each panel regression includes three consecutive monthly observations of all countries with available data. Each regression controls for monthly fixed effects. Data for the monthly mobility measure is obtained from the Google Community Mobility Reports and computed as the average of daily mobility change of a community to retail or recreation destinations relative to pre-pandemic baseline levels. Domestic movement control is a categorical indicator obtained from the OxCGRT database; monthly means are computed from all daily observations. Domestic movement control is the weighted average of five OxCGRT's subindicators, including school closure, workplace closure, cancellation of public events, restriction on social gatherings, and restriction on internal travelling. Bar heights represent the sizes of the estimated coefficients. Whiskers represent 90 percent confidence intervals of the estimates.

A similar empirical analysis suggests that domestic economic activities—proxied by the monthly industrial production volume (indexed against the 2019 average level)—are also showing signs of adaptation. In figure BI.4.2, the infection severity (panel A) and the reduction in community mobility (panel B) were all negatively and significantly correlated with industrial production during the first phase of the pandemic; however, the magnitude and significance of these marginal effects has dissipated over time. Industrial production declined by an average three index points (out of 100) in May 2020 in response to approximately 20 additional case per million (panel A) or every 10 percent reduction in mobility; all of such effects became negligible in 2021.

(continued)

(Box I.4. continued)

Figure BI.4.2. Economic activity has become less sensitive to disease severity and mobility reduction



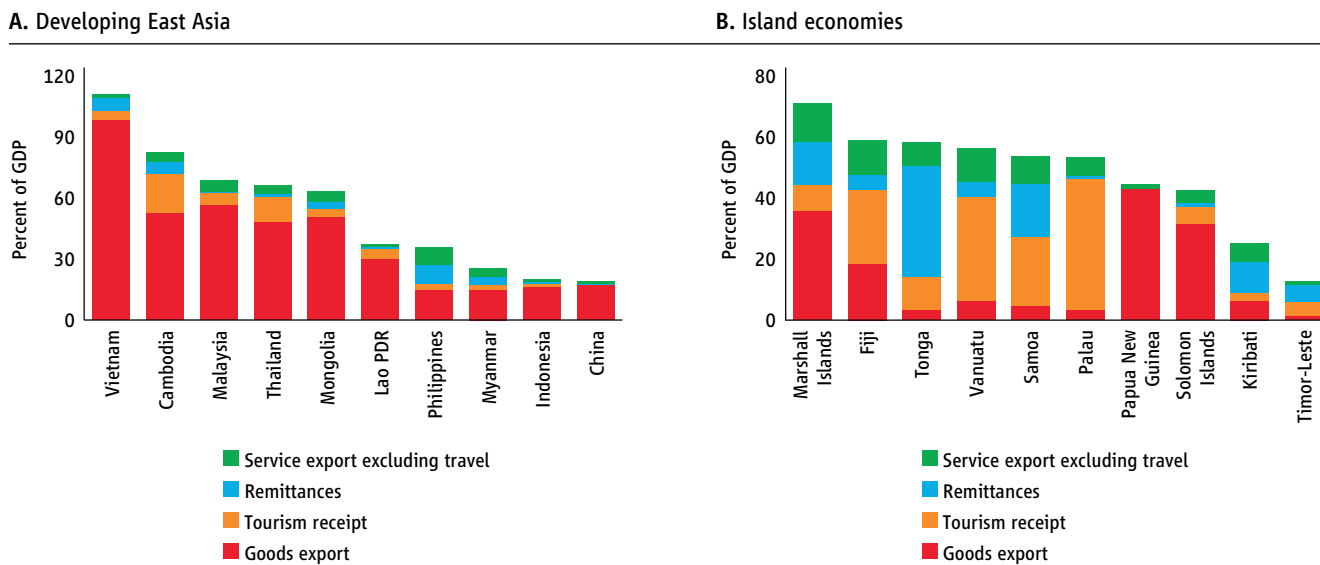
Source: EAP staff research, based on data from *Global Economic Monitoring*, IMF's World Economic Outlook, World Development Indicators, Oxford Covid-19 Government Response Tracker (OxCGRT), and Google Community Mobility Reports.

Note: The figure presents point estimates from a set of rolling country-level panel-data regressions of monthly year-on-year growth in industrial production on cumulative monthly COVID-19 cases per one million people (panel A) and reduction in monthly average mobility index (panel B). The rolling window for each panel regression includes three consecutive monthly observations of all countries with available data. Each regression controls for month fixed effects. Data for the monthly mobility measure is obtained from the Google Community Mobility Reports and computed as the average of daily mobility change of a community to retail or recreation destinations relative to pre-pandemic baseline level. Mobility reduction is subsequently the inverse of the original indexed values. Bar heights represent the sizes of the estimated coefficients. Whiskers represent 90 percent confidence intervals of the estimates.

External environment: Trade, tourism, and remittances

East Asia and Pacific economies are highly exposed to the rest of the world through various channels. The export-oriented growth model of East Asian countries, such as Vietnam, Cambodia, and Malaysia, is reflected in the large share of goods exports in their total external receipts (figure I.17). Tourism is a vital source of earnings not only for small island economies, such as Vanuatu, Fiji, and Samoa, but also for some of the other countries, such as Cambodia and Thailand. Remittances dominate foreign flows in Tonga and Samoa but are also important for the Philippines, the Marshall Islands, and Kiribati.

Figure I.17. The region's economies are exposed to the rest of the world mostly through dependence on exports, but tourism and remittances are important for some countries, especially the Pacific Island economies



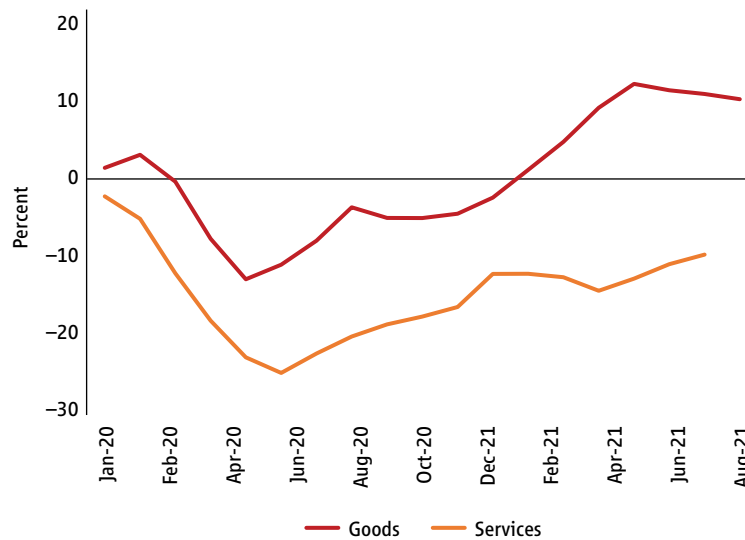
Source: World Development Indicators.
Note: Figures show an average of 2017–2019.

• Trade

World merchandise exports have recovered, while services exports remain below pre-pandemic levels. Merchandise exports peaked in 2021-Q2 at around 15 percent above the value in 2019-Q4 (figure I.18). Although global services exports have recovered from the 25 percent plunge at the height of the pandemic, they still remain 10 percent below the pre-pandemic level.

Figure I.18. World goods trade is well above and services are still well below pre-pandemic levels

Percentage change in world exports relative to 2019-Q4

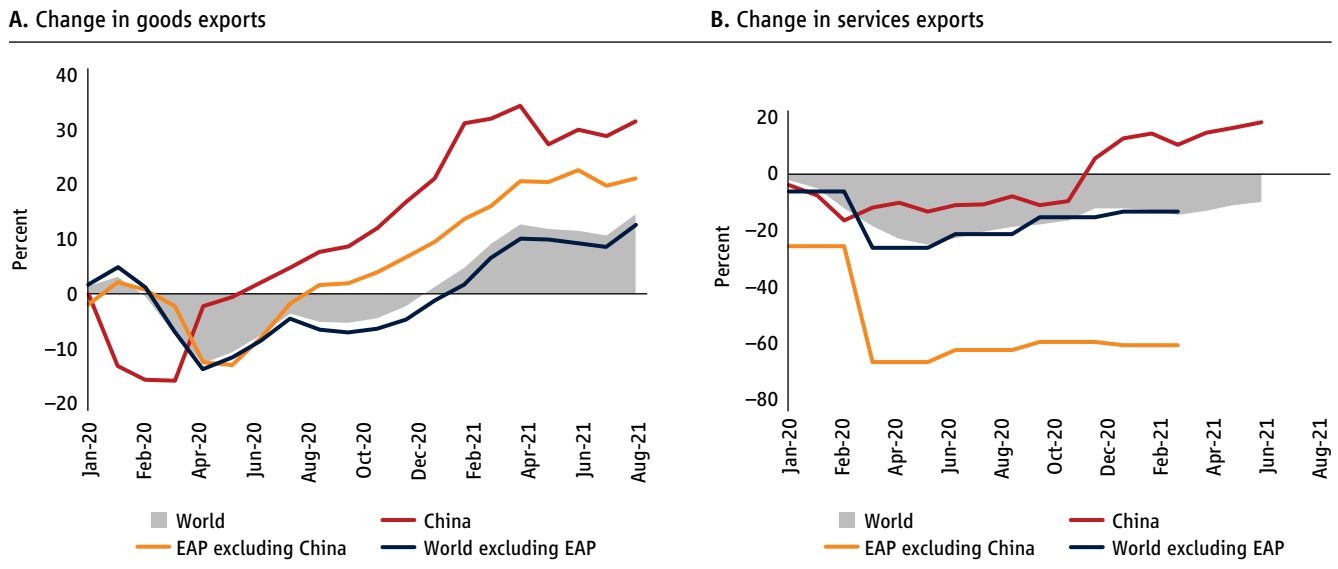


Source: Merchandise exports from Global Economic Monitor. Services exports based on 39 economies from the World Trade Organization.
Note: The chart shows a three month moving average of the exports normalized by their level in 2019-Q4.

Global economic recovery has led to a growth in EAP goods exports in terms of both values and share in global exports, but the momentum eased recently. During 2021-Q1, strong global economic recovery led by the US and other advanced economies helped to sustain strong demand for exports from the EAP countries (figure I.19). EAP merchandise exports increased by 27 percent compared to pre-pandemic levels after a swift recovery during 2020. China merchandise exports saw a 31 percent increase, whereas other EAP countries' exports grew by 21 percent over 2019-Q4. Growth in global and EAP exports seems to be flattening since the 2021-Q2. The pandemic seems to have altered the relative share of the EAP region in global goods exports. China's share of the world exports increased from around 15.0 percent before the pandemic to 16.5 percent in 2020. Other EAP countries also experienced an increase in their world export share from around 6.0 percent to 6.6 percent.

EAP services exports continued their persistent decline over pre-pandemic levels, while the world exports sluggishly recovered. Countries show widely varying performances within the EAP region. China services exports in July 2021 were 18 percent higher than the level in 2019-Q4 after a steady recovery in the beginning of 2021. However, the rest of the EAP exports during 2021-Q1 were 60 percent below their pre-pandemic level.

Figure I.19. EAP goods exports plateaued recently at higher than pre-pandemic levels but services exports continue to languish, except in China

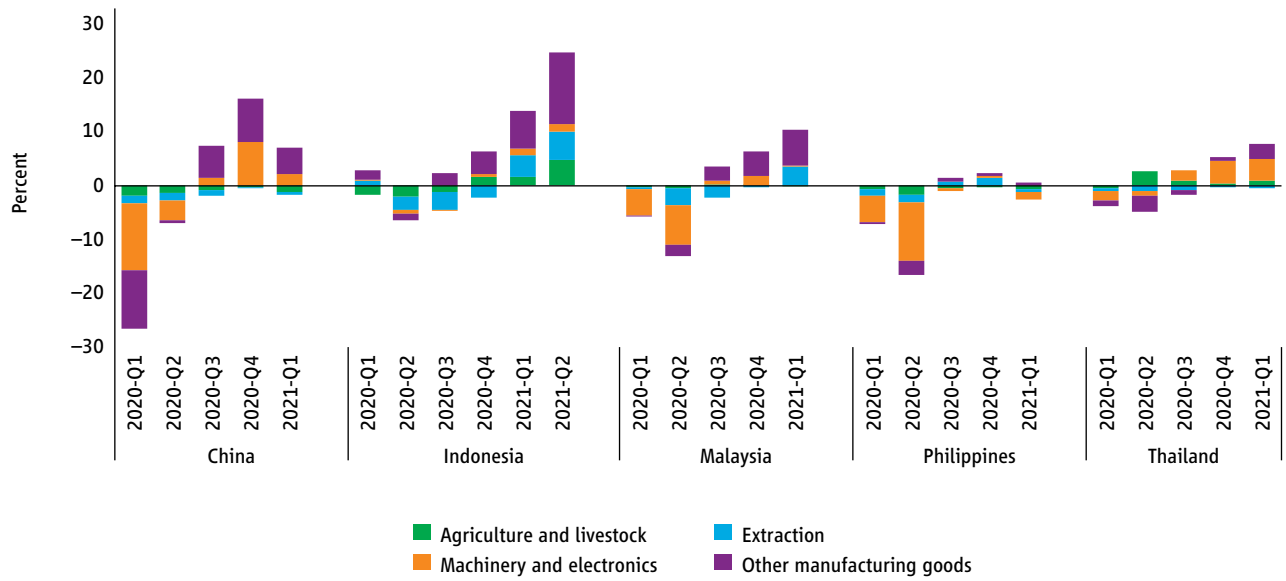


Source: Global Economic Monitoring, World Bank; International Monetary Fund, Balance of Payments Accounts; World Trade Organization.
 Note: Chart shows growth relative to 2019:Q4.

The recent plateauing of EAP goods export growth can be attributed to several factors. First, world import demand peaked in 2020-Q2, and its composition slightly shifted away from EAP’s comparative advantage sectors such as machinery and electronics (figure I.20). Second, exports from other countries recovered, and EAP exports no longer outperformed the rest of the world, as they had done in 2020 during the downturn. Third, the spread of the Delta variant spread through East Asia and disrupted production at home and in regional source countries, limiting the export growth. While high participation in value chains by EAP countries cushioned them from the impact of domestic pandemic mitigation measures, it also exposed them to shocks in regional countries because of the high regional input content in each countries’ exports. Fourth, commodity prices have stopped increasing, affecting the exports of countries such as Indonesia, Myanmar, and Mongolia (figure I.21). Finally, recent increases in shipping costs and delays also hurt EAP exports.

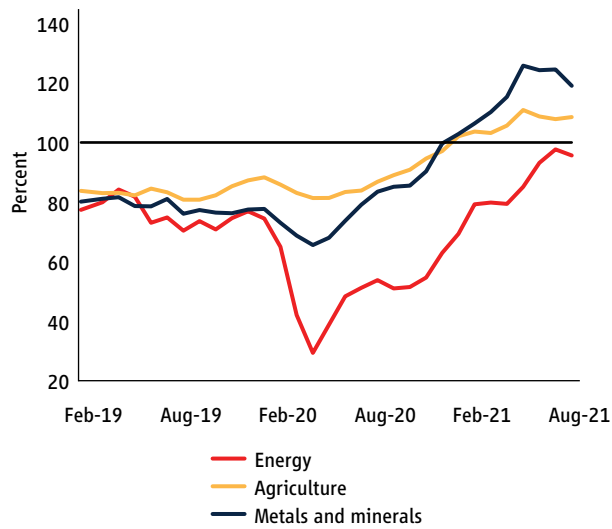
Figure I.20. Decomposition of export growth, major economies

Percent goods export growth over 2019-Q4



Source: Customs data from the US, the EU, Japan, and China.

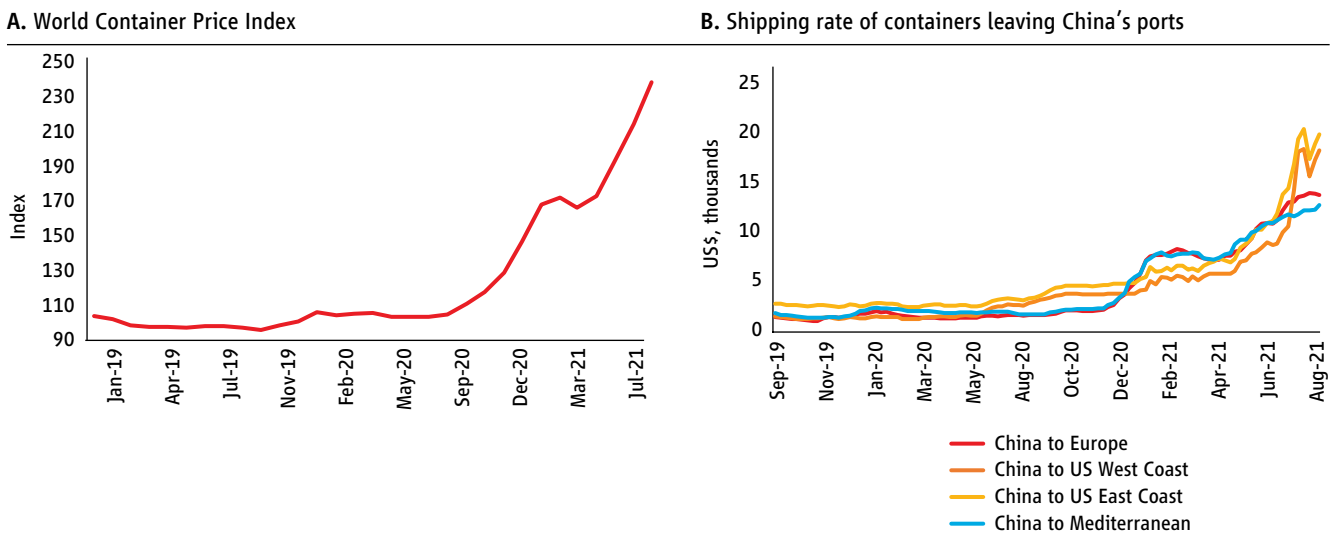
Figure I.21. Higher commodity prices boosted export revenue for some of the region's economies but are now flattening



Source: Commodity Markets Outlook, World Bank.
Note: Index, nominal term, 2010 = 100.

The world is in the grip of a shipping crisis since the beginning of 2021, which has affected the EAP more intensely. The global container shipping price index has increased by a massive 115 percent over its average pre-pandemic value (figure I.22). This happened in consecutive quarters: in 2021-Q1, the index surged by 73 percent; and then in 2021-Q2, the index rose a further 66 percentage points over its average value in 2019. Prices on EAP routes have increased even more. The cost to ship a forty foot container from China to the US West Coast skyrocketed to US\$18,000 in August–September 2021, from an average of US\$1,500 in the corresponding period in 2019. Similar trends can be seen on routes from China to the US East Coast, Europe, and the Mediterranean.

Figure I.22. The global shipping crisis is particularly severe for EAP

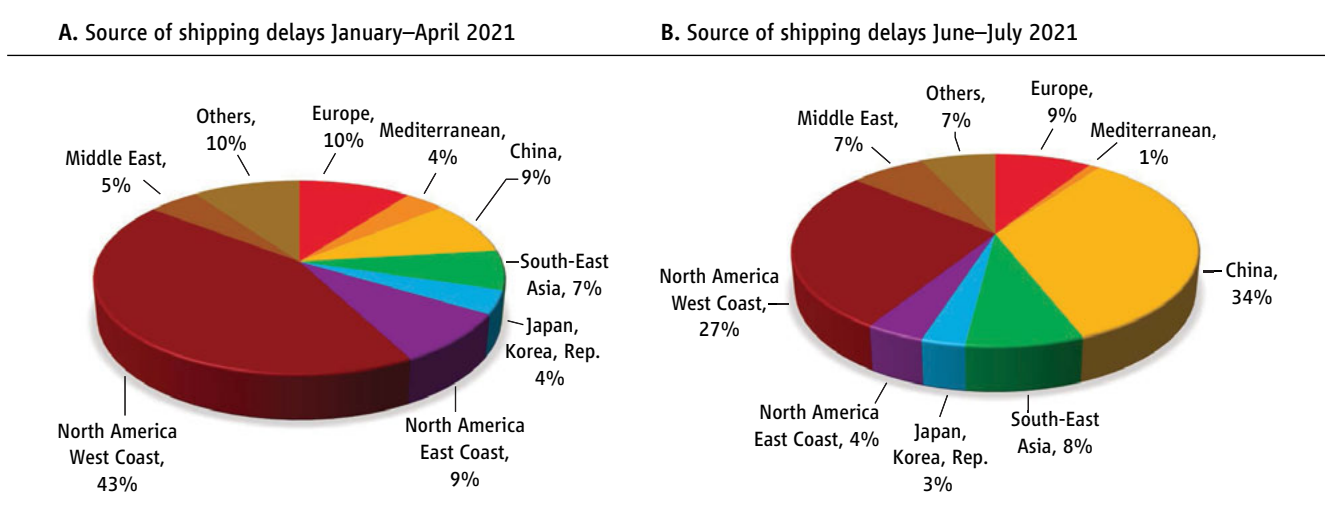


Source: CTS shipping index.
 Note: The chart shows world weighted average container shipping rate relative with 2018 as 100.

Source: Freightos Baltic Index.
 Note: The chart shows price of a 40 foot container.

Global shipping disruptions are mainly driven by two factors. The first factor is the rapid and broad-based increase in imports driven by the stimulus-fueled surge in demand in advanced economies. This sudden increase in demand put significant pressure on ports, especially on the North American ports, which drove the first wave in shipping price increased. At the beginning of 2021, more than one-half of the global shipping delays were present at the US ports (figure I.23). Second, the subsequent surge in shipping prices can be attributed to port disruptions and closures due to isolated outbreaks of the Delta variant in China. This is evident from the increase in East Asia’s contribution to global shipping delays in recent months. Due to the intricately interconnected nature of the shipping structure, both these factors had large feedback and ripple effects across the world and over time.

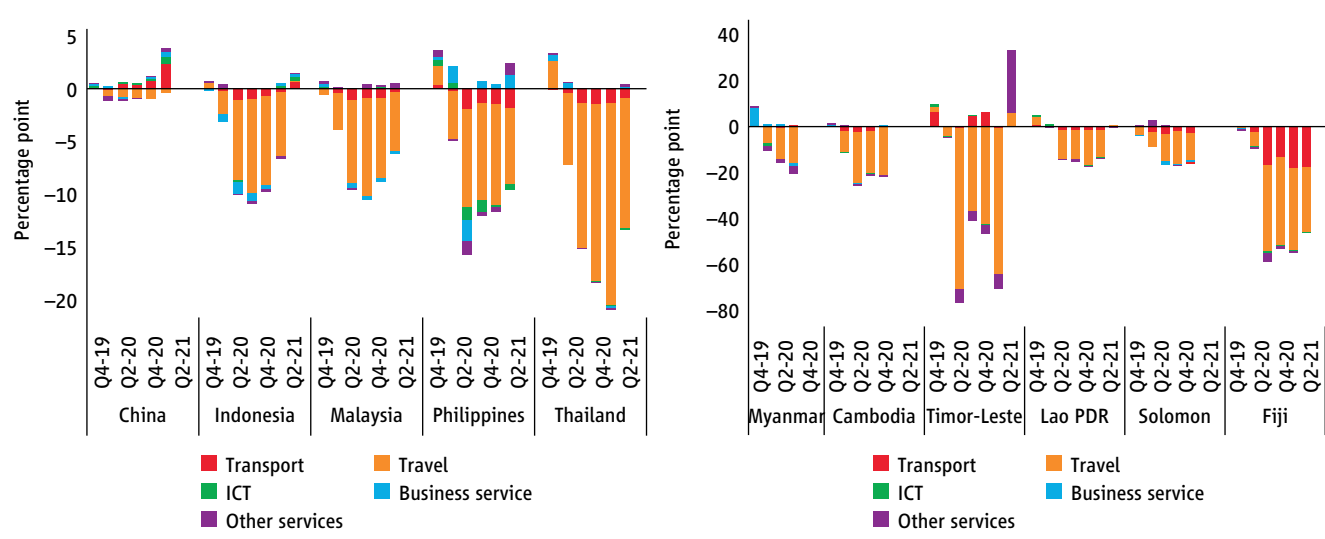
Figure I.23. Port disruptions in China have contributed to shipping delays since June 2021



Source: Trade Watch, volume 12.

In contrast to booming goods exports, EAP exports of services remain weak. However, the overall weakness hides heterogeneity in performance. While the global travel and tourism service exports have shown no signs of recovery, exports of telecommunications, computers, and information, as well as business services, have proved more resilient, for example for China and the Philippines (figure I.24).

Figure I.24. Travel services drag down service exports, while business services and ICT are resilient



Source: Balance of Payments, International Monetary Fund. World Bank staff calculations.
 Note: ICT = information and communication technology. Figures show contribution to total export growth (year on year).

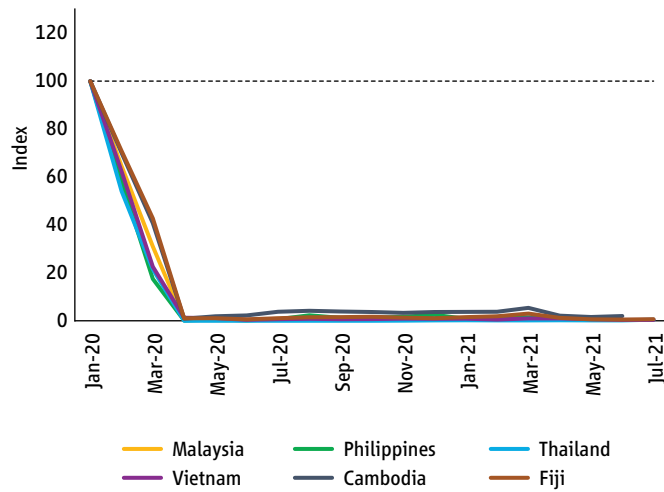
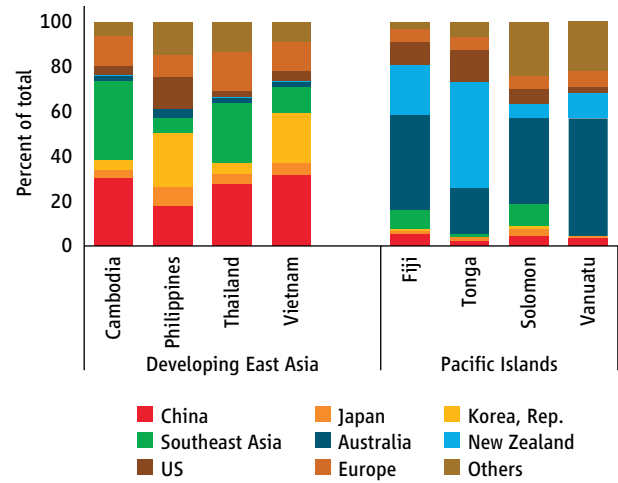
Open trade and investment policies are more likely to support global economic recovery. The pandemic has combined with longer-term structural changes in the global economy to provoke two sets of trade measures. One set of “onshoring policies” restricts imports and favors domestic production to reduce dependence on other countries. Another set of policies restricts exports to increase domestic availability of essential products such as vaccines and to decrease foreign access to cutting-edge technology. Research shows that onshoring policies by industrial countries may “bring value chains home” but by hurting both trade and global incomes, and hence, impeding recovery (box I.5). In the hypothetical scenarios considered, real incomes in the EAP region could decline by nearly 3 percent relative to the baseline in 2030, with trade-dependent Vietnam affected worst. Interestingly, a retaliatory response to such policies would make developing countries, including in the EAP region, even worse off. Responding by liberalizing and facilitating trade rather than through retaliatory restrictions, could lead to a net increase in real incomes for most countries, including Vietnam and most EAP countries, and contribute to recovery. Separate research shows that import restrictions, in the form of non-tariff measures, have penalized exports in Indonesia (box I.6). And export restrictions, such as those imposed recently on medical goods and hi-tech products, lead to a diminution in exports and export shares long after the restrictions have been removed. Thus, departing from trade openness hurts national and global real incomes, now when recovery is fragile and in the future when growth is uncertain.

Trade facilitation would allow countries to make better use of global value chains. International production fragmentation requires a smooth transport of goods and services across borders. Recent electronics shortages and shipping disruptions have highlighted the importance of investing in trade infrastructure (box I.7). Trade facilitation measures such as port infrastructure investments will further bring stability to the trading system by reducing uncertainty surrounding deliveries and by making trade resilient to systemic shocks.

As the world transitions toward an environmentally sustainable economy, there will be carbon mitigation measures taken by EAP’s trading partners such as EU’s Carbon Border Adjustment Mechanism (CBAM). Through the CBAM, the EU will introduce tariffs on imports based on their carbon content to bring import costs to the same footing as domestic EU production costs. In its current form, the CBAM is estimated to have a small effect on EAP’s exports, mainly because the EAP exports do not contain a significant share of current CBAM-covered sectors. However, the coverage of such climate friendly measures would only increase in scope and adoption going forward. This provides an incentive for the forward-looking policies and investments that limit climate change, while insuring exports against such measures.

- **Tourism and remittances**

Tourism virtually disappeared in early 2020 and has not recovered (figure I.25). Strict border control measures motivated by health concerns in destination countries, as well as border and quarantine measures in tourists “home” countries, have combined with individual risk aversion to deter international mobility. Tourists to the Pacific Islands come mostly from Australia and New Zealand (figure I.25, panel B). Tourists in the larger East Asian countries are from more diversified sources, but East Asia accounts for more than one-half of the tourists.

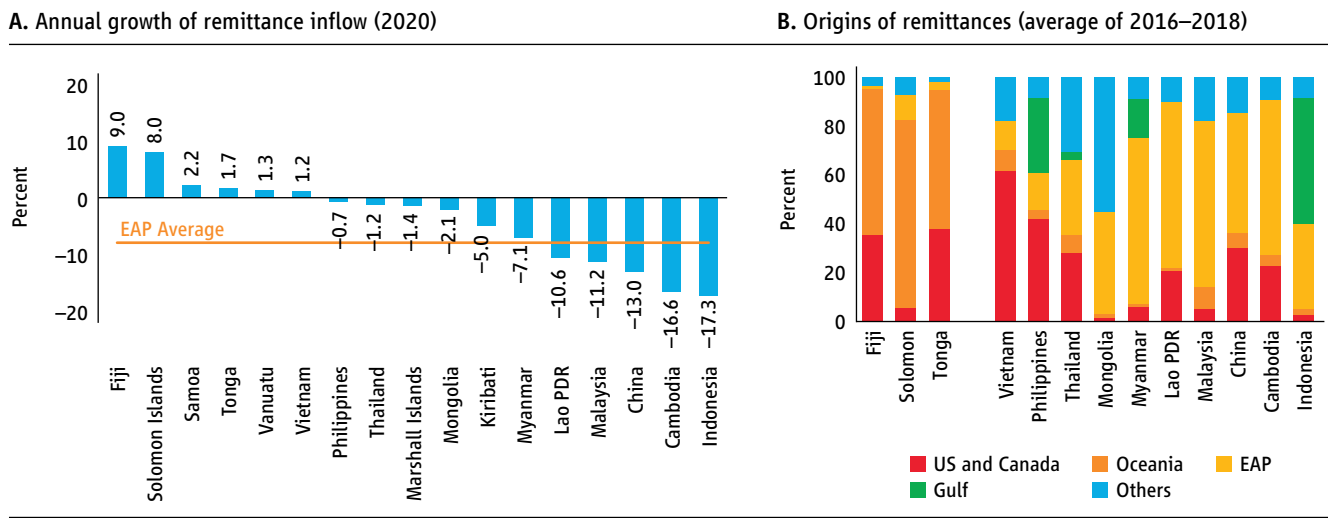
Figure I.25. Tourism was hit hard in the aftermath of the COVID-19 shock**A. Tourist arrival****B. Origins of tourists (average of 2017–2019)**

Source: Haver Fiji Bureau of Statistics.
Note: Index: January 2020 = 100.

Source: UNWTO.
Note: Origins based on country of residence.

In the wake of the COVID-19 shock, remittances to EAP countries fell on average by 8 percent in 2020 compared to 2019, ranging from a 17 percent decline in Indonesia to a 9 percent increase in Fiji (figure I.26). The decline was significantly higher than in the rest of emerging market and advanced economies (–1.6 percent). Certain Pacific Island Countries (Fiji, the Solomon Islands, Tonga) saw an increase in their remittance inflows during the crisis because they were highly reliant on remittance inflows from Australia and New Zealand, which were only mildly affected by the pandemic. Workers that were already in these countries stayed on and may have increased the size of flows back to their home countries to help family and friends. Also, there have been some special exemptions granted for fruit pickers (i.e., from Vanuatu) to come to Australia during the pandemic. Similarly, several of the region’s economies that receive a large share of their remittance inflows from the United States experienced only mild declines, or even slight upticks in remittances (Vietnam, the Philippines, Thailand). The countries that saw the largest drop in remittances were highly reliant on intra-regional remittance inflows (Cambodia, Lao PDR, Malaysia, Myanmar). These countries are likely to witness subdued remittance inflows as infections continue to rise in the region.

Figure I.26. Remittance inflows declined in 2020, especially in countries that were relying on intra-regional remittance flows



Source: KNOMAD.

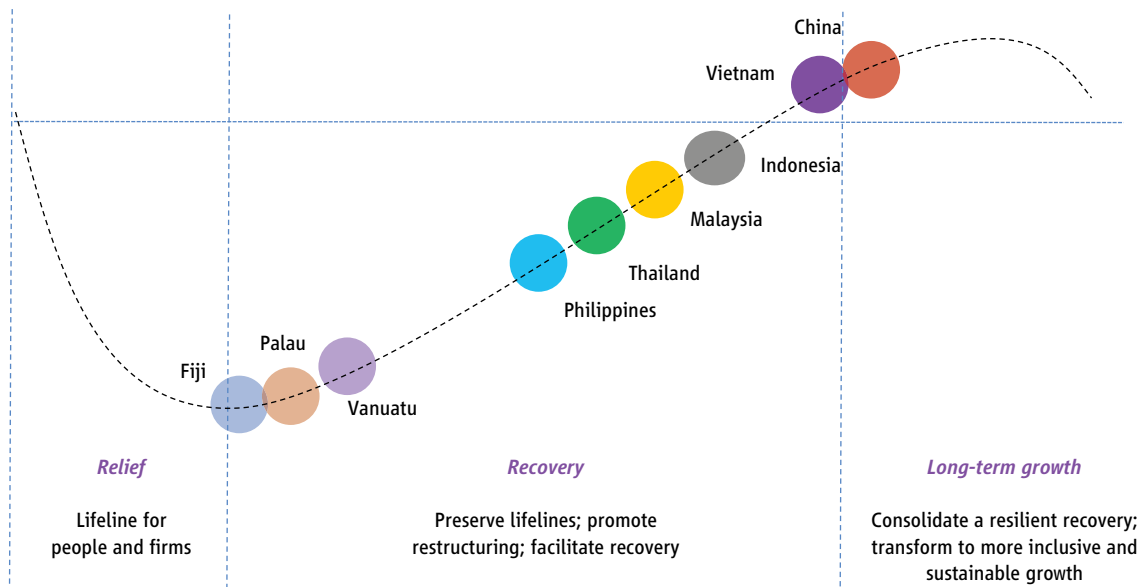
Source: Haver Analytics/World Bank.

Remittances and tourism both depend on the movement of people, which bilateral and regional cooperation may facilitate to some extent. Originally, a case had been made for travel bubbles between COVID-19 free countries like Australia and New Zealand, and potentially also China and other countries. However, the notion of zero COVID-19 has evaporated with the coming of the Delta variant. An alternative is to build on existing bilateral or regional agreements, or to negotiate new ones, which provide the mutual reassurance needed to allow international movement of people. Fortunately, the vaccine rollout has been relatively swift in some of the Pacific countries due to ample supplies provided by the US, China, Australia, and New Zealand. The Pacific Islands may be able to develop a mutually recognized “vaccine passport,” as well as credible testing certificates, with some of the countries which are major sources for tourists and destinations for temporary workers. A comprehensive digital identification (ID) would help and could be linked to passports, educational attainment and grades, and work experience, as well as testing and vaccine status. Such measures may also facilitate and reduce the costs of remittances. However, longer-term measures will also be needed to entice tourists back, such as the strengthening of basic health facilities. The tourism industry may also need support to be able to restart after being on hold for nearly two years.

Macroeconomic policy: Fiscal, monetary, and financial

Governments in the region have relied on fiscal, monetary, and financial sector policies to support their economies in response to the COVID-19 shock. These policies are expected to play a demanding triple role of supporting relief, recovery, and growth (figure I.27). While infections rage and economic activity is restricted, households and firms need relief, liquidity, and access to credit. During the recovery phase, further policy support helps avoid an underemployment equilibrium trap. Once the economy recovers, macroeconomic policies can help facilitate a transition to more sustainable and inclusive growth.

Figure I.27. Policy emphasis reflects the state of the recovery



	<i>Relief</i>	<i>Recovery</i>	<i>Growth</i>
Fiscal policy	Support households and firms; strengthen public health	Preserve lifelines; target support better; accelerate spending on planned investment	Invest in infrastructure; durably strengthen social protection and increase climate resilience
Monetary policy	Provide necessary liquidity; ensure access to credit	Monitor and manage inflationary pressures and capital flight risk	Return to primary focus of targeting inflation and unemployment
Financial market regulations	Continue granting credit; exercise forbearance while ensuring transparency of financial situation	Monitor risks and prepare to unwind support; evaluate the state of nonperforming loans and loans at risk	Focus on strengthening financial sector; maintain long-term stability

Source: Authors' illustration.
 Note: The horizontal line indicates the level of GDP in December 2019.

Governments in the region reacted boldly to COVID-19, but the duration of the pandemic is straining their capacity to provide support. Initially, governments increased spending, relaxed monetary policy, and exercised regulatory forbearance toward the financial sector so that it could extend credit. While this support helped East Asian economies weather the initial shock relatively successfully, policy space inevitably narrowed in certain dimensions (table I.1). Government debt has increased in all economies compared to pre-pandemic levels, and many economies could face large post-pandemic fiscal deficits and high debt overhangs in the absence of a robust recovery. Debt levels are above the emerging markets and developing economies (EMDE) average in Mongolia, Lao PDR, and Malaysia. Some economies could face significant challenges in servicing debt, especially if sovereign risk premia rise. Now, renewed infections and extended mobility restrictions have disrupted the recovery process, and continuation of support is a challenge.

• **Fiscal policy**

Fiscal policy can support the economy during the phases of relief, recovery, and growth. Relief is needed to help households to smooth consumption and firms to avoid bankruptcy or damaging contraction. Recovery requires a fiscal stimulus because the COVID-19 shock threatens to lock the economy into an underemployment equilibrium. Growth requires public investment to improve the hard infrastructure of roads, ports, and cables and the soft infrastructure of

Table I.1. Fiscal and monetary policy space have narrowed across developing East Asian economies

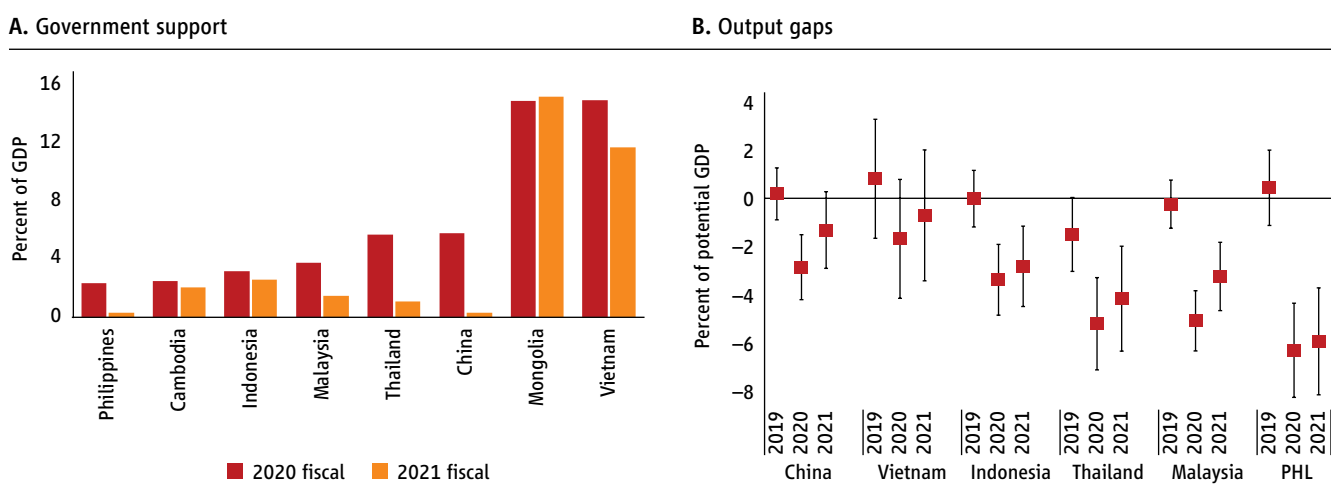
	Fiscal						Monetary			Reserve Buffers		
	General government gross debt (% of GDP)		Fiscal balance (% of GDP)		Domestic credit to private sector (% of GDP)		Key policy rate, in percent		Headline inflation rate, in percent	Inflation target in 2021	Reserves, months of imports	
	2021	change	2021	change	2020	change	Jul-21	change	Jul-21		2020	change
Cambodia	36.4	7	-6.5	-7	142.8	52	3.9	-1	2.7		10.3	3
China	57.9	7	-7.6	-3	203.4	46	3.5	-2	0.9	3	14.9	-1
Indonesia	42.4	13	-5.6	-3	38.5	0	3.0	-1	1.5	2-4	8.4	2
Lao PDR	67.0	10	-4.7	0	41.9	1	3.0	-1	4.7		2.4	1
Malaysia	65.3	9	-6.4	-4	134.1	13	1.8	-1	2.2	2.5-4	6.3	1
Mongolia	82.6	7	-6.6	-3	45.6	-8	6.0	-6	7.4	4-8	6.1	2
Myanmar	49.1	11	-8.5	-5	28.7	6	7.0	-3	4.0		4.7	2
Philippines	53.4	16	-7.6	-7	58.2	13	2.0	-2	4.0	2-4	12.6	4
Thailand	59.0	17	-7.4	-7	134.9	-11	0.5	-1	0.5	1-3	12.0	4
Vietnam	58.3	13	-6.0	-3	146.1	20	2.5	-2	2.6	<4	3.4	1

Source: World Development Indicators; Haver Analytics.
 Note: Color scale represents country percentile across EMEs. Change denotes percentage point/level change compared to 2015–2019 average with the bar length showing –10 to +10 range. For inflation rate, Cambodia shows June 2021, Myanmar shows April 2021.

schools and hospitals, as well as to facilitate transition to more sustainable and inclusive growth. As governments wrestle with the challenge of extending domestic support to cope with long COVID in the face of tightening intertemporal budget constraints, acting domestically and internationally can mitigate the trade-offs.

Fiscal support increased significantly in response to the COVID-19 shock (past EAP updates). Fiscal support packages across the region averaged 7.7 percent and 4.9 percent of GDP during 2020 and 2021, respectively (figure I.28). Nearly two years after the initial COVID-19 outbreak, fiscal policy support remains critical. Measures of the output gap suggest that the EAP economies are operating below their potential economic activity and need continued fiscal support to reduce economic slack. A premature unwinding of fiscal policy support in the face of shrinking fiscal space risks undermining the fragile recovery.

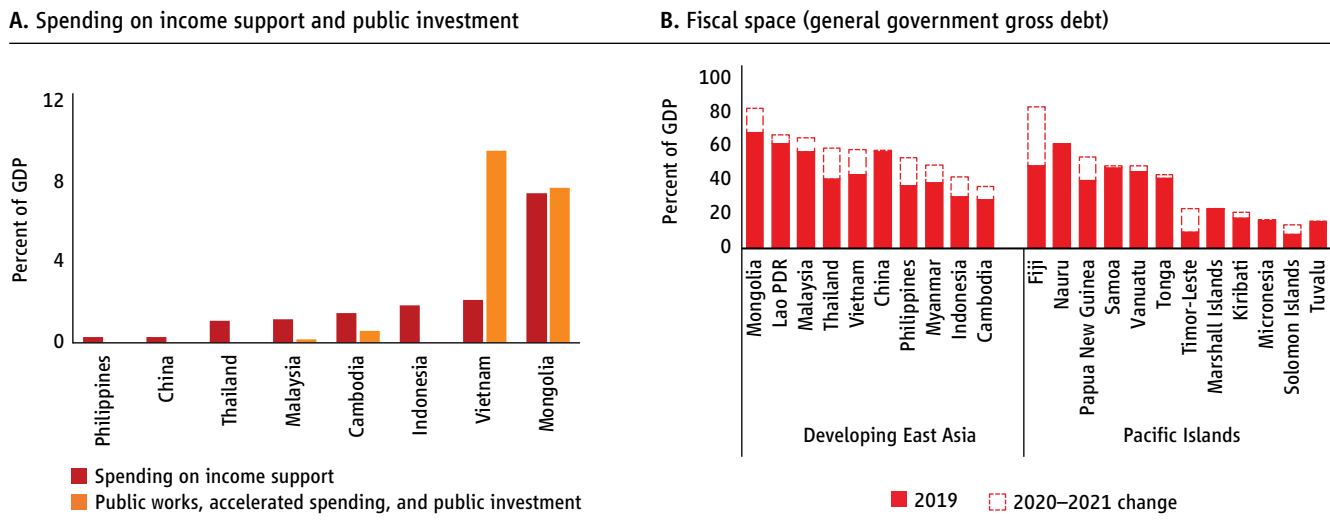
Figure I.28. Government support has been declining while output gaps endure



Source: World Bank staff estimates.
 Note: A. Figure shows fiscal support excluding health measures, below-the-line measures, and contingent liabilities.

Most countries focused their fiscal support on providing relief to households and firms during 2020, and these trends continued during 2021. Relatively few countries, including China and Vietnam, increased public investment through public works and the acceleration of already approved public investment projects (figure I.29). Increased government spending has been financed through a combination of increased debt, expenditure shifting, and accelerated spending (Mongolia, Vietnam). All EAP countries have experienced an increase in public debt and the widening of budget deficits, leading to narrowing fiscal space.

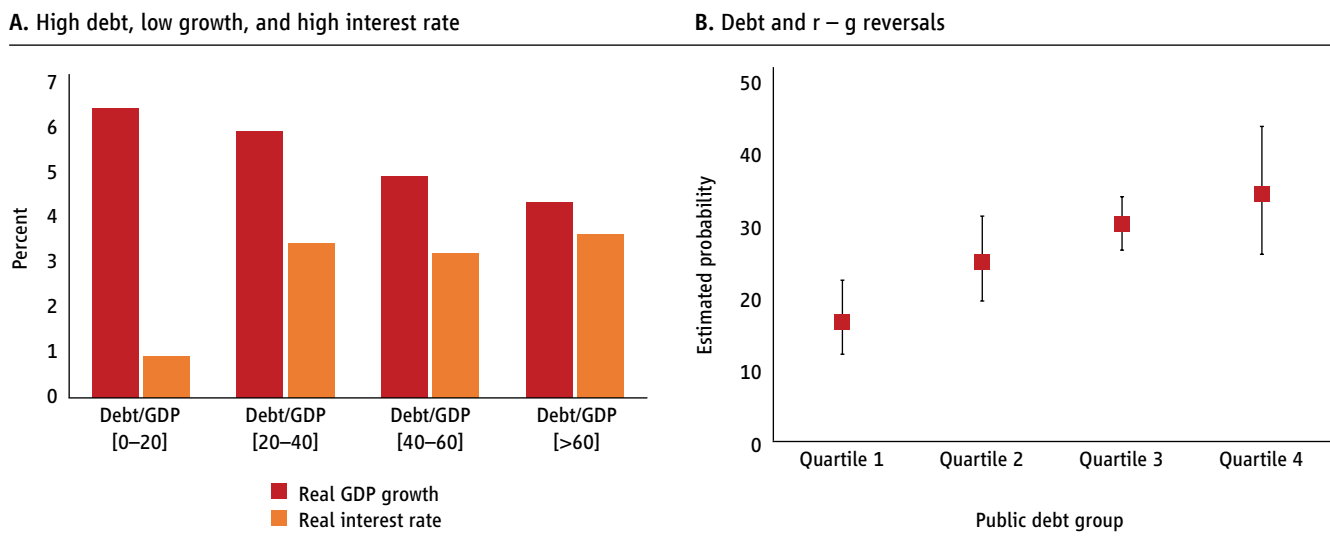
Figure I.29. Few economies supported public investment amid tightening fiscal conditions



Source: World Bank staff estimates.

Shrinking fiscal space has been associated with higher borrowing costs for emerging markets and developing economies (April 2021 EAP Update [World Bank 2021]; figure I.30). High and growing public debt could weigh on growth through higher interest rates and negative effects on investment. Higher borrowing costs and low fiscal space are correlated with a higher likelihood of real interest rate minus real growth rate, $r - g$, reversals, which could make debt unsustainable.

Figure I.30. Lower fiscal space has corresponded to lower economic growth and higher interest rates



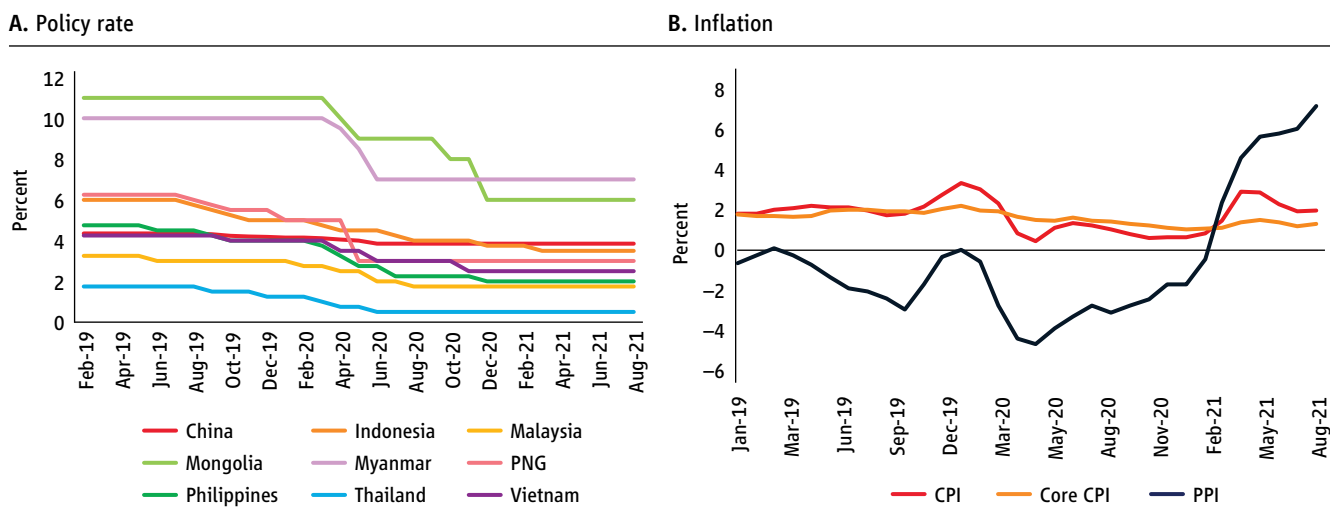
Source: World Bank staff estimates.

Public sector arrears are reported higher in Papua New Guinea. Data on public sector arrears were only reported for a few countries in the region, with Papua New Guinea as the only country where COVID-19 may impact arrears. In Papua New Guinea, as of end-2019, the government estimated arrears to be close to US\$583 million (2.6 percent of GDP). The government was planning to clear one-half of these arrears in 2020, but the COVID-19 crisis has led to a substantial revenue shortfall. In Kiribati, COVID-19 has not introduced any liquidity constraints, as the country has large cash reserves and its fisheries revenues seem unaffected by the pandemic. Similarly, the Philippines and Thailand reported no liquidity constraints. While information is not available for Myanmar, given strict rules and regulations, the size of arrears has historically been very small, accounting for less than 0.001 percent of GDP.

• **Monetary policy and inflation**

EAP countries have also relied on monetary policy actions to support their economies (figure I.31). Key actions included cuts in policy rates and reserve requirement ratios as well as new asset purchases in some countries. There is still room for propping up demand in the region through monetary policy. In most EAP countries, interest rates are well above zero, reserve requirements are relatively high, capital has continued to flow in, and exchange rates are relatively stable (*April EAP Update: World Bank 2021*). Strong recovery in some sectors, combined with external factors such as booming commodity prices and supply shortages of key manufacturing inputs, have led to an increase in import and producer prices. Measures of core inflation, however, have risen only mildly and are generally still below central bank target rates.

Figure I.31. Monetary policy was supportive throughout the region and inflation remains low



Source: Haver Analytics.
 Note: B. CPI and core CPI show the average year-on-year change in China, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. PPI shows the average year-on-year change in China, Malaysia, the Philippines (manufacturing), and Thailand. August 2021 data excludes Malaysia and the Philippines. CPI = consumer price inflation; PPI = producer price index.

The recent increase in producer prices could pass through to consumer prices unless inflation expectations are so well anchored that households and firms ignore temporary changes in producer prices. In certain circumstances, a short-lived rise in consumer price index (CPI) feeds into agents’ beliefs about trend inflation and can thereby induce a much more persistent rise in actual inflation. In this environment, policy makers that aim to stabilize inflation would be forced to raise the policy rate. However, our analysis suggests that the pass-through from producers to

consumers prices is limited in the major developing East Asian economies (box I.8). The analysis also shows that inflation expectations have been well anchored across the countries in the region during the past two decades. These findings suggest that inflation will remain within the targeted ranges.

A potential challenge emanates from monetary policy actions abroad. Changes in the policy stance in the United States constitute a risk for emerging markets, including those in East Asia since the region's recover is not in sync with the rest of the world. The prospect of higher interest rates in the United States could lead to a rush of money: an echo of the "taper tantrum" of 2013 when the Federal Reserve began normalizing monetary policy after the financial crisis. While the likelihood of a "taper tantrum" type of event is low in the near term because the US Treasury yields have dropped back from their Spring highs and the Fed has signaled that it will continue to keep interest rates low as they unwind the asset purchases, EAP authorities need to be alert that these external pressures could mount in the medium term and lead to premature financial tightening.² The presence of foreign currency-denominated debt in firms' balance sheets, which render the latter susceptible to domestic currency depreciation, is a vulnerability in some EAP countries, such as Cambodia, Indonesia, and Malaysia, and could enhance the negative effects of US monetary policy shocks, though central banks in the region have mitigated the potential risk through specific hedging regulations. The foreign holding of domestic currency-denominated sovereign bonds could also be a source of weakness because foreign investors may choose to sell their domestic currency bonds in response to a rise in Fed interest rates, as in the 2013 Taper Tantrum. Maintaining the robust policy framework—with independent central banks, significant foreign-exchange reserves, and limiting dependence on foreign currency debt—would help them to deal with external pressures.

• Financial sector policies

Bank in the region's economies remain well-capitalized, but macro-financial risks can be higher than available indicators suggest. All countries in the region have a regulatory capital to a risk-weighted assets ratio (CAR) exceeding the 10.5 percent minimum required by Basel III, and a regulatory tier 1 capital to risk-weighted assets in excess of the 8.5 percent minimum required by Basel III (table I.2). The latter is in the double digits in all countries, except for Vietnam. Similarly, most EAP economies seem to be in a reasonably adequate position in liquid assets to short-term liabilities, and liquid assets to total assets, though liquidity buffers in Cambodia, Indonesia, and Thailand are relatively low. However, close monitoring is warranted, particularly in the context of recently extended regulatory forbearance measures which could mask underlying financial sector risks and vulnerabilities. For example, the highly leveraged corporate sector, with strong links to the nonbank financial institutions, poses a risk to financial stability. The extent of these risks has been revealed by the difficulties of certain firms in China, one of the first countries to roll back regulatory forbearance measures and resume efforts to contain financial risks associated with the highly leveraged real estate sector.

² US monetary policy tightening has been associated with sizeable cross-border spillovers negatively affecting economic activity in emerging markets (Dedola et al. 2017; Miranda-Agrippino and Rey 2020). A rise in US rates transmits to foreign economies via tighter credit market conditions abroad as well as via substantial deviations from uncovered interest parity (UIP) (di Giovanni et al. 2017; Degasperis et al. 2021).

Table I.2. EAP countries have maintained adequate capital and liquidity buffers

Q1-2021 (or latest available)	Financial strength indicators									
	Capital adequacy		Earnings and profitability							
	Regulatory tier 1 capital to risk- weighted assets		Return on assets		Return on equity		Interest margin to gross income		Non-interest expenses to gross income	
China	11.91	↑	0.91	↓	11.28	↓	78.40	↑	27.12	↓
Indonesia	22.26	↑	1.84	↓	12.37	↓	58.71	↓	40.67	↓
Malaysia	14.93	↑	0.98	↓	8.52	↓	60.06	↑	51.06	↑
Philippines	15.67	↑	1.01	↓	7.96	↓	73.52	↓	54.34	↓
Singapore	15.27	↑	1.31	↓	14.11	↓	63.52	↑	44.30	↑
Thailand	16.74	↑	0.93	↓	6.50	↓	6.50	↓	48.79	↑
Vietnam	9.40	↑	0.98	↑	12.80	↑	71.48	↑	46.21	↓
Cambodia	20.70	↑	1.31	↓	7.08	↓	43.68	↓	77.67	↑

Q1-2021 (or latest available)	Financial vulnerability indicators									
	Asset quality				Liquidity				FX risk	
	NPL to total gross loans		NPL net of provisions to capital		Liquid assets to short-term liabilities		Liquid assets to total assets		Net open position in foreign exchange to capital	
China	1.80	↓	-9.63	↓	58.46	↑	24.1	↑	2.0	↓
Indonesia	3.27	↑	4.18	↓	25.99	↓	18.0	↓	1.3	↓
Malaysia	1.59	↑	5.27	↓	145.08	↓	22.4	↓	4.5	↓
Philippines	4.21	↑	8.28	↑	51.36	↑	33.3	↑	3.5	↓
Singapore	1.31	↓	6.37	↓	73.82	↓	66.9	↓		
Thailand	3.10	↓	8.72	↓	34.31	↑	22.2	↑		
Vietnam	2.14	↑	9.93	↑			10.6	↓		
Cambodia	1.87	↓	3.08	↓	25.70	↑	16.2	↑	9.1	↑

Source: Latest available data from IMF FSIs and national sources/central bank data.

Note: Color indicates the relative level of risk and arrows indicate the change between the last quarter of available data and the 2019 four quarters moving average. For Singapore, the most recent available data is from Q4-2019, whereas for Vietnam from Q2-2019.

Deterioration in other forward-looking indicators points to increased risks in the financial sector. NPL levels increased during the crisis in all countries. In Mongolia, and a few Pacific Island Countries (PICs), NPL levels are above 10 percent, while most other EAP countries have reported NPLs of less than 4 percent as of Q1-2021. But the real numbers are likely higher in lieu of the regulatory forbearance exercised by regulators in most countries. Indeed, other forward-looking indicators, such as loans at risk, restructured loans, and special mention loans, as well as the profitability of the banking sector, have deteriorated during the crisis. In the Philippines, restructured loans spiked from 0.41 percent in January 2020 to 3.05 percent of the total loan portfolio in June 2021, and in Indonesia, loans at risk increased from 9.93 percent in December 2019 to 23.30 percent in March 2021 (table I.3). Virtually all EAP countries have experienced declines in their banking sectors' return on assets (ROA) and return on equity (ROE) during the pandemic, with Cambodia, Indonesia, the Philippines, and Thailand seeing considerable drops in these indicators relative to the pre-crisis levels. The decline in profitability has important implications for financial stability, as profitability has been shown to be negatively associated with a bank's contribution to systemic risk and its idiosyncratic risk (Xu et al. 2019).

Table I.3. Loans at risk, restructured loans, and special mention loans have increased considerably in some countries in the region

Country	Metric	Evolution and period	Source
China	Debt at risk for listed firms	Significant increase during the early part of the pandemic, declined considerably in recent quarters: 5.62 percent (Q4-2019); 22.54 percent (Q1-2020); 20.62 percent (Q2-2020); 8.33 percent (Q3-2020); 10.4 percent (Q4-2020); 9.8 percent (Q1-2021); 12.2 percent (Q2-2021)	WB staff calculations based on WIND database
Indonesia	Loans at risk (LAR) ratio	Increased significantly since the start of the pandemic: 9.93 percent (Dec 2019); 11.59 percent (Mar 2020); 20.65 percent (Jun 2020); 23.53 percent (Sep 2020); 23.38 percent (Dec 2020); 23.3 (Mar 2021)	Kajian Stabilitas Keuangan—Bank Indonesia, OJK updates (latest available Mar 2021)
	Restructured loans as a share of total loans	Increased from 13 percent (Jun 2020) to 18.8 percent (Dec 2020), then declined to 18.5 percent (Jan 2021) and 14.2 percent (May 2021)	OJK data, Bank Indonesia, banks' financial statements, media
Malaysia	Rescheduled and restructured loans (R&R)	From April to June 2020, the number of applications from business to reschedule and restructure their loans increased 6.3 times	BNM (https://www.bnm.gov.my/documents/20124/1395181/ch1_2_credit.pdf)
	Gross impaired loans	1.44 percent (Jun 2020); 1.37 percent (Sep 2020); 1.56 percent (Dec 2020); 1.58 percent (Mar 2021)	https://www.bnm.gov.my/documents/20124/3434930/1Q2021_GDP_Slides.pdf
	MFRS stage 2 loans	8.4 percent (Jun 2020); 7.9 percent (Sep 2020); 10.2 percent (Dec 2020); 10.0 percent (Mar 2021)	https://www.bnm.gov.my/documents/20124/3434930/1Q2021_GDP_Slides.pdf
Mongolia	COVID-19 restructured loans	22 percent of total loans as of Q3-2020	Fitch Ratings, Mongolian Banks Dashboard: November 2020
Philippines	Restructured loans as a share of total loans	Increased from 0.41 percent in January 2020 to 1.91 percent in December 2020; 2.2 percent in March 2021 and 3.05 percent in June 2021	BSP (https://www.bsp.gov.ph/Statistics/Selected%20Performance%20Indicators/7.aspx)
Thailand	Special mention loans as a share of total loans	Increased from 2.82 percent in Q4-2019 to 6.65 percent in Q4-2020; 6.44 percent in Q1-2021, and 6.37 percent in Q2-2021.	BOT (https://www.bot.or.th/App/BTWS_STAT/statistics/BOTWEBSTAT.aspx?reportID=906&language=ENG)

Source: World Bank staff estimates.

The corporate sector is emerging from the pandemic with higher levels of debt and increased financial vulnerability with a potential negative impact on the financial sector. Both financial and nonfinancial corporates have increased borrowing further and are highly leveraged in China and Vietnam. According to the latest Business Pulse Survey (BPS) results, firms faced persistent liquidity constraints and many fell into arrears during 2021-Q1. In Malaysia, BPS Round 2 (January–February 2021) revealed that liquidity continues to be a pressing problem, with the average firm reporting less than five months of cashflow available as of February 2021.³ Firms' financial situations worsened in Cambodia by May 2021, with increases in perceived shortages of the supply of financial services, suppliers' credit, and cashflow availability. As of March 2021, the share of large firms reporting having difficulty in paying rents and utilities was increasing in Indonesia, as was the share of micro firms reporting having issues with paying wages. Until May 2021, firms in the Philippines reported facing problems of liquidity, with as many as 63 percent of firms surveyed reporting having less than one month of cash available. In the household sector too, debt continues to be elevated in China, Malaysia, and Thailand. Across the region, household debt servicing capacity has deteriorated as some households have taken on more debt to cover lost income.

Further vulnerabilities may be hidden by the veil of regulatory forbearance. Extraordinary policy measures have eased financial conditions and supported the economy, helping to contain financial stability risks. But actions taken during the pandemic may have unintended consequences, such as stretched valuations and rising financial vulnerabilities.

³ Almost 67 percent of firms were already in arrears or expected to fall in arrears in the next six months, with a sharp increase in the share of firms in arrears in the construction sector compared to October 2020, and agriculture firms appeared to be under stress with 40 percent of firms already in arrears.

Moratoria and deferrals (loan forbearance) delay the recognition of losses and public guarantees reduce provisioning rates and maintain capital buffers. While regulatory forbearance and borrower support measures have been necessary to support the EAP financial sectors and economies more broadly during the pandemic, many of them have been extended more than once, and they may be masking emerging risks and vulnerabilities in the region’s financial systems.⁴

• Policy trade-offs

EAP countries face sharp trade-offs as they balance the need for economic support against the risk of future instability. The prolonged support provided through fiscal, monetary, and financial sector policies undermines debt sustainability and poses risks to price and financial stability. Premature tapering of support, though, can hurt the fragile recovery.

But vulnerabilities remain high across the economy (table I.4). Many small island economies struggle with slow growth, which can affect the ability to grow out of debt. Government revenue is low in Indonesia, Lao PDR, Myanmar, Papua New Guinea, and Vietnam, making it difficult for these countries to generate revenue to deal with budget shortfalls. External financing needs are high in Cambodia, Lao PDR, Malaysia, and Mongolia, driven by external debt, and in Fiji, the Solomon Islands, and Timor-Leste, driven by high current account deficits. Financial sector leverage remains elevated in Cambodia, China, Malaysia, Thailand, and Vietnam, followed by Fiji, Vanuatu, and the Philippines.

Table I.4. Vulnerabilities in the region

	Macroeconomy			Fiscal				External				Financial					
	2021	2021	avg. 2019-2021	2021	2021	2021	2021Q1	2021	2021	2020	2020	2020					
	GDP growth	change	r-g	General government revenue (% of GDP)	change	Fiscal balance (% of GDP)	change	General government gross debt (% of GDP)	change	Current account (% of GDP)	change	External debt (% of GDP)	change	External Financing needs (% of GDP)	change	Domestic credit to private sector (% of GDP)	change
China	8.5	2	-6.9	26.3	-2	-7.6	-3	57.9	7	1.8	0	15.2	2	7.3	-1	203.4	46
Malaysia	3.3	-2	-2.6	16.6	-4	-6.4	-4	65.3	9	2.7	0	64.6	-1	29.7	-1	134.1	13
Indonesia	3.7	-1	-0.7	11.2	-3	-5.6	-3	42.4	13	-0.8	1	35.9	0	9.4	-4	38.5	0
Philippines	4.3	-2	-7.1	15.9	-3	-7.6	-7	53.4	16	1.3	2	24.1	1	6.1	-2	58.2	13
Vietnam	4.8	-2	-3.7	23.8	4	-6.0	-3	58.3	13	1.5	1	35.6	1	6.8	-3	146.1	20
Thailand	1.0	-2	-5.8	19.9	-2	-7.4	-7	59.0	17	-0.4	-8	34.6	1	13.8	5	134.9	-11
Lao PDR	2.2	-4		13.3	-3	-4.7	0	67.0	10	-4.0	9	88.8	4	20.9	1	41.9	1
Mongolia	4.5	0		31.0	3	-6.6	-3	82.6	7	-8.5	3	145.5	0	41.3	-20	45.6	-8
Cambodia	2.2	-5		24.1	1	-6.5	-7	36.4	7	-18.1	2	65.1	12	11.6	-13	142.8	52
Myanmar	-18.0	-25	5.5	15.8	-3	-8.5	-5	49.1	11	-2.6	2	16.2	0	4.0	-2	28.7	6
Timor-Leste	1.9	1		45.5	-10	-29.7	5	23.4	17	-31.3	-23	10.1	2	32.0	22	15.8	2
Fiji	-4.1	-7	-0.5	21.5	-5	-13.8	-10	83.6	38	-16.1	-9	21.4	3	15.3	4	84.9	-4
Solomon Islands	2.0	-2		30.6	-8	-2.5	-1	14.1	6	-10.0	-5	22.0	1	14.8	6	20.5	-12
Papua New Guinea	1.0	-3		14.9	-2	-7.2	-3	54.1	20	18.0	-7	68.9	-13	-5.2	7	15.5	-5
Samoa	-8.0	-11		37.0	6	-3.4	-3	49.0	3	-6.5	-5	48.0	-4	-5.2	7	53.4	-29
Vanuatu	1.2	-2	1.2	42.1	4	-5.8	-5	48.7	5	-6.1	-9	45.5	4	13.4	9	64.1	-1
Tonga	-3.2	-6		43.1	3	-1.7	-3	43.7	1	-18.6	-13	39.0	-1			37.4	0
Kiribati	3.0	-2		113.8	-27	-11.6	-35	21.4	1	10.7	-22						
Marshall Islands	-2.5	-6		71.4	9	0.6	-2	23.3	4	2.6	0						
Micronesia, Fed. Sts.	-3.2	-5		69.0	5	-3.4	-18	15.3	6	3.0	-9						
Nauru	1.6	0		150.5	30	15.9	-5	57.1	23	10.5	11						
Palau	-16.0	-17		42.1	0	-16.6	-21	0	21	-37.0	-21	68.6	36				
Tuvalu	2.5	-3		133.0	-6	-3.4	-19	11.8	7	-9.0	0						

Source: World Bank staff calculations.
 Note: Mongolia’s external debt and external financing needs exclude the intercompany transactions amounting to 36 percent of the total external debt in 2021. Color scale represents country percentile across EMDEs. Change denotes percentage change compared to 2015–2019 average.

⁴ According to the FCI GP COVID-19 Financial Policy Response Compendium, in the EAP region, out of 268 policy measures aimed to support the banking sector, 113 (or 42 percent) fall under the prudential measures category, and 129 (or 48 percent) fall under the borrower support category. The former category includes measures such as easing credit exposure limits, easing other macroprudential measures (debt-to-income, loan-to-values), lowering risk weights for credit with public guarantees, relaxing capital requirements or nonperforming exposure (NPE) treatments and so forth. The latter category includes measures such as caps on interest rates or fees, credit restructuring with public guarantees, flexibility in credit information requirements, loan restructuring, mandatory credit repayment moratorium, and so forth.

• Fiscal policy

There are at least three routes to softening the trade-offs through fiscal policy: disciplining spending and borrowing through fiscal rules; credibly committing to future fiscal reform that ensures fiscal discipline and improves revenue mobilization; and international coordination of fiscal policy to magnify its collective impact.

Among the countries that have fiscal rules, those that have relaxed them temporarily will need to gradually move to legislatively stipulated commitments (Indonesia, Malaysia) (box I.9). Some other countries, especially the ones with high public debt, will benefit from introducing fiscal rules that can help curb additional borrowing (Fiji, Lao PDR).

EAP countries must also anticipate the need to generate revenues and strive to increase the efficiency of expenditures. Revenue generation is low in Indonesia, Lao PDR, Myanmar, the Solomon Islands, and Vietnam. While raising revenue and cutting spending during a crisis is difficult, committing to future reforms may be politically easier—because opposition from vested interests is likely to be weaker when they are currently benefiting from government support and bailouts. On the revenue side it will be important to increase the progressivity of the tax framework through reforms to, among others, personal income tax, consumption tax, corporate taxes, and capital gains taxes, as well as enhancing revenue administration. On the expenditure side it will be important to contain the rising costs of the public wage bill and pensions, thus improving the targeting of social spending, phasing out generalized subsidies, and strengthening public investment project selection and management.

Global and regional coordination of fiscal policy could boost its impact. In open economies, we see leakages of fiscal stimulus because part of governments' added spending could be used to purchase imported goods rather than support domestic production. EAP countries should join international efforts to revisit taxation of multinational companies. These efforts would make a race to the bottom of corporate taxes less likely, even though at the initial phase, the additional revenues for EAP economies are expected to be limited (box I.10).

• Monetary policy

Central banks are likely to face trade-offs between continuing supportive monetary policy, containing inflationary pressures, and maintaining exchange rate stability. The higher the balance sheet mismatches, the sharper this trade-off. Foreign currency denominated corporate debt remains above the EMDE average in Indonesia and Malaysia. The reliance on foreign investors in these two countries, as well as a high share of short-term financial sector corporate debt in Malaysia, the Philippines, Thailand, and Vietnam, add to the risk from capital flights. Monetary policy in these countries should include a combination of tools that target price as well as exchange rate stability.

The trade-offs are likely to be less steep in countries where inflation expectations are well anchored. Under well-anchored expectations, consumers are less likely to react to temporary bouts of price increases, and the pass-through from imported inflation to domestic prices is lower. While we find that inflation expectations have been relatively well anchored in recent years, domestic prices appear somewhat sensitive to a depreciation of the domestic currency against the US dollar in Indonesia and Malaysia, and to spikes in producers and oil prices in Thailand. Boosting the credibility of the central bank by ensuring its independence and a clear communication strategy, followed by commitment to price stability, will help anchor expectations.

Most EAP countries have increased the level of foreign reserves since the offset of the crisis, but they appear to be low in Lao PDR, Myanmar, and Vietnam. More flexible exchange rate regimes would allow greater monetary policy autonomy and relieve pressures on reserves.

• Financial sector policy

Regulators face a trade-off between allowing continued easier access to credit and potential financial instability.

Many countries have instituted regulatory forbearance during the pandemic. For instance, the Philippines and the Republic of Korea implemented reductions in risk weights below the level required by the Basel framework till the end of 2020 for small and medium enterprise (SME) exposures. Similarly, China has allowed regulatory forbearance by not including the loans subject to moratoria and suspending credit classifications for those loans. What is necessary today may sow the seeds of instability tomorrow. The continued implementation of forbearance measures would increase the risks and vulnerabilities of the financial systems in the region, given the already record accumulation of private sector debt in several jurisdictions (Cambodia, China, Malaysia, Thailand, Vietnam). Forbearance measures need to be unwound in a carefully coordinated, sequenced, and transparent manner (box I.11). One option would be to announce the objective indicators linked to overall economic performance and financial sector conditions that would trigger a reversion to standard regulatory measures.

Authorities' actions should not roll back regulatory reforms or compromise the underlying objectives of existing international standards.

During recovery, the focus should turn to transparency and correctly pricing risks. Regulators should work closely with bank supervisors to ensure appropriate disclosure of loan restructuring by borrower category and economic sector, performance of the loan portfolio, adjustments made to policies to assess borrowers' creditworthiness, and any impact of these adjustments. Countries should strengthen restructuring and debt resolutions. Many firms will face insolvency, and financial sector policies should facilitate firm restructuring and debt resolution. In Indonesia, for example, more than 31 percent of loans to large corporates have been restructured. While many countries have recently introduced policies to ameliorate their insolvency frameworks, gaps remain between developing EAP countries, and advanced economies and policy makers should continue their efforts to strengthen their frameworks (box I.12).

As growth resumes, one of the greatest challenges for policy makers will be to decide how and when to exit from the regulatory relief measures.

Acting too early may remove much needed credit to support the economy, while waiting too long could undermine confidence in the regulatory regime and heighten systemic risks. Regulators should assess vulnerabilities as the veil of forbearance falls and ensure the continuation of long-term reforms that improve the stability and efficiency of the financial system. In some cases, COVID-19 has served as an impetus to financial sector reforms, especially those concerning digital payments that have the potential to increase financial inclusion (box I.13).

Outlook

The region is projected to grow by 7.5 percent in 2021. China is projected to expand by 8.5 percent, driven largely by base effects. This forecast assumes recurring but contained COVID-19–related disruptions and supportive fiscal and monetary policy (table I.5). The rest of the region is projected to grow only by 2.5 percent in 2021, as ongoing COVID-19–related disruptions are expected to dampen economic activity. Aggregate output in the region excluding China is forecast to remain below pre-pandemic projections in 2022. The recovery will continue to show considerable divergence. The recovery in countries with low vaccinations or those that rely heavily on tourism is expected to be fragile and the recovery is expected to be delayed till 2023. In contrast, growth in highly vaccinated countries is expected to be solid, with only marginal forecast revisions envisioned in 2023.

Table I.5. Regional GDP forecasts

	<i>Latest forecasts</i>					<i>April 2021 forecasts</i>	
	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>	<i>2021</i>	<i>2022</i>
East Asia & Pacific	5.8	1.3	7.5	5.4	5.2	7.4	5.4
<i>East Asia & Pacific (excluding China)</i>	4.8	-3.7	2.5	5.2	4.8	4.4	5.1
<i>ASEAN-5</i>	4.7	-3.9	3.4	5.2	4.8	4.8	5.1
<i>Pacific Island Countries</i>	0.7	-11.7	-2.9	5.4	5.4	1.0	6.2
China	6.0	2.3	8.5	5.4	5.3	8.1	5.4
Indonesia	5.0	-2.1	3.7	5.2	5.1	4.4	5.1
Thailand	2.3	-6.1	1.0	3.6	3.1	3.4	4.7
Malaysia	4.3	-5.6	3.3	5.8	4.5	6.0	4.2
Philippines	6.1	-9.6	4.3	5.8	5.5	5.5	6.3
Vietnam	7.0	2.9	4.8	6.5	6.5	6.6	6.5
Myanmar	6.8	3.2	-18.0			-10.0	
Cambodia	7.1	-3.1	2.2	4.5	5.5	4.0	5.2
Papua New Guinea	5.9	-3.9	1.0	4.0	3.0	3.5	4.2
Mongolia	5.0	-5.4	4.5	5.2	6.1	6.1	7.2
Lao PDR	5.5	0.5	2.2	4.5	4.8	4.0	4.6
Fiji	-0.4	-15.7	-4.1	7.8	6.9	2.6	8.2
Solomon Islands	1.2	-4.3	2.0	4.5	4.4	2.0	4.5
Timor-Leste	1.8	-8.5	1.9	3.7	4.3	2.9	3.8
Vanuatu	3.9	-6.8	1.2	3.0	4.1	4.0	3.9
Samoa	3.6	-2.7	-8.0	1.5	3.0	-7.7	5.6
Tonga	0.7	0.7	-3.2	2.6	3.3	-3.0	2.3
Micronesia, Fed. Sts.	1.2	-1.8	-3.2	1.0	3.0	-3.5	2.5
Kiribati	3.9	-1.9	3.0	2.6	2.4	3.0	2.6
Palau	-1.8	-8.0	-16.0	12.0	14.0	-4.0	12.0
Marshall Islands	6.6	-2.2	-2.5	3.5	2.5	-1.0	3.0
Nauru	1.0	0.7	1.6	0.9	0.8	1.3	0.9
Tuvalu	13.9	1.0	2.5	3.5	3.8	3.0	4.0

Source: World Bank; World Bank staff estimates and projections.

Note: Percent growth of GDP at market prices. Values for 2021–23 represent forecast. Values for 2020 for the small island economies refer to GDP growth estimates. ASEAN-5 comprises Indonesia, Thailand, the Philippines, Malaysia, and Vietnam. 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.

This forecast assumes that COVID-19 remains generally contained in China, and that the negative impact of recurring mobility restrictions on activity will be offset by additional policy support. It also assumes that the rest of the region will continue to suffer from occasional COVID-19 outbreaks until a substantial proportion of the population gets vaccinated. EAP economies are expected to face a less favorable external environment in 2022, as demand from major economies plateau and commodity prices stabilize. Global financial conditions are expected to gradually tighten, leading to tighter domestic financing conditions. Similarly, fiscal support is expected to be gradually withdrawn in most countries. Regional growth is projected to decelerate in 2022, to 5.4 percent, as macroeconomic policy support in China

is also gradually withdrawn. In the rest of the region, growth is expected to strengthen to 5.3 percent in 2022–23 as domestic demand recovers and global tourism and travel revive on the back of more widespread vaccinations.

Compared to the April update, growth forecasts have been downgraded for almost all major economies in the region. Despite downward revision, GDP growth in Vietnam is expected to be 4.8 percent, thanks to resilient exports and additional monetary and fiscal policy support. In Indonesia, growth is expected to rebound by 3.7 percent in 2021, reflecting low base effects, gradual improvements in consumer spending and investment, and buoyant exports. Structural reforms implemented by the government through the Omnibus Law on Job Creation, and the planned General Tax Law will help boost investment and improve fiscal revenues in the medium term. In Malaysia, the economy is expected to expand 3.3 percent in 2021, a significant downgrade since April. Acceleration in the vaccination rollout is expected to contribute to the relaxation of containment measures and provide an additional boost to growth.

The economic recovery in Thailand is expected to be protracted, and output is likely to remain below the 2019 level by 2022. The economy is projected to see a small growth of 1.0 percent in 2021, which will strengthen to 3.6 percent in 2022. Merchandise exports are expected to be the major source for growth, while the absence of tourism will continue to dampen recovery throughout 2022. The launch of a quarantine-free travel destination for vaccinated tourists is expected to provide some relief to Thailand’s tourism sector. Increased political tension due to prolonged weak economic activity, however, will continue to undermine the consumer and business confidence and contribute to heightened uncertainty.

For the smaller economies in EAP, recovery is expected to be gradual in the medium term, with the exception of Mongolia, which is projected to see a V-shaped recovery led by recovery in the mining sector and private sector investment on the back of strong foreign direct investment (FDI) and government subsidized loans. In Timor-Leste, growth is expected to be only 1.9 percent in 2021, impeded by the impact of COVID-19 and heavy floods. In Myanmar, the economy is projected to contract sharply due to the impact of the military takeover in February 2021 and the third wave of COVID-19 infection. These events have also scarred the economy and could potentially reverse the progress Myanmar made in the last decade.

Recovery paths are varied across the Pacific Island Countries. Fiji, the Solomon Islands, Vanuatu, Nauru, and Tuvalu are expected to return to positive growth in 2021, while the rest will remain in a recession. A range of natural disasters also derailed the recovery in the South Pacific Islands. Despite being successful in preventing COVID-19 case surges, the economies have not been spared by the shock, particularly because of their dependence on tourism. A successful vaccine rollout and easing of international travel restrictions will determine the recovery path for these countries.

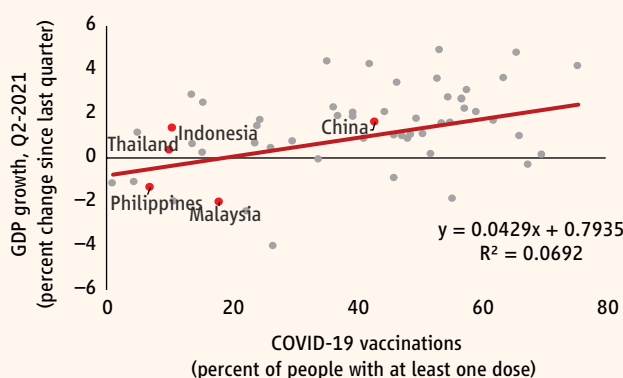
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Box I.2. Vaccination and GDP growth

Widespread vaccination could not only help countries deal with the health consequences of new virus outbreaks but could also prevent economic setbacks. Figure BI.2.1 depicts a positive cross-country scatter plot of vaccination rates—measured by the share of population having received at least one COVID-19 vaccine dose at the end of June 2021—and the quarter-on-quarter change in gross domestic output in Q2-2021. The scatter plot suggests a positive relationship. So does a simple comparison: the quarterly GDP of countries that had vaccinated at least 50 percent of their population with at least one vaccine dose grew on average by 1.6 percent in Q2-2021; those that had achieved less than a 20 percent vaccine coverage experienced an output *contraction* on average of 0.8 percent in the same period.

Figure BI.2.1. COVID-19 vaccinations and change in GDP



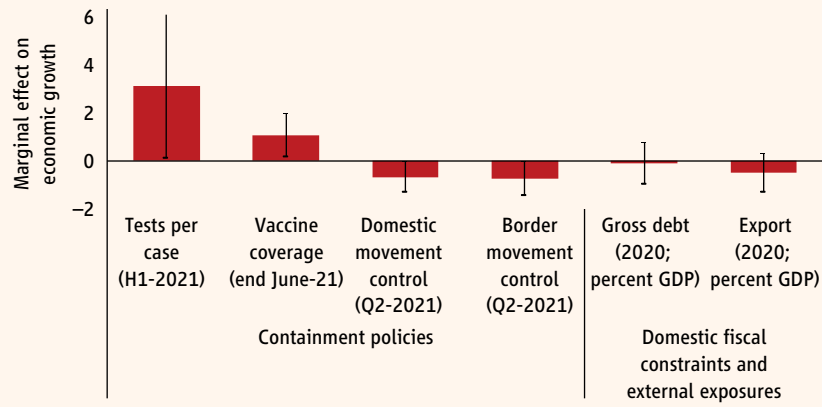
Source: Global Economic Monitoring (GEM) and Oxford Covid-19 Government Response Tracker (OxCGRT).

Note: Correlation of Q2-2021 GDP growth (percent change from Q1-2021) and share of population having received at least one COVID-19 vaccine dose at end of June 2021. Observations include all countries with available quarterly GDP data up to Q2-2021 as of September 10, 2021.

A preliminary cross-country ordinary least square estimation helps examine the impact on the change in GDP between Q1-2021 and Q2-2021 of the four major pillars of non-pharmaceutical intervention to contain COVID-19: (1) testing-tracing-isolation, proxied by the cumulative tests per case in H1-2021; (2) vaccinations, proxied by the share of population having received at least one COVID-19 vaccine dose at the end of June 2021; (3) the stringency of domestic lockdowns; and (4) international border closures. The regression also controls for domestic fiscal constraints and external exposure, proxied respectively by gross debt accumulation and dependence on exports. The results, depicted in figure BI.2.2, suggest that the change in GDP is positively associated with both testing and vaccination coverage. A 10 percent increase in a country's vaccination coverage is associated with approximately one-half of a percentage point increase in quarterly GDP (0.45 percentage points). More stringent domestic lockdowns and international closures, greater gross debt, and greater exports are all correlated with less output growth, but the latter two are not significant. These results illustrate positive associations and are not evidence of a causal relationship.

(continued)

(Box 1.2. continued)

Figure BI.2.2. Determinants of GDP in Q2-2021

Source: EAP staff research, based on data from the World Development Indicators, Global Economic Monitoring, Worldometer, and Oxford Covid-19 Government Response Tracker (OxCGRT).

Note: The figure presents point estimates of a cross-country OLS regression with the dependent variable being Q2-2021 GDP growth (percent change from Q1-2021). The vaccination rate is measured as the cumulative share of population having vaccinated with at least one dose in H1-2021. Border control and domestic movement control are obtained from the OxCGRT database and averaged over Q2-2020. Domestic movement control is the weighted average of five OxCGRT's subindicators, including school closure, workplace closure, cancelation of public events, restriction on social gatherings, and restriction on internal travelling. All regressors are standardized as units of deviation from the global average. The regression controls additionally for GDP per capita (2020). Bar heights represent the sizes of the estimated coefficients. Whiskers represent 90 percent confidence intervals of the estimates.

Box I.3. COVID-19 vaccination in the EAP countries: Situation, constraints, and strategies

How far has vaccination progressed in EAP countries? What are the constraints to the expansion of vaccination? What strategies have been adopted to allocate vaccines within countries? To obtain at least a rough picture of where things stand, World Bank staff conducted a survey in 16 EAP countries. We find that in most EAP countries, a fully vaccinated population remains below 30 percent of the eligible population as of September 2, 2021. So far, vaccine availability has been the binding constraint in the larger EAP countries, such as Indonesia, the Philippines, and Vietnam, and the domestic distribution capacity has been the binding constraint in some of the smaller and poorer EAP countries such as Papua New Guinea. Vaccines that have been acquired are being allocated within countries primarily based on the size of the (vulnerable) local population, but some countries take into account local levels of infection and the distribution of economic activity.

Where does vaccination stand?

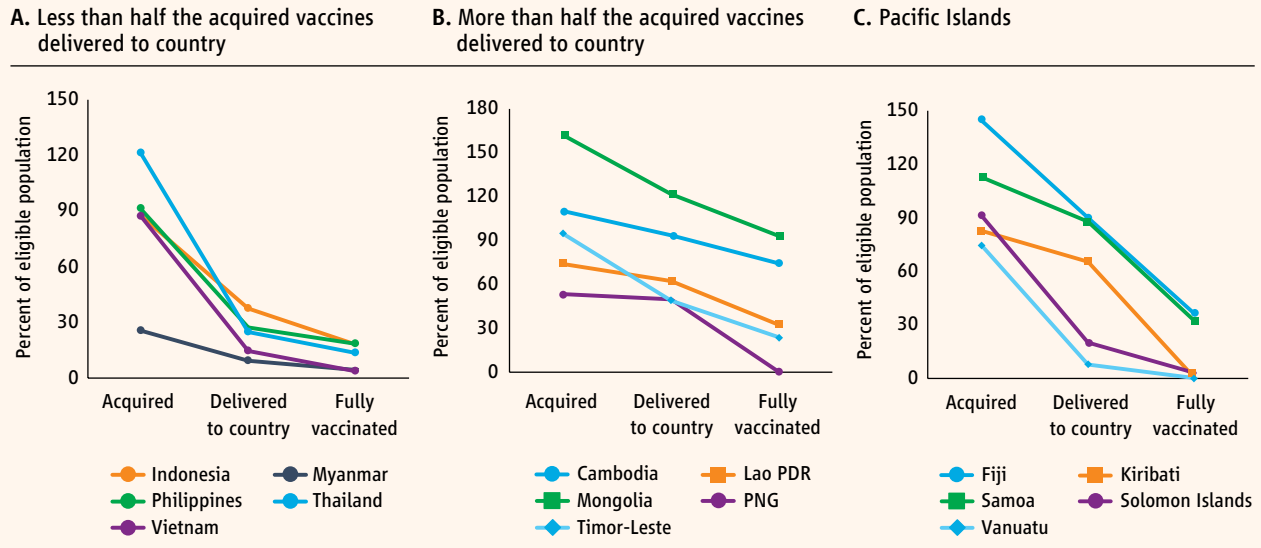
Many EAP countries have contracted sufficient COVID-19 vaccines to fully vaccinate more than 70 percent of their eligible population ages 15 and above, but less than one-half of the vaccines have been delivered (figure BI.3.1). Cambodia, Thailand, and Mongolia have contracted vaccines to fully vaccinate more than 100 percent of the eligible population; Indonesia, Lao PDR, the Philippines, Timor-Leste, and Vietnam to cover 70–100 percent; and Papua New Guinea and Myanmar to cover 25–55 percent. However, a large share of the contracted vaccines is yet to be delivered. Countries to which less than one-half of the acquired vaccines were delivered include Indonesia (43 percent), Myanmar (37 percent), the Philippines (30 percent), Thailand (20 percent), and Vietnam (14 percent) as of September 2, 2021. Due to the uncertainty and frequent delays in vaccine deliveries, countries have had to plan for short-term measures to rapidly scale up vaccinations.

In many countries, the fully vaccinated population remains below 30 percent of the eligible population (figure BI.3.1). Almost all countries with low vaccination coverage (below 30 percent) have received vaccines from suppliers to fully vaccinate less than 50 percent of the eligible population. For instance, Indonesia has received vaccines that can fully vaccinate 37 percent of the eligible population and has vaccinated 18 percent of them with all required doses. In the Philippines, delivered vaccines were enough to cover 27 percent of the eligible population, and 18 percent of them got fully vaccinated. An exception was Lao PDR that received vaccines to cover more than 60 percent of the eligible population but fully vaccinated only around 30 percent.

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(Box 1.3. continued)

Figure BI.3.1. For many countries, a significant proportion of procured vaccines are yet to be delivered, and for a few, delivered vaccines have not yet been distributed, so vaccination coverage remains low



Source: Acquired and delivered vaccines from COVID-19 Task Force (<https://data.covid19taskforce.com>, September 2, 2021) and survey responses from World Bank staff; vaccinated people from Our World in Data (<https://ourworldindata.org/covid-vaccinations>, September 2, 2021).
 Note: Acquired = acquired vaccines via purchase or donation. For Cambodia, Thailand, and some Pacific Islands (Kiribati, Samoa, the Solomon Islands, Vanuatu), the acquired vaccines include not only secured, but also expected vaccines. The number of acquired and delivered vaccines as the percentage of eligible population was adjusted for the required doses per person; if a vaccine brand was not available, two doses per person was assumed. Eligible population is defined as population ages 15 and above; this may be different across countries and may change as countries consider vaccinating people younger than 15. PNG = Papua New Guinea.

What constrains vaccination?

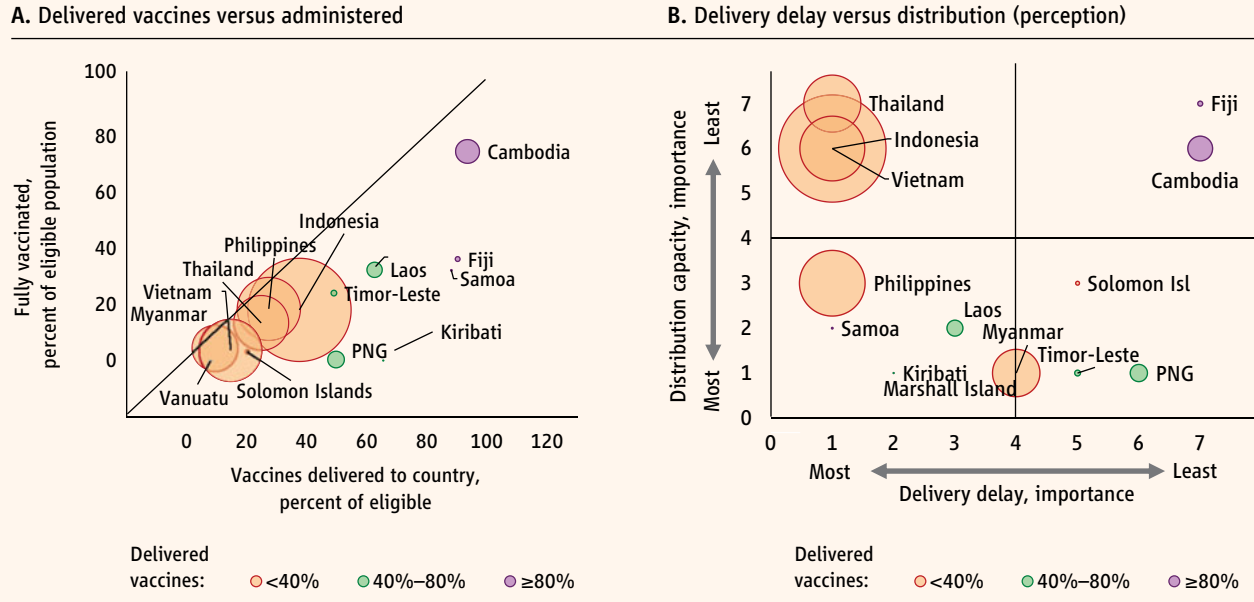
1. Vaccine availability

Countries that have received relatively few vaccines from suppliers identify delivery delays rather than financial, regulatory, or procurement limitations as the most serious constraints on vaccination (figure BI.3.2). Indonesia, the Philippines, Thailand, and Vietnam—those in which less than one-half the contracted vaccines were delivered—identified delays in vaccine delivery as the most important constraint. For instance, Indonesia responded in the survey that the country secured a large number of vaccines at an early stage; however, unexpected delays in vaccine delivery and uncertainty in global supply have affected its vaccination plans.

(continued)

(Box 1.3. continued)

Figure BI.3.2. Delivery delays are the major problem for the larger EAP countries, while distribution capacity is a serious constraint for the smaller and poorer countries



Source: Fully vaccinated from Our World in Data (<https://ourworldindata.org/covid-vaccinations>, September 2, 2021); delivered vaccines from COVID-19 Task Force (<https://data.covid19taskforce.com>, September 2, 2021) and survey responses from World Bank staff; perceptions on constraints from survey responses from World Bank staff.
 Note: The size of circles represents relative population size. Importance (1 is the most; 7 is the least) was assessed among potential constraints (delivery delays, financing, procurement processes, domestic production, distribution capacity, regulations, hesitancy). The number of delivered vaccines as the percentage of eligible population (ages 15 and above) was adjusted for the required doses per person; if a vaccine brand was not available, two doses per person was assumed. Eligible population was defined as population ages 15 and above; this may be different across countries and may change as countries consider vaccinating people younger than 15. PNG = Papua New Guinea.

2. Financial and procurement capacity

Limited financial capacity is one of the top three important constraints in about one-half of the countries. Most East Asia countries used the government budget for more than 95 percent of acquired vaccines. Countries that highly relied on bilateral donations were some Pacific Islands, Lao PDR, Papua New Guinea, and Timor-Leste (figure BI.3.3). Even some countries heavily dependent on donors, such as Papua New Guinea and Timor-Leste, identified financial capacity as an important constraint. In China, financial capacity was the second most important constraint because local governments need to pay for vaccines with their own funds, which is hard for poorer local governments. The Philippines identified financial capacity as the third most important constraint, and the government has relied on multiple loans and donations to finance its COVID-19 vaccination program.

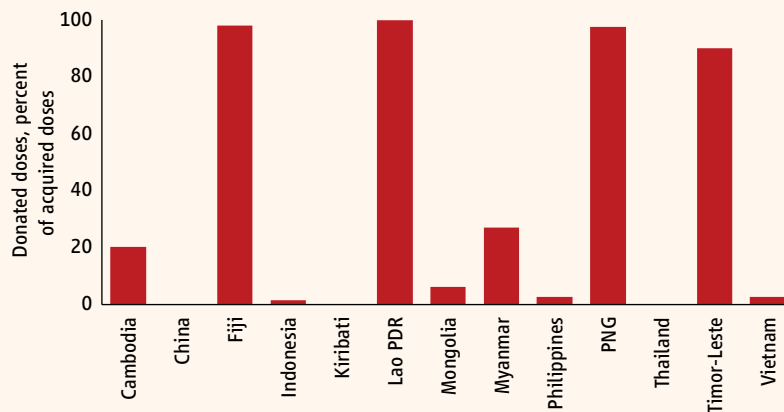
The vaccine procurement process is an important constraint in some countries. The Philippines and Vietnam identified the domestic procurement process as the second and third most important constraints, respectively. In the Philippines, the procurement law does not allow advance payments to suppliers. This was a constraint when vaccine manufacturers required advance payments. The government had to use existing treaty agreements with international financial institutions for advance payments. In Vietnam, the rigid procurement process was a potential reason for the delayed purchase of COVID-19 vaccines starting in May 2021. In general, the procurement of vaccines poses a special challenge. Since global demand outstrips supply, it is a seller's market where countries

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(Box 1.3. continued)

are obliged to bear significant risks and accept nondisclosure agreements, indemnity clauses, and uncertain delivery dates. Furthermore, competitive procurement, which in normal times is the preferred approach, is not feasible. Therefore, risk-averse government officials have tended to be cautious in the acquisition of vaccines.

Figure BI.3.3. Most East Asia countries used their government budget to acquire vaccines, whereas some Pacific Islands relied primarily on donations



Source: Survey responses from World Bank staff.
 Note: Donated vaccines exclude COVAX Advance Market Commitment. The figure is based on data as of August 31, 2021. PNG = Papua New Guinea.

3. Distribution infrastructure and regulatory capacity

Distribution capacity is an important constraint in some small and poor countries, many of whom have received an adequate number of vaccines (figure BI.3.2). Papua New Guinea, Kiribati, and the Marshall Islands, as well as Myanmar consider distribution capacity an important barrier. For instance, Papua New Guinea responded in the survey that not only limited cold chain capacity, but also electricity supply were main barriers. Because the number of vaccines delivered from manufacturers is low for the larger countries, distribution infrastructure and capacity have not been important issues so far. However, Indonesia indicated that distribution capacity, such as vaccine storage and quality control, would emerge as an important constraint as the vaccination program is expanded to remote areas.

Most countries are well prepared in terms of having national vaccination plans, expedited regulatory pathways, and functional safety monitoring systems. While most countries have completed national deployment and vaccination plans, Lao PDR, Mongolia, Myanmar, and Timor-Leste are still developing plans to build public confidence and trust in COVID-19 vaccines. For China, many elements of the vaccination plan, including training of vaccinators, prioritizing target groups, and building public confidence and trust, are still in progress. All countries, except Lao PDR, have prepared expedited regulatory pathways for the approval of COVID-19 vaccines. All countries have built a national coordinating body for COVID-19 introduction. All countries but Myanmar reported that they have a vaccine monitoring system that allows both passive and active surveillance and monitoring vaccine-related safety issues.

Box I.5. Globalization not localization key to COVID-19 recovery

The resilience of Global Value Chains (GVCs) has been put to the test by the COVID-19 pandemic, extreme weather events, and trade tensions spurred by growing economic nationalism and protectionism. While GVCs can transmit shocks in production and trade from one country to another, participation in GVCs can lessen the blow of a domestic shock and support recovery as countries come out of lockdowns. However, concerns about GVCs leading to a higher vulnerability to shocks have led some countries to consider reshoring industrial production. This box presents stylized scenarios of reshoring by leading economies and examines the optimal response by developing countries (Brenton, Ferrantino, and Maliszewska 2021). Three scenarios are considered:

1. *Reshoring only by leading economies.* In this scenario, leading economies (high income countries and China) implement policies for reshoring production through a subsidy to local production, putting up barriers to imports, and making it harder to substitute domestic production for imports by, for example, tightening product standards.
2. *Retaliatory reshoring by all.* This scenario is also referred to as the “localized world” and involves all countries adopting policies that favor domestic production.
3. *“Turning the other cheek” or GVC friendly liberalization + trade facilitation (TF).* In this scenario, developing countries implement policies to become more GVC-friendly: eliminating tariffs on all intermediate inputs; making it easier to substitute domestic for imported inputs by, for example, loosening the product standards; and reducing costs to trade by implementing trade facilitation measures.

This analysis builds on a global dynamic Computable General Equilibrium (CGE) model, a multiregional input-output (MRIO) version of the ENVISAGE model (van der Mensbrugge 2019). All the scenarios are evaluated in the year 2030 against a baseline with an L-shaped recovery from COVID-19. The details of the analysis can be found in Chepeliev et al. (2021).

Globalization will strengthen the recovery from the COVID-19 pandemic while localization will weaken it. Developing and developed countries are better off in a globalized world. If major countries reshore their production, the global income declines by 2.2 percent and global exports decline by 17.0 percent relative to the baseline in 2030. Reshoring efforts lead to higher trade costs for the developing countries, reducing their competitiveness and lowering the demand for their products. This in turn leads to lower income in the EAP region amounting to a loss of 2.8 percent relative to the baseline in 2030 (see figure BI.5.1). Within the region, Vietnam, one of the countries more deeply integrated into GVCs, experiences the highest loss, with a reduction of real income of –8.5 percent, followed by Malaysia (–4.7 percent), and Thailand (–4.4 percent).

Own reshoring efforts, i.e., when developing countries respond by reshoring their production, hurt the poorest and least integrated regions as well as those that are highly integrated. Vietnam suffers the highest losses again with a real income decrease of 12.6 percent relative to the baseline, followed by the rest of East Asia with a loss of 4.8 percent. China suffers higher losses if all countries respond in kind, with a 4.2 percent reduction of real

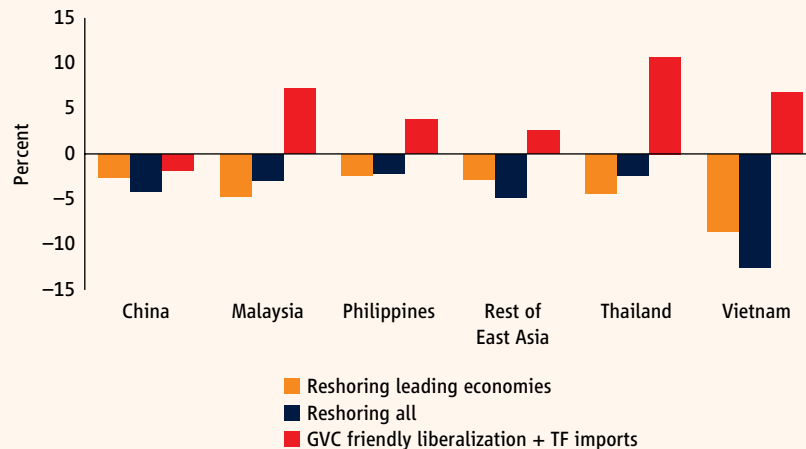
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income, a 1.6 percentage point reduction as compared to the first scenario. A small number of countries see their real income decrease less in this scenario because of slight improvements in terms of trade in sectors where they have market power.

Instead of reshoring their production, developing countries have the option to counteract reshoring policies by generating a more GVC-friendly environment, which leads to faster growth of trade and income and deeper integration into GVCs in line with their comparative advantage. All EAP countries are better off in this scenario compared to other scenarios, with most registering gains in real income. Countries that benefit the most from the GVC friendly scenario include Thailand, with an increase of real income of 10.7 percent, compared to the baseline, followed by Malaysia (7.2 percent), and Vietnam (6.8 percent). China is also better off than in other scenarios but suffers a decrease in real incomes, because unilateral liberalization leads to a worsening in terms of trade for the large country.

Figure BI.5.1. Real income compared with COVID-19 L-shaped recovery under reshoring by leading economies, by all countries, and in the GVC-friendly scenario in 2030 (deviations from the L-shaped COVID-19 recovery, percent)



Source: Based on Brenton, Ferrantino, and Maliszewska 2021.

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Box I.6. How trade restrictions affect exports

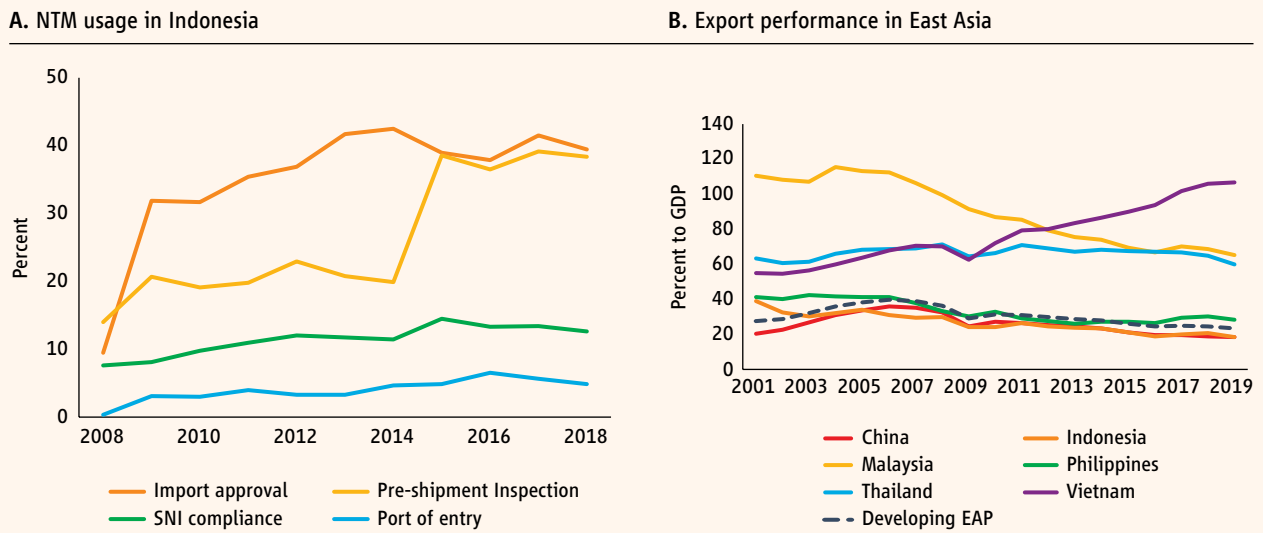
This box draws on recent research to assess the effects of non-tariff measures (NTMs) on export performance at both the firm and country levels. First, we examine the contemporaneous effects on Indonesia’s exports of the NTMs it imposes on imports. Then, using multicountry evidence, we discuss the longer-term effects on a country’s exports of a specific category of NTMs—export restrictions—which have proliferated during the COVID-19 pandemic to enhance domestic access to medical goods and have also been deployed to restrict foreign access to sophisticated technologies.

While most economic analyses of trade policy focus on import tariffs, NTMs are increasingly used as a trade policy tool. Certain NTMs are typically used to achieve legitimate non-trade objectives, such as the protection of consumer health and safety. However, they can also unnecessarily distort trade by having a protectionist impact. Governments today have less room to raise import tariffs due to multilateral and regional trade agreements. But they have more discretion over the use of NTMs, which can affect the competitiveness of firms and have long-term effects on trade.

The effect of NTMs on export performance of firms: Evidence from Indonesia

The Indonesian government has increased its use of NTMs over the past decade (figure BI.6.1, panel A). At the same time, Indonesia’s overall export performance has worsened (figure BI.6.1, panel B). Import restrictions affected the performance of domestic firms by restricting international competition. The degree of competition can reduce the incentive for productivity enhancing investments and hence hurt performance in international markets.

Figure BI.6.1. The use of non-tariff measures in Indonesia has increased, while exports share in GDP has declined



Source: World Bank staff estimations from NTM data.
Note: SNI = national standards.

Source: World Bank staff calculations from the World Integrated Trade Solution (WITS) database.

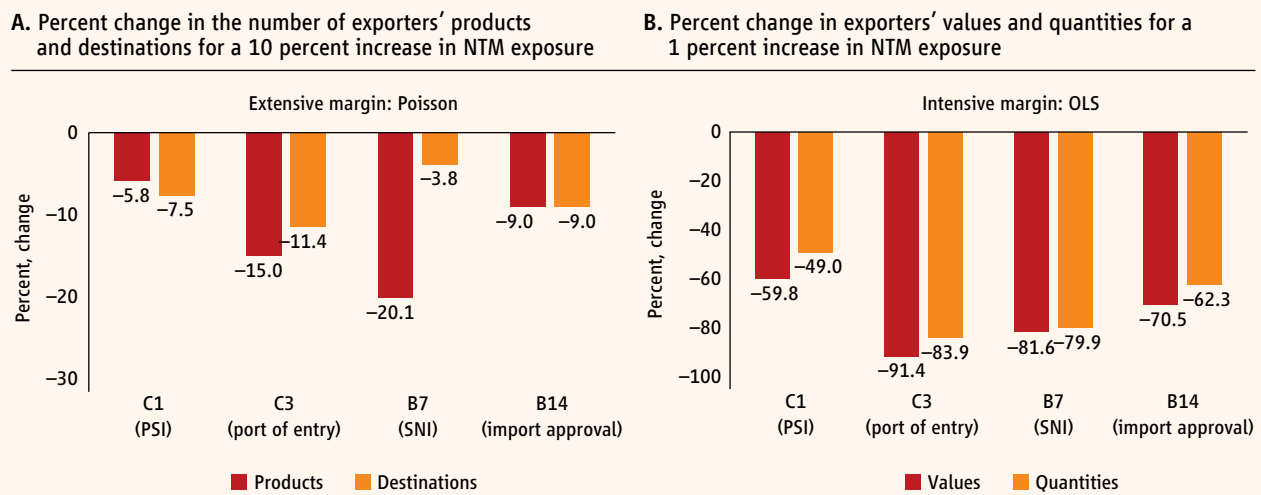
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Recent research examines the impact of changes in NTM applications on firms' exporting activities, focusing on four specific types of NTMs which are widely applied in Indonesia. The analysis matches two unique data sets: a customs-level data set on Indonesian firms' exports and a novel time-varying data set on NTMs at a highly disaggregated product level. Specifically, it investigates the effects of NTMs on exports through the protection from import competition that they grant to domestic firms. To do this, it is important to study NTMs that aim to provide a protectionist cover to domestic firms. The four NTMs we consider are: certification of compliance with national standards (SNI), pre-shipment inspections, restrictions on port of entry, and import approvals. While the SNI affects around one-fourth of the firms, the rest of the three NTMs affect around one-half of all the Indonesian exporters.

An increase in firm exposure to each of the four NTMs leads to a significant decrease in export performance. An increase in NTM exposure leads to a lower number of products exported and a decrease in export destinations at the firm level (figure BI.6.2, panel A), thus reducing export diversity. A higher exposure to each of the four NTMs also reduces firm-level export values and quantities (figure BI.6.2, panel B). The study also finds a negative effect of NTMs on entry into new markets and on the firm life cycle by negatively affecting the probability of firm survival.

Figure BI.6.2. Non-tariff measures have led to a decrease in number of products exported and export destinations of firms



Source: Cali, M., and A. F. Montfaucon. 2021. "Non-tariff measures, import competition and exports," mimeo, July 2021.

Note: Estimation controls for exposure to all other NTMs that are applied to the firm's products and includes tariffs and initial market share in covariates as well as time, firm and time industry fixed effects.

These findings demonstrate how distortionary NTMs prevent export-led growth and diversification. Indonesia has embarked on a wide-ranging reform of its investment regime but has been slower in reforming its trade regime. Accelerating the latter is vital for improved trade performance.

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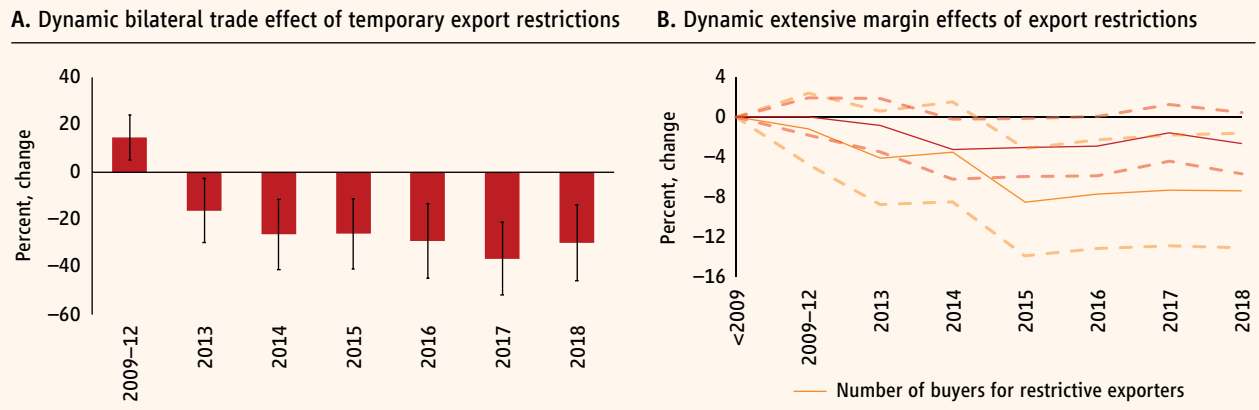
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The durable effects of temporary export restrictions: Evidence from 2008–2011 global food crisis

A widely used type of NTMs is export restriction, which takes the form of export taxes, bans, quotas, and price controls. During times of crises, such as a large negative supply shock, countries often restrict goods’ exports to ensure availability and lower prices at home. One example is the global food crisis of 2008–2011 when an increase in global food prices led to a widespread use of trade policy to restrict exports, which in turn exacerbated the initial price increase.

Export restrictions can cause buyers to permanently shift away from restrictive exporters. The study only considers the policy measures on food and agricultural products which were (1) in place between 2009 and 2012 only, and (2) not imposed again afterward. This analysis finds that the export restrictions, even though temporary in nature, persistently depressed bilateral trade by 40 percent in affected products (figure BI.6.3, panel A). This reduction in trade was driven by importers who were heavily reliant on restrictive exporters before the crisis. The results also indicate that while the total exports and the number of buyers of restrictive exporters fall significantly, the affected importers switch to other exporters (figure BI.6.3, panel B). This suggests that trade was diverted toward nonrestrictive exporters and not the domestic suppliers. Such large and persistent effects of the restrictive use of NTMs highlight the significant scarring effects of such policy actions.

Figure BI.6.3. Temporary export restrictions lead to a durable decrease in bilateral trade



Source: Islamaj, Khan, and Mattoo 2021.
 Note: Estimated using bilateral product-level data from BACI and export restriction measures from Global Trade Alert.

The use of export restrictions has recently increased. During the COVID-19 pandemic countries attempted to ensure domestic availability of the highly demanded personal protective equipment (PPEs) and other medical equipment. Even before the pandemic, the US-China trade war featured a heightened use of NTMs, such as export restrictions on the hi-tech 5G products and semiconductors. This note shows how such measures can have severe contemporaneous and long-term negative effects on bilateral trade via the competition and supplier reliability channels.

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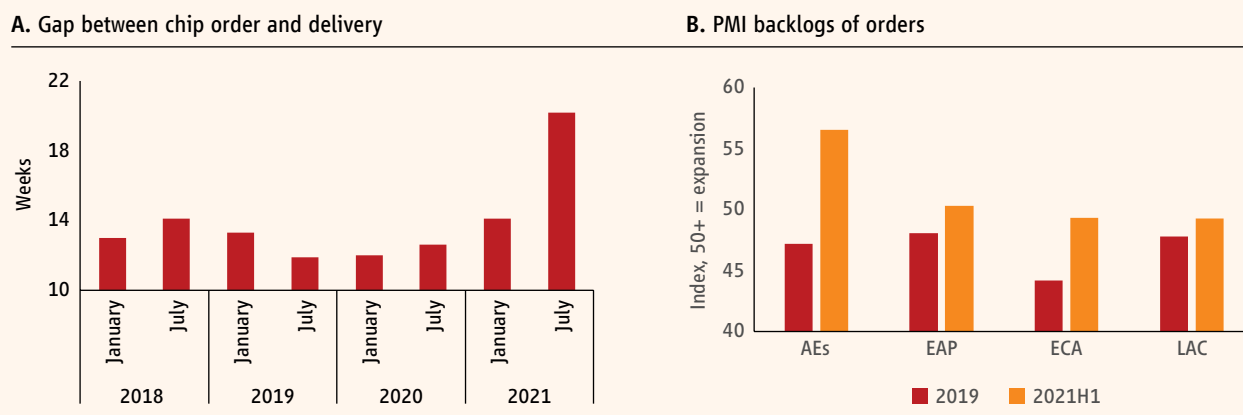
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Box I.7. Supply shortages

Temporary plant closures and production shutdowns as COVID-19 spread across the world led to some supply shortages in the first half of 2020. While production and trade recovered fast, bottlenecks have recurred in 2021, with disruptions rippling across sectors and regions, feeding into higher inputs and output prices.

The most visible example of supply shortages in 2021 has been the shortage of computer chips. Despite buoyant demand, output of the semiconductor industry worldwide was back to its 2018 level by May 2021. Purchasing Manager Index (PMI) survey data show that backlogs of orders increased in the first half of 2021, suggesting gaps between demand and supply. This is reflected in semiconductor delivery times, which are at record high (figure BI.7.1).

Figure BI.7.1. A gap between demand and supply of semiconductors has widened in 2021, pushing semiconductor delivery times up to a record high



Source: Bloomberg, Susquehanna Financial Group, World Bank.

Source: Haver Analytics.

The shortage of semiconductors—essential input into many production processes—rippled upstream and downstream through the global value chains, affecting other industries such as electronics, medical devices, and the automotive industry, which has been hit particularly hard. It is estimated that around 1 million fewer cars were produced in the first quarter of 2021 compared to the previous year, potentially leading to about a 5 percent annual production shortage.

Supply shortages seem to be extending beyond semiconductors, affecting packaging materials such as plastics, paper and metals, and lumber and appliances. PMI data point to a surge in delivery times across 12 industries at the end of 2021-Q1, with the largest increase seen in the tech industry, in machineries and equipment, and in chemicals. These shortages are likely to be driven by the following five factors:

1. *Demand shift toward manufacturing goods during the pandemic.* Demand for personal electronic products, such as smartphones and computers, and therefore semiconductors, increased faster in the initial stage of

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the pandemic as consumers shifted their demand toward durable goods. At the same time, the rapid increase in e-commerce during lockdowns has created a sharp increase for paper packaging materials.

2. *Supply disruptions, because of the Delta variant–induced factory and port shutdowns.* Several countries in Asia Pacific have experienced a resurgence in COVID-19 cases due to the highly transmissible Delta variant, which led to factories and port closures across the region. In June, COVID-19 infections triggered disruptions at shipping hubs in Southern China, including the key Shenzhen and Guangzhou ports. In August the third largest container port in the world, Ningbo-Zhoushan, was also shut down, adding strains to port congestions.
3. *Logistic bottlenecks related to weather disruptions (US, Taiwan, and Brazil), container scarcity, and additional idiosyncratic events (Suez blockage, fires in large Japanese plant).* As consumer demand collapsed at the start of 2020, many shipping routes between Asia and North America were cancelled. When demand rebounded in the second half of 2020, empty containers were held in the US and in the EU, which caused severe delays in shipments from Asia. The grounded container ships' blockage of the Suez Canal in March 2021 and severe weather events in the US and Brazil in the first half of 2021 led to further accumulations of shipments at ports throughout the world.
4. *Long-term structural issues related to the diffusion of artificial intelligence, automation, and 5G.* Although supply shortages appear to be driven by forces associated to the pandemic, there is also a pre-existing structural dimension to it, particularly in the case of the semiconductor industry, which was already operating at almost full capacity before COVID-19. Many devices that used to be completely analogue are now digital and supported by integrated circuits. Cars and trucks also require an increasing number of semiconductors thanks to the extension of board computers.
5. *US exports ban leading to stock holding in China.* In September 2020 the US administration passed legislation which requires foreign manufacturers using American chipmaking equipment to get a license before they're able to sell semiconductors to Huawei. Further to this, many Huawei affiliates were added onto a blacklist, banning American companies from doing business with these companies. Allegedly, ahead of the ban, Huawei stockpiled microprocessors to keep its production viable for three to six months.

High demand and supply shortages are also reflected in higher container shipping costs and, more generally, in higher input prices. The emerging markets aggregate PMI input price subcomponent rose to its highest level in nearly a decade in July 2021, which is feeding through output prices—the output price component hit its highest level since 2011.

A preliminary empirical analysis indicates that in the second quarter of 2021 supply factors might have become more binding. Figure BI.7.2 shows the results of an exercise where world industrial production growth is regressed on the PMI's new orders—a proxy for demand factors—and its own lags over the period 2000–2021H1. The model, which fits the data well, points to a large negative residual in 2020H1. This suggests that factors omitted in the model (e.g., supply related) are likely to have dragged on industrial production in the first half of 2020. In contrast, during the rebound, growth was actually more resilient than predicted. But the residual turned negative

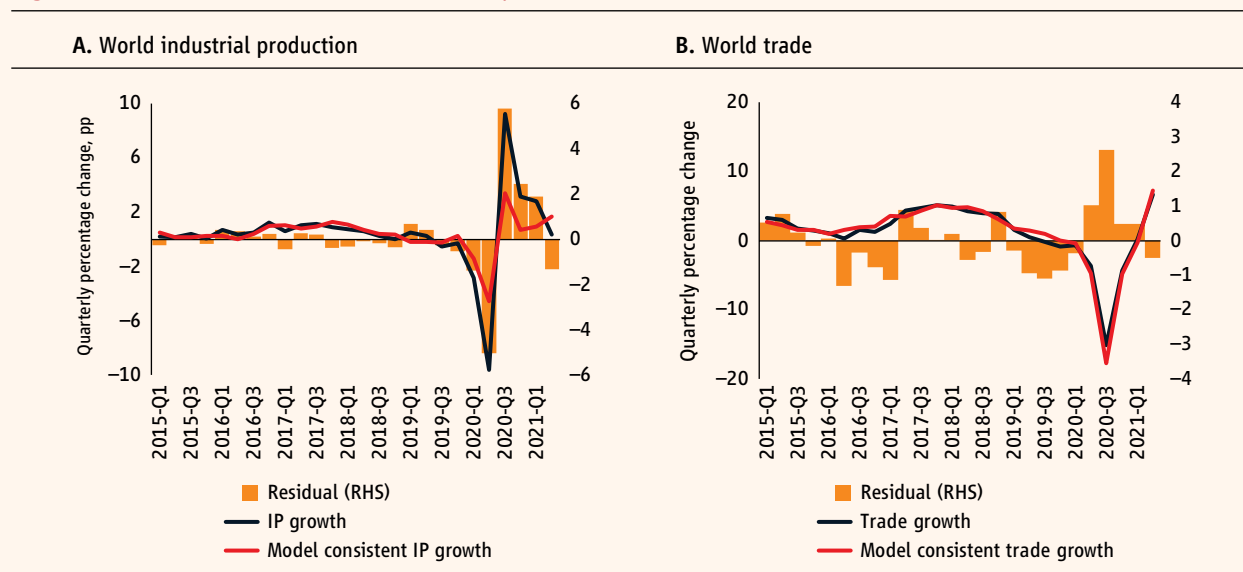
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again in 2021-Q2 and appears to be sizeable, which might point to the fact that supply bottlenecks are starting to hit production again, albeit not to the same extent in 2020 (figure BI.7.2, panel A).

In a similar vein, figure BI.7.2, panel B shows the results of an error correction model where world goods trade is regressed on world industrial production. Even in this case the model fits the data well, which is not surprising given the high historical correlation between global industrial production and trade. The model residual has turned slightly negative in the latest data, which suggests that supply factors might have started having a toll also on global trade.^a These findings corroborate results from recent business surveys in the Euro area and in the United States, where manufactures lament as supply shortages are currently an important factor hindering production.^b

Figure BI.7.2. Model estimates world industrial production and world trade



Source: Haver Analytics; World Bank.

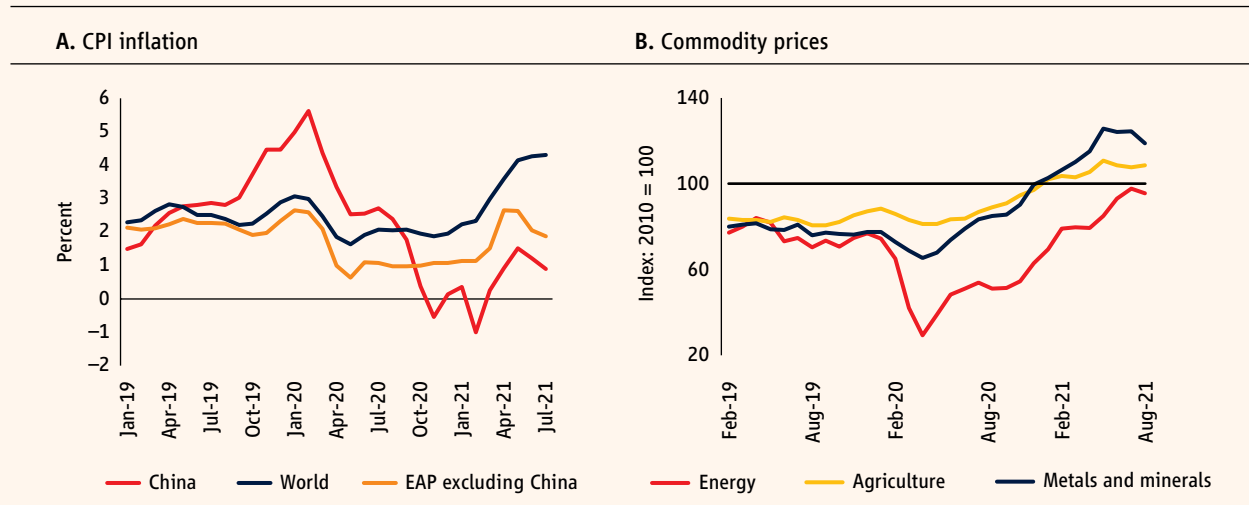
Note: Panel A: Estimates from a model where global industrial production is regressed on its own lags and the global PMI new orders (proxy for demand). The model is estimated over the period 2000–2021-Q2. Last observation is 2021-Q2. Panel B: Estimates from an error correction model where global trade is regressed on world industrial production (proxy for demand). Last observation is 2021-Q2.

a Several caveats apply to the analysis. The residual model is likely to reflect a number of supply-related forces, including in the oil and credit markets. In addition, nonlinearities might have emerged in the relation between industrial production and new orders during the pandemic, which are not captured in the model.
 b See for example August ISM business surveys for the US.

Box I.8. COVID-19 and inflation: Diverging trends

Consumer price increases in most countries in the region remain modest. Global inflation rose to 4.3 percent in July, fueled partly by a surge in commodity prices, a sharp rebound of global activity, and supply disruptions (figure BI.8.1). The surge in global inflation pushed producer prices up across the region, including in China, Malaysia, the Philippines, and Thailand. Headline consumer price inflation, however, has so far increased at a considerably lower pace—1.1 percent in July—and in most countries remains within the central bank target range. But these increased cost pressures may lead to higher consumer prices down the road, forcing central banks to prematurely tighten monetary policy. This box analyzes the extent to which external price pressures have passed through to consumer price inflation in East Asian economies.

Figure BI.8.1. Consumer prices in the region rose only modestly compared to the rest of the world



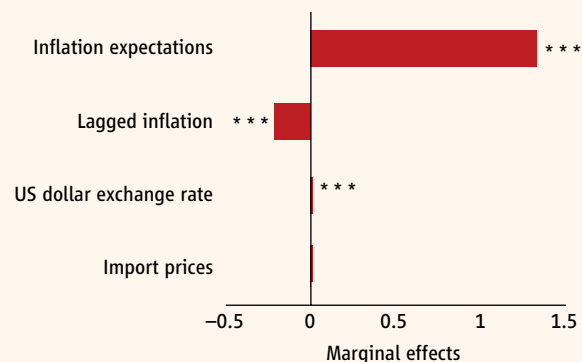
Source: Haver Analytics; World Bank.

The drivers of inflation in the region's economies are estimated using an augmented Phillips curve. They include (1) inflation expectations by consensus forecasters over a one-year horizon that captures a forward-looking component of inflation; (2) one-year lagged inflation, representing adaptive expectations of agents; (3) an output gap representing slack in the economy; and (4) supply shock variables such as exchange rate depreciation, producer prices, import prices, and commodity prices (food and oil prices). The Phillips curve is estimated for China, Indonesia, Malaysia, the Philippines, and Thailand.

Inflation expectations appear to be well anchored in the region's economies. Inflation expectations are highly correlated with headline inflation, suggesting that agents are mainly forward looking (figure BI.8.2). Moreover, a negative and statistically significant coefficient of lagged inflation provides evidence of mean reverting inflation. The flat Phillips curve observed in the EAP is largely in line with the finding in advanced economies and some emerging markets and developing economies (EMDEs) (Forbes 2020; Kabundi, Schaling, and Some 2019; Blanchard 2016; Gillitzer and Simon 2015). These authors provide a link between anchoring of inflation expectations and flattening of the Phillips curve. Consistent with these papers, the Consumer Price Index (CPI) inflation is not correlated with contemporaneous output gaps.

(continued)

(Box 1.8. continued)

Figure BI.8.2. Headline inflation is highly correlated with inflation expectations

Source: Haver Analytics; World Bank staff estimations.

Note: Bars show estimated coefficients from regressing CPI inflation on one-year inflation expectations, one-year lagged inflation, exchange rate depreciation with respect to the US dollar, and import price changes. Panel regression estimates. *** $p < 0.01$.

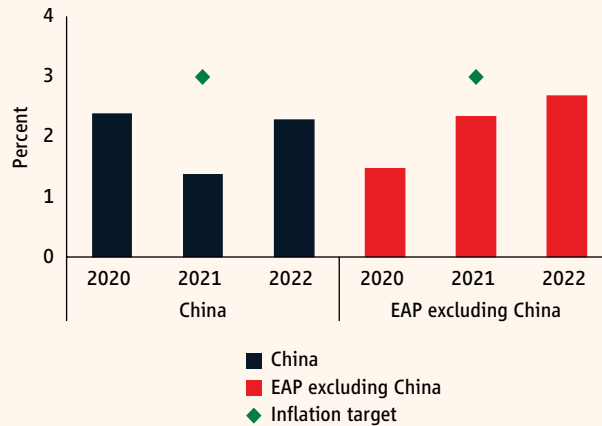
The pass-through from changes in exchange rates and import prices to CPI inflation is low. The estimated coefficient of US dollar exchange rate movements to CPI inflation is positive, but low in magnitude (always smaller than 0.02). The results are similar when using nominal effective exchange rate movements. Similarly, the pass-through from import prices to CPI inflation is also close to zero. In other robustness checks, headline inflation in the region does not react strongly to other supply factors such as oil and food prices. The weak pass-through can be attributed to sound monetary policy and the credibility achieved by many central banks since the adoption of the inflation-targeting regime (Taylor 2000).^a In this instance agents believe that the central bank will keep inflation at levels that are consistent with the midpoint of the target band. Hence, supply shocks to inflation are perceived as transitory.

Risk of inflation is perceived as low in the near term for most countries. Long-term inflation expectations remain well anchored at the levels that are consistent with central bank objectives, except for Mongolia and the Philippines where inflation lies slightly above the upper bound of the official target band. Output gaps remain wide in most countries, suggesting lack of demand pressures on consumer prices. Unlike other EMDEs, such as Turkey, Russia, and Brazil, who experienced a massive depreciation of domestic currencies against the US dollar, currency depreciation in the region remains mild. Decoupling between the CPI and Producer Price Index (PPI) inflation is related to the rebound in commodity prices, in this instance food and oil, and supply-demand mismatches. While some of these pressures are likely to continue, inflation is expected to remain within target ranges in most of inflation targeting East Asian countries during 2021 (figure BI.8.3).

Regional central banks are closely monitoring these developments. They should focus on keeping inflation expectations well anchored around the midpoint of the official target band and react only when inflation drifts away outside of the target band for a prolonged period.

(continued)

(Box 1.8. continued)

Figure BI.8.3. Inflation is expected to remain below central bank target in East Asian economies

Sources: IMF; Consensus; Haver Analytics; World Bank.

Note: Weighted averages are calculated by using real GDP weights in each year. 2021 GDP weight is implied by June 2021 GEP forecast. Median inflation target is calculated based on 10 inflation-targeting countries in the region.

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^a Another explanation could be that producers refrain from passing the costs to consumers for fear of losing their market share amid high competition in most countries in the region (Direkudomsak 2016).

Box I.9. Fiscal rules in East Asia and Pacific

This box presents a summary of key numerical domestic fiscal rules across the EAP region.

Cambodia: An annual ceiling at 4 percent of GDP on guaranteed payments for Private Public Partnerships (PPPs).

Indonesia: Consolidated national and local government budget deficit \leq 3 percent of GDP in any given year; total central and local government debt \leq 60 percent of GDP. Ceiling on fiscal deficit was relaxed until 2023 in response to COVID-19.

Malaysia: Federal government domestic debt \leq 55 percent of GDP; external debt \leq RM 35 billion; treasury bills issued \leq RM 10 billion; government only borrows for development/capital spending (golden rule). Malaysia temporarily increased its legal domestic debt limit, as well as its foreign borrowing limit, from 55 to 60 percent of GDP.

Mongolia: Budget deficit \leq 8.8 percent of GDP in 2021, 5.1 percent of GDP in 2022, 3.6 percent of GDP in 2023, 2.8 percent of GDP in 2024, and 2 percent of GDP starting 2025. Government debt/GDP cannot exceed 70 percent of GDP in 2021–22, 65 percent of GDP in 2023, and 60 percent of GDP starting 2024.

Thailand: Public debt \leq 60 percent of GDP; capital expenditures \geq 20 percent of the annual budget and must not be less than the fiscal year (FY) budget deficit.

Timor-Leste: Budget deficit \leq 30 percent of GDP; recurrent spending \leq 50 percent of GDP. Public debt to GDP \leq 60 percent of GDP; borrowing cost \leq 3 percent of total borrowing; expenditure to GDP \leq 80 percent; recurrent spending growth \leq 10 percent; capital spending \leq 30 percent of GDP. Domestic revenue to GDP floor is 15 percent; estimated sustainable income (ESI) is at least 3 percent to petroleum wealth; 60 percent of excess withdrawal to estimated sustainable income.

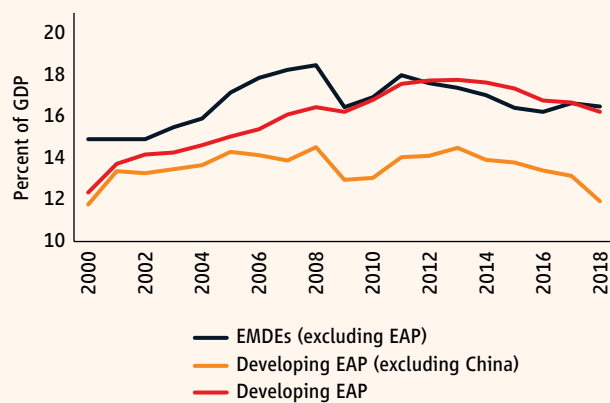
Vietnam: Public debt \leq 65 percent of GDP.

Box I.10. The fiscal implications of the two-pillar solution in East Asia and Pacific

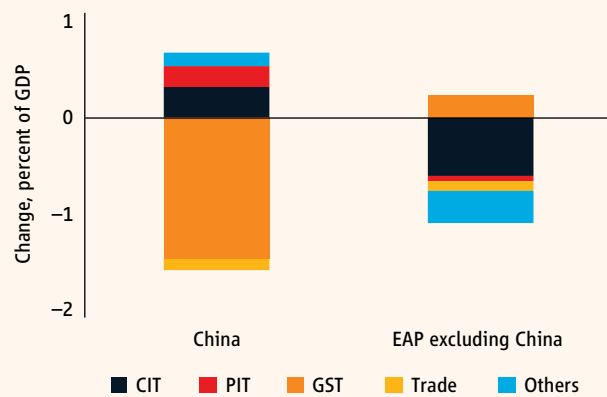
Tax revenue collection has been decreasing in developing East Asia excluding China, led by a decline in corporate tax revenues. The decline started in the aftermath of the global financial crisis of 2008–09 and has accelerated recently. Between 2008 and 2018, tax revenues in the region excluding China declined from 14.5 percent of GDP to 11.9 percent of GDP. This is in large part due to drops in revenue from corporate income taxes (figure BI.10.1). This decline mirrors the trend in other emerging markets and developing economies (EMDEs).

Figure BI.10.1. Tax revenues have been declining in East Asia and Pacific in recent years, accompanied by shifts in tax revenue compositions

A. Tax revenues



B. Change in tax revenues between 2010–14 and 2015–18 by category



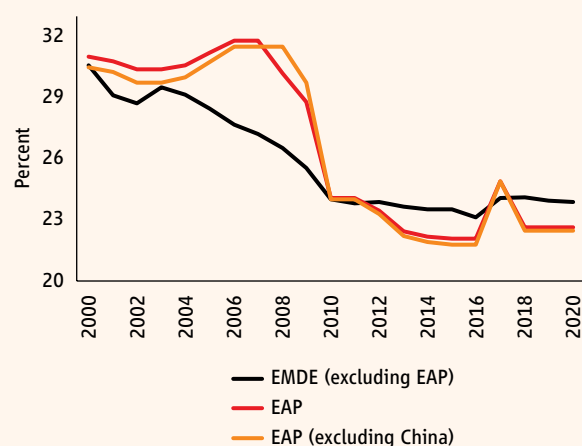
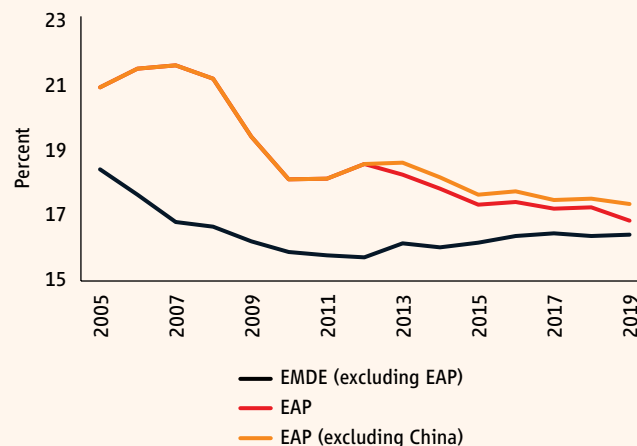
Source: IMF WoRLD and GFS.

Note: A. Lines show GDP-weighted averages. B. Lines show simple averages for developing EAP. Dashed lines show trend in revenue from corporate (personal) income taxes. CIT = corporate income tax; GST = general sales tax; PIT = personal income tax.

The decline in corporate income tax revenues was largely due to base erosion and profit shifting (BEPS) and income taxes. Tax revenues are increasingly reliant on goods and services taxes and less on trade taxes. Globalization has contributed to this shift by making it harder to tax profits earned by multinational enterprises and top-percentile income earners.^a During the past two decades, as governments lowered their tax rates to compete for investments and trade, there has been a rising mismatch between where taxes are paid and where real activity takes place.^b Statutory corporate income tax (CIT) rates declined by 8 percentage points (from 31 percent to 23 percent) on average in developing EAP in the past two decades (figure BI.10.2). Effective CIT rates also declined, reflecting the trend in CITs.

(continued)

(Box I.10. continued)

Figure BI.10.2. Corporate income tax rates have declined across the region**A. Statutory corporate income tax rates in developing East Asia****B. Effective corporate income tax rates in developing East Asia**

Source: Vuletin and Vegh (2015); OECD; Michigan University; KPMG; World Bank; World Development Indicators.

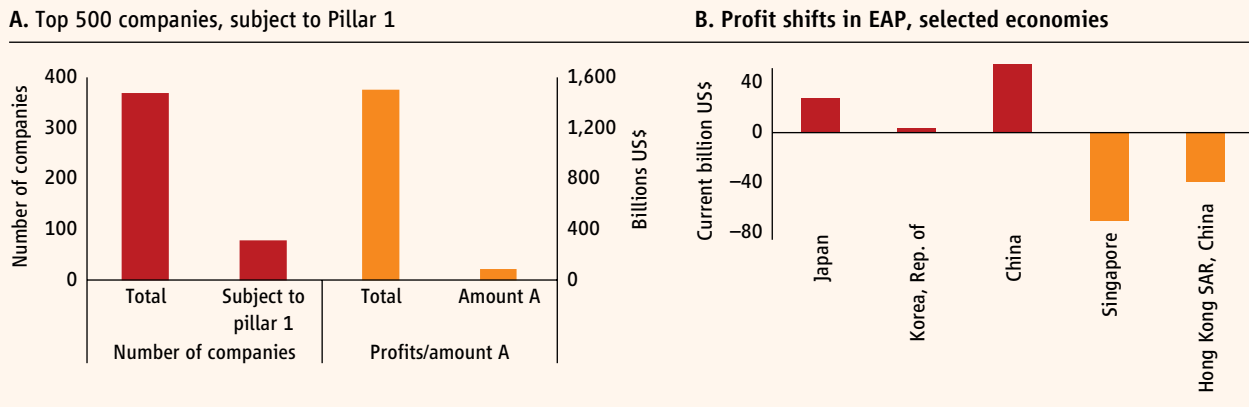
Note: Effective corporate income tax rates are proxied by profit tax in percent of commercial profits. Following Vuletin and Vegh (2015), the maximum statutory corporate income tax rates are used here. Lines show simple averages for EMDEs (excluding EAP), EAP region (EMDEs only), and EAP (EMDEs excluding China). In figure BI.10.4, panel B data from China is only available after 2013.

Against this backdrop, an agreement was announced by the OECD's inclusive framework in July 2021. The proposed solution contains two pillars (OECD 2021b): (1) Pillar 1 tries to reallocate taxing rights to the location of a company's sales so that a slice of profits could be levied to the host country of the multinational enterprise (MNE);^c (2) Pillar 2 aims at installing a global minimum corporate income tax, which should end the tax competition and allow some countries to raise the corporate income tax rates. The fiscal implications of the agreement may differ notably across regions and economies.

Pillar 1: Reallocating taxing rights. The fiscal gains are expected to be modest as they will only apply to a limited number of MNEs and a small slice of residual profits.^d According to the agreement, in-scope MNEs are those with turnovers above 20 billion euros, not in the financial sector or the extractive sector, and with profitability above 10 percent.^e Based on these criteria, only 78 out of the 500 largest companies in the world—where the smallest firm generates a revenue of 22.5 billion euros—will be subject to Pillar 1 (figure BI.10.3).^f For in-scope MNEs, between 20–30 percent of residual profit (“Amount A”) defined as profit in excess of 10 percent of revenue will be reallocated to countries where sales or consumption took place. The aggregate size of Amount A for the top 500 in-scope MNEs will be about US\$87 billion. Therefore, at the global level, Amount A of Pillar 1 is expected to involve a moderate tax revenue gain—less than 0.5 percent of global CIT revenues (OECD 2020a).^g

(continued)

(Box I.10. continued)

Figure BI.10.3. Under Pillar 1 corporate profits are shifted away from investment hubs in East Asia

Source: Fortune Global 500 2020; Devereux and Simmler 2021; Torslov, Wier, and Zucman 2018; Vuletin and Vegh 2015; OECD; Michigan University; KPMG; World Bank; Doing Business.
 Note: A. This chart shows the number of companies subject to Pillar 1 and their aggregated Amount A profits if Pillar 1 is introduced with a revenue threshold of 20 billion euro, a threshold of profitability of 10 percent, and with 20 percent of the profits above the threshold being included in Amount A. The sample includes the 500 largest firms in the world based on revenue. The smallest firm has revenues of 526.3 billion (which is equivalent to 22.5 billion euros). Firms in the extractive industry are active in mining and crude oil production. Pre-tax profits are calculated using an effective tax rate of 20 percent and after-tax profits. Since the turnover threshold here is slightly above the agreed one in Pillar 1, the numbers shown in A would be lower than using the full set of in-scope MNEs. B. Data are from 2015 and in current billion US\$. Red bars show the amount of profit shifted away from the corresponding country, while red bars show the amount of profit being shifted toward the corresponding country.

Focusing on “Amount A,” the following factors can affect the revenue implications of Pillar 1 for countries in the region:^h

- **Allocation of residual profits.** Revenue gains are expected to be larger (as a share of current CIT revenues) among jurisdictions with lower-income levels, where little residual profit is currently located. Investment hubs, such as Singapore and Hong Kong SAR, China, are expected to lose tax revenues, as the share of residual profit allocated in these jurisdictions exceeds the share of consumption or sales occurred there (Dabla-Norris et al. 2021).
- **Market size.** As Pillar 1 will reallocate a share of residual profits to the end market jurisdictions, revenue gains in countries with a larger market size and more trade openness, such as China and Indonesia, are likely to be larger (OECD 2020a).
- **Statutory CIT rates.** Revenue gains also tend to be larger among jurisdictions with relatively higher statutory CIT rates, as the reallocated residual profits will be subject to the CIT rates at the receiving jurisdictions (figure BI.10.4).
- **Digital services taxes (DSTs).** Pillar 1 implies that unilateral measures, such as DSTs, should be removed. Countries in the regions, such as Indonesia and Malaysia, that have implemented or enacted the DSTs, are expected to gain less from Pillar 1 if they have to repeal their DSTs.

Pillar 2: Global anti-base erosion mechanism. Pillar 2 consists of two interlocking domestic rules (together the Global anti-Base Erosion [GloBE] Rules) and one treaty-based rule (the Subject to Tax Rule [STTR]). Since the STTR does not have a model provision at the moment, the analysis here focuses on the two domestic rules: the Income Inclusion Rule (IIR) and the Undertaxed Payment Rule (UTPR). While the IIR imposes top-up tax on

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(Box 1.10. continued)

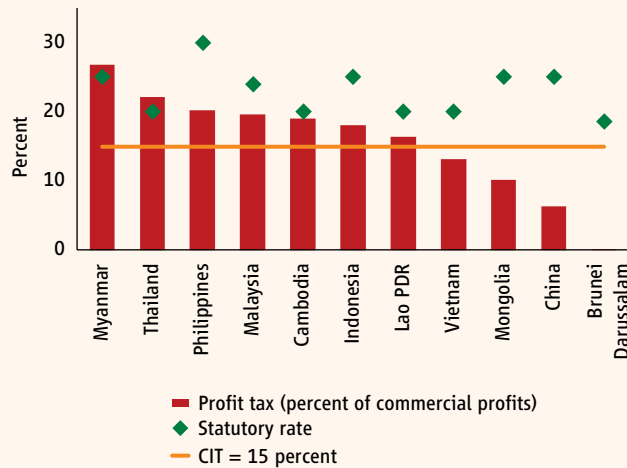
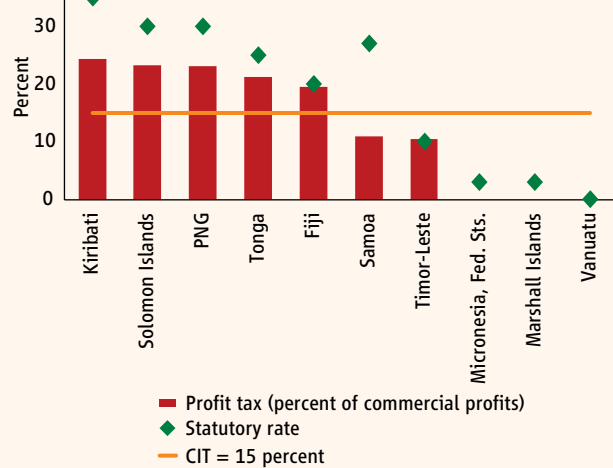
a parent entity in respect of the low taxed income of a constituent entity, the UTPR works as a backstop in cases where IIR does not apply.ⁱ When applied, the two rules together set the minimum effective CIT rates facing MNEs equal to (at least) 15 percent. The two domestic rules will be applied to MNEs that meet the 750 million euro revenue threshold as determined under BEPS Action 13 (country-by-country reporting), covering a larger group of MNEs than Pillar 1.

By placing a floor on the CIT rate, Pillar 2 is expected to raise more revenues than Pillar 1 (Dabla-Norris et al. 2021; OECD 2020a). Global revenue gains from Pillar 2 (excluding US MNEs) are expected to reach 1.8–3.2 percent of global CIT revenues when assuming no responses from firms and governments and no carve-out.^j The gain will be slightly smaller when taking the interaction between Pillar 1 and Pillar 2 into account, as the taxing rights of low-taxed income under Pillar 2 could be reallocated due to Pillar 1. In scenarios where MNEs reduce their profit-shifting intensity and low-tax jurisdictions increase tax rates, the potential global revenue gains can reach 2.4–4.2 percent of global CIT revenues. The following factors can affect the revenue implications of Pillar 2 in the region:

- **Income level.** Revenue gains tend to be larger among higher income jurisdictions (such as Japan and the Republic of Korea) than lower income ones, reflecting that most ultimate parents of MNE groups are located in high-income jurisdictions.
- **Responses from governments.** In some jurisdictions with zero effective tax rates in the Pacific, such as Vanuatu, governments may not introduce an IIR nor a UTPR, as the rules require the introduction of a CIT system which entails fiscal costs. In the case of investment hubs, such as Hong Kong, SAR, China and Singapore, they would on average generate positive revenue gains if their governments raise the effective CIT rates.
- **Responses from firms.** If MNEs reduced their profit shifting intensity, revenue gains from Pillar 2 will increase notably in middle- and low-income countries (such as China, Indonesia, and Malaysia) and countries that are currently suffering more from profit shifting (such as Japan, the Republic of Korea, and China) (figure BI.10.3).
- **Investment hubs.** Investment hubs often have effective CIT rates below 15 percent (such as Singapore) and are more likely to receive shifted profits in the absence of Pillar 2 (figure BI.10.4). They are likely to gain revenues from Pillar 2 when assuming no responses from MNEs and governments, as they also host some ultimate parents of MNEs. However, if MNEs reduced their profit shifting intensity, the tax base in these investment hubs will shrink, resulting in negative revenue gains.

(continued)

(Box I.10. continued)

Figure BI.10.4. Scope of Pillar 1 and Pillar 2**A. Effective corporate income tax rates in EAP, selected economies****B. Effective corporate income tax rates in EAP, island economies**

Source: Fortune Global 500 2020; Devereux and Simmler 2021; Torslov, Wier, and Zucman 2018; Vuletin and Vegh 2015; OECD; Michigan University; KPMG; World Bank; Doing Business.
 Note: A. Data are from 2020 (2019 in the case of profit tax as a share of commercial profits) or latest year available. Following Vuletin and Vegh (2015), the statutory CIT rate (shown in bars) is the maximum rate in each economy. Profit tax as a share of commercial profits is used as a proxy for effective CIT rates (shown in diamonds). The yellow line shows the minimum global CIT rate (i.e., CIT = 15 percent).

Policy issues

Overall, the proposed two-pillar solution is expected to generate positive but moderate revenue gains at the global level and in EAP. However, there is still much work to do to flush out the details of the framework, resulting in some uncertainty regarding the final impact when it comes into effect in 2023.^k There is also considerable uncertainty regarding how countries and MNEs would respond to it. For instance, in the case of Pillar 1, countries that have enacted (or are considering enacting) DSTs and similar unilateral measures may not find Pillar 1 sufficiently beneficial to repeal their DSTs. In the case of Pillar 2, countries that have not built a CIT system (those with a zero CIT rate) may find it too costly to follow Pillar 2. If some of the host countries for the ultimate parent enterprises of MNEs decide not to follow Pillar 2, they could trigger further uncertainty in the ultimate revenue impact of Pillar 2 at the country level.

Based on the current assessment, the agreement will yield limited revenue gains in EAP in the future. With public spending needs remaining high in EAP, fiscal reforms should be considered to improve domestic revenue mobilization and allow greater spending on relief without sacrificing public investment (World Bank 2020). Improving revenue gains from excise taxes and other tax sources and cutting subsidies that are not crucial in terms of supporting the current recovery should be prioritized.

(continued)

(Box 1.10. continued)

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a OECD (2021a and 2021b); Huizinga and Laeven (2008); Johannessen, Torslov, and Wier (2020).

b WDR (2003); Overesch and Rincke (2011).

c Pillar 1 seeks to adapt the international corporate tax system to new (digitized) business models and would establish new taxing rights without requiring a physical presence (new "nexus").

d See Devereux and Simmler (2021) and OECD (2020a and 2021b) for details.

e In due course, the turnover threshold will be reduced to \$10 billion.

f Among the top 500 companies, 131 companies are in the financial (121) and extractive sectors (10), which are excluded from Pillar 1. The remaining 369 companies have total profits of €1.5 trillion. However, the vast majority of the companies do not have a rate of profitability in excess of 10 percent (Devereux and Simmler 2021).

g The estimate is obtained using a group of MNEs that have revenues above 750 million euros and provide automated digital services (ADS) and consumer facing businesses (CFB) (OECD 2020a). On average, high-, middle- and low-income jurisdictions would all obtain a small tax revenue gain from Pillar 1. It is estimated that the revenue impact for high-income countries show greater variability; they could lose or gain a small amount of revenue. Low-income countries would increase their CIT revenue by about 1 percent (or 0.02 percent of GDP) and middle-income countries by 0.5 percent (0.02 percent of GDP). Investment hubs unequivocally lose revenue by as much as 3.9 percent of current CIT revenue (0.2 percent of GDP).

h Here the assessment does not take into account the effect of potential strategic reactions by MNEs and governments. It also does not take into account the potential interaction between Pillar 1 and Pillar 2. It focuses on the revenue implication of "Amount A," due to the data limitations and methodology challenges of assessing the effect of the other components of Pillar 1 ("Amount B" and the tax certainty component; see OECD 2020a for details).

i The UTPR denies deductions or requires an equivalent adjustment to the extent the low tax income of a constituent entity is not subject to tax under an IIR. The rule will not apply when the IIR is in effect. However, when IIR is not applicable, the UTPR will put a floor on the effective CIT rate. See Devereux et al. (2020) and OECD (2020b) for detailed examples.

j In Pillar 2, it is agreed that a minimum rate will be applied on a jurisdictional basis. In that context, the US global intangible low-taxed income (GILTI) regime will co-exist with the GloBE rules. Hence, the estimates here exclude US MNEs. In addition, Pillar 2 will provide for a formulaic substance carve-out that will exclude an amount of income that is at least 5 percent (in the transition period of five years, at least 7.5 percent) of the carrying value of tangible assets and payroll. The carve-out will lower the revenue gains from Pillar 2. See OECD (2020a) for details.

k Detailed design elements within the agreed framework will come out by October 2021. The solution will take effect in 2023.

Box I.11. Financial stability risks of COVID-19 forbearance measures

Governments, and supervisory and macro prudential authorities have taken bold actions to mitigate the effects of the COVID-19 pandemic on real economies and banking systems. The policies include capital relief measures, the loosening of macro prudential policies, public moratoria and guarantees, and loan forbearance. These extraordinary policy measures have a positive effect on nonperforming assets, bank profitability, and capital ratios. Moratoria and deferrals (loan forbearance) delay the recognition of losses, and public guarantees reduce provisioning rates and maintain capital buffers. By accelerating economic recovery, these policies also support lower credit losses but can mask weakening financial soundness indicators of the banking sector.

International standard setters have provided guidance on how flexibility in the macro and micro prudential frameworks should be implemented. The Basel III countercyclical capital buffer is designed to support lending during a downturn. Many authorities released countercyclical capital buffers quickly, but these were not always available or of sufficient scale to provide substantial additional macro prudential space. The Basel III conservation buffer has similar macro prudential features. The Financial Stability Board (FSB) COVID-19 principles further underpin global consistency in the policy response. One of the principles is that authorities' actions should be consistent with maintaining common international standards and will not roll back regulatory reforms or compromise the underlying objectives of existing international standards. Guidance has also been issued by the Basel Committee on the prudential treatment of extraordinary support measures related to COVID-19, loan forbearance, and expected loss accounting. EAP is well represented in these international standard setting bodies: China; Hong Kong SAR, China; Indonesia; Japan; Republic of Korea; and Singapore are part of the Basel Committee, and Malaysia is an observer.

A significant part of the policy measures deployed internationally focus on loan forbearance. This means that banks allow debtors to miss scheduled payments without this necessarily being classified as nonperforming loans or triggering collateral execution. When a bank grants a loan deferral or a moratorium to a borrower, that period of deferral/moratorium does not need to be treated as a period of arrears for prudential purposes. This means the bank pauses the counting of days past due from the day the deferral/moratorium is granted. The loan thus remains classified as "current" or "performing" for the deferral, or the entire period of the moratorium, and does not need to be reported as impaired. Importantly, deferred loans are not forgiven and must still be paid in the future; loan forbearance is thus a temporary measure that helps borrowers and banks to attenuate the blow and avoid economic and social collapse. Yet, it raises supervisory and financial stability concerns that become more pronounced the longer the pandemic and the loan forbearance last. The implementation of these extraordinary measures must therefore be limited in time. Moratoria were implemented by at least 14 jurisdictions in the EAP region as extraordinary relief measures.

There is a clear distinction between taking a flexible approach, on the one hand, and regulatory forbearance, on the other. The former (flexibility) is necessary and desirable, as it makes an allowance for the inherent uncertainty in assessing asset quality and the difficulty in drawing the distinction between recoverable and non-recoverable loan payment delays in the current circumstances. However, a flexible approach still seeks to ensure that, ultimately, there is a genuine attempt to recognize and value impaired assets and to make appropriate provisioning for expected irrecoverable loan losses from unviable borrowers. The latter (regulatory forbearance) is not desirable and carries a risk of impaired loans not being appropriately identified and addressed. Other

(continued)

(Box 1.11. continued)

observed forms of regulatory forbearance in EAP include the outright suspension of asset classification, the easing of the nonperforming loan and past due definitions, and the reduction of risk weights below internationally agreed minimum standards. For instance, the Philippines and the Republic of Korea implemented reductions in risk weights below the level required by the Basel framework till the end of 2020 for small and medium enterprises (SME) exposures. Similarly, China has allowed regulatory forbearance by not including the loans subject to moratoria and suspending credit classifications for those loans. Regulatory forbearance can result in a weaker banking sector, which would weaken the economy.

The distinction between using the flexibility in the prudential framework and regulatory forbearance is often based on expert judgement, which may be more difficult to exercise and supervise in a remote work setting. With accounting, such as the International Financial Reporting Standard (IFRS9) and prudential standards becoming increasingly principle and risk based, expert judgment takes a more prominent role in the identification of impaired loans and their provisioning. Sound expert judgment requires independent oversight, good bank governance, and robust risk management. There are challenges with the implementation and supervision of expert judgments in a remote work environment for bank staff and supervisors alike. Without on-site inspections and face-to-face meetings, supervisory scrutiny is likely to be less intense and comprehensive. Most EAP supervisors have piloted some forms of remote inspections as a second best solution.

The application of flexibility in the prudential framework and in loan classification criteria should be complemented with public disclosure. Ensuring transparency in the risks facing the banking system is crucial for financial stability. The application of temporary extra ordinary measures requires increased information to avoid the mispricing of risk. It is therefore important for supervisors and banks to ensure appropriate disclosure of (1) materiality of loan restructuring by borrower category and economic sector; (2) the performance of the loan portfolio and provisioning coverage ratios; (3) any adjustments made to policies to assess borrowers' creditworthiness; and (4) the impact of these adjustments. When needed, supervisors should mandate additional disclosures for the financial system. Many supervisors, but not all, disclose aggregated data on the extent and trend in loan forbearance in their banking system on a monthly or quarterly basis. In Indonesia, for example, more than 31 percent of loans to large corporates have been restructured.

Supervisors are faced with the continuous tension between macro and micro prudential policy objectives. On the one hand, banks need to be encouraged to provide credit to solvent but cash strapped borrowers. On the other hand, supervisors need to be mindful of the longer-term implications of these measures for the health of the banking system. A sound banking system is a precondition for recovery and sustainable growth. Most of the EAP countries entered the pandemic with solid capital and liquidity buffers built up following the global financial crisis.

One of the greatest challenges for policy makers will be to decide how and when to exit from the regulatory relief measures. Acting too early may remove much needed credit to support the economy while waiting too long could undermine confidence in the regulatory regime and heighten systemic risks. Better targeting of existing measures to viable borrowers in need should be a priority for policy makers. Further work is needed to understand the risks of unwinding and the options to reduce these risks. Withdrawal of these support measures before the macroeconomic outlook has stabilized could be associated with significant immediate risks to financial stability. At the same time, financial stability risks may gradually build if support measures remain in place for too long. Consistent and timely communication about policy intentions and international coordination are necessary to share effective practices and avoid divergencies with global minimum standards.

Box I.12. East Asia and Pacific insolvency frameworks

The COVID-19 pandemic has caused widespread firm distress in the EAP region. World Bank data gathered from surveys conducted between June and August 2020 suggest that large proportions of businesses were in arrears or anticipating entering arrears within six months: 38.8 percent in Cambodia, 13.2 percent in Indonesia, 70.7 percent in Mongolia, and 47.4 percent in Vietnam.^a There are, however, green shoots of recovery, with a survey of predominantly large businesses in ASEAN member states conducted between November 2020 and February 2021 revealing that the majority of businesses anticipate an increase in profits in 2021.^b Nonetheless, it is likely that any recovery will be piecemeal and likely accompanied by a rise in insolvencies in at least some sectors.

Insolvency reforms to support micro, small and medium enterprises (MSMEs) are a trend in the region. Effective January 1, 2021, Australia introduced two insolvency reforms targeted at MSMEs—a simplified liquidation framework and a small business restructuring framework. Singapore has also introduced a temporary revised insolvency program for small businesses to facilitate low-cost restructuring and liquidation.^c

This box presents key characteristics of insolvency frameworks in selected EAP countries:

- In **China**, bankruptcy processes are largely governed by the 2007 Enterprise Bankruptcy Law (EBL). The EBL introduced a number of significant reforms, including reorganization procedures, improving the rights of secured creditors, and a regime for the formation of creditors' committees.^d On key metrics, China's insolvency system delivers results that are similar to the EAP regional average, but some metrics are lower than the Organisation for Economic Co-operation and Development (OECD) average.^e Recently a number of further reforms have been implemented. In 2019, China introduced changes to facilitate post-commencement financing and increase creditor participation.^f Many jurisdictions within China have also established bankruptcy courts, with judges and staff who specialize in insolvency matters.
- **Thailand**, prior to COVID-19, was experiencing strengthened usage of both insolvency and restructuring proceedings, though restructuring remains underused. There were over 8,000 bankruptcy filings in 2019 (compared to about 5,000 in 2018) and 28 business rehabilitation filings in 2019 (compared to 23 cases in 2018).^g Whereas some jurisdictions have deferred substantive restructuring or have experienced substantial court delays, in June 2021 the Central Bankruptcy Court approved a business rehabilitation plan for Thai Airways, demonstrating that its systems remain functional.^h To mitigate the challenges faced by commercial entities as a result of the pandemic, the Ministry of Justice of Thailand is currently working on two reforms that: (1) will strengthen the restructuring provisions currently applicable to small and medium enterprises (SMEs), and (2) allow private practitioners to act as insolvency administrators in bankruptcy proceedings.
- In **Indonesia**, the 2004 *Bankruptcy and Suspension of Debt Obligations* is now outdated and suffers from inconsistent application, a lack of transparency, and a lack of detail in the law itself, leading to interpretive issues.ⁱ A key weakness remains the limited use of insolvency proceedings by commercial entities, which remain limited to larger companies and in practice exclude SMEs—the number of insolvency cases opened in the last five years does not exceed 500 cases per year. In 2020, there was significant growth in filings for restructuring—PKPU—and a slight fall in filings for conventional liquidation.^j Typically this is an indicator of a functioning insolvency system, but in Indonesia this trend is explained by the current preference by

(continued)

(Box 1.12. continued)

financial creditors to file for PKPU so they can appoint the administrator. In June 2021, the national airline, Garuda Indonesia, initiated a restructuring process with government representatives indicating that it would need to reduce its debt by about two-thirds in order to return to viability.^k In parallel, Indonesia's Ministry of Law and Human Rights continues working on an anticipated reform that will be submitted to Parliament in 2022.

- In **Vietnam**, a key weakness in the insolvency regime is the low level of returns that the system provides for creditors, estimated at 21.3 cents on the dollar, positioning Vietnam well below the regional average of 35.5 cents.^l Creditors, and in particular secured creditors, are reluctant to initiate bankruptcy proceedings, due to unduly excessive durations and complicated procedures.
- The **Philippines** reformed its insolvency regime in 2010 with the introduction of the Financial Rehabilitation and Insolvency Act. Together with associated legislation,^m this provides a relatively robust legislative framework with various in-court and out-of-court tools for debt enforcement and collective insolvency proceedings. Despite the extensive legislative framework, insolvency practice is limited, and creditor recovery is relatively low. The primary reason for these limitations appears to be weak implementation of the legislation and challenges with the supporting professionals and institutions. There are very few insolvency practitioners (rehabilitation receivers or liquidators) with different qualification requirements to be appointed as either. There is no insolvency regulatory authority to monitor insolvency practitioners and no professional association for insolvency practitioners. One of the major obstacles is the length of time to go through court processes and the potential for frivolous claims, which ultimately increases the length of time and cost of proceedings, and impacts creditor recovery. Accordingly, banks are reluctant to use formal proceedings and do not fully understand the different procedures available.
- In **Fiji**, the insolvency framework is split between the Companies Act 2015 and the Personal Bankruptcy Act (Chapter 48) enacted in 1945. Insolvency cases are rare in practice, partly because the bulk of enterprises in Fiji are micro- and small-sized enterprises, but the insolvency legislation does not cater for enterprises of this size. Overall, the insolvency regime needs to be modernized, and policy considerations should be given to adopt a unified insolvency act that will provide more streamlined and coherent insolvency provisions for all distressed enterprises and individuals. More specifically, the legislation should strengthen provisions in relation to avoidance transactions, post-commencement financing, and no-asset cases. In parallel, significant capacity building of related institutions and stakeholders is needed.

a World Bank Business Pulse data, available at <https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard.print>.

b Economic Research Institute for ASEAN and East Asia, "The Impact of COVID-19 on Business Activities and Supply Chains in the ASEAN Member States and India."

c *Insolvency, Restructuring and Dissolution (Amendment) Act 2020*; Hui Min Chiew, "Singapore's New Simplified Insolvency Programme for Micro and Small Companies," Singapore Global Restructuring Initiative Blog, February 1, 2021, available at <https://ccla.smu.edu.sg/sagri/blog/2021/02/01/Singapore-new-simplified-insolvency-programme-micro-small-firms>.

d Doing Business 2008.

e Doing Business 2020. The recovery rate is 36.9 cents on the dollar (compared to 35.5 for the EAP region and 70.2 for OECD countries), and the cost of insolvency proceedings as a percentage of the insolvent estate is 22.0 percent (compared to 20.6 percent for the EAP region and 9.3 percent for OECD countries). An exception is the time it takes to resolve insolvency proceedings, which at 1.7 years is equal to the OECD average and significantly better than the EAP average of 2.6 years.

f Doing Business 2020.

g Statistics from the Central Bankruptcy Court, cited in <https://www.chandlermhm.com/content/files/pdf/publications/Chambers%20Global%20Practice%20Guide%202020%20%20Thailand%20Insolvency.pdf>.

h https://www.thaiairways.com/sites/en/news/news_announcement/news_detail/the-central-bankruptcy.page.

i Sulaiman, D., H. Bunjamin, and Tandjung. 2020. "Indonesia's Bankruptcy Law in Urgent Need of Reform" in *Asia Pacific Restructuring Review 2021*, p. 66.

j *The Restructuring Review*, Edition 14 (2020), "Indonesia." Available at <https://thelawreviews.co.uk/title/the-restructuring-review>.

k <https://www.reuters.com/article/garuda-indonesia-debt/garuda-indonesia-to-seek-suspension-of-debt-payments-to-avoid-bankruptcy-idUSL3N2NL25K>.

l Doing Business 2020.

m For instance, the 2017 Personal Property Security Act, the New Civil Code of the Philippines (Republic Act 386), and the Financial Rehabilitation Rules.

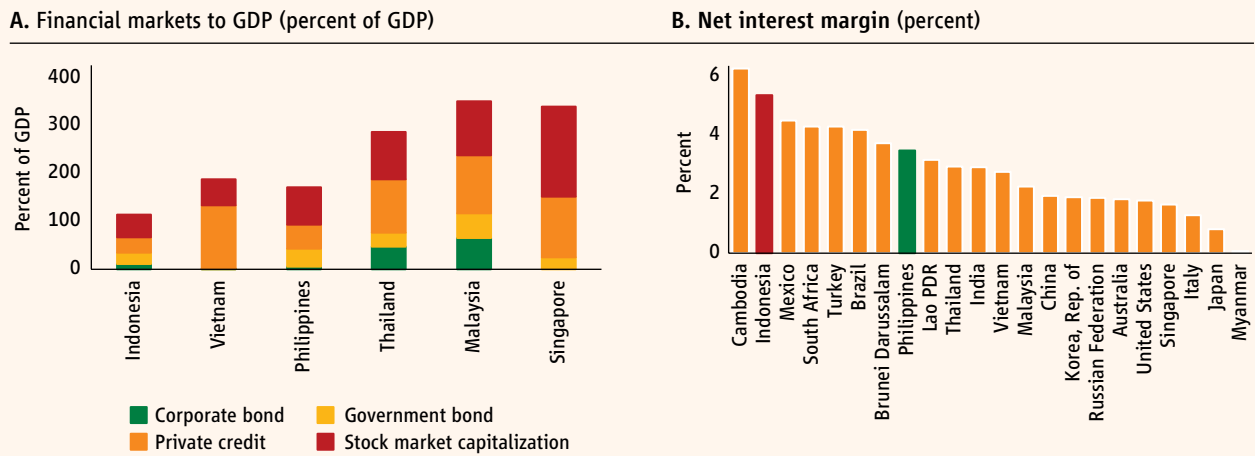
Box I.13. Financial sector reforms in Indonesia and the Philippines

Despite marked improvements during the past few years, the financial sectors in Indonesia and the Philippines remain saddled with some key developmental challenges. The COVID-19–induced recessions—the worst recession in Indonesia since the 1997–98 Asian Financial Crisis and in the Philippines since 1946^a—have exacerbated those challenges.

Policy responses to COVID-19–induced shocks in both countries have been comprehensive. In addition to short- and medium-term measures to facilitate the continued flow of credit to the economy, both countries have also undertaken some fundamental structural reforms in the financial sector to support long-term growth.

Financial sectors in Indonesia and the Philippines share similar characteristics. They are overall sound and well capitalized, but have traditionally been too small, too shallow, and too costly to fund development needs and support inclusive economic growth. Both financial systems are excluding one-half of the adult population, are not adequately serving SMEs, are not able to fund critical infrastructure, have extensive bank-corporate linkages posing risks to the financial system during the stress episodes to the corporate sectors, and have a small institutional investor base that exposes countries to global risks.

Figure BI.13.1. Financial sectors in Indonesia and the Philippines have traditionally been too small, too shallow, and too costly to fund development needs

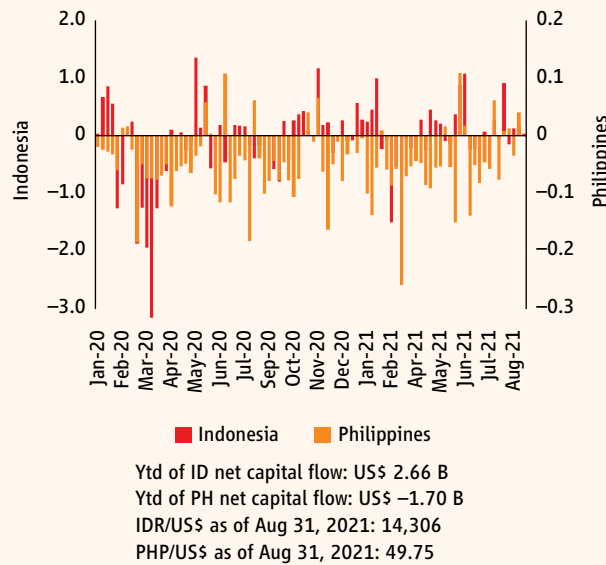


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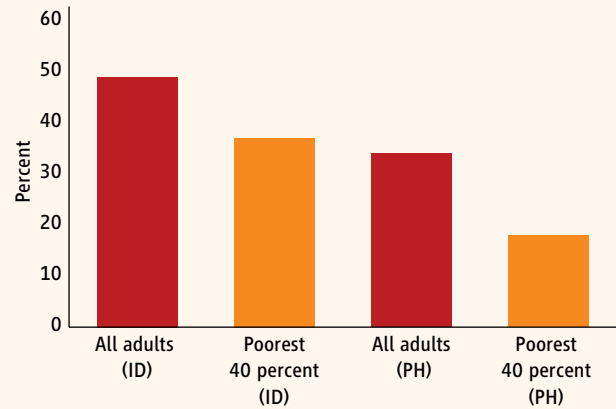
(Box I.13. continued)

Figure BI.13.1. Continued.

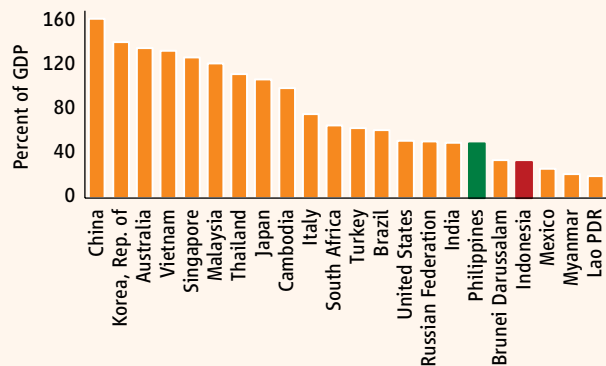
C. Net capital flow (US\$ billion)



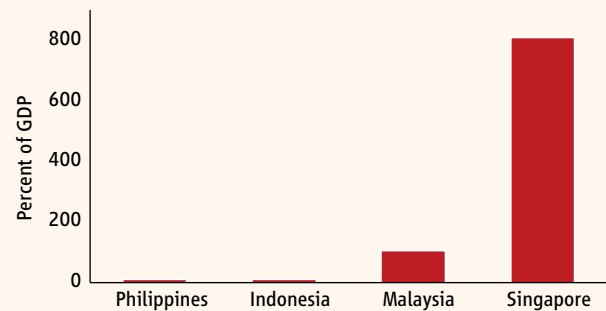
D. Account ownership (financial institution or mobile money account)



E. Private credit



F. Institutional investments



To address those fundamental shortcomings, the government of Indonesia has accelerated reforms aimed at deepening its financial sector and improving its efficiency and resilience. This includes (1) the expansion of payment channels to protect livelihoods during the crisis. This ongoing reform will allow private banks and mobile money providers to channel social assistance funds, in addition to state-owned banks; will change the regulations to make agents more interoperable with full cash in and cash out functions; and will allow for know your customer (KYC) verification to be conducted remotely (eKYC); (2) the development of new long-term instruments to broaden Indonesia’s investor base and deepen its capital markets to help reduce the adverse impact of future outflows of foreign portfolio investors and potentially contributing to increasing the financing options for critical private and public investments in the longer term. This reform has started by reducing withholding taxes on debt securities held by nonresident entities to minimize tax discrepancies among investors, as well by strengthening the risk management

(continued)

(Box 1.13. continued)

framework for institutional investors (insurance companies and pension funds) in order to drive more appropriate long-term investments. It is expected to be followed by additional reforms to enable the development of a derivatives market as well as reforms to incentivize contributions to (and disincentivized withdrawals from) pension and old-age savings;^b and (3) strengthening of the framework for insolvency and for banking resolutions to preserve and repair the balance sheets of corporates and banks to ensure a robust recovery for firms to start investing, and for consumers to start buying again.^c This reform has started by improving the existing system of remuneration of insolvency practitioners and by strengthening the role of the resolution authority through a clarification of its mandate, roles, and responsibilities in banking resolutions and the issuance of a regulation on resolution planning, which entails the annual preparation of resolution plans and resolvability assessments. These reforms are expected to be followed by a revision of the bankruptcy law to enhance creditor rights and by institutionalization of the legal protection of the financial authorities and officials exercising their duties in good faith (that was already introduced in the Law 1/2020 on mitigating the COVID-19 threat to financial stability as a temporary provision).

Moreover, as part of the COVID-19 recovery phase, the government is currently preparing a Financial Sector Omnibus Law (FSOL) to be submitted to Parliament in 2021. In line with the government's financial sector development agenda, the focus of the FSOL is on increasing the depth and improving the efficiency of the financial sector. The proposed law has five pillars: (1) expanding access and broadening financial market products, (2) promoting long-term investment, (3) increasing competition and efficiency, (4) strengthening risk mitigation, and (5) improving consumer and investor protection. The law is likely to include, among other things, an improved scope of the financial market and its supervision to remove the relevant gaps in regulation and supervision. Some of the elements of reforms envisioned in the reform areas above (e.g., new payment channels, derivative market instruments, pension incentives and disincentives), especially those which require legislative changes, would be included in the FSOL.

In the Philippines, the COVID-19 pandemic created a large demand for digital financial services. Recent reforms of financial and payment infrastructures laid a strong foundation for a major shift to digital financial services during the pandemic. Coupled with the implementation of a national digital ID called Philsys and digitizing government payments, the Philippines has seen enormous growth in digital transactions and overall access to financial services, such as 66.5 percent year-on-year (y-o-y) growth of active mobile money accounts, and 484.0 percent y-o-y growth of two main interbank retail payment systems (PesoNet and InstaPay combined) in 2020. Digital financial services continue to expand under the BSP's Digital Payments Transformation Roadmap.

Moreover, the government of the Philippines is accelerating structural and institutional reforms to strengthen the resilience of the financial sector due to rising risks, while at the same time, enabling the financial sector to continue to play an effective role in supporting recovery. Such reforms span from climate change and disaster risk finance to financial inclusion and infrastructure and financial stability and integrity. The financial sector authorities formed a Financial Sector Strategy Task Force (FSSTF), which is preparing a National Financial Sector Development Roadmap (FSDR). The FSDR aims to demonstrate the government's high-level commitment to financial sector development and will provide an overarching vision, strategic and time-bound action plan, and targets to promote a sound, inclusive, and deep financial sector that contributes to economic growth. These reforms complement a tax reform (Corporate Recovery and Tax Incentives for Enterprises Act or CREATE Act), Financial Institutions Strategic Transfer (FIST) Law aiming to ensure that distressed financial institutions have a mechanism to strengthen their balance sheet, and the amendments to the Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) Act aiming to criminalize tax crimes for money laundering.

a The Philippine government data are available from 1946.

b The reforms on withholding taxes and derivatives market development would reduce market segmentation between foreign investors and domestic investors and increase the attractiveness of domestic investments to foreign investors, while the reforms on domestic institutional investors are aimed at strengthening the capacity of the domestic market to finance development.

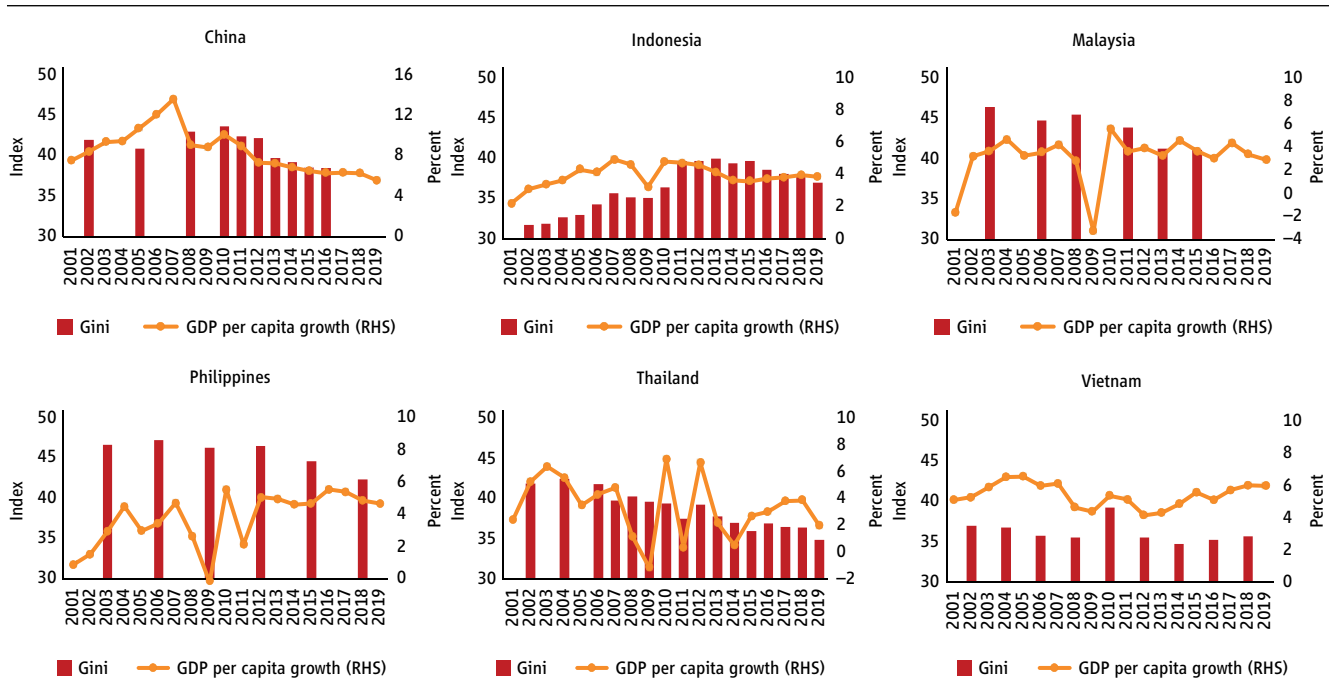
c These reforms are supported through a World Bank Financial Sector Reform Development Policy Loan series.

Part II. COVID-19: Growth and Inequality

Part II.A. A macroeconomic perspective on growth and inequality

A serious concern is the impact on growth and inequality in the longer term. In the 2000s, inequality increased in many countries, but high overall growth also lifted incomes of the relatively poor and most people were better off. After the Great Recession, growth slowed down in the 2010s, but declining inequality ensured that even the lower deciles saw improved standards of living (figure II.A.1). Now COVID-19 threatens to create a combination without recent precedent: slow growth and increasing inequality. The result could be absolute deprivation to an extent that the region has not seen in the last two decades. And an additional result could be social and political unrest that would further hurt growth and the poor.

Figure II.A.1. The 2000s were a period of increasing growth and increasing inequality; the 2010s saw a growth slowdown and declining inequality

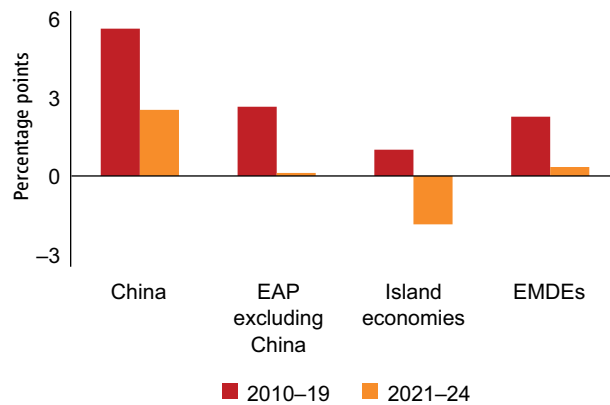


Source: World Bank staff calculations.
 Note: GDP = gross domestic product.

With economic activity rebounding in 2021, per capita income growth in the East Asia and Pacific (EAP) region is projected to reach 7 percent in 2021 and edge down to 4.8 percent in 2022. Among small Pacific Island Countries (PICs), however, per capita income growth is expected to be considerably lower. Per capita income growth in many EAP countries will fall short of the pace of recovery in advanced economies over the next two years. In many economies, this will slow or even reverse the pace of per capita income catching up with advanced economies (figure II.A.2). Per capita income losses that incurred in 2020 will not be fully unwound by 2022 in the majority of EAP economies, as the lingering effects of the pandemic continues to dampen domestic demand.

Figure II.A.2. The COVID-19 shock risks slow down EAP's convergence to high income levels

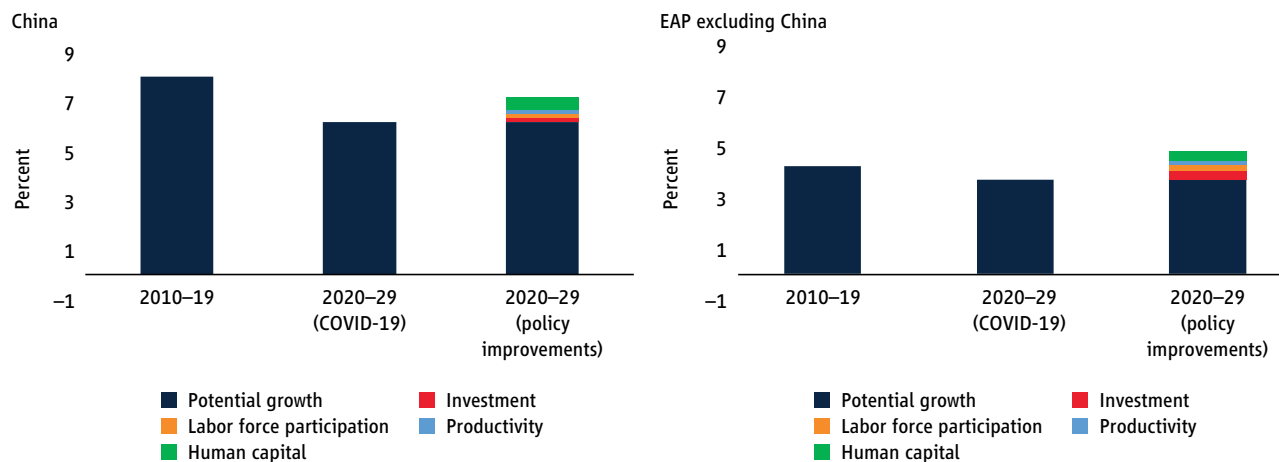
Per capita income growth relative to advanced economies



Source: World Development Indicators. World Bank staff calculations.

Unless bold reforms are implemented, COVID-19 is expected to reduce regional potential growth. While the COVID-19 shock has led to a contraction in current output to levels below potential output, it is also likely to lower the growth of potential output in the region (*April 2021 EAP Economic Update: World Bank 2021*). The previous sections of the report focused on output gaps; the subsequent sections speak to potential output.

Reforms that focus on policies aimed at increasing female labor force participation (see, e.g., Box II.A1), investing in human and physical capital, and boosting productivity growth through rapid digitalization can potentially undo some of COVID-19-induced losses. Such reforms could boost potential growth by more than 1 percentage point (figure II.A.3). The relative importance of the different elements will differ across countries; for example, in China, larger benefits are likely to come from factor market reforms that boost productivity rather than from further investments in infrastructure. In most countries, investment in (resilient and greener) infrastructure, including through public-private partnerships, could contribute to more efficient cities and watershed management, and climate-smart agriculture could contribute to more sustainable and stable growth.

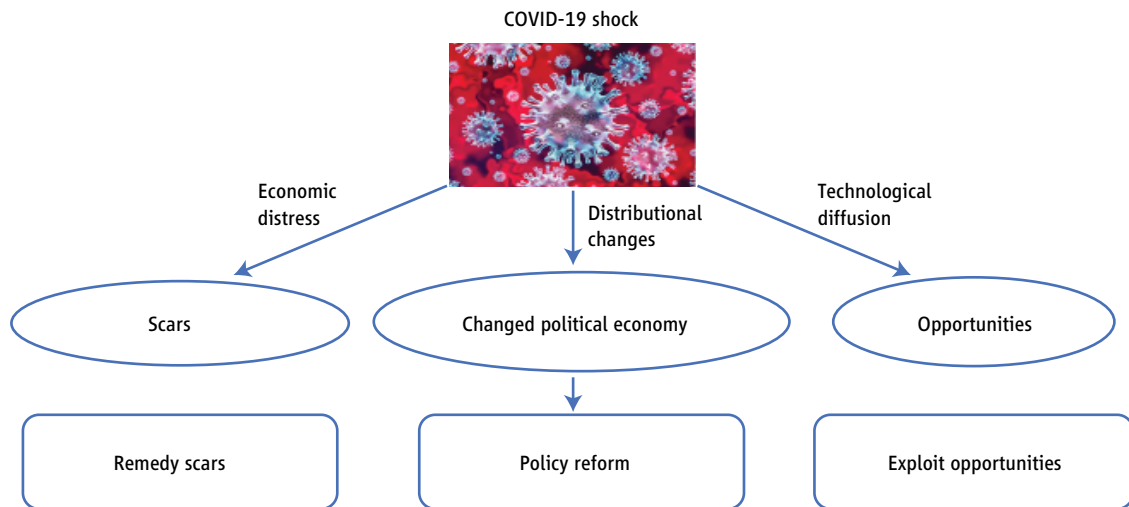
Figure II.A.3. Bold and comprehensive reforms could spur growth

Source: World Bank staff calculations.

Note: Positive scenario: assumes that over the next decade, each country will raise its investment growth as much as its largest increase over any historical 10-year interval.⁵ Under these improved policies, investment growth is assumed to reach 4.6 percent annually over the next decade on average in the region compared to 2.8 percent under the COVID-19 scenario. Female labor force participation rate is assumed to close one-third of the gap between its male counterparts. Under this positive scenario, female labor force participation is assumed to rise by 2 percentage points. Positive scenarios also include improvement in total factor productivity (TFP) growth via acceleration in digitalization due to positive spillovers of COVID-19. Under this scenario, TFP is assumed to raise by 2 percentage points over the next decade in total. Further improvement in education policies is in addition to the policies above, and further improvements assume that education (both secondary education completion rate and average years of schooling) increase as much as its largest increase over a 10-year interval since 2010. Under this scenario, the secondary education completion rate is assumed to raise to 22.8 percent, and the average years of schooling are assumed to pick up to 8.4 years compared to 22.5 percent and 8 years under the COVID-19 scenario, respectively.

While COVID-19 has inflicted scars, it has also created opportunities. The scars are in the form of increasingly indebted and sometimes bankrupt firms and households, as well as lost human capital. The opportunity is primarily arising from the rapid diffusion of technology, which could boost productivity, democratize education, and transform state institutions. Importantly, COVID-19 is also affecting the political economy of policy making by changing the distribution of economic pain and incomes (figure II.A.4). It remains to be seen whether these political changes contribute to the policy reform needed to both remedy the scars and exploit opportunities.

Figure II.A.4. COVID-19 shock, scars, and opportunities



Source: World Bank staff illustration. World Bank. 2021a. "Uneven Recovery" East Asia and Pacific Economic Update (April), World Bank, Washington, DC.

Part II.B. Firms and technology

While growth is affected by several factors, including public investment, we focus here on the impact on firms, the key protagonists. We first examine the impact on productivity within the firm, and because of the reallocation of resources between firms, we examine the impact within a sector and across sectors. We then explore the patterns of technology adoption which will affect future productivity growth. Finally, we study the role that policy is playing and should play in fostering growth.

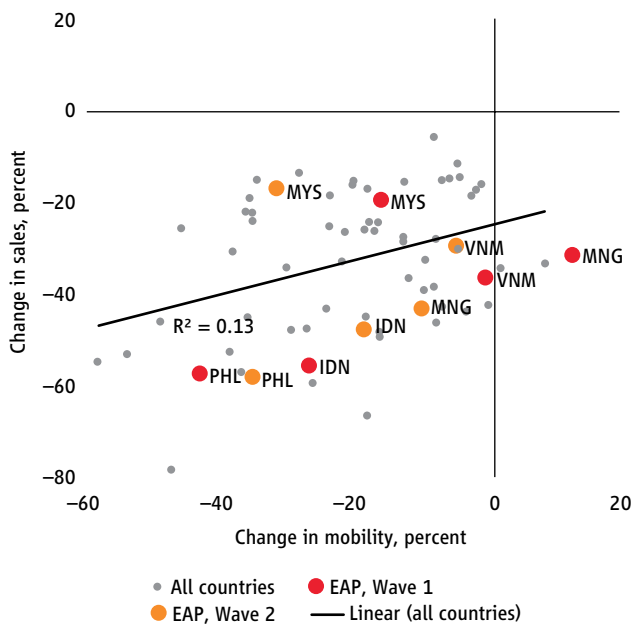
Who Is Feeling the Pain?

Aggregate changes over the course of the pandemic

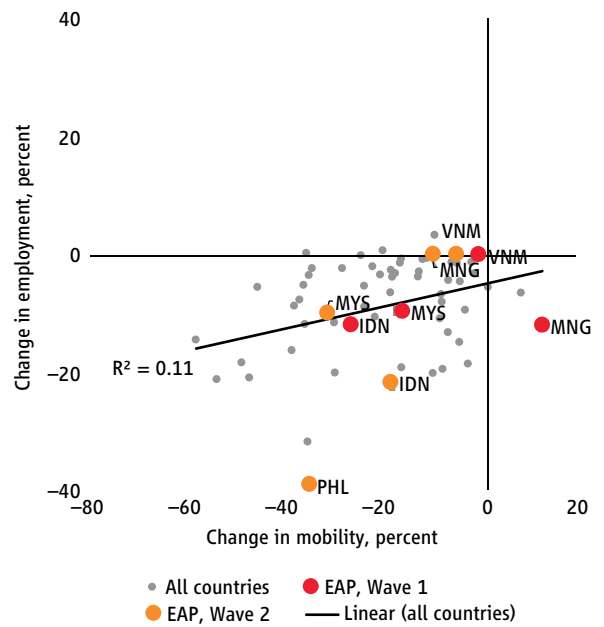
As the pandemic continues, the sales freefall is arrested and weakly reversed, but employment dynamics are mixed (figure II.B.1). As mobility recovered and firms shifted more of their businesses online, severe sales losses were somewhat mitigated. In Mongolia, Indonesia, and the Philippines, firms lost at least 40 percent of their typical monthly sales. Changes in employment are much more heterogeneous. On the one hand, the deepest employment fall appears behind for Mongolia, as more recent data points to a rebound. On the other hand, Indonesia's employment decline keeps spiraling downward. Cross-country heterogeneity in productivity changes persists, likely reflecting heterogeneity in labor dynamics.

Figure II.B.1. Sales and employment respond differently as pandemic continues

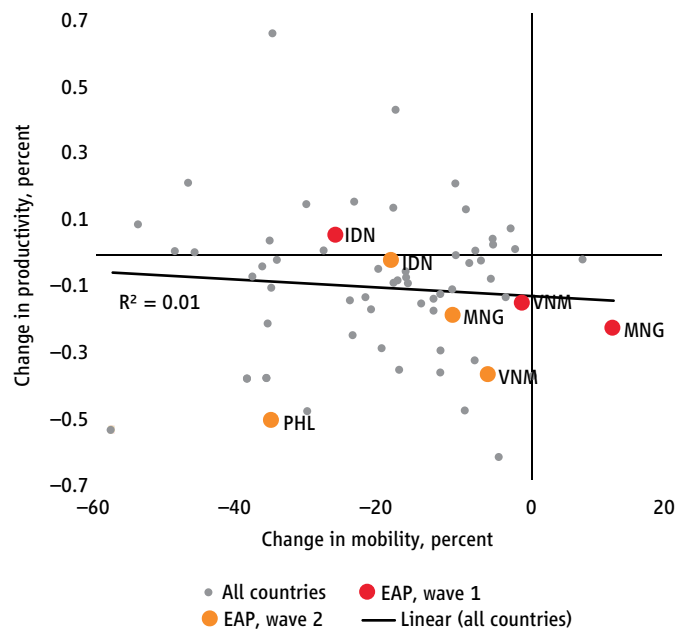
A. Sales dynamics



B. Employment dynamics



C. Labor productivity dynamics



Source: Business Pulse Survey data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard>. Note: Wave 1 survey was June to August 2020, Wave 2 survey was October 2020 to February 2021.

Aggregate productivity decomposition

To understand the drivers of these aggregate trends and uncover any within country heterogeneity, we focus on productivity dynamics.

The distribution of current pain matters for future economic growth. On the one hand, current pain can slow growth, as continuing firms are likely to defer nonessential productive investments—nearly one-half of firms in the United Kingdom cut back on R&D investment during COVID-19 (Harris and Moffat 2021). The exit of good firms can mean the loss of valuable firm intangible assets that are hard to rebuild, such as supplier or customer relationships and know-how. Unemployment too can have persistent scarring on future earnings, particularly of young workers. On the other hand, crises can spur future growth through creative destruction—the contraction and exit of less productive firms, frees resources to help productive firms grow. Past crises have often been poor selectors—for example, the 1997 East Asian crisis weeded out productive and inefficient Indonesian firms alike (Hallward-Dreiemeier and Rijkers 2013). However, preliminary World Bank Enterprise Survey evidence from a sample of 31 countries—most from Eastern European economies (but also Mongolia) suggests that less productive firms are more likely to exit during the pandemic (Muzi et al. 2021).

An aggregate productivity decline is largely driven by falls in productivity for the average firm. We find weak evidence of positive contributions from within-sector or across-sector reallocation, which play a minor role. Most of the fall in aggregate productivity is attributable to the decline in productivity of the average firm.

This result may partly reflect issues other than the firms' dynamics. First, sectors are broadly defined in our data, thus making it more difficult to observe cross-sectorial reallocation. Second, reallocation may be hindered by the high degree of uncertainty related to the evolution of the pandemic and the general economic conditions. Third, sectorial reallocation may require more than the time elapsed between the baseline and the second wave.

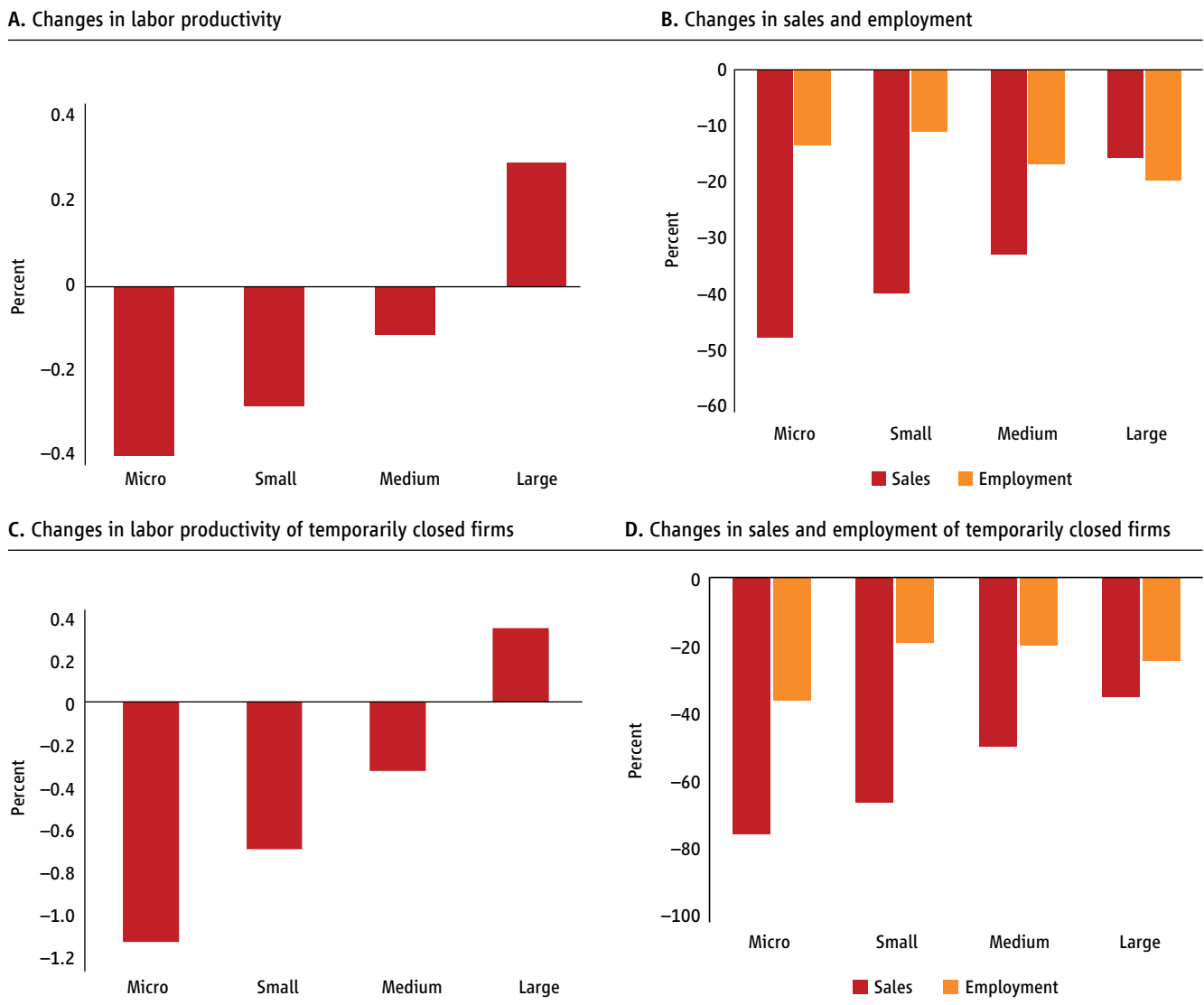
Within-firm changes

Large firms avoided the worst of the pandemic (figure II.B.2, panels A and B). Productivity has improved for large firms who experienced less severe sales declines. Much larger sales contractions are observed for micro and small firms across sectors within the region and globally. By winter 2020, micro firms' monthly sales were 48 percent lower than one year ago, compared to 15 percent lower for large firms.

Figure II.B.2, panels A and B consider all firms: open, partially open, and temporarily closed ones. In our data we cannot distinguish whether firms are temporarily closed due to policy restrictions, or because the business is no longer viable. Regardless, these closed firms are likely to have suffered more—either because the pandemic has already delivered an almost fatal blow to their profitability or because the temporary closure results in missing revenues. We thus focus on this narrower group in panels C and D, to understand which firms may be suffering more.

Of temporarily closed firms, micro firms are the most severely battered by the pandemic, registering the largest drop in both sales and employment (figure II.B.2, panels C and D). This implies widespread economic scars in EAP economies where micro firms account for large shares of the firm distribution.

Figure II.B.2. Micro firms experienced the largest drop in productivity



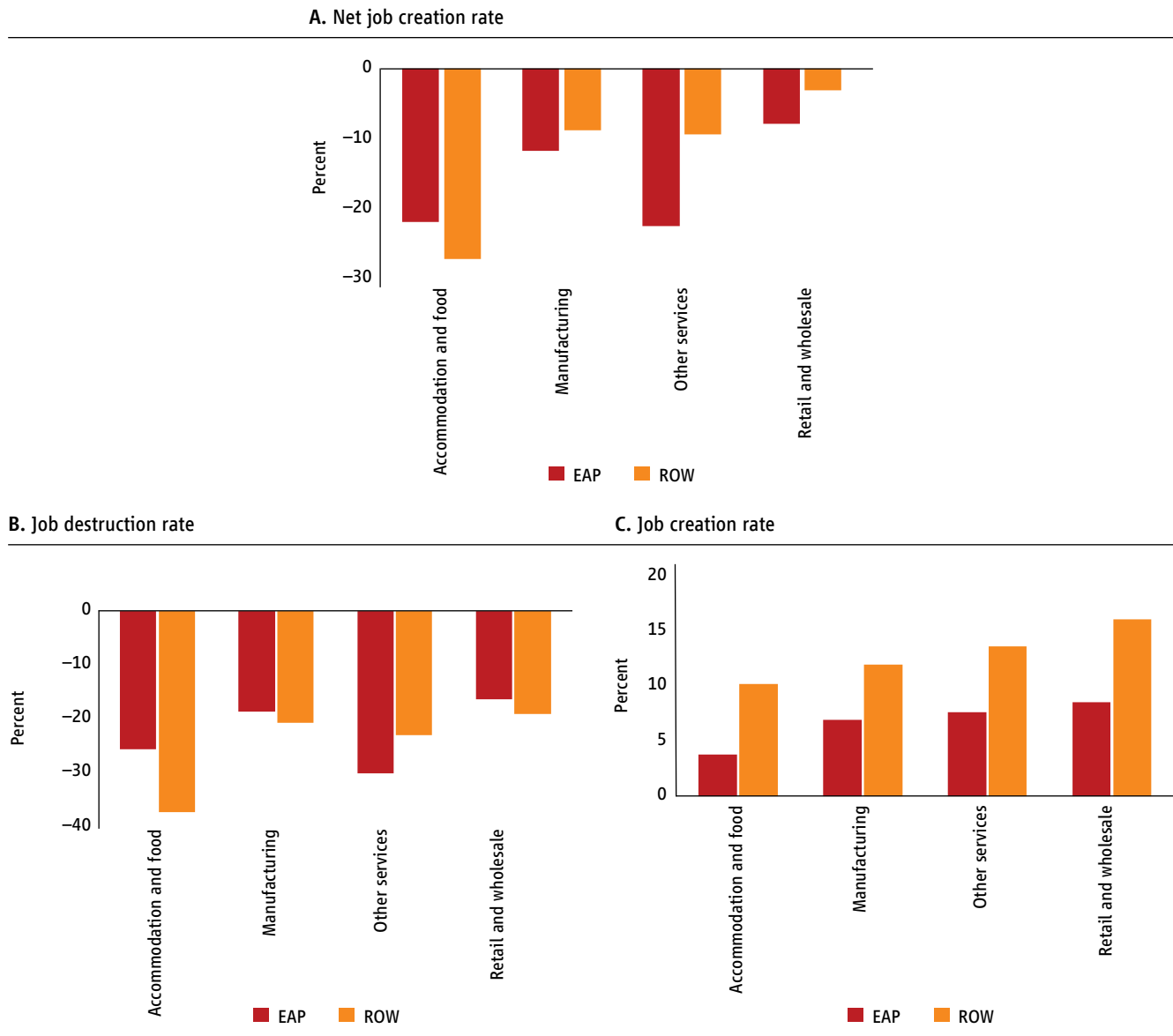
Source: Business Pulse Survey data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard>.
 Note: Micro firms have 1–4 employees, small firms have 5–19 employees, medium firms have 20–99 employees, large firms have at least 100 employees. Changes are computed between survey wave 2 and baseline. Productivity is log (sales per worker).

Within-sector changes

Conditional on firm survival, EAP economies suffered larger net employment contractions across all sectors except for accommodation and food (figure II.B.3). Lockdowns and limited travel hit accommodation and food hard globally, with a 21 percent fall in industry employment in EAP and 27 percent in other regions. However, for all other sectors EAP experienced larger employment contractions than other regions. In other services this is especially acute, with a 23 percent contraction compared to 9 percent in other regions. The result is driven by lower job creation

across all sectors and larger job destruction in other services.⁵ The poorer performance by the service sector may reflect inefficiencies and weaknesses of the sector that predates the pandemic—competition and competitiveness issues are often raised in reference to EAP firms. For instance, services trade restrictions in EAP are above the global average (Constantinescu, Mattoo, and Ruta 2018).

Figure II.B.3. EAP firms create fewer jobs and service firms destroy more jobs



Source: Business Pulse Survey data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard>.
 Note: Calculated between the baseline of December 2019 and the second round of the Business Pulse Survey (BPS) survey—between October 2020 and March 2021. Job creation (destruction) rates are calculated as the total jobs created (destroyed) for each country-industry level over the period, and expressed as a proportion of average country-industry employment (averaged between baseline and round 2), following Davis and Haltiwanger (1999). Net job creation is job creation less job destruction. The bars represent the (unweighted) average of each country within the EAP and other regions. The Philippines is an outlier with very high levels of job destruction and is excluded from the EAP sample. ROW = rest of the world.

⁵ Note that the Philippines is an outlier with far higher job destruction rates than other countries in the region or globally (but similar levels of job creation), and is excluded from these figures.

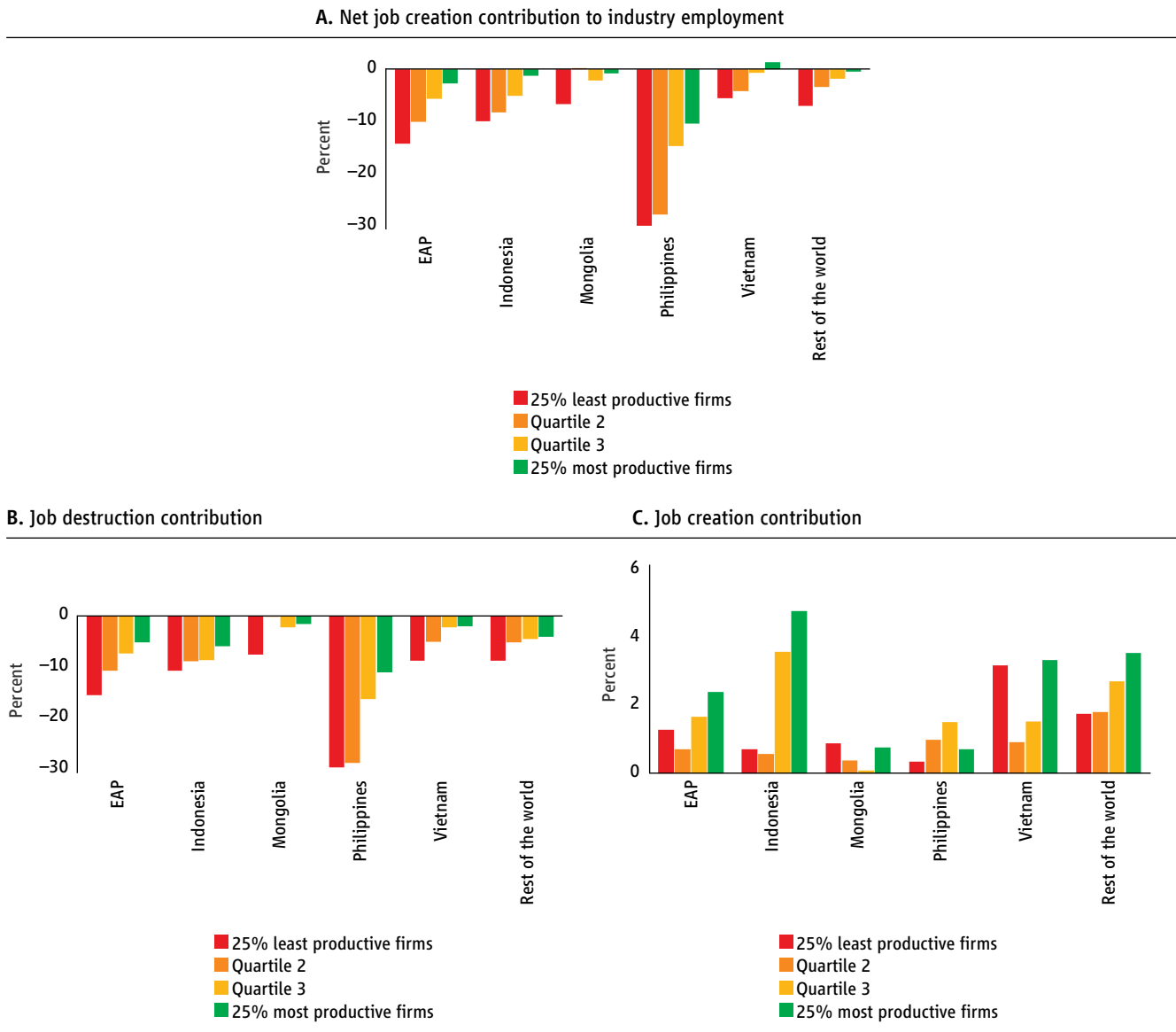
Productive firms within each sector had smaller employment falls, with both higher levels of new job creation and lower levels of job destruction. The pattern of net job flows across the labor productivity distribution suggests that employment reallocation among surviving firms is productivity enhancing. Although employment fell for almost all firms, there are substantial differences by firm productivity. For all countries in EAP the most productive firms (defined within a country sector), experienced smaller reductions in net employment than the least productive firms, conditional on survival (figure II.B.4). On average, employment falls in the least productive firms amounted to 14 percent of industry employment, compared to only 3 percent for the most productive. Job destruction was most acute in the least productive firms, and jobs were created at a faster rate by those most productive. The positive reallocation of jobs from businesses with the lowest levels of sales per worker into businesses with the highest rates occurred in almost every country in the region, but there remain significant cross-country differences, such as in Mongolia versus the Philippines.⁶

The pattern of productive employment reallocation is apparent across all firm size groups of surviving firms. Employment falls are significant for all firm sizes, especially for larger firms.⁷ However, the bulk of the large firm employment contraction is concentrated in the least productive firms. Large firms with below average productivity accounted for a loss of 10 percent of industry employment, compared to only 1 percent for those above average. While conditional on survival micro firm employment fell less than larger firms, we see evidence of productive reallocation within smaller firms as well. Micro firms with below average productivity accounted for a loss of 3 percent of industry employment, compared to only 1 percent for those above average.

⁶ The relationship between job creation and productivity is less clear for EAP countries, than job destruction.

⁷ In part this may reflect a weak relationship between size and productivity in our data, which is often negative conditional on survival.

Figure II.B.4. More productive firms have smaller falls in employment—they destroy fewer jobs and create more new opportunities

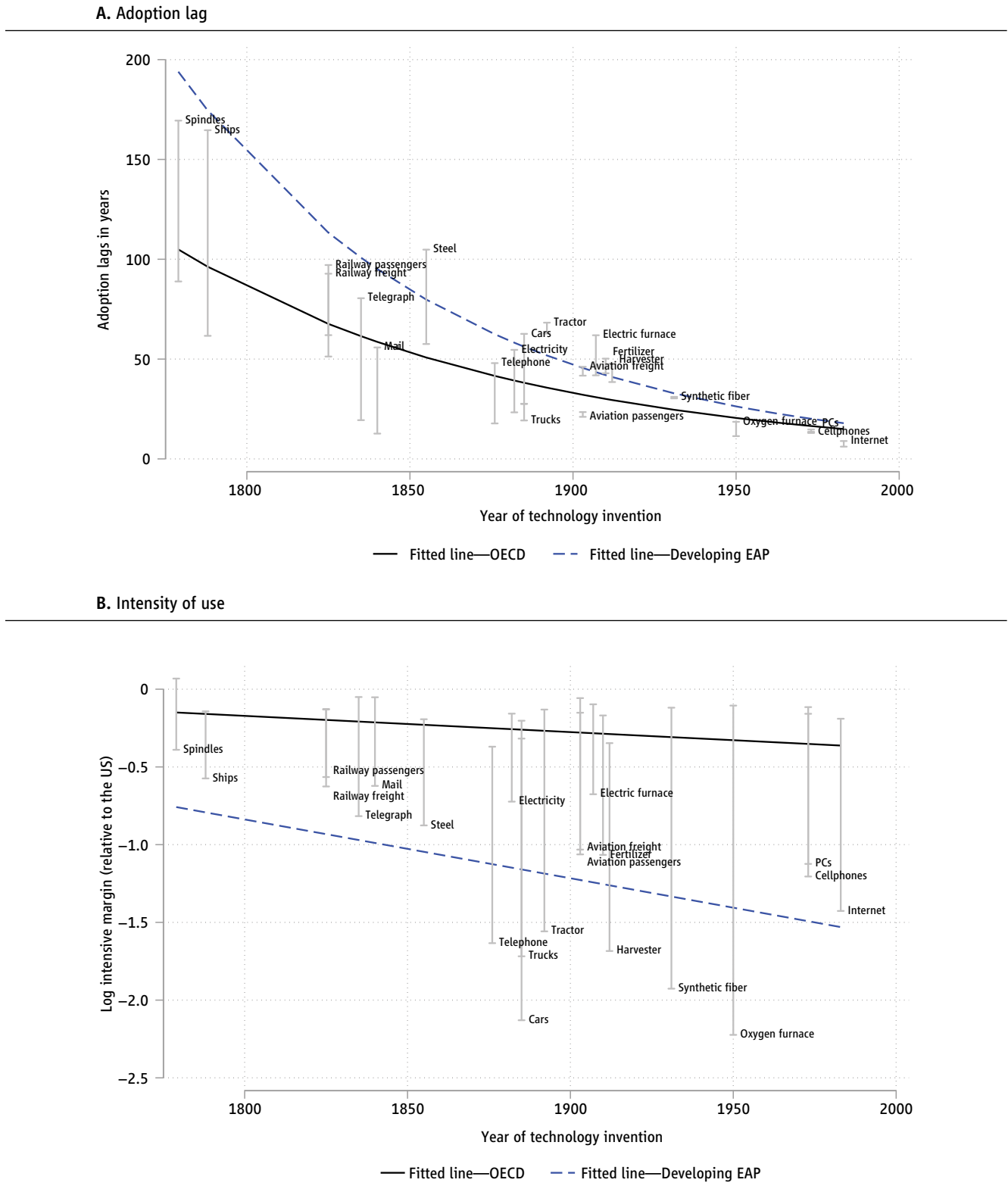


Source: Business Pulse Survey data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard>.
 Note: Calculated between the baseline of December 2019 and the second round of the BPS survey—between October 2020 and March 2021. In each country and industry businesses are sorted into quartiles using the distribution of sales per worker at baseline. Job creation (destruction) contributions to industry employment are calculated as the total jobs created (destroyed) for each country-industry-productivity quartile over the period and expressed as a proportion of country-industry employment across all productivity quartiles (and averaged between baseline and round 2), following Davis and Haltiwanger (1999). Net job creation is job creation less job destruction. Each bar is an (unweighted) average of industries for each country. EAP = East Asia and Pacific.

Who Is Grasping the Technology Opportunity?

Before the pandemic, EAP suffered from a narrow diffusion of modern technologies. While countries in EAP been reducing the time lag in technology adoption, new technologies are not diffusing deeply (figure II.B.5). The adoption lag between when new technologies were invented and first adopted in the Organisation for Economic Co-operation and Development (OECD) and developing EAP countries has been narrowing over time, with similar adoption lags in recent years (panel A). In contrast, differences in the intensity of use are widening between OECD and EAP with more modern technologies (panel B). While a minority of frontier firms in EAP seem to rapidly be able to adopt new advanced technologies, a broader group of firms have increasingly been left behind.

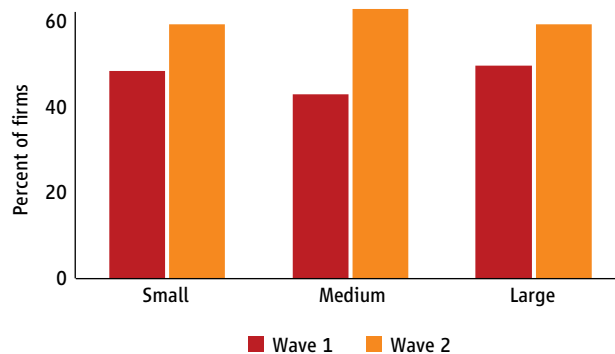
Figure II.B.5. Adoption lags between developing East Asia and the OECD are converging while intensity of use is diverging



Source: The Innovation Imperative for Developing East Asia—Cirera et al. 2021a.
 Note: Results plotted by authors, using country technology-level estimates from Comin and Mestieri (2018). Adoption lag, defined as the number of years it takes for a technology to arrive to a country since invention, and intensive margin, or usage intensity, are both country-specific model parameters estimated structurally using the CHAT database. The lines are fitted lines by OECD and developing EAP countries. The bars show the median adoption lags/intensive margins of the two country groups for each technology.

One potential upside of the pandemic is that it catalyzed a broad group of firms to rapidly adopt new technologies. The pandemic catalyzed the use of technology, as mobility restrictions and health concerns meant people were increasingly stuck at home, spending more time online, and avoiding visits to brick-and-mortar retail stores. Firms shifted from in-person sales, toward new digital sales models to be able to reach their customers (figure II.B.6). By winter 2020, more than two-thirds of firms in EAP had started or increased their use of digital platforms. Firms responded rapidly to the pandemic shock, with the majority of firms reacting by adopting technology within two to three months of the first COVID-19 cases in their country (*EAP Update Spring 2021: World Bank 2021*). Accordingly, the majority of the adoption of digital platforms during the year had already occurred by the summer. The adoption rates are broadly similar across firm size, suggesting that smaller as well as larger firms adopted some sort of technology in response to the pandemic. Many firms also started using the cloud during COVID-19, which can help small and start-up firms grow by avoiding some of the large fixed costs of IT, see Box II.B1.

Figure II.B.6. Firms of all sizes rapidly increased their use of digital platforms

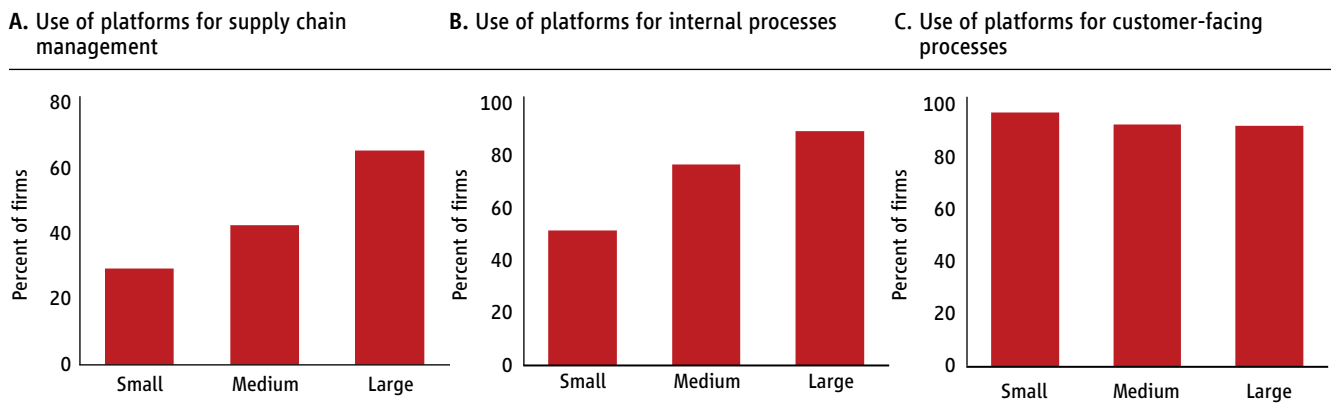


Source: Business Pulse Survey data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard>.

Note: Adoption between baseline and wave 1 or wave 2 for EAP countries comprising Indonesia, Mongolia, the Philippines, and Vietnam. Small firms are defined as 5–19 employees, medium as 20–99 employees, and large as 100+ employees. Digital adoption data are not available for micro firms. Wave 1 survey was June to August 2020; Wave 2 survey was October 2020 to February 2021.

Larger firms took advantage of more sophisticated technologies related to supply chains or internal processes. Almost all firms that increase their use of digital platforms, such as e-commerce, digital marketing, electronic payments, or delivery, do so for reaching customers, and this is true across firms of all sectors and firm sizes (figure II.B.7). In recent years e-commerce has become much more accessible, with firms able to avoid the costs and complexity of developing e-commerce technologies themselves through online marketplaces or “off-the-shelf” online stores. However, the broad adoption of technologies to reach customers masks differences in more complex technologies. Larger firms that adopted digital platforms were 35 percent more likely to use them for supply-chain management and 38 percent more likely to use them for internal processes than small firms (figure II.B.7). Larger firms in emerging markets were also more likely to adopt other frontier technologies during COVID-19, such as advanced data analytics (A/B testing), enterprise resource planning or customer relationship management software, or cloud computing (DeStefano and Timmis 2021).

Figure II.B.7. Larger firms increasingly use platforms for managing internal processes or supply chains, whereas almost all adopters use platforms to reach customers

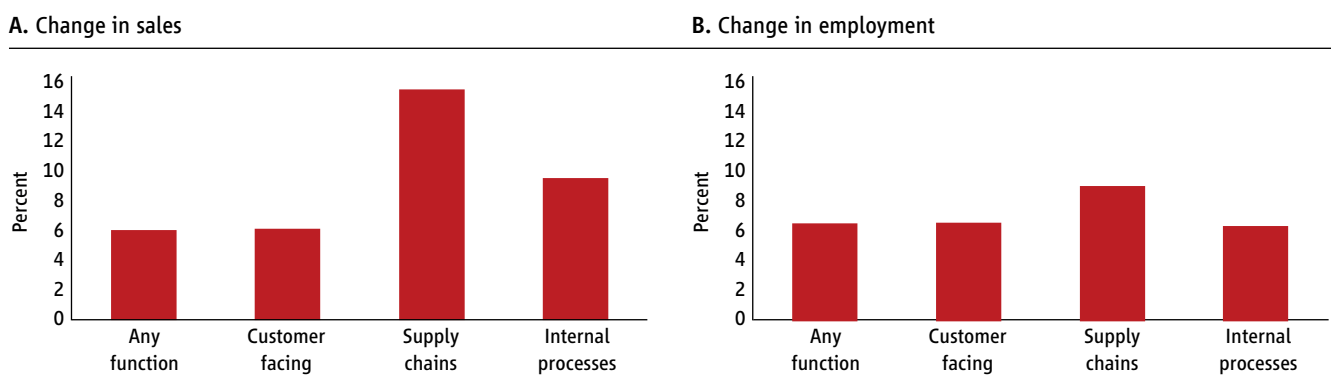


Source: Business Pulse Survey data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard>.
 Note: Adoption between baseline and wave 2 is shown conditional on firms increasing use of digital platforms. Shown for EAP countries comprising Indonesia, Mongolia, the Philippines, and Vietnam. Small firms are defined as 5–19 employees, medium as 20–99 employees, and large as 100+ employees. Digital adoption data are not available for micro firms. Customer-facing processes include digital marketing, online payments, or sales and service delivery. Internal processes include business administration or production planning.

Larger firms were already more likely to use more advanced technologies prior to the pandemic. In Vietnam, despite almost universal access to mobile, computers, and the internet, the likelihood of having its own website and using social media for the business is low, particularly among smaller firms. Nearly 60 percent of large firms had their own website compared to 30 percent of smaller firms (Cirera et al. 2021b). In developing countries, more generally, the use of advanced technologies is in its infancy, but larger firms were more likely to use such technologies than smaller firms, including enterprise resource planning software and frontier specific business function technologies (Cirera and Cruz 2021). In 2019 large firms in emerging markets were more than twice as likely as medium-sized firms to use advanced data analytics like A/B testing (DeStefano and Timmis 2021).

Adopting any technology is associated with lower falls in employment and sales. But adopting technologies related to supply chains were particularly correlated with better sales performance (figure II.B.8). Firms that started using digital platforms were able to keep around 7 percent more workers in jobs and maintain 6 percent higher sales than those that did not adopt. Using platforms for different firm functions does not appear to lead to substantial differences in employment. However, firms that adopted platforms for supply chain management maintain nearly 16 percent higher sales.⁸

Figure II.B.8. Adopting technologies, and in particular those related to supply chains, is associated with better sales performance



Source: Business Pulse Survey data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard>.
 Note: Estimated coefficients from regressions of the percentage change in monthly sales versus prior year (panel A) or percentage change in employment versus December 2019 (panel B) on a digital adoption dummy. All regressions include sector, survey month, and country fixed effects and controls for mobility, COVID-19 cases, and stringency of lockdowns. Sample of EAP countries comprising Indonesia, Mongolia, the Philippines, and Vietnam, including both wave 1 and wave 2 data. Customer-facing processes include digital marketing, online payments, or sales and service delivery. Internal processes include business administration or production planning.

⁸ One concern might be that we are capturing the differential performance of large firms, who were more likely to adopt digital technology for supply chain management or internal processes and also had lower sales falls in general. However, some confidence can be obtained from regression results being robust to control initial firm size, productivity, and age.

One potential risk is that if large firms can exploit cutting-edge technologies that matter more for firm performance, the small or micro firms may be left behind. That a broad group of firms adopted technologies to reach customers online means many firms are better able to maintain sales or employment than they otherwise would under the pandemic. The trade-offs between being open for business and containing the virus would have been much worse had ecommerce functionality not been as accessible as it is today. However, larger firms were more likely to adopt advanced technologies that may have an even stronger impact on firm performance, not only in coping with COVID-19 but in the recovery, too. Even prior to the pandemic, firm’s subnational, and country productivity was positively associated with intensive use of more advanced technologies (Cirera and Cruz 2021). In rich countries, digital technologies have also been linked to rising trends of divergence between the best firms and the rest, as well as the growing market shares of big business (Andrews, Criscuolo, and Gal 2016; Bessen 2020). If technology that matters most for productivity does not diffuse beyond the few, the majority may be relatively worse off.

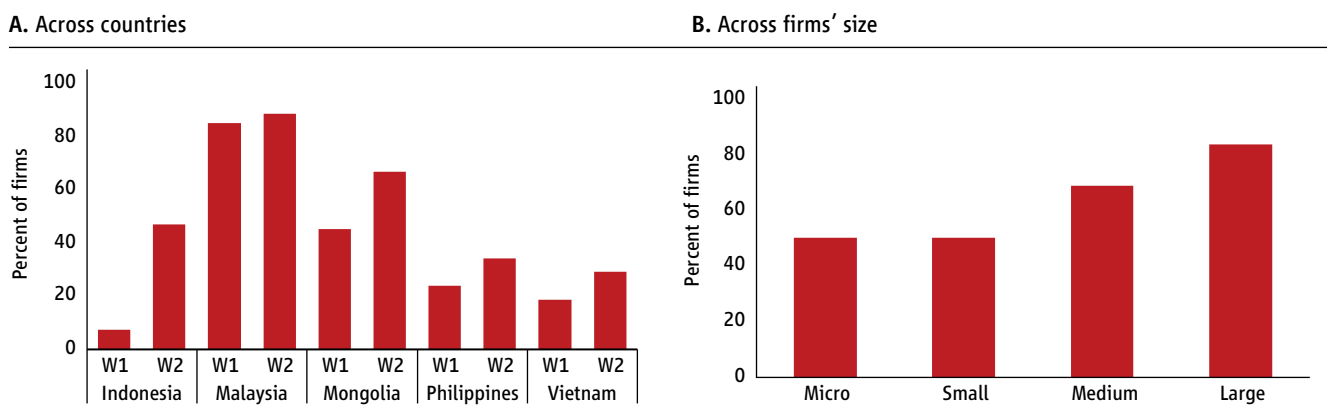
Firms need to adapt business models to turn technologies into productivity growth, which may amplify differences across firms. Adopting customer-facing technologies like e-commerce was a COVID-19 survival necessity for many firms—as many customers were under lockdowns or minimizing in-person store visits. The rise of e-commerce platforms and off-the-shelf e-commerce websites have dramatically eased the cost and difficulty of adopting these technologies. However, adopting technology by itself does not necessarily lead to longer-term productivity growth—particularly if technologies are simply bolted onto existing business processes. Rather, productivity growth comes from adapting business models and investing in skills to take advantage of technology, which can take time and is often best achieved by larger or more productive firms (Brynjolfsson and Hitt 2000; Bresnahan, Brynjolfsson, and Hitt 2002). Longer-term productivity growth is more likely for the subset of firms adopting technologies that require firm reorganization, such as technologies for internal processes or supply chain management.

Who Is Receiving the Support?

To stave off the worst of the pandemic, EAP governments have provided support to firms, but support remains uneven across countries (figure II.B.9). Governments in EAP have adopted at least 460 measures to support the real sector since the onset of the COVID-19 crisis, including debt financing (29 percent), subsidies (34 percent), and tax relief measures (23 percent).⁹ The bulk of these measures were introduced in the first half of 2020.¹⁰ The extent and pace with which these measures reached firms have been slower than expected in many countries, with significant variations across firm size and sector. The effectiveness of government programs has been an object of public debate across the region. For instance, after being criticized for the slow initial rollout of relief measures, the Indonesian government managed to increase the reach of its support programs from less than 10 percent in June 2020 to over 40 percent in October 2020. Conversely, most Malaysian firms reported having received support by October 2020.

⁹ World Bank, FCI EAP COVID-19 Policy Tracker.

¹⁰ Second waves of infection and mobility restrictions have pushed several countries (e.g., Cambodia, China, Malaysia, Thailand) to introduce new measures or extend existing ones since the end of 2020, often targeting small and medium enterprises (SMEs).

Figure II.B.9. Reach of policy support is uneven

Source: Business Pulse Survey data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard>.
 Note: Share of firms receiving any policy support. W1 and W2 refer to survey wave 1 and 2 respectively.

The reach of support is uneven across firm size. While about one-half of micro, small, and medium-sized enterprises (MSMEs) have not received any form of support by Q4-2020, less than 20 percent of very large firms have not received any support (figure II.B.9). Lack of awareness about available support and complex application procedures are some of the reasons cited by firms. Being ineligible for support is also frequently reported.

Understanding who receives policy support is important from an equity perspective. It is equally important to assess whether policy support can play a meaningful role in curbing the negative impacts of the pandemic. As the pandemic progresses and fiscal pressure mounts, it becomes increasingly important to understand whether policy support is effective at curbing pandemic shocks, and whether specific policy instruments should be preferred.

Does the unequal distribution of pain, opportunity, and support matter for growth and welfare?

Unequal firm performance may not hurt short-term growth. Preliminary evidence mostly from Eastern Europe suggests that COVID-19 has led to the exit of less productive firms, which can free resources to help productive firms grow (Muzi et al. 2021). In contrast, larger firms have avoided big falls to sales and labor productivity and also disproportionately invested in more sophisticated technology that may lead to future productivity gains. This reallocation of activity toward larger and more productive firms may mean higher short-term productivity than would otherwise be the case.

Understanding firm performance matters because it impacts workers and may lead to increased inequality. How productivity is affected by within-firm adjustments, within-sector changes, or between sector reallocation matters for growth. Inequality in firm performance matters for workers since moving between firms, occupations, and locations is difficult. Studies suggest that the bulk of the dispersion in workers' wages is explained by differences between the best and the worst firms (Berlingieri, Blanchenay, and Criscuolo 2017; Song et al. 2019). Moreover, the destinies of the poor are often tied explicitly to the performance of micro and small firms which tend to be family run businesses. This in turn can affect their ability to adopt and intensify their use of more productive technologies with implications for future growth. The growth of larger firms may also increase returns to capital owners and reduce labor's share of revenue, since these firms need fewer workers than capital (Ganapati 2021).

Increased inequality today can hurt growth tomorrow. Creative destruction through firm entry, growth, and exit is vital to a dynamic economy—start-ups are the engine of job creation and play a key role in diffusing innovation. However, more resilient sales in incumbent big business implies diminished market shares for smaller and younger firms—which may make it harder for new firms to enter and attract the resources to grow. Larger firms already had better access to financial resources and were also better able to leverage government COVID-19 support. Increased wage inequalities can also mean slower growth by impeding human capital accumulation particularly of poorer households, as discussed in the next section.

How can policy help productive reallocation?

Governments face a choice of whether to support firms or workers. The performance of firms matters because of their impact on workers—and these workers are typically better reached through social protection. However, where firms have irreplaceable intangible assets that are useful for the recovery, such as firm-to-firm and firm-to-worker relationships, preventing firm exit can help the recovery (de Nicola et al. 2021). Micro, small, or less productive firms are unlikely to invest in these assets. However, trying to protect the status quo runs the risk that support may inadvertently keep zombie and less productive firms afloat, slowing the flow of employment and capital to more productive uses. Identifying the firms that do is difficult, and the longer the pandemic goes on, the greater the costs of untargeted support that keeps resources trapped in inefficient firms.

Getting policy support is weakly associated with improvements in net job changes: policy support appears to curb job destruction, but it doesn't help job creation. Job creation in EAP does not appear sensitive to policy support, as weak job creation is associated mostly with a pessimistic outlook on future growth. Pandemic-related public support does not appear sufficient enough to promote job creation. Conversely, firms that received policy support destroyed fewer jobs. The ability to defer payment, in particular, is associated with significant reductions in job destruction. This presents a challenge, as the EAP region suffered disproportionate employment losses mainly due to limited job creation, compared to other regions.

Trade openness and financial development help to mitigate job destruction. Micro evidence indicates that firms more integrated globally have been more resilient during the pandemic (Borino et al. 2021; Espitia et al. 2021). Job destruction is less severe in economies that are more open to trade and more financially developed. While EAP is relatively open in terms of goods trade, liberalizing services and reducing barriers to competition are largely untapped avenues to promote more efficient resource allocation. Policy changes are already happening in EAP, e.g., the recent financial sector reforms in Indonesia and the Philippines detailed in box I.13. But further progress is warranted. Advancing the agenda on the insolvency and bankruptcy frameworks, which are reviewed in box I.12, could contribute to a productivity-enhancing reallocation process and improve the ability of banks to lend. As documented in box I.6, trade restrictions in Indonesia harm export performance—distortionary nontariff-measures (NTMs) prevent export-led growth and diversification. Mitigating the use of these trade barriers could yield a more dynamic and prosperous economy. Improving economic dynamism also involves fostering competition domestically. The rise of digital businesses raises new challenges for competition and competition policy, as discussed in box II.B2.

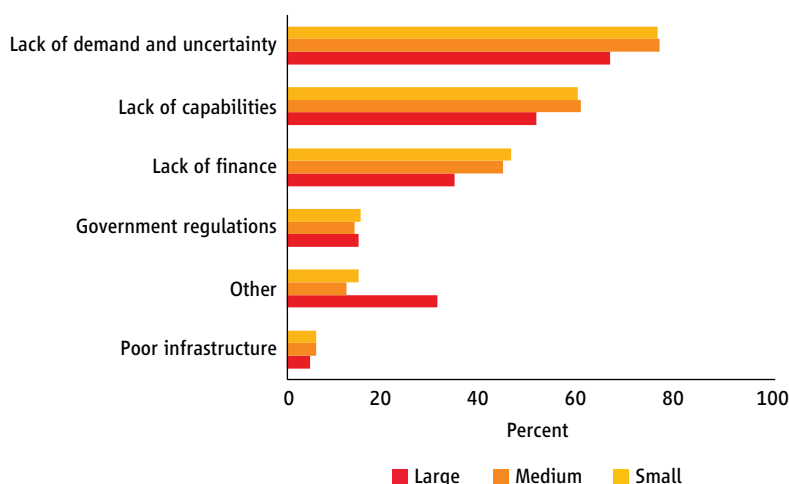
Broader/horizontal policy reforms that strengthen the business environment may be more effective at creating jobs. Although the support of existing productive firms today is important, the recovery also depends on new innovative firms—and the entry and growth of start-ups is particularly sensitive to the business environment (Calvino, Criscuolo, and Menon 2016). The poorer performance by the service sector may reflect inefficiencies and weaknesses of the sector that

predates the pandemic. The reform of investment policy, as implemented by Indonesia and imminent in the Philippines, can boost performance by enhancing competition and facilitating the diffusion of technology (box II.B3). Stronger competition policies may be especially important to address concerns about the emergence of dominant platform firms in sectors from distribution to transport (box II.B2).

Policies need to support broader technology diffusion and ensure that more firms can leverage the COVID-19 digital dividend. Support could be directed toward incentivizing new productive activities—for example, investment in technology, skills or other intangibles—which are particularly constrained during recessions (Aghion et al. 2010). First, demand and limited information are often reported as some of the biggest barriers to adoption with firms often overconfident of their technological sophistication relative to their peers (figure II.B.10). Training firms with the skills to embed technology in their business and policies to disseminate information is likely to be important, especially for smaller firms. Second, openness and competition policies are important since stronger market competition increases the incentives for firms to exploit technologies (Iacovone, Lopez, and Schiffbauer 2016; Nicoletti, von Rueden, and Andrews 2020). Finally, the digital infrastructure for basic technologies is often broadly available, such as the use of e-commerce platforms using basic mobile broadband. Rather the infrastructure challenge is in terms of access to modern data infrastructure, such as high-speed broadband, cloud data centers, and internet exchange points, that are needed for more sophisticated technologies and data-intensive business models that are likely to be increasingly relevant in the future.

Technology is not exogenous, but the direction of change can be influenced by policy. Cloud computing services can help small and start-up firms grow by avoiding some of the large fixed costs of IT capital. However, many countries have several tax breaks for capital investment—including accelerated depreciation, corporate tax rebates, or import duty exemptions. Policies that incentivize capital investments hold back diffusion of cloud services—especially for SMEs that have the most to gain from cloud (see box II.B1). Capital incentives can also distort robot adoption—away from using labor and toward automation—and lead to more labor-saving technological change (Acemoglu, Lelarge, and Restrepo 2020). Technology is neither a blessing nor a curse, it is up to us to design policies that lead to a favorable labor-technology relationship box II.B4).

Figure II.B.10. Demand and firm capabilities are among the biggest barriers to technology adoption



Source: Cirera et al. 2021b.
 Note: The figure is based on data from Vietnam. Authors' subsequent analysis shows that results hold for other countries. Each line represents the average across firms for each business function.

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Part II.C. Households and inequality

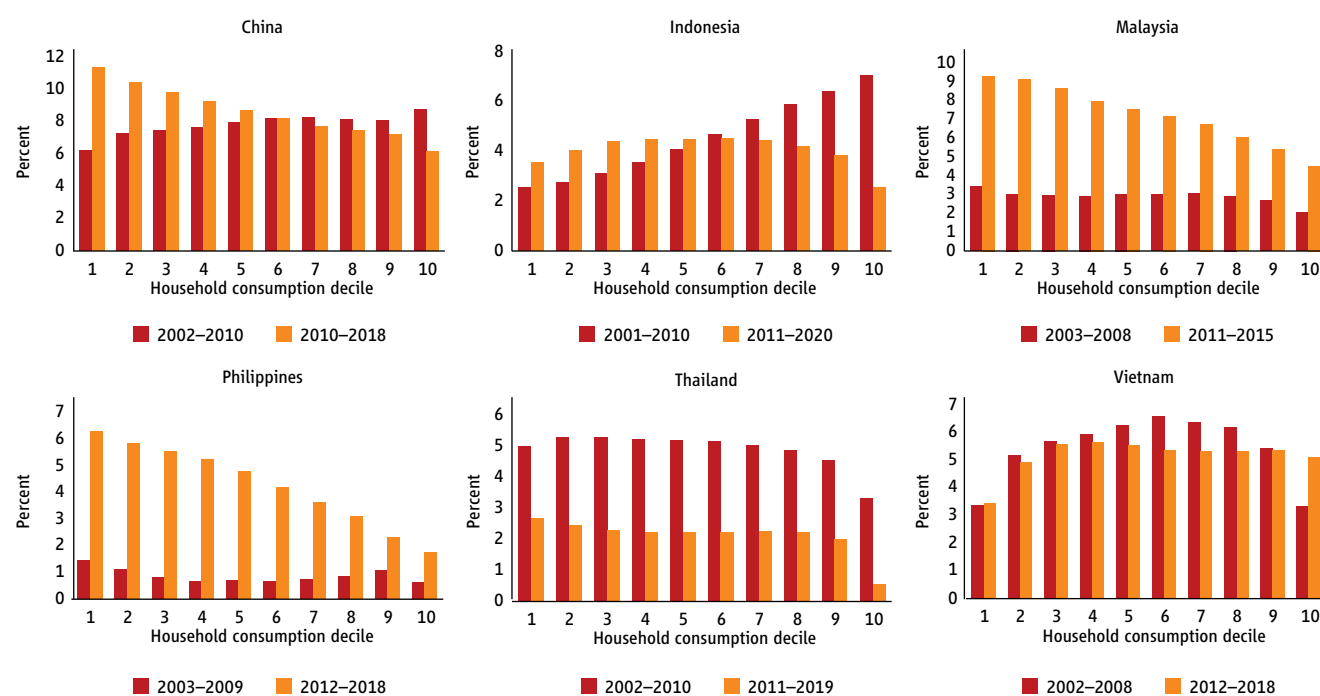
This section will begin by examining how the COVID-19 crisis has affected existing patterns of inequality and assess how far changes are likely to be durable. It will then examine the scope for progressive intervention through social protection and educational reform.

Evolution of Household Inequality

Consistent with the aggregate data on inequality presented earlier, a detailed analysis of household survey data, by decile, indicates that the pattern of household consumption growth changed substantially between the 2000s and the 2010s. Specifically, data from China, Indonesia, and Vietnam highlight growing inequality in the first decade of 2000, as consumption growth was lowest among those in the bottom deciles and highest in the top or middle deciles (figure II.C.1, red bars). Perhaps even more striking is the pattern of declining consumption inequality in the 2010s. During the past decade, prior to the COVID-19 pandemic, consumption growth was highest among households in the lowest deciles in China, Malaysia, the Philippines, and Thailand. Moreover, in Indonesia where consumption growth was highest in the middle deciles, consumption growth in the lowest two deciles was still higher than those in the top decile.

Figure II.C.1. The pattern of average annual household consumption/income growth rate, by decile, changed substantially in East Asia between the 2000s and 2010s

Growth in household per capita consumption in the 2000s and the 2010s, by decile, for selected East Asian countries



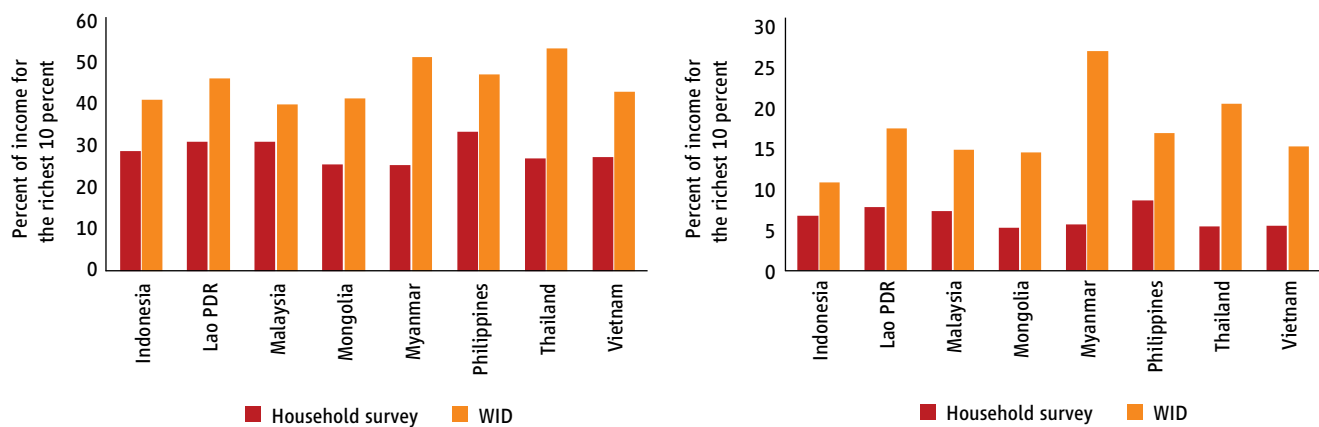
Source: World Bank staff calculations.
 Note: Figures show compounded annualized growth rate by decile.

It is important to highlight that an analysis of household survey data may result in the underestimation of inequality due to underreporting of the consumption/incomes of countries' wealthiest inhabitants. Both levels and trends in inequality will be affected if rich households are not included in the household consumption and income surveys used to estimate the poverty and Gini levels. Richer households may be both more likely to underreport consumption or income, or refuse to respond to the survey.¹¹ Both of these sources of bias (under-response and nonresponse) mean that inequality could be underestimated.

A comparison of national household surveys with data from the World Inequality Database (WID) suggests that a significant share of top income households is not captured in survey data. The WID has analyzed top income shares for countries around the world.¹² They augment household surveys with data from national accounts, tax records, and other data to construct these estimates. Comparing the income shares of the richest 10 percent and richest 1 percent between the WID and household surveys shows a significant gap in most EAP countries (figure II.C.2). On average, only 64 percent of the WID top 10 percent income share is found in surveys, and only 49 percent of the top 1 percent income share. That is, one-third of the income of the richest 10 percent may be missing from the standard household surveys, and one-half of the income of the richest 1 percent.

Figure II.C.2. A significant share of the incomes of top incomes appears to be missing from standard household surveys

Comparison of survey and WID estimates of incomes of the top 10 percent and 1 percent of country populations in selected EAP countries



Source: World Bank staff calculations, based on WID and national household surveys.

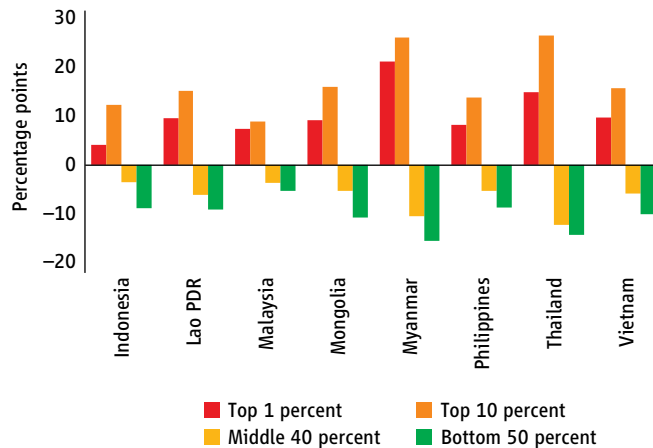
If the income share of the richest households is being underestimated in surveys, then the shares of the rest of the population must be overestimated, resulting in underestimates of inequality. Figure II.C.3 shows how the income shares for the top 1 percent, top 10 percent, middle 40 percent, and bottom 50 percent change when they are calculated using the WID data instead of the survey data. The gains to the top 10 percent are high everywhere, that is greater than 10 percentage points except for in Malaysia (9 points) and exceeding 25 points in Thailand and Myanmar. The equivalent loss in income shares is spread out over the rest of the population but generally concentrated in the poorest one-half of the distribution. The consequence of rich household income being overestimated and the rest of the population's income being underestimated is that standard inequality measures are also being underestimated.

¹¹ See, for example, Higgins, Lustig, and Vigorito 2018 and Ravallion 2021.

¹² <https://wid.world/>.

Figure II.C.3. Higher income shares among the top 1 and 10 percent imply lower shares among the rest of the population and, thus, higher inequality

Change in income shares of the top 1 and 10 percent, the middle 40 percent, and the bottom 50 percent using WID data rather than household survey data



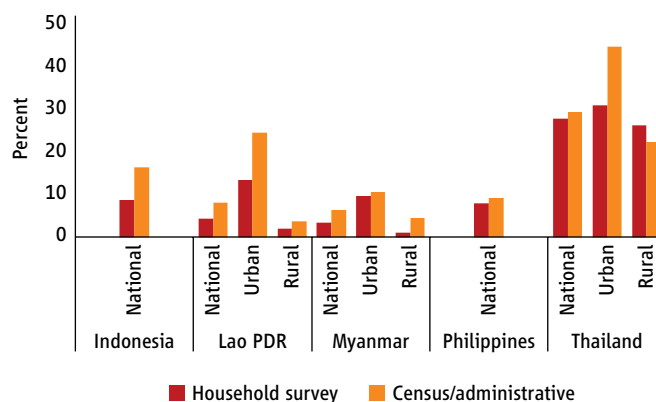
Source: World Bank staff calculations, based on WID and national household surveys.

Fully capturing top incomes on estimates of inequality could significantly raise measured inequality in EAP countries. Initial work, which used central bank data on household credit (such as for mortgages and vehicles loans, which depend on retail bank assessments of household income and the ability to meet debt servicing obligations), suggests that the consumption Gini in Indonesia would be five points higher if missing top incomes were incorporated (World Bank 2018a).

Other data on car ownership reinforce the idea that many richer households are missing from the survey data. Comparing the number of households that report owning cars (generally richer households in the developing EAP region) in national household surveys and countries’ population censuses (which would be expected to better capture wealthier households), censuses generally find more cars and, by implication, more wealthy households (figure II.C.4).¹³ This gap is particularly large in urban areas where the problem of surveys missing top income households is likely the largest.

Figure II.C.4. Census and administrative data indicate higher car ownership than surveys, further suggesting that surveys miss higher income households in EAP

Households owning cars: household surveys vs. census/administrative data



Source: World Bank staff calculations, based on WID, household surveys, and Indonesian state police data.

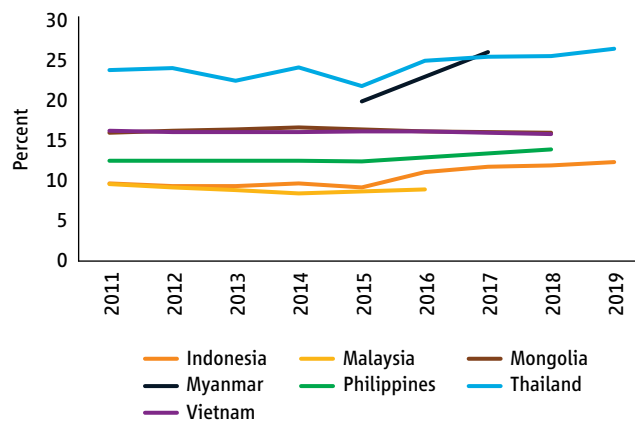
Note: Urban-rural indicators are not available in the public IPUMS Philippines Census while the Indonesian 2000 Population Census does not include cars; administrative data are taken from the registered number of cars with provincial police, adjusted for assumptions about commercial passenger cards and households that own multiple cars.

¹³ Car ownership is not available in the Indonesian Census so registered passenger cars and selected assumptions (per note) were used.

Moreover, in the years between recovery from the global financial crisis and the start of the COVID-19 pandemic, the gap between surveys and WID data has been widening in several EAP countries, notably Thailand (+3 percentage points), Indonesia (+3 points), and Myanmar (+6 points) (figure II.C.5). If the share of missing top income households in surveys is increasing over time, then not only might the standard measures like the Gini coefficient underestimate actual consumption/income inequality, but estimates of inequality trends over time could also be distorted.

Figure II.C.5. The gap in high-income households between household surveys and the WID has been widening in recent years

Gap in the top 10 percent income share in household surveys compared to WID, 2011–2019

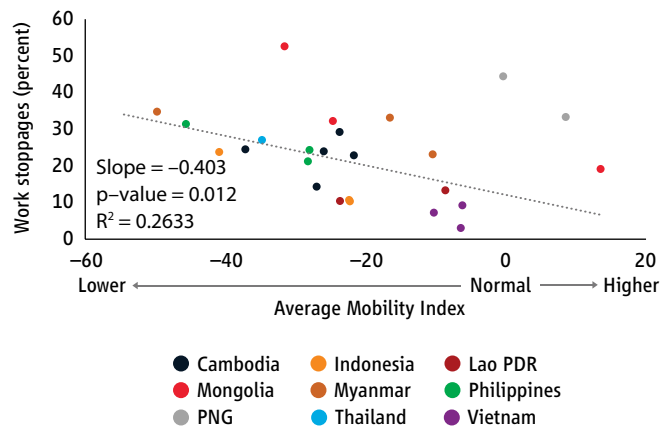


Source: World Bank staff calculations, based on WID and national household surveys.

How is COVID-19 affecting inequality?

COVID-19 has had widespread impacts on employment in East Asia and Pacific countries, particularly during periods of stringent mobility restrictions. High-frequency phone survey data from across the region indicate that periods of tighter mobility restrictions, either due to sudden or continuing lockdown measures, have been associated with higher levels of work stoppages (figure II.C.6). This contrasts to patterns seen in high-income countries where low-income workers were significantly more likely to lose their jobs, due in part to the greater ability of high-income workers to work from home.¹⁴ When mobility restrictions were high, workers in East Asia and Pacific experienced work stoppages across a wide range of sectors, and the impacts were distributed relatively evenly across the welfare distribution. This pattern may partly reflect the small share of workers in the region who are able to work remotely relative to those in retail, tourism, manufacturing, or agriculture, where physical presence has traditionally been important. A labor force survey data from Indonesia (and the Philippines) similarly indicate that mobility restrictions were associated with widespread employment effects during the early months of the pandemic (box II.C1).

¹⁴ See, for example: Chetty et al. 2020; Gould and Kandra 2021; Gould and Wilson 2020.

Figure II.C.6. During the pandemic, work stoppages have been widespread during times of tight mobility restrictions

Source: Kim et al. forthcoming, based on High-Frequency Phone Survey (HFPS) data for Cambodia, Indonesia, Lao PDR, Mongolia, Myanmar, Papua New Guinea (PNG), the Philippines, and Thailand, and Google Mobility Reports. Indicators of HFPS can be found at <https://www.worldbank.org/en/data/interactive/2020/11/11/covid-19-high-frequency-monitoring-dashboard>.

Note: Each point represents a country round. The mobility index is an average of the percentage change in mobility to retail and recreation locations, transit stations, parks, and workplaces. The change is calculated relative to a pre-pandemic baseline. The regression line excludes outliers, namely PNG.

Box II.C1. The effects of COVID-19–related mobility restrictions on employment in Indonesia and the Philippines

Recently available labor force surveys from Indonesia and the Philippines enable new analysis of the relationship between mobility restrictions and labor market outcomes. The analysis, summarized here, compares the August 2019 and 2020 rounds of Indonesia’s national labor force survey and the October 2019 and 2020 rounds of Philippines’ national labor force survey, taking advantage of variation in mobility and employment in Indonesian provinces and Philippine regions, respectively. By examining changes from 2019 to 2020, the analysis enables a deeper understanding of how mobility restrictions in each country affected employment in the first five to seven months of the crisis. A key message of the analysis is that the mobility restrictions had widespread labor market effects in the early months of the pandemic.

Results are presented here for the entire samples (individuals, ages 15–64), as well as for selected pairs of population subgroups: males and females; urban and rural residents; skilled (with educational attainment higher than middle school) and unskilled workers (educational attainment up to middle school); and young (15–34 years) and old (35–64 years) workers. Figure II.C.B1.1 presents point estimates as well as 90 and 95 percent confidence intervals.

The data indicate that decreased mobility led to significant declines in *labor force participation* in Indonesia, although not in the Philippines (figure II.C.B1.1). In Indonesia, the drop in labor force participation is estimated to be 1 percentage point for an average difference in mobility changes between provinces. For male workers, urbanites, the skilled, and older workers the estimated effect is similar and statistically significant at the 10 percent level.

The effects of decreased mobility resulted in significant increases in *unemployment* in both Indonesia and the Philippines, although the estimated magnitudes differ across the countries (figure II.C.B1.1). Mobility restrictions

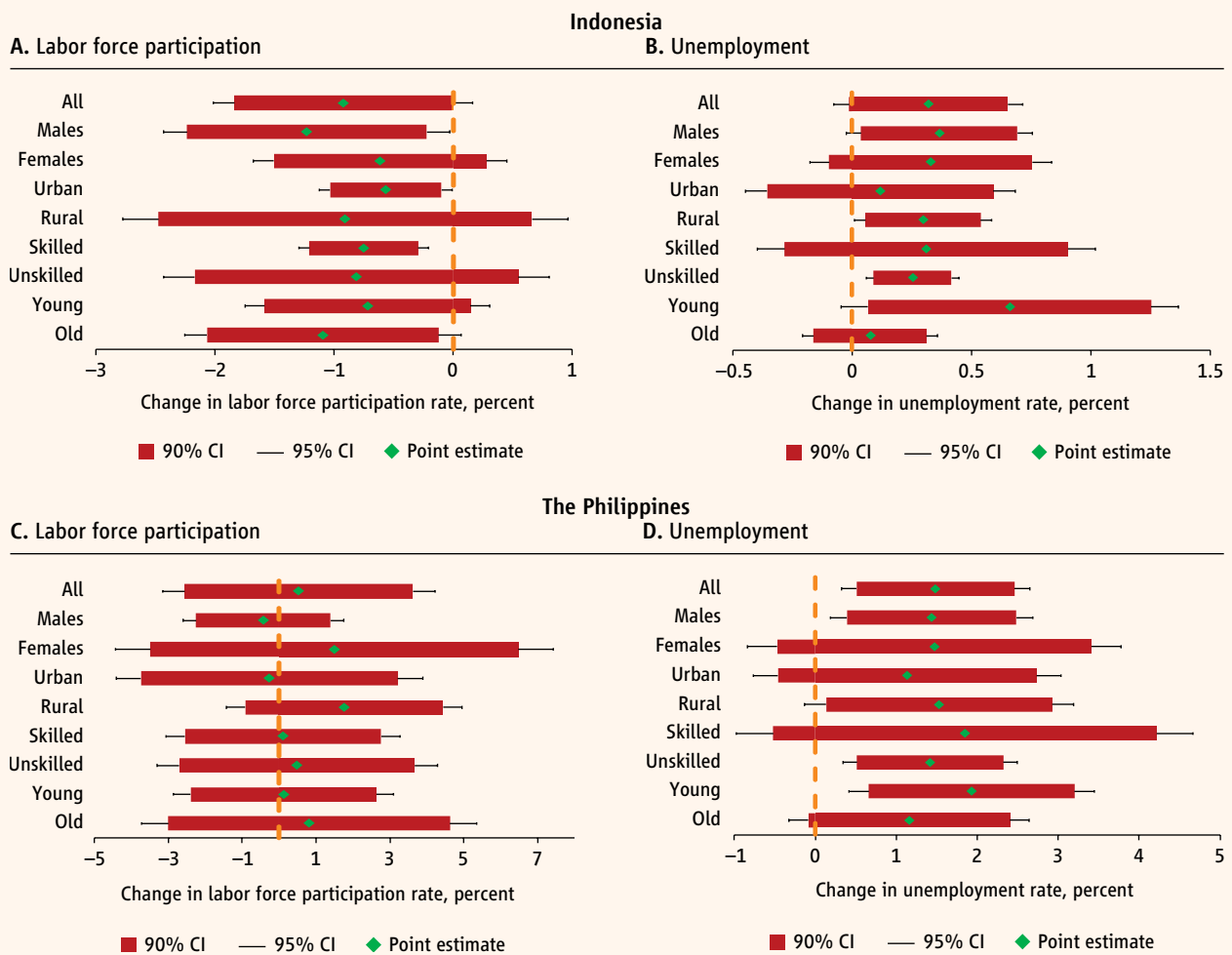
(continued)

(Box II.C1. continued)

were associated with about a 0.3 percent increase in the unemployment rate in Indonesia, but roughly a 1.5 percent increase in the Philippines. While the estimated effects on unemployment were widespread in both countries, the effects appear particularly pronounced among unskilled and younger workers. Indeed, in both Indonesia and the Philippines, the largest estimated effects on unemployment rates were found among younger workers.

While not shown here, the analysis for Indonesia indicates that mobility restrictions also had widespread negative effects on people's earnings in the early months of the pandemic.

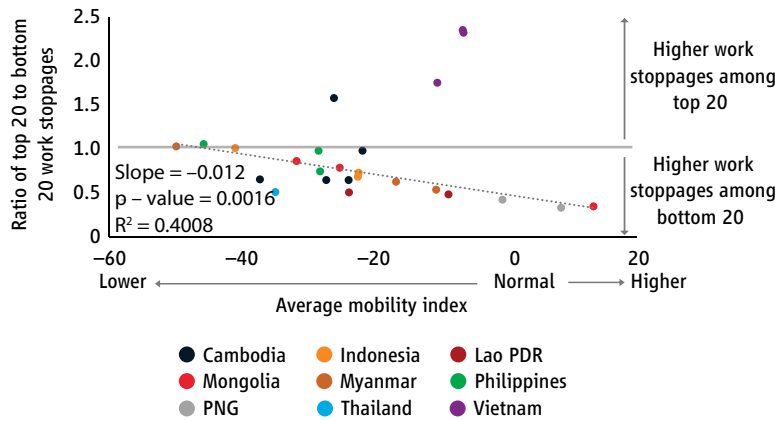
Figure BII.C1.1. The effects of reduced mobility on labor force participation and unemployment in Indonesia and the Philippines



Source: Labor force survey data from Indonesia (August 2019, August 2020) and the Philippines (October 2019, October 2020).

Nevertheless, as mobility restrictions were relaxed, poorer workers in the region were less likely than wealthier workers to return to work, exacerbating labor market inequalities. High-frequency data indicate that when restrictions were relaxed and businesses reopened, poorer workers—often employed in less secure, informal employment—found it harder to resume work and thus were more likely to be out of work compared to their wealthier counterparts (figure II.C.7). Differences in sectors of employment across welfare groups do not explain these findings, suggesting that higher rates of job security and formality among higher-income, higher-skilled workers may have made it easier for them to resume work once restrictions loosened.

Figure II.C.7. Poorer workers have found it harder to resume work when mobility restrictions loosened



Source: Kim et al. forthcoming, based on HFPS data for Cambodia, Indonesia, Lao PDR, Mongolia, Myanmar, PNG, the Philippines, and Thailand, and Google Mobility Reports. Indicators of HFPS can be found at <https://www.worldbank.org/en/data/interactive/2020/11/11/covid-19-high-frequency-monitoring-dashboard>.
 Note: Each point represents a country round. The mobility index is an average of the percentage change in mobility to retail and recreation locations, transit stations, parks, and workplaces. The change is calculated relative to a pre-pandemic baseline. The regression line excludes outliers, namely Vietnam, where work stoppages were higher among wealthier workers, driven by higher participation by those in the poorer quintiles in agriculture, which was relatively less affected by the pandemic.

The COVID-19 shock has also led to income shocks among households across the welfare distribution—although those in the wealthiest 20 percent have been relatively less exposed. High-frequency data from across the region show that more than 50 percent of households experienced a loss in wage or business income since the previous survey round—with the exception of those in the top 20 percent of the welfare distribution (figure II.C.8). Households in the top quintile were 10 to 13 percent less likely than those in poorer quintiles to experience declines in labor income as a result of the pandemic. The difference between the poorest and the wealthiest households is particularly striking in urban areas, reflecting in part the resilience of agriculture in many countries. Moreover, when disaggregated by income source, the data suggest that shocks to self-employment income have been spread broadly across welfare groups, indicating that much of the increased inequality in labor income losses is attributable to shocks to wage income.

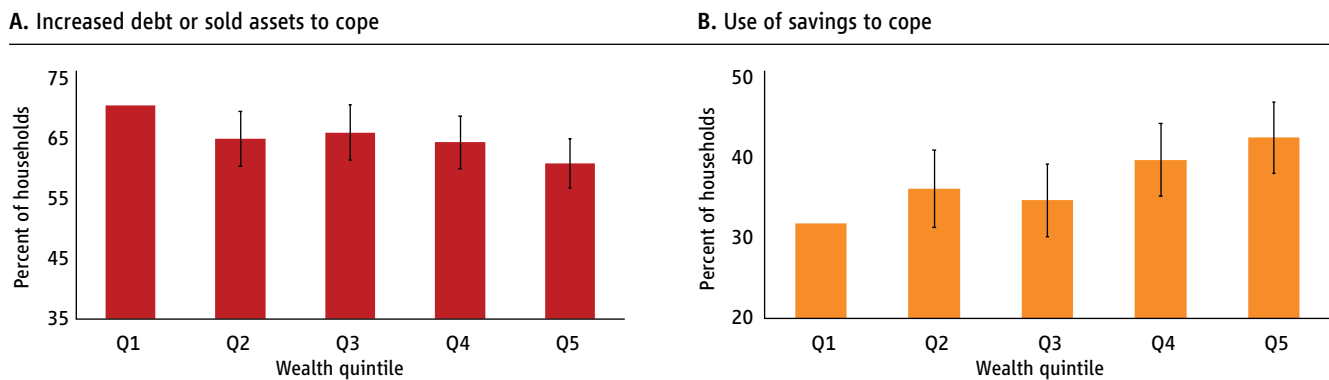
Figure II.C.8. Households in the bottom quintile were significantly more likely than those in the top quintile to experience a labor income decline



Source: World Bank staff calculations based on HFPS data for Cambodia, Indonesia, Lao PDR, Mongolia, Myanmar, PNG, the Philippines, the Solomon Islands, Thailand, and Vietnam.
 Note: Income losses are relative to the previous round. Conditional means controlling for country fixed effects are shown. Ninety-five percent confidence intervals for the difference from Q1 are shown (rather than from zero).

Poor and vulnerable households have had to rely more frequently on harmful coping mechanisms. For example, households in poorer quintiles are more likely to sell scarce assets or go into debt to cope with the COVID-19 shock (figure II.C.9). Across countries, households in the bottom 20 percent of the distribution were 16 percent more likely, on average, than those in the top 20 percent to resort to such measures. In contrast, those in the wealthiest quintile were, on average, 34 percent more likely than the poorest quintile to rely on their savings to cope with the economic impacts of the pandemic.

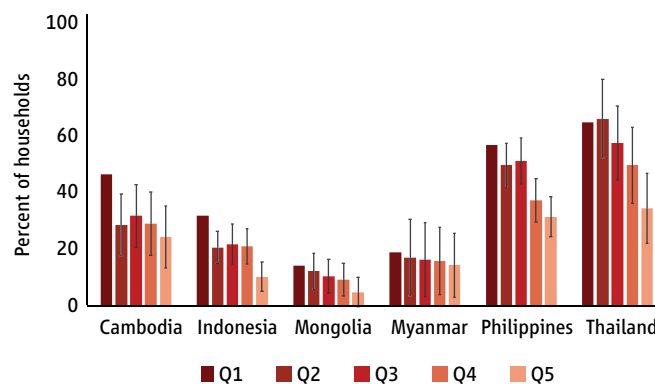
Figure II.C.9. Poorer households are more likely to rely on coping mechanisms that increase their debt or involve the sale of scarce assets; wealthier households are more able to rely on savings



Source: Kim et al. forthcoming, based on HFPS for Cambodia, Indonesia, Lao PDR, Mongolia, Myanmar, PNG, the Philippines, the Solomon Islands, and Vietnam. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2020/11/11/covid-19-high-frequency-monitoring-dashboard>.
 Note: Coping mechanisms that increased indebtedness or involved the sale of assets include sold assets, sold livestock, credited purchases, delayed payments, or borrowed from friends, family, moneylenders, or other sources. Conditional means controlling for country fixed effects are shown. Ninety-five percent confidence intervals for the difference from Q1 are shown (rather than from zero).

Poorer households are significantly more likely to be food insecure. Rising food prices in some countries and reliance on adverse coping mechanisms that involve reduced food consumption have also contributed to rising food insecurity, particularly among the poorest households. High-frequency survey data from several countries indicates that, among households that experienced a decline in labor income during the pandemic, those in the poorest quintile were 1.8 to 3.1 times more likely than those in the wealthiest quintile to be food insecure (figure II.C.10).¹⁵ While differences in food insecurity across the welfare distribution are not entirely the result of the pandemic, within quintile comparisons of households that have and have not experienced an income shock suggest that pandemic-related shocks have put households at greater risk of food insecurity. While the effects are most serious among the poor, this is also found to be true among those in the top 20 percent of the distribution.

Figure II.C.10. Poorer households are significantly more likely to be food insecure



Source: Kim et al. forthcoming, based on HFPS data for Cambodia, Indonesia, Mongolia, Myanmar, PNG, the Philippines, and the Solomon Islands. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2020/11/11/covid-19-high-frequency-monitoring-dashboard>.

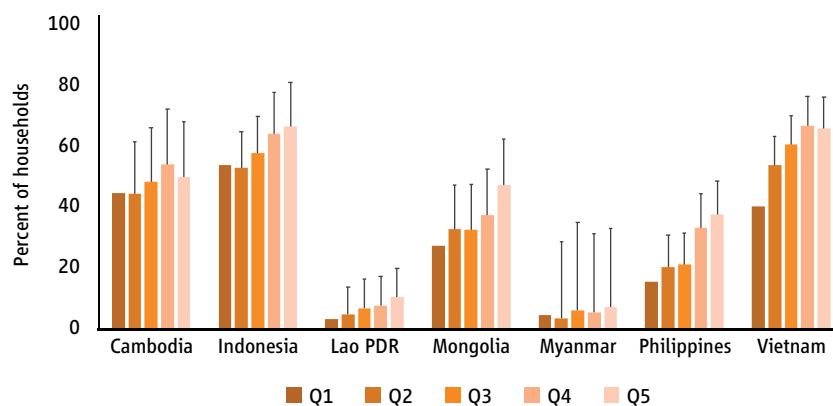
Note: Figure shows food insecurity among those with labor income losses. Food insecurity here is defined as the share of households that reported that they had run out of food, went hungry, or were hungry but did not eat due to a lack of money or resources in the past 30 days. Conditional means controlling for country fixed effects are shown. Ninety-five percent confidence intervals for the difference from Q1 are shown (rather than from zero).

¹⁵ Myanmar is a noteworthy exception. Findings for Myanmar may in part reflect the timing of the high-frequency surveys, which were in 2020. Indeed, during the early rounds of the surveys, Myanmar still had low infection rates. The fact that many poor households work in agriculture, along with government cash and food assistance programs, may also have had protective effects.

Although learning disruptions have been widespread during the pandemic, children in poorer households have been less likely to engage in interactive educational activities, creating significant challenges to continued learning. High-frequency phone survey data show that poorer households are at a greater risk of being left behind: across almost all countries in the sample, poorer quintiles are less likely to engage in face-to-face learning or utilize online, mobile, or video platforms that allow more interactive learning (figure II.C.11).¹⁶ Most interactive modes of learning during the pandemic require access to technology, particularly the internet or a computer or mobile phone, to which not all children at the bottom of the welfare distribution have access. To the extent that lower engagement in interactive learning activities results in higher learning losses, children in poorer households face greater challenges with respect to human capital accumulation which will, in turn, affect their long-term economic prospects.

Figure II.C.11. Children in poorer households have been less likely than those in wealthier households to engage in interactive educational activities

Interactive distance learning by country and quintile among households with children attending school pre-pandemic



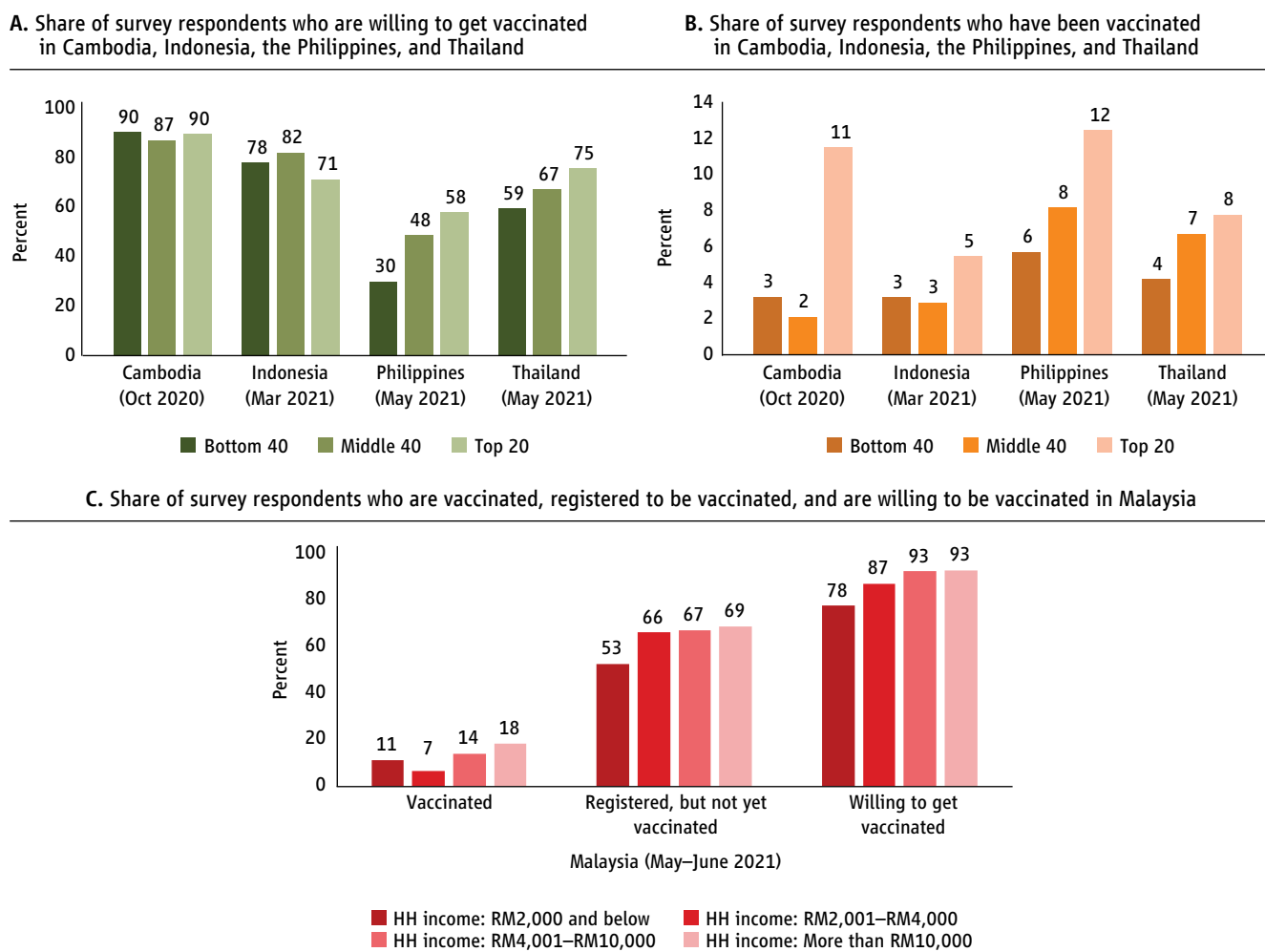
Source: Kim et al. forthcoming, based on HFPS data. Indicators can be found at <https://www.worldbank.org/en/data/interactive/2020/11/11/covid-19-high-frequency-monitoring-dashboard>.

Note: Modes of interactive distance learning include mobile apps, online or in-person meetings/sessions with a teacher or tutor, or other online learning platforms. Averages have been taken across rounds within each country. Education data are only available for Round 4 in Myanmar and Round 2 and 4 in Indonesia.

Although vaccine rollouts are still in relatively early stages in much of the region, high-frequency survey data suggest that the poor may already be falling behind in vaccinations, again with potential longer-term consequences. The data suggest that vaccination acceptance rates are generally high in the region; the Philippines is a notable exception, where roughly 42 percent of all respondents and 30 percent of those in the bottom 40 percent of the population have expressed readiness to be vaccinated (figure II.C.12, panels a and c).¹⁷ In Malaysia and Thailand poorer respondents also express a lower willingness to get vaccinated than their wealthier counterparts. Moreover, early data from Cambodia, Indonesia, Malaysia, the Philippines, and Thailand suggest that poorer households are already falling behind in receiving the vaccine (figure II.C.12, panels b and c). This is consistent with patterns seen in high-income economies where vaccine campaigns are more advanced, and where vaccination rates are lower among underserved and remote rural communities. Such inequalities in access to vaccines are likely to compound other social and economic inequalities over time, jeopardizing the health of poorer individuals and their ability to return to school or work, affecting both human capital development and economic opportunity.

¹⁶ The analysis in figure II.C.11 is restricted to households with children attending school before the pandemic, in early 2020, which represents 45 percent of the sample in each country, on average. Small sample sizes make the detection of statistical differences across quintiles challenging. Nevertheless, the data show that in most countries the wealthiest households are significantly more likely than the poorest households to have children engaged in interactive learning.

¹⁷ Due to differences in survey design, the welfare categories in the Malaysia survey are not comparable to those in the Cambodia, Indonesia, the Philippines, or Thailand HFPS data sets.

Figure II.C.12. Poorer people are at risk of falling behind in getting vaccinated

Source: World Bank staff calculations, based on HFPS Cambodia, Indonesia, Malaysia, the Philippines, and Thailand.

Note: For Cambodia, those who do not know that the vaccine is available are assumed to be unvaccinated. For Malaysia, household income groups are self reported, and willingness to get vaccinated is the share of respondents who are already vaccinated, registered to get vaccinated, or are planning to register. HH = household.

Increases in inequality during the pandemic threaten to lead to greater inequality in the future. Income shocks among the poor are more likely to have adverse long-term consequences. Coping mechanisms, such as the distress sale of productive assets and increased debt, can hurt longer-term incomes. Food insecurity increases the risk of increased child malnutrition and stunting which, in turn, can impede children's cognitive development and learning, and ultimately, productivity and earning as adults. Limited opportunities to engage in online or other forms of interactive learning raises the risk of long-term losses in human capital and, with it, economic opportunity.

The distress sale of assets and increased debt can hurt productivity and incomes. Given the prevalence of small household-run enterprises in the region, the depletion of scarce family assets and rising debt levels can prevent households from making new investments or resuscitating their enterprises. Evidence from a number of low- and middle-income settings shows that in the absence of insurance or adequate social protection, harmful coping behaviors by poor households can make it difficult, if not impossible, for households to escape poverty in the aftermath of the shock.

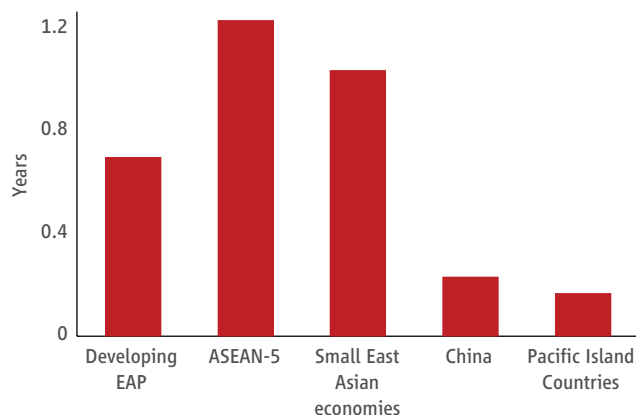
While studies on the long-term impacts of adverse coping behaviors are scarce among EAP countries, evidence from several countries outside the region, including Ethiopia, Kenya, and Honduras, suggest that negative shocks may indeed generate “poverty traps” if household asset levels fall below a certain threshold (Carter et al. 2007; Barrett, Carter, and Chavas 2016).

Child malnutrition and stunting can have lifelong economic consequences. The effects on economic prospects can be seen in studies on the effects of stunting carried out in the region. In China, for example, stunting as a child is associated with lower hourly wages and monthly earnings; in Indonesia, stunting is associated with lower adult earnings and lower asset holdings among women; and in the Philippines, stunting is associated with a lower likelihood of formal employment.¹⁸ Moreover, a review of the global evidence identifies a significant wage premium associated with greater adult height; across a set of preferred studies that attempt to address unobserved confounding variables and measurement errors, the authors find that a 1 centimeter increase in stature is associated with a 4 percent increase in wages for men and a 6 percent increase in wages for women (McGovern et al. 2017).

COVID-19–related school disruptions are resulting in substantial learning losses in many EAP countries, compounding long-standing learning challenges in the region. School closings and the subsequent movement to distance learning and/or hybrid learning models have had significant impacts on learning in many EAP countries. When including both learning losses accrued to date plus those anticipated as the pandemic continues, it is estimated that students stand to lose an average of about two-thirds of a year of learning-adjusted years of schooling (LAYS), with significant variations across the EAP subregions (figure II.C.13, panel A). Given relatively longer periods of school closures, students in the ASEAN-5 countries are estimated to lose the most—about 1.2 LAYS. Because school disruptions have been much less common in the Pacific Island Countries, the expected learning loss is estimated at less than 0.2 LAYS. Nevertheless, COVID-19–induced learning losses are compounding serious learning challenges that the region already faced pre-pandemic. A number of countries in the region were already performing poorly on international learning assessments, pre-COVID-19, whether on PISA exams (figure II.C.13, panel B) or on other assessment tests.

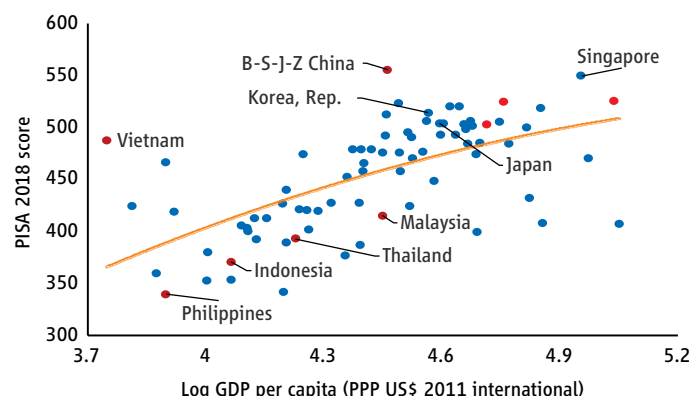
Figure II.C.13. COVID-19–related school disruptions are causing significant learning losses, compounding long-standing learning challenges in the region

A. Estimated losses in Learning Adjusted Years of Schooling (LAYS), by EAP subregion



Source: World Bank staff estimates.

B. Country PISA 2018 reading scores, by GDP per capita

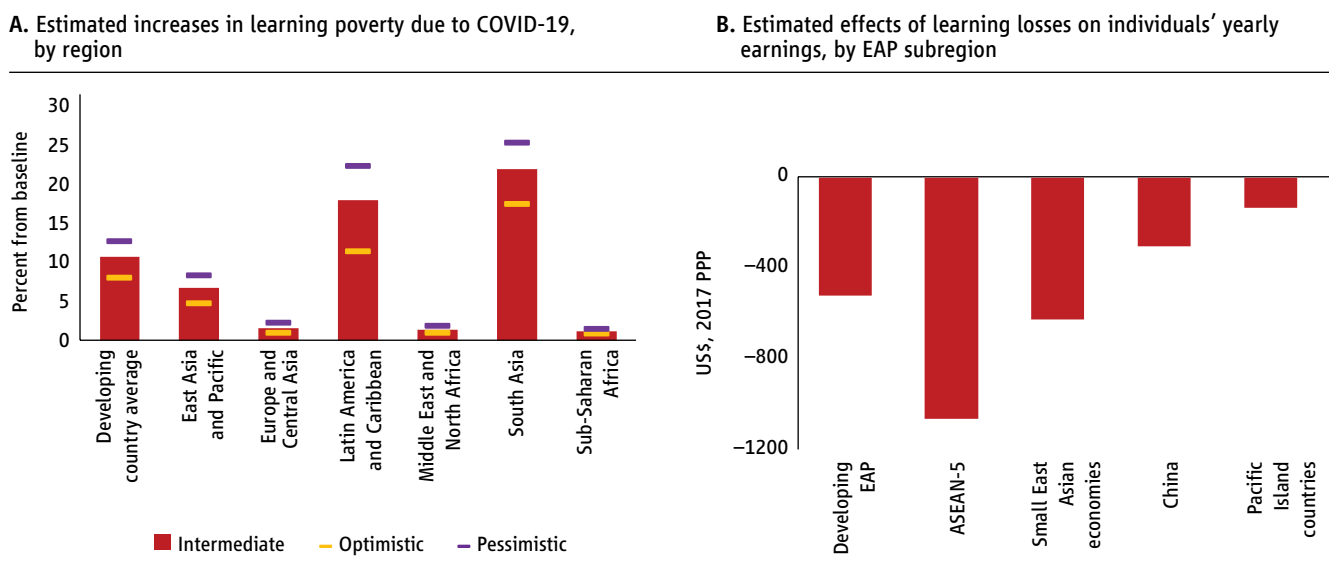


Source: Cirera et al. 2021.

¹⁸ See Gao and Smyth (2010) and Elu and Price (2013) on China, Maccini and Yang (2009), Rokx, Subandoro, and Gallagher (2018) on Indonesia, and Carba, Tan, and Adair (2009) on the Philippines.

COVID-19–related learning losses among the poor and vulnerable can lead to increased learning poverty, which hurts individuals’ earning capacity. Students from poor and vulnerable households were already experiencing poorer learning outcomes, pre-pandemic, and the COVID-19 crisis is expected to increase learning poverty—defined as the percentage of 10-year-olds who cannot read and understand a short age-appropriate text—in the region (figure II.C.14, panel A). These adverse effects of the pandemic on learning are expected to exact a significant toll on current students’ future earning capacity. Indeed, the average student in school today could face a reduction of about US\$524 (in 2017 PPP dollars) in yearly earnings compared to a counterfactual scenario in which there was no pandemic. This is equivalent to a reduction of 3.8 percent in expected earnings every year on average across the region (figure II.C.14, panel B). Reductions in yearly earnings are expected to be larger in the ASEAN-5 and small East Asian economies, estimated at 9.3 and 7.9 percent, respectively, again driven by relatively longer periods of school closures in these economies compared to those in China and the Pacific Islands. To the extent that learning losses are greater among poor and vulnerable students, they will also face a risk of greater than average reductions in future earnings.

Figure II.C.14. COVID-19–related schooling disruptions are causing significant learning losses, compounding long-standing learning challenges in the region



Source: World Bank staff calculations.

Whether inequality in East Asia and Pacific continues to rise in the coming years or whether it subsides will have important implications for poverty reduction and household welfare, especially if rising inequality is accompanied by slower growth. An inclusive recovery that favors those at the lower end of the distribution—as in the 2010s—would mean greater reductions in poverty and vulnerability and a stronger emergence of the middle class. A recovery that favors those at the higher end of the distribution—as in the 2000s, but without as strong a growth—would see only an expanding upper middle class with relatively weaker progress on poverty reduction.

The poverty and broader welfare effects of rising and declining inequality are simulated for four large EAP countries: Indonesia, the Philippines, Thailand, and Vietnam.¹⁹ Stylized progressive and regressive recovery scenarios are constructed by allowing each decile to enjoy either more than or less than the average country projected growth rates, applying the growth incidence curves below (figure II.C.15). In the progressive scenario, projected national growth benefits the first five deciles of households by more than average with the growth rate increasing as households

¹⁹ For Indonesia and Thailand, new household survey data from 2020 are used as the baseline for understanding the effects of the progressive and regressive scenarios. For the Philippines and Vietnam, 2018 survey data are “nowcasted” to 2020 using historical sectoral economic growth. The nowcasting is distributionally neutral; all households receive the same consumption growth so that the distributional analysis begins only at the baseline.

get poorer; the poorest decile, for example, gets 1.33 times the average growth rate. The richest five deciles get less than average growth, with the growth rate declining as households get richer. In the regressive scenario the pattern reverses, with richer households experiencing better-than-average growth and poorer households less than average growth.²⁰

Although the Gini coefficient, as a scalar measure, has its limitations (different distributions can have the same Gini coefficient), it is the most popular and widely known measure of inequality (with 0 representing perfect equality, i.e., all household consume/earn the same, and 100 perfect inequality where one household gets everything). The stylized scenarios, for example, would see the Gini coefficient decrease from 36.9 in 2020 in Indonesia to 36.0 by 2023 (in the progressive case) or increase to 37.9 (in the regressive case). Similar results can be seen for the other countries in table II.C.1.

Figure II.C.15. Stylized growth incidence curves under equality enhancing (progressive) and inequality increasing (regressive) scenarios

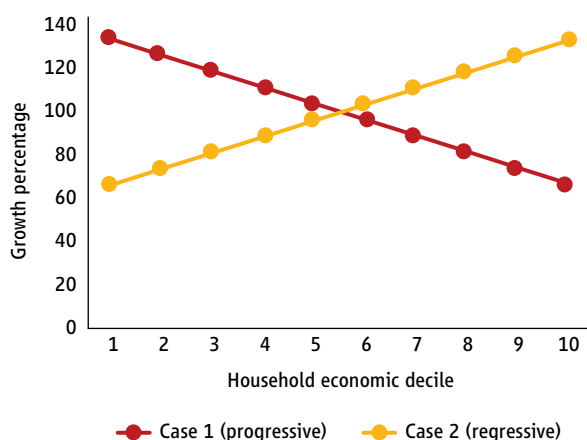


Table II.C.1. Projected 2023 Gini coefficient under progressive and regressive scenarios

	Indonesia		Philippines		Thailand		Vietnam	
	Prog.	Reg.	Prog.	Reg.	Prog.	Reg.	Prog.	Reg.
2020	36.9	36.9	42.3	42.3	35.0	35.0	35.7	35.7
2023	36.0	37.9	41.2	43.3	34.4	35.6	34.5	36.9
Change	-1.0	0.9	-1.1	1.0	-0.6	0.6	-1.2	1.2

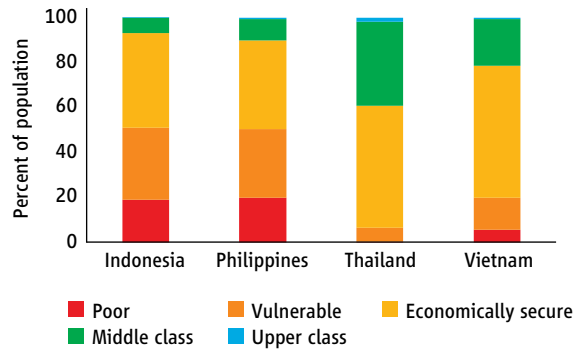
As COVID-19 began in 2020, the four countries had different levels of poverty, vulnerability, and middle-class populations (figure II.C.16). Indonesia and the Philippines looked similar, with a large economically secure class representing around 40 percent of the country, but with another 50 percent of the country being poor or vulnerable.²¹ Thailand had virtually eliminated poverty (using the lower-middle-class poverty line of purchasing power parity (PPP)

20 In all countries, projected GDP per capita growth is passed through to household consumption or income growth at a rate of 0.85; a pass-through of 0.75–0.85 is commonly seen in such simulations.

21 The regional class thresholds are based on World Bank, 2018a (see note to chart for specific class thresholds). These thresholds are estimated using panel data and represent the moderate poverty line (PPP \$3.20 for the poor) or level at which a household has less than a 10 percent chance of falling to the class below. The economically vulnerable are above the poverty line but have a greater than 10 percent chance of falling into poverty in the next period. The economically secure class are safe from poverty but not from vulnerability. The middle class have a low chance of being poor or vulnerable in the next period. The upper-class line is arbitrarily drawn at PPP \$50 per person per day.

\$3.20/day) and had very low levels of vulnerability; over 50 percent of the country is part of the economically secure class, and most of the rest are middle class or richer. Vietnam appears in between these two states, with 20 percent of the country still poor or vulnerable but with 65 percent of the country part of a large economically secure class. This is despite having the lowest GDP per capita of the four countries and reflects both a lower level of inequality and a lower cost of living.

Figure II.C.16. Distribution of country populations across economic class pre-COVID-19: Indonesia, Philippines, Thailand, and Vietnam

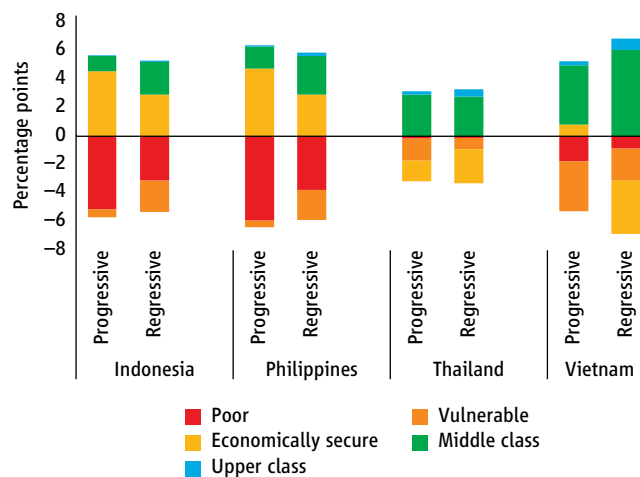


Source: World Bank staff calculations, using household survey data.

Note: Class thresholds follow World Bank, 2018a. Poor: less than PPP \$3.20; Vulnerable: between PPP \$3.20–5.50; Economically secure: between PPP \$5.50–15; Middle class between PPP \$15–50; Upper class: greater than PPP \$50.

The difference between a progressive and regressive recovery can be seen in just three years (figure II.C.17). By 2023, a regressive recovery in Indonesia and the Philippines would mean slower declines in total poverty and vulnerability (especially poverty) and a smaller expansion of the economically secure class. In Indonesia, poverty declines 2.0 percentage points more slowly, and the economically secure class only grows by 3.0 points compared to 4.6 points. In the Philippines, poverty declines 2.1 points more slowly, and the economically secure class grows only by 2.9 points compared to 4.8 points. In Thailand where poverty is nearly zero, eliminating the remaining vulnerability happens more slowly, falling to 5.2 percent instead of 4.5 percent. At the same time, the upper class grows more strongly from 2.1 percent to 2.6 percent instead of 2.3 percent. The lower degree of class mobility in Thailand reflects a country where 92 percent are already middle class or economically secure. In Vietnam, regressive growth would lead to significantly more mobility from the economically secure class to the middle class but at the cost of substantially lower reductions in poverty and vulnerability.

Figure II.C.17. Changes in economic classes under progressive and regressive scenarios, pre-COVID-19–2023

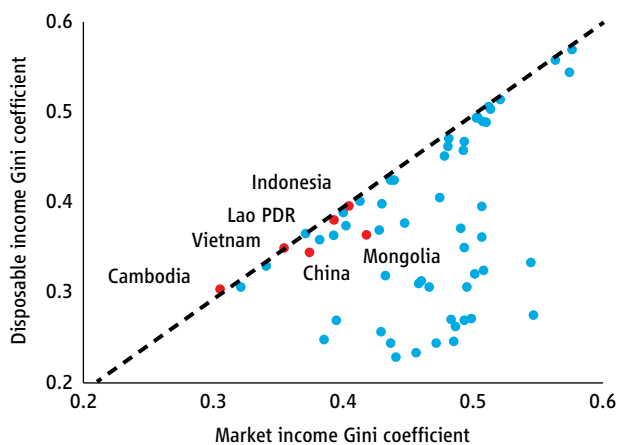


Source: World Bank staff calculations, using household survey data.

Fiscal Policy to Promote More Equitable and Inclusive Growth

Fiscal policy can play an important role in promoting more equitable and inclusive growth—although tax and expenditure policies have only had limited redistributive impacts in the region to date. This can be seen in figure II.C.18, which compares inequality measured by the Gini coefficient for market income (x-axis) with the Gini coefficient for disposable income, that is, after direct taxes and direct transfers (y-axis). The figure shows data from 60 countries, including seven from developing EAP. The farther below the 45-degree line a country lies in the figure, the more equality enhancing is the country's system of taxes and transfers. As can be seen in the figure, all of the developing East Asian countries are situated close to the 45-degree line; Mongolia with its universal child grant is the most redistributive. Although none of the systems of direct taxes and transfers (before indirect taxes such as value added tax [VAT] and tobacco excises and indirect subsidies such as for fuel or food) in developing East Asia worsens inequality, they have a relatively little effect on mitigating it. In contrast, the effects of direct taxes and transfers in high-income economies tend to be strongly equality enhancing. For example, at 0.395, Switzerland's Gini coefficient for market income is not that different from that of Lao PDR (0.393). After taxes and transfers, however, Switzerland's Gini coefficient for disposable income falls to 0.268, whereas that for Lao PDR barely changes (0.380).

Figure II.C.18. Direct taxes and transfers have limited redistributive impacts in developing East Asia



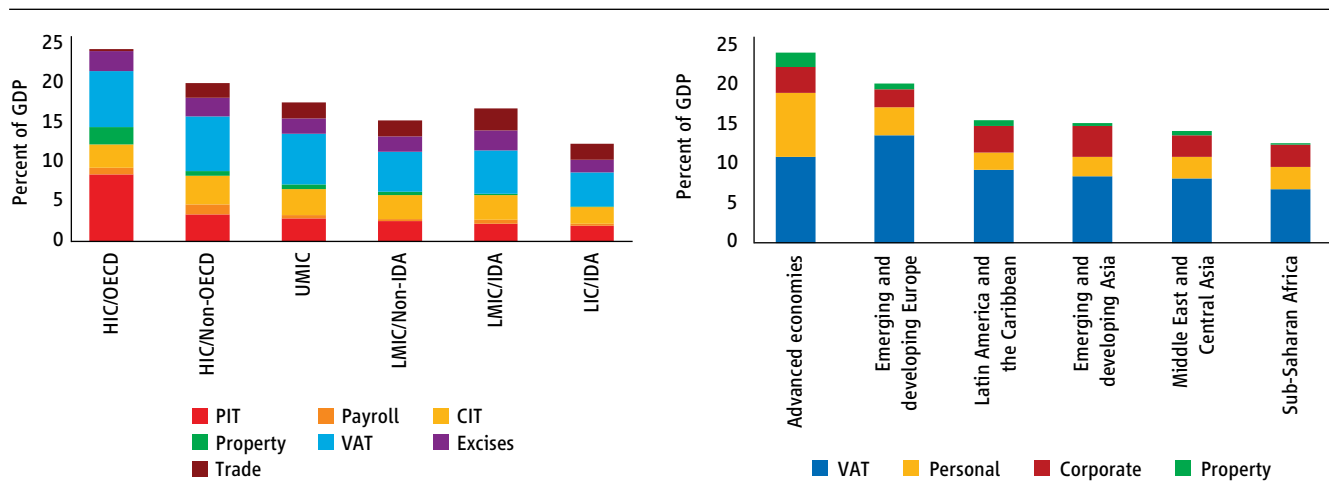
Source: Mason and Shetty (2019).

Direct taxation is the most progressive source of revenue, but it only raises significant revenues in higher-income countries; for countries such as Malaysia and Thailand, the transition to high income should include broadening the income tax base. Personal income taxes (PIT) tend to be progressive because they are based on income and not consumption and because they usually feature higher tax rates as incomes rise. Because richer households earn more than they consume, in general, taxes on income are more progressive than taxes on consumption (the poor generally save little so income and consumption are similar), and an increasing PIT rate as incomes rise embeds progressivity. However, PIT requires significantly more tax administration capacity than indirect taxation collection. As a consequence, while PIT is progressive, it accounts for relatively little revenue in non-OECD countries. In all countries for which there are data, richer households pay a greater percentage of their income in direct taxes. At the same time in poorer countries, the amount of PIT paid is close to 0 percent of market income in most deciles, except for those which are high income, indicating that PIT generates very little revenue. As upper-middle-income EAP countries such as Malaysia and Thailand aim for post-COVID-19 fiscal recovery while seeking to make the transition to high-income

country status, a broadening of the personal income tax base—as seen in high-income countries—would raise revenues in a progressive manner.

However, most EAP countries rely on indirect taxes and are not well positioned to build progressivity into their tax systems in the short term. The majority of tax revenues in non-high-income countries come from indirect taxes, such as VAT or excise taxes (figure II.C.19, panel A). Progressive PIT remains only a small source of tax revenue in middle- and low-income countries. For most of the region’s other upper-middle-income and lower-middle-income countries, which do not have the necessary administrative capacity to raise significant PIT, indirect taxation will likely remain the main source of new revenues for some time; regionally, roughly all revenues are from indirect taxes (figure II.C.19, panel B).

Figure II.C.19. Most middle-income and EAP countries rely heavily on indirect taxes for their revenue



Source: Fuchs, Sosa, and Wai-Poi (2021).

Note: CIT = corporate income tax; PIT = personal income tax; VAT = value added tax.

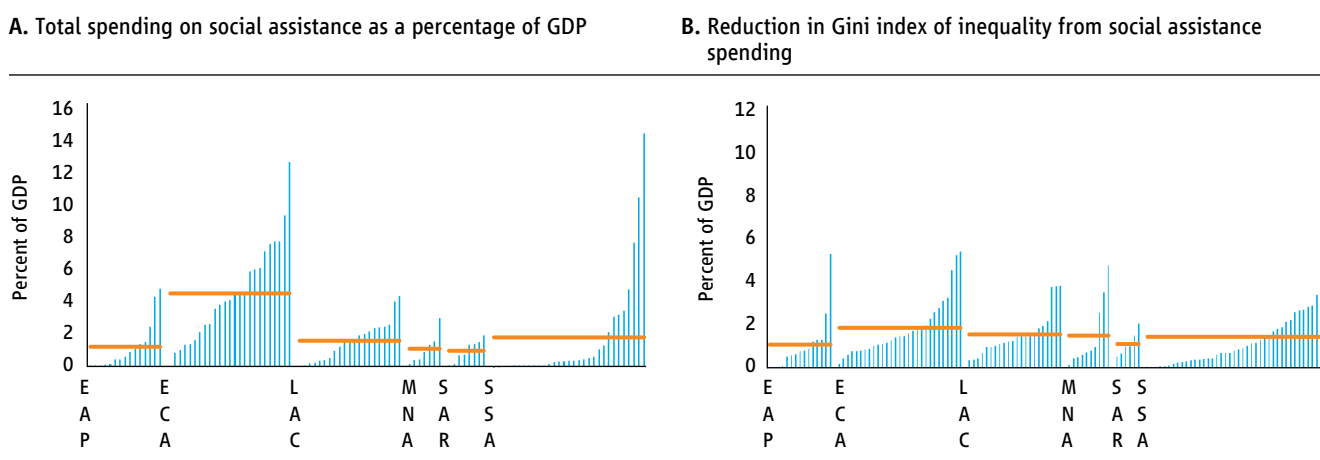
IMF (International Monetary Fund) 2017.

EAP countries relying on indirect taxation can raise significant revenues in a regressive manner if they eschew exemptions on staples, or they can maintain such exemptions but at a cost of revenue generation. Generally, the indirect tax incidence graphs either slope upward (progressive) and collect little revenue (are close to the bottom of the y-axis which represents percentage of tax collected relative to household income), or they slope downward (regressive) and collect more revenue (are higher on the y-axis) (Fuchs, Sosa, and Wai-Poi 2021). This stylized fact is a result of both VAT/GST (goods and sales tax) rates as well as patterns of exemptions or zero rating on staples and other selected items. If staples are zero rated or exempted from indirect taxation, then the incidence tends to be progressive, because staples make up a larger share of poor households’ consumption baskets. However, richer households consume the same items and in much higher quantities, so the tax revenue forgone as a result of such exemptions is high. In Indonesia for example, the incidence of indirect taxes is relatively neutral across the distribution, with most deciles paying a similar amount of tax relative to their market income. This neutral incidence is driven by both the many exemptions on goods and services in the tax code as well as exemptions for small firms; the total cost of these exemptions is estimated at 91 trillion rupiah, or 0.67 percent of GDP (Ministry of Finance, Indonesia and the World Bank 2020).

Targeted direct transfers to the poor can more than offset the burden of indirect taxation, meaning that reforms to close VAT exemptions combined with targeted transfers can both raise revenues and be poverty reducing (Harris et al. 2018). Social assistance targeted at poorer households results in significant reductions in poverty and inequality. The majority of benefits go to poorer households. This is true in almost all countries as well as for Indonesia. In 2012 when data were first available, the poorest 40 percent of people received 53 percent of all targeted social assistance spending. By 2017 after a series of reforms this had increased to 61 percent (Ministry of Finance, Indonesia and the World Bank 2020).

However, EAP as a region has traditionally spent too little on social assistance and, as a result, has achieved too little redistribution with that spending. On average, the region spends the least on social assistance as a percentage of GDP than any other region, equal with South Asia (figure II.C.20, panel A), at 1.1 percent of GDP, compared to 1.8 percent in Eastern Europe and Central Asia, 1.6 percent in Latin America and the Caribbean, 1.5 percent in the Middle East and North Africa, and 1.4 percent in Sub-Saharan Africa.²² As a consequence, the region achieves little redistribution through social assistance (figure II.C.20, panel B) with the Gini index of inequality falling only 1.2 points. By contrast, Eastern Europe and Asia, which spend the highest average share of GDP on social assistance, reduces the Gini index by 4.5 points across the region.

Figure II.C.20. Public spending on social assistance and its effect on inequality, by region

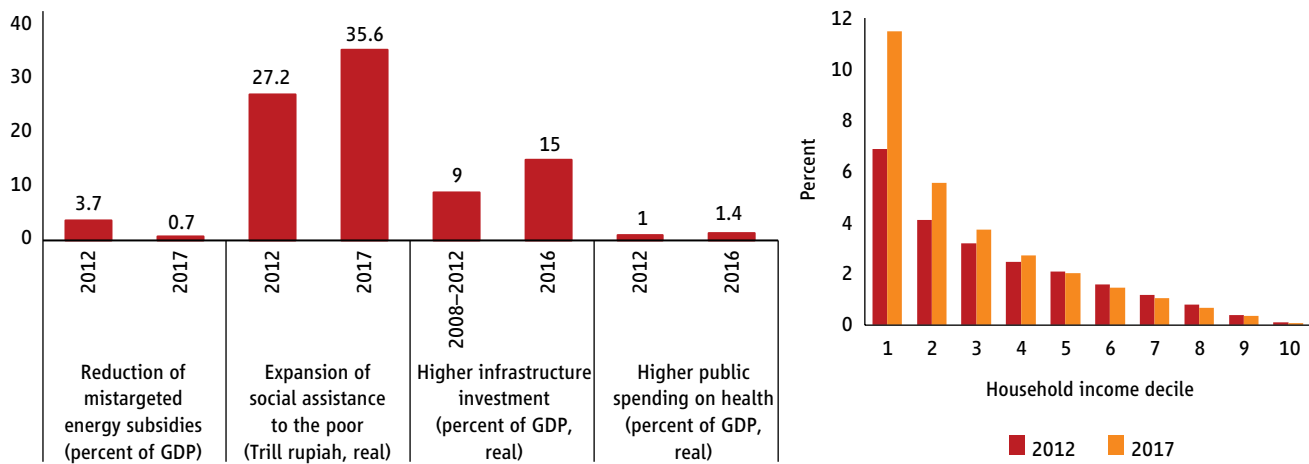


Source: ASPIRE database, World Bank.

Redirecting inequitable spending more broadly can play an important role in redressing inequality. Eliminating fuel subsidies, which helps drive climate change, would also free up fiscal space for more progressive spending and save money. Most indirect subsidies go to richer households because they consume more of the subsidized good (Fuchs, Sosa, and Wai-Poi 2021). Indonesia undertook significant fiscal reforms in 2015, reducing heavy spending on regressive fuel subsidies and redirecting spending into infrastructure, social assistance, and health. The expansion in social assistance was well targeted, with most going to the poorest 40 percent and significantly increasing the value of benefits received for the poorest households. Figure II.C.21, (right panel), likely underestimates the redistributive impact of the reforms, as the main expansion in social assistance happened after the 2017 analysis was carried out.²³ However, even the beginning of the expansion in 2017 contributed toward the fiscal policy reducing inequality by 0.3 points on the Gini index compared to 2012.

²² See <https://www.worldbank.org/en/data/datatopics/aspire>.

²³ The longer-term impacts are expected to be analyzed in a future analysis.

Figure II.C.21. Fiscal policy can more effectively address inequality in EAP countries: An illustration from Indonesia

Source: Ministry of Finance, Indonesia and World Bank 2020.

Thus there are different paths to fiscal recovery that can help mitigate the impact of the pandemic on poverty and inequality across the region. Richer countries such as Malaysia and Thailand can look to broaden their personal income tax bases (that are low for their level of development), which will help close fiscal deficits and provide a progressive source of financing for post-COVID-19 public investments. Countries with less capacity to administer broad income taxes, such as in Cambodia, Indonesia, Lao PDR, and the Philippines, can eliminate VAT exemptions. For example, close to one-half of the foregone revenue from VAT exemptions in Indonesia benefits households in the top three deciles (Ministry of Finance, Indonesia, and the World Bank 2020). Similarly, countries with regressive energy subsidies, such as Malaysia, could eliminate this spending to close the fiscal gap, reduce the impact on climate change, and partially finance an expansion in poverty and inequality, thus reducing social assistance.²⁴

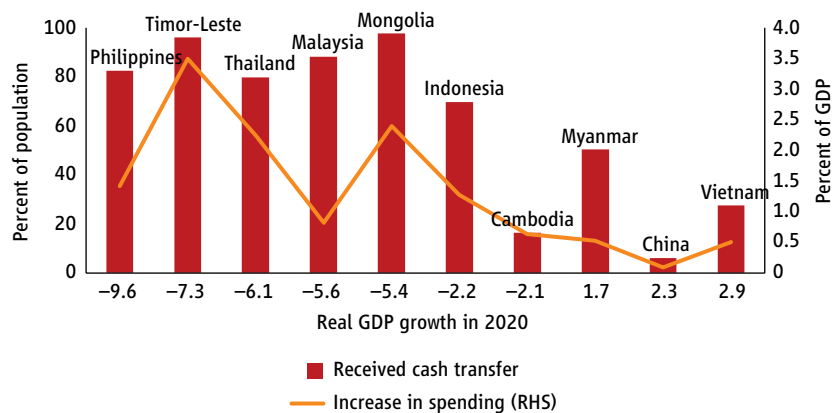
The Social Protection Response

East Asia and Pacific countries have mounted some of the largest expansions of social protection programs in the world in response to the pandemic (World Bank 2021a). Governments in the region have used an array of instruments—cash transfers and in-kind support to protect poor, vulnerable, and informal sector workers; unemployment benefits and wage subsidies for formal sector workers; and other labor market interventions to protect jobs and reskill workers. Some countries also reduced contribution rates for social insurance or allowed early withdrawals from pension accounts. The most important policy, however, was the scaling up of cash transfers. This was done by temporarily increasing existing benefits (“vertical expansion”), covering new segments of the population (“horizontal expansion”) through existing or new programs, or in most cases both. Excluding China, more than 60 percent of households in the region received at least one cash transfer in 2020 (World Bank 2020a).

²⁴ Despite a reduction in energy subsidies in the mid-2010s, in 2019 just before COVID-19, Malaysia was still spending around US\$5.7 billion or 1.5 percent of GDP on subsidized petrol (IEA fossil fuel database).

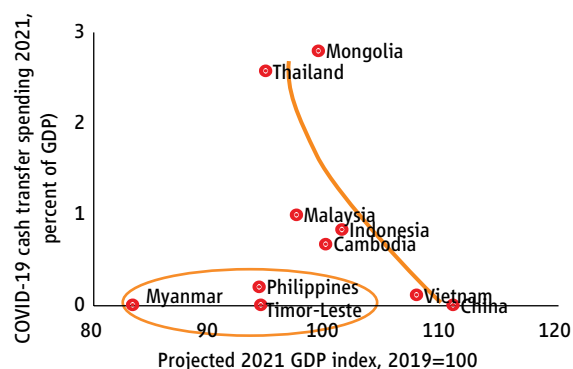
Coverage and spending on cash transfers has generally been greater in the countries hardest hit by the pandemic. Cross-country comparisons show that countries experiencing larger income shocks also had larger programs, both in terms of share of the population receiving a COVID-19–related cash transfer and in terms of increased spending (figure II.C.22). China and Vietnam continued to grow in 2020 and spent little on relief measures. In contrast, most of the region experienced a recession, which was especially severe in Malaysia, Mongolia, the Philippines, Timor-Leste, and Thailand. These countries reacted with massive and unprecedented expansions of their social assistance programs. Malaysia and Thailand (and to a lesser extent Indonesia) also spent significant amounts to support formal sector workers, including on wage subsidies and unemployment benefits.

Figure II.C.22. Cash transfer responses and economic growth in EAP, 2020



Source: World Bank 2021b.

With a few important exceptions, the impact of new lockdowns has led to similar patterns of cash transfer spending in 2021. In general, the faster countries are recovering—to 2019 levels or above—the less they plan to spend on social protection in 2021 (figure II.C.23). Mongolia and Thailand stand out with high levels of spending, including a universal benefit paid to all Mongolian citizens in April. As in 2020, China and Vietnam are expected to have the highest growth and the lowest spending on transfers. Most of the programs launched in 2020 in Indonesia and Malaysia have been extended into 2021, and a new urban relief program has been added in Cambodia. The major deviation from the pattern in 2020 is the reduction in spending (and coverage) in the three economies with the weakest recoveries—Myanmar, the Philippines and Timor-Leste. The situation is most extreme in Myanmar where there appears to be no extension of emergency support despite a huge projected decline in income.

Figure II.C.23. Countries' projected economic recovery and cash transfer responses in 2021

Source: World Bank (2021b and 2021c).
Note: 2021 figures are preliminary estimates.

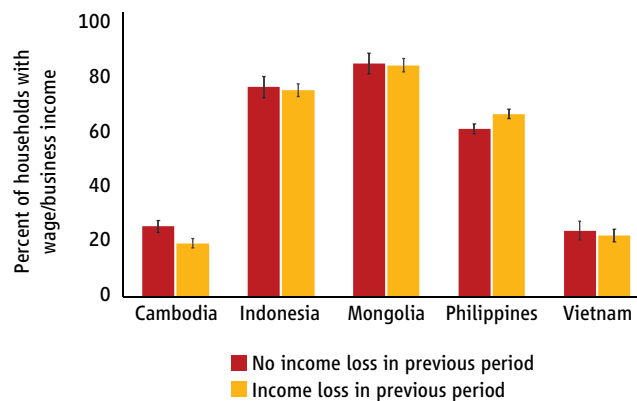
Some countries were in a better position to implement cash transfers by using existing government databases to register new beneficiaries quickly and digitally. Malaysia, Mongolia, and Thailand were able to take advantage of good identification system and administrative databases (e.g., income tax, social insurance) to cross-check applications or simply determine eligibility without the need for person-to-person interaction. In contrast, in Myanmar and Timor-Leste, local officials were tasked with preparing lists of eligible households from scratch. Even where some data were available, the lack of readiness for a shock of this magnitude was apparent. Cambodia, for example, utilized an existing database designed to determine eligibility for a health insurance subsidy, but this database covered less than 16 percent of the population, much less than those affected. The social registry used for targeting in the Philippines, despite covering more than 75 percent of the population, was considered too out of date to be used for determining who would receive benefits. Local officials were thus required to implement manual processes to gather new data, creating further delays and errors. Not coincidentally, the countries that used digital registration processes also avoided physical contact by using digital payments into accounts.

EAP countries' responses to the pandemic exposed the shortcomings of existing social protection systems and highlighted the need to make them more inclusive and adaptive. Increasing pre-pandemic benefit levels was straightforward and played a major role in countries that entered the crisis with larger social assistance programs. Horizontal expansion proved more difficult because information on the vast majority of those affected was not readily available. The poor were listed in social assistance databases while formal sector workers appeared in social insurance databases. The nonpoor, informal sector population that makes up most of the population in the region were essentially invisible to policy makers.

The inability to quickly determine and register those in need of support appears in some cases to have led to poor targeting and exclusion. In countries with programs of limited scope, many informal sector workers that experienced significant income losses did not receive support. Vietnam originally planned support to 5 million informal sector workers but ultimately was only able to "find" 1 million. Cambodia utilized its database of households that were poor prior to the pandemic but excluded many that fell into poverty, and then scrambled to create a new list of urban workers affected by the lockdown in Spring 2021. Survey results from Myanmar suggest poor targeting with beneficiaries evenly scattered throughout the income distribution. At the other end of the spectrum, cash transfers in Malaysia, Mongolia, Samoa, Thailand, and Timor-Leste were almost universal. Recent high-frequency phone survey data indicate that many governments have provided support both to households experiencing pandemic-related income shocks and those that are not (figure II.C.24). Most countries appear to have either failed to reach many of those in need of support or have been forced to accept significant errors of inclusion. As the pandemic continues, large inclusion errors will result in significant fiscal costs that threaten the sustainability of government response efforts.

Figure II.C.24. Government assistance is not finely targeted to those experiencing income shocks

Households receiving government assistance: those experiencing income loss and those not experiencing income loss in the previous period



Source: World Bank staff calculations based on HFPS data.

From Crisis Response to Protecting All: Toward More Inclusive and Adaptive Social Protection Systems

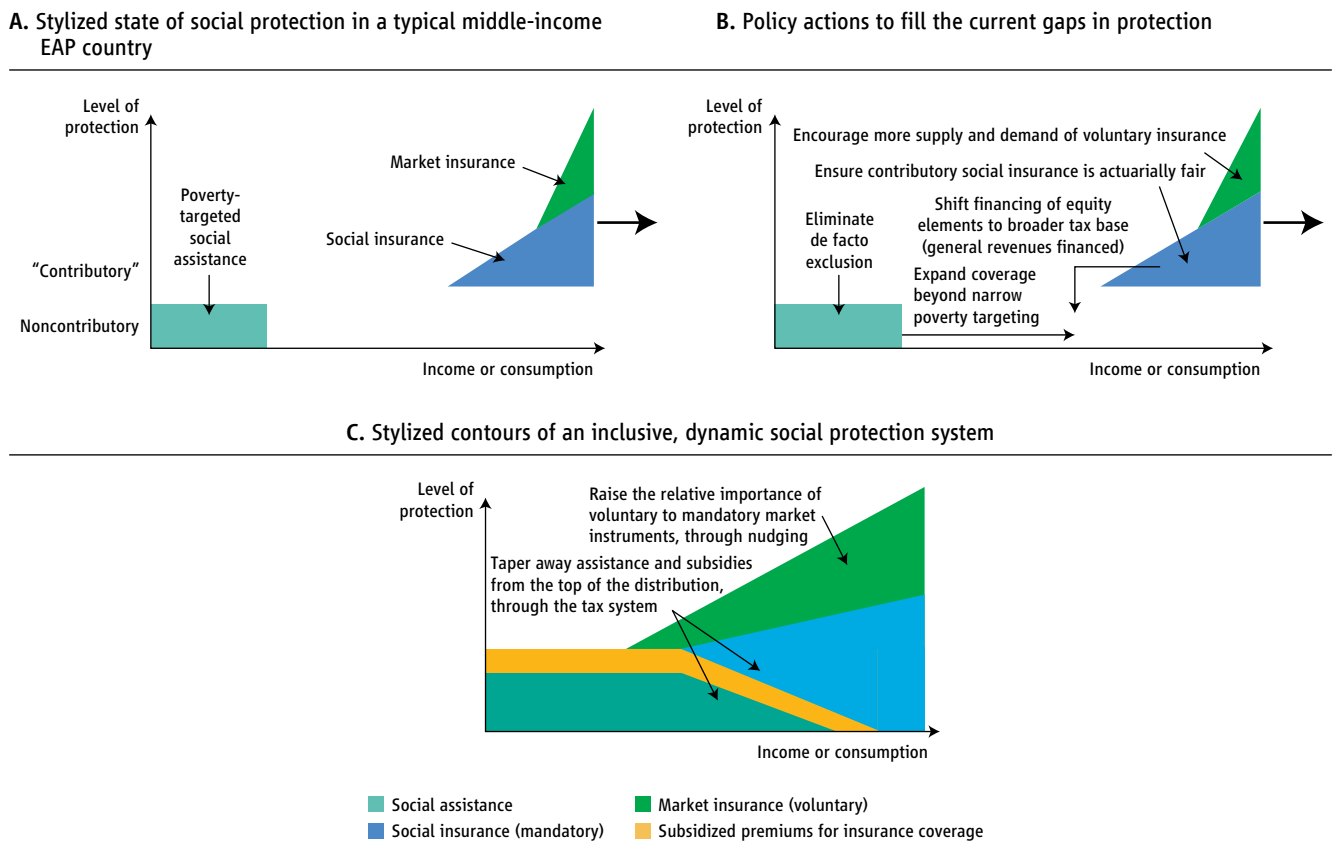
Beyond the immediate imperative of providing support to crisis-affected households, the pandemic has highlighted the need to develop more dynamic and inclusive social protection systems. Many countries have had to rely on ad hoc measures to expand social protection to reach those who were not previously covered by social assistance (e.g., cash or in-kind transfers) or enrolled in social insurance programs (e.g., unemployment insurance, pensions). This included large swaths of agricultural workers along with those working in the region's large nonagricultural informal sector. While the COVID-19 shock reminded policy makers of the need for more inclusive and adaptive social protection systems, there are numerous reasons why building such systems is becoming increasingly important in the region. Rapid technological change, digitalization, and automation; increasingly frequent job transitions experienced by workers; increased risks of natural disasters associated with climate shocks; and rapid population aging in the region all require a rethinking of how social protection is designed and provided in the region.

Social protection in most of the region is still characterized by significant coverage gaps, with only a small share of poor households covered by social assistance and only a subset of workers in the formal sector covered by social insurance. In the absence of follow-up efforts, it is likely that coverage gaps will emerge again when countries begin to unwind the special measures initiated during the pandemic. Figure II.C.25, panel A, presents a stylized depiction of the typical social protection landscape in the region's middle-income countries. Some fraction of the poor are afforded limited protection by a social assistance program financed by governments' general revenues, while another fraction of the working population is afforded protection via contribution-based social insurance programs. Private insurance is largely the purview of high-income households. In short, a large share of the population remains uncovered.

Recognizing rapidly evolving economic circumstances—and learning the lessons from the pandemic—governments can develop social protection systems that will more adequately protect their populations from poverty, economic shocks, and natural disasters. This can be accomplished in the short-to-medium term by expanding eligibility to need-based assistance beyond those who are currently receiving program benefits, starting with the uncovered poor, and moving from the traditional static targeting to more dynamic targeting methods that can capture those adversely affected by shocks (figure II.C.25, panel B). More dynamic targeting systems can be enabled by the modern information systems and the current generation of digital technologies.

Over time, countries can initiate reforms that make social insurance available to those working outside the formal sector (figure II.C.25, panel C). Extending social insurance benefits to those in the informal sector will be increasingly important in the region, as workers experience more frequent employment transitions, including between the formal and informal sector. Indeed, several countries in the region, including Indonesia, Thailand, and Vietnam, have succeeded in implementing social health insurance programs that include informal sector workers by subsidizing premia for those unable to afford them. Similarly, the Republic of Korea and Mongolia managed to extend unemployment insurance to self-employed workers as well as formal sector employees.

Figure II.C.25. Governments in the region can move progressively to close coverage gaps, making social protection systems more inclusive and dynamic



Source: Packard et al. 2019.

Implementing the Shift to More Inclusive and Adaptive Social Protection

The social protection responses to the pandemic highlighted the importance of being able to “find” individuals and households not already covered by social assistance or insurance. A recent analysis of more than 80 countries found that those that were able to use existing administrative databases were able to respond more quickly (Beazley et al. 2021) and on a larger scale (Johnson Dapati, and Palacios, forthcoming). Some countries, such as Chile and Pakistan, were able to rely on social registries that included affected households not receiving benefits prior to the pandemic. Cambodia and Indonesia used existing databases to make emergency payments to significant shares of their populations but ultimately were forced to collect new data manually at the local level, just as was done in Myanmar, the Philippines, and Timor-Leste.

The contrasting experiences of the Philippines and Thailand have also highlighted the importance of having a unique identifier. Until 2021, the Philippines was one of the few middle-income countries in the world that did not have a national ID. As a result, there was no easy way to ensure that individuals did not receive multiple benefits. It was also impossible to cross-check other administrative databases, such as social insurance or income tax, to limit inclusion errors. In sharp contrast, Thailand leveraged its universal, digital ID to filter applicants using 20 different databases in an effort that reached informal sector workers and farmers, comprising more than 60 percent of the population. Moreover, because most Thais have bank accounts linked to their national ID, transfers could be made digitally and with confidence that they were going to the right individuals while local officials in the Philippines were forced to distribute cash.

The lessons of the pandemic response are already leading to changes which, over time, could make it possible not only to respond more effectively to crises but also to create the capacity to provide the kind of universal coverage illustrated in figure II.C.25. While a number of institutional processes and protocols are required for adaptive social protection (ASP), one of the most important prerequisites for rapid responses to natural disasters is to have data on the entire population and the ability to verify people’s identities (Barca and Beazley 2019). Combined with other relevant administrative databases, this also makes it possible to move away from the traditional model of employment-based social insurance toward universal coverage based on an individual’s or household’s needs.

The delivery system infrastructure and data required both to respond to future crises (ASP) and to achieve universal social protection coverage during normal times includes

- A strong identification system (including civil registration),
- The ability to link up-to-date and accurate databases relevant for targeting on a regular basis,
- Clear data sharing protocols,
- Adequate data protection and privacy provisions, and
- Robust and financially inclusive government to person (G2P) payment arrangements.

The identification system should ensure uniqueness and provide a mechanism for authentication at the appropriate level of assurance. The use of personal data as well as how it can be shared should be regulated by the data protection agency responsible for implementing the relevant legislation. Corresponding technology for “privacy by

design” should complement legal safeguards. Finally, government to person (G2P) payments should facilitate financial inclusion, allow choice of provider and payment modality (including mobile money), and minimize transaction costs for beneficiaries (Rutkowski et al. 2021).

Table II.C.2 compares the current state of delivery systems in 11 EAP countries. Birth registration rates are generally high except in Lao PDR and Timor-Leste, but in Cambodia and Myanmar the civil registries are not digitized, limiting their usefulness for social protection programs. Digital IDs are absent in Myanmar and have low coverage in Lao PDR. Only China, Malaysia, Mongolia, and Thailand offer authentication services that allow social protection programs to verify the identity of beneficiaries. Data protection laws are absent in many countries.

At present, no East Asia or Pacific countries link administrative databases as a matter of course to help determine eligibility, nor are they able to track households receiving benefits from more than one program. This may be changing, with plans to make this kind of system interoperability possible under consideration in Indonesia, the Philippines, and Vietnam. It is important, however, that data sharing protocols and data protection rules generally are codified and enforced so that the risk of misuse of personal data by the region’s governments or nonstate actors is minimized.

Table II.C.2. Identification and payment systems and data protection laws in selected EAP countries

	<i>Digital ID coverage (percent of adults)</i>	<i>Birth registration rate (percent ages 0–5)</i>	<i>Digital G2P payments</i>	<i>Data protection law in place</i>
China	99 ^a	n/a	No	Yes
Cambodia	89	73	Yes	No
Indonesia	90	73 ^c	Yes	draft
Lao PDR	41	75	No	No
Malaysia	96 ^a	n/a	Yes ^b	Yes
Mongolia	96 ^a	99.6 ^c	Yes ^b	Yes
Myanmar	None	81	Yes	No
Philippines	None	90 ^c	Yes	Yes
Thailand	100 ^a	100 ^c	Yes ^b	Yes (not implemented)
Timor-Leste	95 (voter ID)	55	No	No
Vietnam	94	96 ^c	No	No

Sources: ID4D Global data set; G2Px data set; Marin, forthcoming.

Note: ^aAuthentication services available; ^bChoice of provider; ^cCentralized and digitized.

Moving to digital and financially inclusive G2P payments in the context of overall payment system reform should be high on the agenda. Only Malaysia, Mongolia, and Thailand make digital payments into fully transactional accounts and give the beneficiary the choice of provider. Prior to the pandemic, the Philippines had increased the share of payments of its main cash transfer program made directly into bank accounts to close to 90 percent. However, beneficiaries have no choice of provider, and the accounts can only be used to receive transfers. Learning from this experience, the government has expedited the enrollment for the first national ID in the Philippines and has combined this process with opening transactional accounts for millions of unbanked individuals. Indonesia is planning a major shift in the way it makes government payments and is upgrading its identification system, including better authentication services.

Finally, it is important to recognize that relying on digital processes may result in exclusion due to the so-called “digital divide.” Ensuring the existence of digital infrastructure, including in poor or remote rural areas, and affordable access will be key, as will promoting broad digital literacy. In Thailand, the combination of a robust identification system, data sharing across government agencies, G2P digital payment systems, and broad digital access by the population enabled an unprecedented scaling up of social assistance that appears to have successfully prevented a significant increase in poverty (World Bank 2021d). Nevertheless, there were problems; some databases had not been updated, resulting in complaints and delays, and recent surveys suggest many Thais experienced significant difficulties navigating the digital application process. Eligibility determination by cross-checking databases was done in an ad hoc manner, imposing higher transaction costs on beneficiaries than was necessary.²⁵ Such challenges will need to be surmounted if governments in the region are to achieve more inclusive and adaptive social protection systems going forward.

The Education Response

Most East Asia and Pacific countries implemented a range of measures to maintain education and learning during the pandemic. These responses included distance learning, data subsidies, teacher training, and adjustments in pedagogy. Countries that avoided the first wave of infection only recently had to deal with extended school closures and serious engagement with distance learning, but since the start of the pandemic most countries have had to adjust in the face of often rapidly changing health and economic conditions.

Distance Learning. Countries have responded to pandemic infections by initiating a range of distance learning activities and using online interactive media and cellphones, as well as more traditional approaches such as television, radio, and paper. These modalities are illustrated in figure II.C.26. Many countries used more than one approach in an attempt to maximize coverage among student populations that had varying levels of access to distance media, especially to online and cellular data.

The student experience of these approaches has varied across countries and by technology. For example, television-based instruction has enabled one teacher to teach the entire country’s fourth-grade math lesson to all students simultaneously in countries like Lao PDR, the Philippines, and Malaysia who are using TV for distance instruction as part of their COVID-19 response. Several countries, including China, Indonesia, and the Philippines, have also used mobile phones and communication platforms, such as WeChat, WhatsApp, and Facebook Messenger, to enable teachers to communicate with groups of students and individual students to ask questions and seek help from their teachers (Abbey et al. 2021; Cloutier et al. forthcoming; World Bank 2021e (Indonesia HiFy; World Bank 2021f).

²⁵ It is also worth noting that the implementation of a new data protection law in Thailand was delayed due to the pandemic and did not apply to the registration process or data sharing. See Johnson and Palacios, forthcoming.

Figure II.C.26. Countries have employed multiple distance learning modalities to cope with the pandemic

		<i>Preprimary</i>				<i>Primary</i>				<i>Lower secondary</i>				<i>Upper secondary</i>			
		<i>Online</i>	<i>Paper</i>	<i>Radio</i>	<i>TV</i>	<i>Online</i>	<i>Paper</i>	<i>Radio</i>	<i>TV</i>	<i>Online</i>	<i>Paper</i>	<i>Radio</i>	<i>TV</i>	<i>Online</i>	<i>Paper</i>	<i>Radio</i>	<i>TV</i>
High income EAP	Hong Kong SAR China	×	×			×	×			×	×			×	×		
	Macao SAR, China	×	×			×	×			×	×			×	×		
	Japan	×	×			×	×			×	×			×	×		
	Singapore	×	×			×	×			×	×			×	×		
China	China					×	×		×	×		×	×				×
ASEAN-5	Philippines	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
	Malaysia	×	×			×	×			×	×			×	×		×
	Vietnam					×		×	×	×		×	×			×	×
	Indonesia					×	×			×	×			×	×		×
	Thailand				×	×				×			×	×			×
Small East Asian economies	Timor-Leste	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
	Lao PDR			×	×	×	×	×	×	×	×	×	×	×	×	×	×
	Cambodia	×	×	×	×	×	×			×	×			×	×		×
	Myanmar	×				×	×	×	×	×	×	×	×	×	×	×	×
	Papua New Guinea							×	×	×		×	×	×			×
Pacific Island Countries	Tuvalu		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
	Fiji			×	×	×	×	×	×	×	×	×	×	×	×	×	×
	Tonga		×			×	×	×	×	×	×	×	×	×			
	Palau		×			×	×			×	×			×	×		
	Solomon Islands			×				×				×				×	
	Kiribati					×				×				×			

Source: Cloutier et al. forthcoming, based on joint WB/UNICEF/UNESCO <http://covid19.uis.unesco.org/joint-covid-r3/>.

Improving access. To address issues of student access to online, mobile, and other paid platforms, governments in Cambodia and the Republic of Korea partnered with private telecommunication operators to offer free data services for education websites, while other countries such as Indonesia offered vouchers to pay for access to data (Cloutier et al., forthcoming, Yarrow, Yoo, and Kim, forthcoming).

Supporting teachers. Teachers were often unprepared for the shift to online and hybrid learning, so governments provided training to strengthen teachers' capacity to teach using distance technologies. Data from a joint UNESCO-UNICEF-World Bank-OECD survey indicate that most countries in the region provided multiple forms of support to teachers during the pandemic, including (1) training on providing distance instruction; (2) teaching content adapted to remote teaching; (3) information and communication technology (ICT) tools and free or subsidized connectivity; (4) professional development activities (e.g., workshops and webinars) on pedagogy and effective use of technologies; along with (5) professional, psychosocial, and emotional support (e.g., chat groups, online forums to share ideas and educational content) (WB/UNICEF/UNESCO).

Focusing the curriculum. Many EAP countries also changed the content that teachers taught. In most cases, this involved a narrowing of the curriculum to focus on key subjects. According to the joint WB-UNICEF-UNESCO survey, 42 percent of responding countries reported prioritizing certain curriculum areas or skills (WB/UNICEF/UNESCO). There is a risk of narrowing too much or leaving out key content or subject areas, such as art, music, or physical education. This is of particular concern in lower-income countries, which report adjusting their curriculum at twice the rate of higher-income countries.

Sanitary/health interventions. Minimizing disease transmission in schools requires a range of measures. Schools can implement some of these measures with existing means; others require additional investment or collaboration with other sectors. Many countries in the region are promoting practices related to physical distancing and hand and respiratory hygiene as a part of schools reopening. In Indonesia, for example, the government increased the flexibility of the per-capita student grant program (BOS) to allow for COVID-19–related expenditures, including personal protective equipment (PPE) and water, sanitation, and hygiene (WASH).²⁶

Support to parents/families. Access to the internet and necessary learning devices, along with family member support, have represented major challenges for many children and parents in the face of school closures and hybrid learning models. In Thailand, 20 percent of enrolled students surveyed reported difficulty with a lack of devices, and this number rose to 29 percent in the country’s southern region.²⁷ Countries such as Indonesia have attempted to address these constraints by providing internet credits to access learning, while in the Republic of Korea, the government has provided devices for students (Afkar and Yarrow 2021; Yarrow, Yoo, and Kim, forthcoming).

The pandemic shock has created the need for experimentation and innovation across the region and often a new impetus for education reform. This is illustrated by the experience of Cambodia (box II.C2) but applies broadly to countries across the region.

Box II.C2. Cambodia’s education system response to COVID-19

Schools in Cambodia were open for face-to-face learning for just three months between March 2020 and July 2021. In a pre-pandemic world, face-to-face learning would have taken place for 14 months during the same period. Cambodia’s education system, however, continued to operate, with students expected to learn remotely, typically with technology. Content for all grades and subject areas was made available on the Ministry of Education, Youth and Sport (MoEYS)’s Facebook page, the YouTube channel, education applications, and TVK2 television channel, where teaching videos for different grades were uploaded and put on air. Students with limited access to technology were not left behind—radio programs as well as a system of providing such students worksheets through school community groups catered to at-risk groups. While the impact of these efforts on student learning is not yet known, the pandemic allowed Cambodia to make three important process-related changes in education delivery that have the potential to improve the education system and accelerate student learning.

Strengthening teacher capacity and performance: With schools closed, teachers were trained on using technology for distance instruction. Previously, teachers and teacher-trainers had been reluctant to incorporate technology in teaching and learning. COVID-19–related school closures left teachers with little choice but to

(continued)

²⁶ Indonesia Ministry of Education and Culture Regulation no. 6/2021.

²⁷ Survey on National Education Responses to COVID-19 School Closure (database), United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children’s Fund (UNICEF), the World Bank, and the Organisation for Economic Co-operation and Development (OECD), (accessed January 15, 2021), <http://covid19.uis.unesco.org/joint-covid-r3/>.

(Box II.C2. continued)

adapt. With guidelines and training from the MoEYS on using technology for distance teaching and learning, teachers throughout the country have been teaching using technology platforms or applications such as Google Forms, Google Classrooms, Microsoft Teams, Telegram, Zoom, and Facebook Messenger. The change in usage of and attitude toward technology has allowed the MoEYS to make two important changes pertaining to teacher capacity development and performance. These have been in the pipeline since 2013, but the pandemic gave them momentum. First, the MoEYS has revised its policies on continuous professional development, with teacher training programs now including teaching methods on distance and blended learning, ICT, student assessment, and other necessary skills, rather than the traditional focus on content knowledge for the teachers. Second, the teacher career pathways policy places more emphasis on results in the forms of improved student learning outcomes and mentoring support to other teachers or schools to improve their performances.

Curriculum delivery: Before the pandemic, teaching focused on completing the textbook. Now, the MoEYS has incorporated a holistic approach by incorporating teaching videos, student worksheets, and assessment tools for teachers that are in line with the existing curriculum framework and main textbooks. Two public universities—Royal University of Phnom Penh and Institute of Technology Cambodia—worked closely with line departments to generate content for distance learning. The pandemic allowed the MoEYS to experiment with streamlining the curriculum by focusing on key topics and reducing teaching time, as teaching videos needed to be short and concise. At the central level, textbooks have been made available in soft copies to tackle the issues of textbook shortages; application and platforms have been established to store teaching videos by grades and lessons for the students to come and learn at any time; and communication channels have been established to send out documents, guidelines, training materials, and other materials from the national to subnational and school levels.

Community engagement: The pandemic allowed the MoEYS leadership to experience first hand that home-based learning could work if there were strong school communities, comprising strong local authority support, parental support, community ownership, and strong school-to-school relations, where high performing schools and teachers assist other schools and teachers in their communities to ensure learning continuation for the students. Strong school communities, such as in the targeted communities of an ongoing International Development Association (IDA)-financed Secondary Education Improvement Project, helped ensure that students without access to technology received hard copies of worksheets and support in completing them. With this experience, the MoEYS is developing a school community strategy, which will help students, especially disadvantaged students, learn.

Source: No, Beng, and Beteille 2021 unpublished.

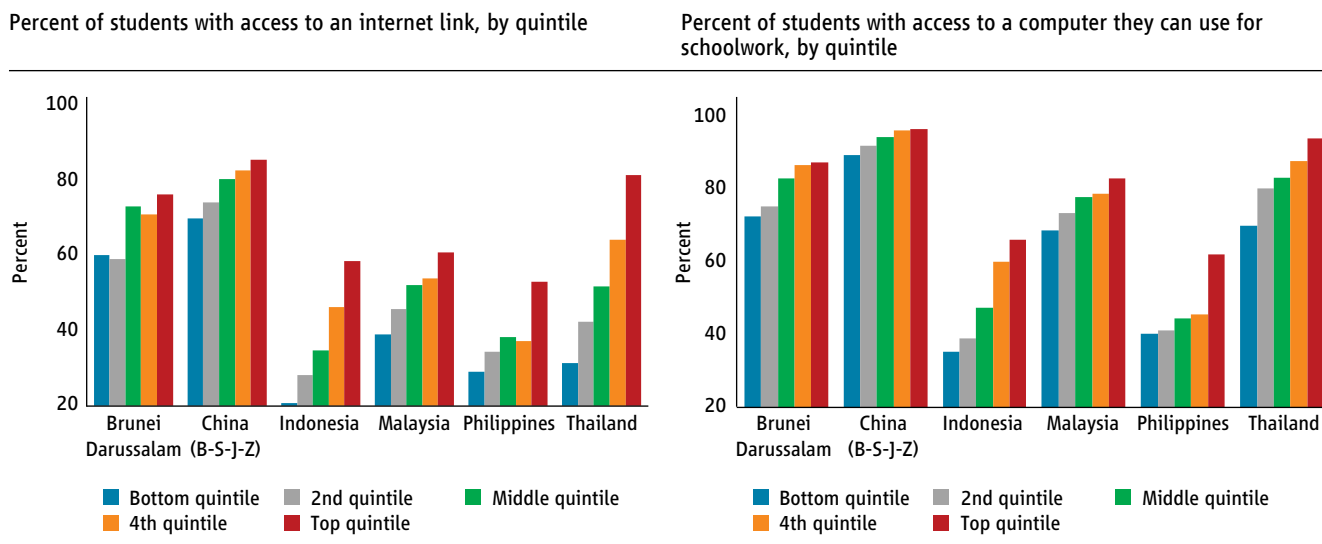
Experience during the pandemic has highlighted several critical challenges that will need to be surmounted if policy makers are to successfully remedy the learning scars associated with COVID-19 and increase the resilience of countries' education systems to future shocks. Existing distance learning modalities, while necessary during the pandemic, are still less effective than face-to-face learning. The following are among the key challenges.

- ***The capacity to implement distance education.*** Many teachers still need support to successfully use distance education hardware and software effectively. In Indonesia, for example, two-thirds of teachers reported difficulties in operating digital devices, including to access and use online learning platform. Even in high income countries such as Australia, less than 40 percent of teachers feel well or very well prepared to use information technology for teaching (Cloutier et al., forthcoming).

- Content to support distance learning.** Cambodia, the Republic of Korea, and Indonesia have made major efforts during the pandemic to make more teaching and learning materials available online, expanding on earlier initiatives. China had made a major pre-pandemic push to spur the development and dissemination of educational software and digital content (Abbey et al. 2021 and Abbey et al. 2019). These efforts have been complemented by China’s vast private education technology (EdTech) content providers, although recent policy changes to clamp down on private providers leave a number of questions about the role such providers will play in the foreseeable future (McMorrow et al. 2021).
- The capacity for active student-teacher interaction, support to students, time on task.** In rural China, students faced several obstacles when engaging in online learning, including the lack of larger digital devices such as computers and tablets (McMorrow et al. 2021). In addition to a lack of access to digital devices, a survey of low-income households in the Philippines identified children’s inability to focus on remote learning in the absence of adult supervision and family members’ inability to provide support due to a lack of content knowledge as key impediments (World Bank 2021g).

A key concern is that the pandemic-driven shift to distance learning appears to be exacerbating learning inequalities. Data indicate, for example that poor households and those in remote rural areas continue to have less access to computers and internet connections needed to facilitate interactive learning (figure II.C.27; figure II.C.28; figure II.C.29). Moreover, the poor and those living in remote rural areas also have personal circumstances that are less conducive to learning at home, including lack of a quiet place to study (Cloutier et al. forthcoming; Li et al. 2020; OECD 2020). Household income, parents’ education, and other household factors are strongly associated with student learning outcomes in the classroom (World Bank 2018b); it is not surprising that these differences matter more when students are required to learn primarily at home.

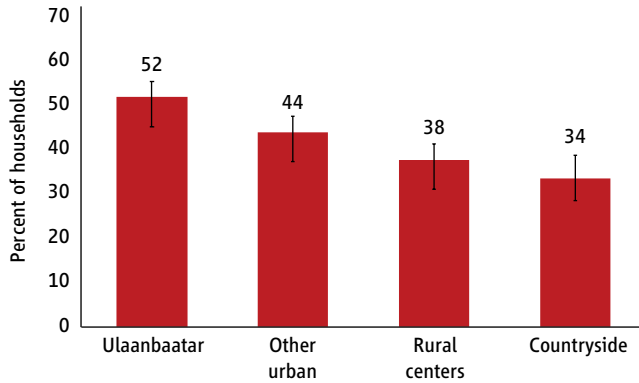
Figure II.C.27. Important inequalities existed, pre-COVID-19, in students access to internet and computers they can use for schoolwork



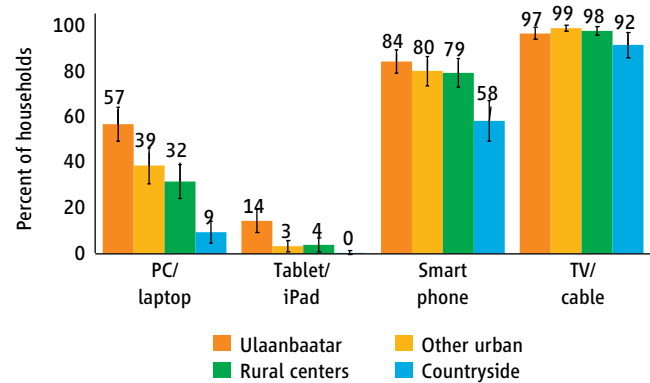
Source: World Bank staff calculations, using 2018 PISA data.

Figure II.C.28. Interactive learning opportunities during COVID-19 have had a strong spatial dimension, reflecting family/community welfare and digital capabilities

Share of Mongolian households with children engaged in online, mobile, or face-to-face learning activities (by region)



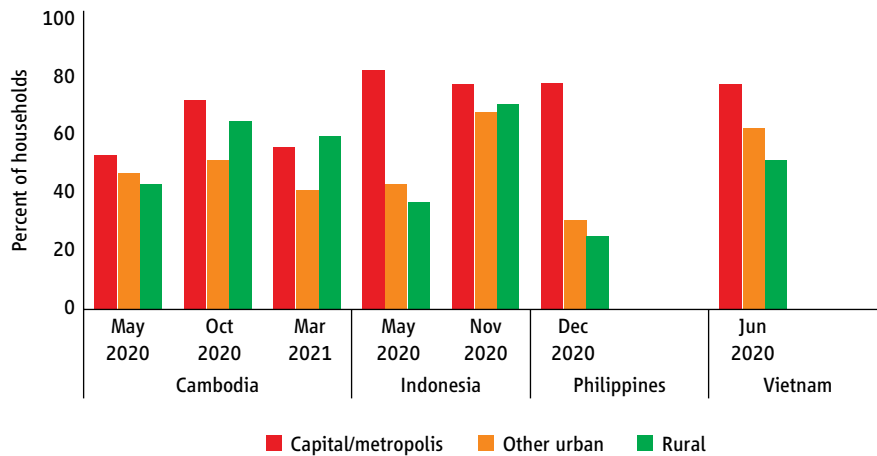
Digital devices available for Mongolian children's learning activities at home (percent of households with any school-enrolled children)



Source: World Bank staff calculations, using HFPS data.

Figure II.C.29. Learning opportunities during COVID-19 have had a strong spatial dimension, reflecting family/community welfare and digital capabilities

Share of households with children engaged in online, mobile, or face-to-face learning activities (by country and subregion)



Source: World Bank staff calculations, using HFPS data.

Moreover, initiatives to increase student engagement in distance learning during periods of school closures have not always been effective. A high-frequency survey data from Indonesia indicates that despite the introduction of internet quota subsidies aimed at supporting online learning, the share of students using mobile learning apps or online media for distance learning did not increase (World Bank 2021f). There were also significant declines in the watching of educational television over time. A survey of low-income households in the Philippines also found low levels of engagement in distance learning. Difficulties in internet access, insufficient mobile credits, and the need to share electronic devices among multiple household members were all given as reasons for low online engagement. In addition, while over two-thirds of households have TV or radio at home, only about one-tenth of children watched or listened to educational programming on these devices, in part due to low awareness of program availability (Cho et al. 2021a, 2021b).

There have been some distance learning successes during the pandemic, however.

- **A recent study of online instruction during the COVID-19 lockdown in Baise City, China, finds evidence of positive effects on student exam performance (Clark et al. 2021).** The study compares (1) students with no support during school closures; (2) students who receive online instruction from their own teachers; and (3) students who receive online instruction from the best teachers in their district. The study finds that receiving online education during the school closure period led to statistically significant improvements on middle school exam scores relative to pupils who received no learning support from school. Moreover, students who were given recorded online lessons from higher quality teachers in the district achieved higher exam scores than those whose lessons were recorded by teachers from their own school. The educational benefits of distance learning were the same for rural and urban students, but the exam performance of students who used a computer for online education was better than for those who used a smartphone. In short, the study shows that prerecorded teaching is better than no teaching at all, and that high quality prerecorded teaching is better than local quality prerecorded teaching. Left unanswered, however, is how online instruction compares to “normal” classroom instruction.
- **Recent studies on learning losses in the Republic of Korea suggest that the country has effectively leveraged its prior investments in EdTech and teacher skills to protect student learning during the pandemic.** Available evidence indicates that average student learning levels changed very little following the shift to fully online learning from April 2020 to May 2020, followed by more than a year of hybrid learning. Concerns about inequalities in learning outcomes have not been allayed by the Korean experience, however. Indeed, the shift to online learning, coupled with dependence on parents and families for support, appears to have amplified the disparities in student learning outcomes in the Republic of Korea that existed before COVID-19, with an increase in the percentage of high and low performing students, and a shrinking number of students performing in the middle of the distribution (Yarrow, Yoo, and Kim, forthcoming).

Other pre-pandemic evidence provides some support for the use of EdTech, including remote instructional techniques, but suggests that technology is more effective when supported by teachers in classrooms. Studies in Ghana, India, and elsewhere indicate that remote instruction can improve student learning (Bianchi, Lu, and Song 2020; Johnston and Ksoll 2017; Naik et al. 2020). However, evidence of positive impacts of EdTech generally involve cases where high-quality instruction is provided by teachers and where both students and teachers are physically present in classrooms. Other evidence on computer-based learning, in which students are accompanied by a facilitator rather than a teacher, find that such approaches yield to no more learning than paper-based exercises done under the same circumstances. According to a review of technology and education in China (Abbey et al., forthcoming), computer programs used by students *as a supplement to* face-to-face instruction generally improve primary school student math scores. Together, the evidence suggests the importance of teachers’ physical presence in making different kinds of EdTech effective tools for learning.

Most EAP countries faced serious learning challenges prior to the pandemic; so only addressing COVID-19–induced problems in education will be insufficient to meeting the human capital needs for countries’ future growth and prosperity. Indeed, a return to learning will require action on two fronts:

1. Mitigating the pandemic’s effects on human capital and avoiding long-term scarring, and
2. Reforming education systems to strengthen learning outcomes in support of countries’ long-term growth and development.

What will it take to remedy the COVID-19’s scars and also address countries’ long-term learning challenges?

Mitigating the pandemic’s effects on human capital will require action on multiple dimensions. To recover from the impacts of COVID-19–related school closures and disruptions to education, EAP countries need to focus on the safe re-opening of schools, including through investments in school infrastructure to minimize COVID-19 transmission. Because it is likely that countries will face future learning disruptions, whether due to COVID-19 or other types of shocks, there will be a premium associated with building resilience into education and learning systems. Emphasis will also need to be given to recovering learning losses including through making adjustments in curriculum and providing remedial support to struggling students. Policy makers will also need to focus on enhanced student readiness to learn, especially where early childhood education enrollment levels have decreased, where there is increased food insecurity, and where reductions in non-COVID-19–related health care may have compromised students’ abilities to learn. Institutional support for early childhood development can make a significant difference to learning outcomes (box II.A1). Finally, special attention will need to be paid to re-enrolling dropouts and keeping potential school dropouts enrolled to ensure that temporary learning losses do not result in permanent scars to human capital. Key policy directions along these lines are summarized in table II.C.3.

Table II.C.3. Enhancing learning in EAP: Remediating COVID-19’s scars

<i>Key issues</i>	<i>Policy directions</i>
<i>Safe reopening of schools</i>	<ul style="list-style-type: none"> • It is essential to minimize disease transmission in schools (World Bank 2021h), and investing in school infrastructure, especially sinks, running water, soap for handwashing, and toilets are key parts of this approach (Afkar, Kumala, Nomura 2021). • Teaching at the right level, where students are grouped by ability rather than age or grade, along with tutoring programs, individualized self-learning programs, and computer-assisted instruction and summer school are all good options to both recover learning loss and boost overall learning above pre-pandemic levels (World Bank 2021i) • Improving access and quality to early childhood education is essential. Malnutrition has long-term negative effects on cognitive development, making good nutrition essential. Interventions including school feeding, vitamins, and deworming medication are appropriate for many contexts, as well as providing access to corrective eyewear, so that students are ready to learn. • More than 400,000 students in the region are estimated to have left education as a result of the pandemic. It is essential to identify these students and to encourage reenrollment. Provision of financial assistance can help. As schools reopen, there is a risk that more will drop out, so it is essential to put in place measures to support retention and reenrollment early (World Bank 2021j).
<i>Recover learning loss</i>	
<i>Readiness to learn</i>	
<i>Re-enrollment of dropouts</i>	

Successfully addressing longstanding learning challenges will require policy makers to focus on building more effective education systems in support of long-term growth and development. To improve learning outcomes, many countries will need to streamline their curricula, improve textbook availability, and utilize local languages for instruction among specific populations of students. Low stakes assessments will be important to help guide teachers on which students and what topics need special attention. Provision of structured lesson plans to teachers can also be helpful, especially at the early primary level, to ensure that all children are reading with understanding by age 10. Investments in EdTech can also help raise learning outcomes when introduced as a complement to teaching and combined with key other enabling factors. Technology alone will not be a panacea, however, and special efforts will need to be made to ensure that technology increases equality of educational opportunity rather than exacerbates existing disparities. The need for deep reforms in many countries means that teachers and school directors will need technical and other support in carrying out the required changes (table II.C.4).

Table II.C.4. Enhancing learning in EAP: Building stronger education systems for the future

<i>Key issues</i>	<i>Policy directions</i>
<i>Low levels of student learning</i>	<ul style="list-style-type: none"> • Countries in EAP and globally have been streamlining curricula to focus on core subjects as a way to address low levels of student learning where curricula are overcrowded, as well as increasingly integrating social-emotional competencies (World Bank 2021k; World Bank 2018c) • At a more basic level, improved textbook availability either as physical or digital textbooks and materials, is essential for learning (World Bank 2018c) • In contexts where the children’s mother tongue differs from the language of instruction, large increases in student learning have been found in early grades from the introduction of mother tongue–based multilingual education (World Bank 2021l)
<i>Diagnostics for teaching and learning</i>	<ul style="list-style-type: none"> • Low-stakes assessments can be used to provide teachers with information about how individual students are doing and where they can improve; this information can guide learning recovery and learning improvement programs (e.g. DeHoyos, Ganimian, and Holland 2017; World Bank 2021m)
<i>Teacher support, school director support</i>	<ul style="list-style-type: none"> • In cases where teachers may need additional support to effectively increase student learning, structured lesson plans and intensive teacher coaching and support have been effective (Eble and Price 2021; World Bank 2020b) • School managers and principals can be supported to become instructional leaders as a way to improve student learning outcomes (Adelman and Lemos 2021; World Bank 2021n)
<i>Investment in EdTech in an appropriate and sustainable way</i>	<ul style="list-style-type: none"> • Teachers need specific skills in order to effectively conduct hybrid and online instruction now and in the event of future school closures (Hawkins et al. 2020; Yarrow Yoo, and Kim, forthcoming). This can be part of a broader push to make learning more accessible to all, anytime, anywhere, especially when linked to improved connectivity for schools and families (Hawkins et al. 2020; World Bank 2016) and high-quality resources for online and hybrid instruction (Hawkins et al. 2020)

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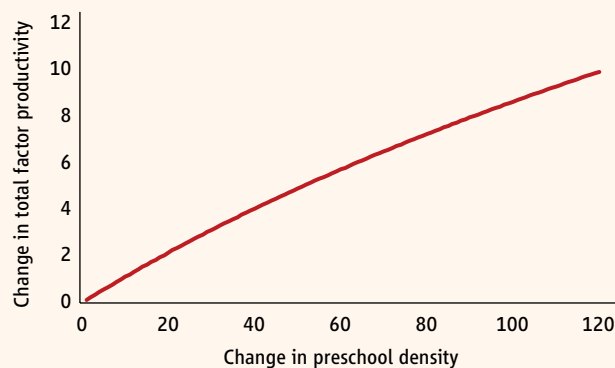
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Box II.A1. Investing in childcare for recovery and equitable growth

The COVID-19 pandemic has shined a spotlight on childcare, drawing the world's attention to how intricately it is related to the smooth functioning of the labor markets, and perhaps, the economy overall. The massive closure of schools has undermined the ability of parents to work in person or remotely (Alon et al. 2020). The pandemic has brought gender gaps in domestic and care work out of the shadows: women were more likely to withdraw from the labor market in response to school closures (O'Donnell et al. 2021). Although both men and women reported spending more time on domestic and care work, increases experienced by women exceeded those by men by about 2 hours on average (UN Women 2020). However, a silver lining of the COVID-19 pandemic in the realm of care policy is the opening of a window of opportunity for policy change, as the world is grappling with a realization of its paramount role for smooth functioning of societies.

Investment in institutional childcare may be a promising policy for post-COVID-19 recovery through its impact on households and firms. First, institutional childcare positively affects women's labor market outcomes, such as labor force participation, employment, extending work hours, or switching to more productive jobs.^a In Indonesia, an additional public preschool per 1,000 children increases maternal employment by 9.1 percent (Halim, Johnson, and Perova 2021). In Vietnam, Dang, Hiraga, and Cuong (2019) find that childcare public provision results in a 41 percent increase in the probability of wage-earning employment (41 percent), formal employment (26 percent), and long-term participation in the labor market (38 percent). Such impacts may create positive externalities beyond the households. An increase in the number of working women expands a pool of potential workers, enabling firms to find better matches for jobs. In the framework of imperfect labor markets, with employee-employer matching and frictional searches, such improvement in the quality and speed of matching is likely to trigger an increase in aggregate productivity (Beerli et al. 2021). Indeed, recent evidence from Indonesia (Cali et al. 2021) suggests that preschool expansion increased the productivity of manufacturing firms. Figure BII.A1.1 presents a relationship between the change in preschool density and total factor productivity, based on a computable general equilibrium (CGE) model that uses study results and assumes diminishing returns to changes in preschool density.

Figure BII.A1.1. Relationship between preschool access and firm productivity in Indonesia

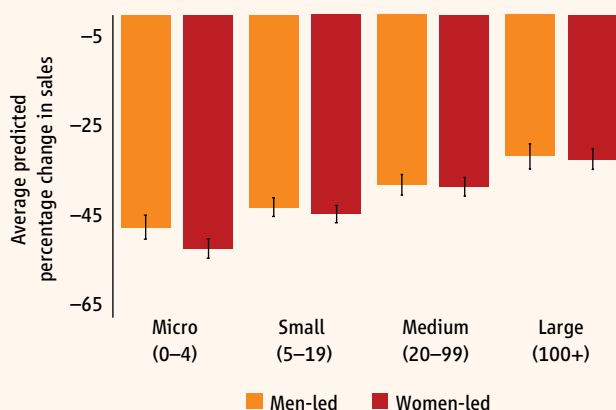


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Institutional childcare is also likely to aid in post-COVID recovery of micro, small, and medium enterprises (MSMEs), which employ more than one-half of the workforce and contribute between 20 and 50 percent of GDP in the EAP countries (APEC). Women own roughly one-half of microenterprises in EAP but make substantially lower profits. A forthcoming report on Female Entrepreneurship in EAP demonstrates that female microentrepreneurs earned 24 percent, 41 percent, 17 percent, 32 percent, and 11 percent less than male microentrepreneurs in the same sectors in Cambodia, Indonesia, Lao PDR, Timor-Leste, and Vietnam, respectively. Moreover, microenterprises operated by women have been hit particularly hard by the pandemic (figure BII.A1.2). The same report shows that while gender gaps in performance are driven by a range of factors, from lower skills to a lack of access to capital and hired labor, women’s domestic responsibilities are an important factor. Removing this constraint through institutional childcare could facilitate closing gender gaps in entrepreneurship in EAP, which are estimated to lead to 7 to 8 percent losses in income per capita (Cuberes and Teignier 2016).

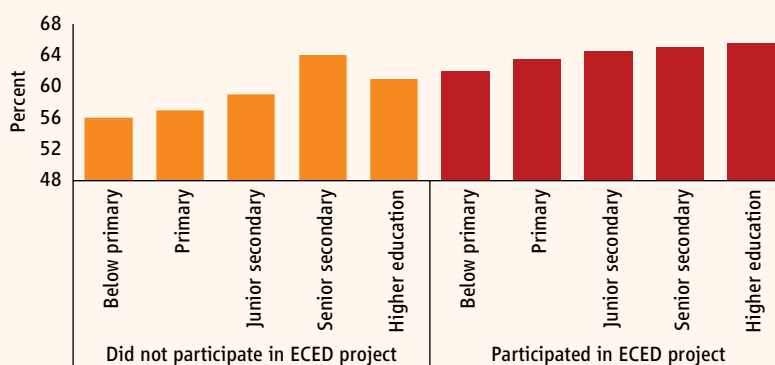
Figure BII.A1.2. Women’s microbusinesses have been particularly hard hit by the pandemic



In addition to the potential of institutional childcare to aid in a country’s recovery through positive impacts on productivity, it may be a powerful tool for advancing equity objectives. There is a consensus in the literature that well-designed early education programs improve children’s development outcomes (Devericelli and Beaton-Day 2020). Children from vulnerable families are particularly likely to benefit. Indeed, evidence from Indonesia demonstrates equity enhancing effects of Early Childhood Education and Development (ECED) programs: participation in an ECED program virtually eliminated the gap in test scores between children of parents with higher education and children of uneducated parents (Chang et al. 2006). Figure BII.A1.3 shows that participation in the program raised test scores of children without an elementary education by 11 percent—to surpass the level of children with a higher education. Notably, figure BII.A1.3 also demonstrates that all groups of children, regardless of parental education level, benefited; however, the impacts are larger among more vulnerable children.

(continued)

(Box II.A1. continued)

Figure BII.A1.3. Impacts of participation in an ECED project on children, by level of parental education

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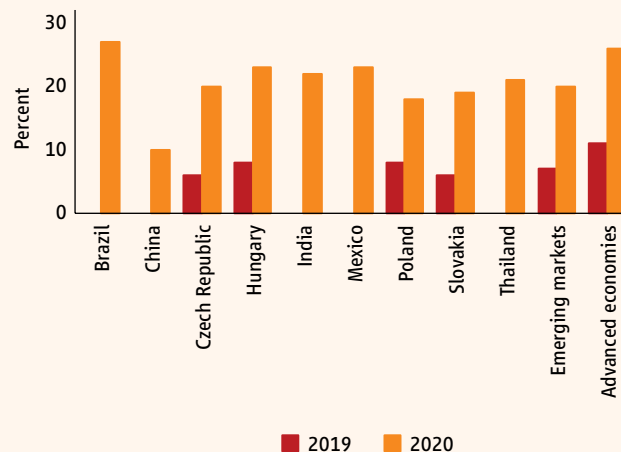
^a Morrissey (2017), Hegewisch and Gornick (2011), and Del Boca (2015) review evidence from upper-income countries; Halim, Perova, and Reynolds (2021), Todd (2013), and Harper et al. (2017) review literature in lower- and middle-income countries.

Box II.B1. Can cloud computing help close digital divides?

Cloud computing can help small and start-up firms grow by avoiding some of the large fixed costs of information technology (IT). In the past, acquiring IT required substantial investments in hardware, software, and large IT departments. Now, firms can access storage, computing, and software as services through the internet—what is known as “cloud computing” (Van Ark 2016; OECD 2015). Cloud providers offer such services “on demand” to firms via flexible “pay as you go” subscriptions. Thus, cloud computing allows firms to turn some of their fixed IT investment into a variable cost (DeStefano et al. 2020). In the UK, firms that adopted cloud were able to reduce their IT investment by 49 percent over a seven-year period (DeStefano, Kneller, and Timmis 2020). Traditional IT disproportionately benefited large firms that were better able to afford these large fixed investments. In contrast, cloud has been found to spur the growth of start-ups and small firms, potentially leveling the playing field (DeStefano, Kneller, and Timmis 2020; Jin and McElheran 2017).

The pandemic has accelerated the diffusion of cloud computing in both advanced and emerging economies. During the pandemic, the use of cloud increased considerably throughout the globe (see figure BII.B1.1). In emerging economies, 20 percent of medium and large firms started using the cloud during 2020, compared to only 7 percent in 2019. Similarly, for advanced economies, 26 percent of new firms adopted the cloud in 2020 versus 11 percent in 2019. Much of this growth in adoption is driven by the use of cloud for storing and processing data rather than using the cloud to access software, potentially reflecting the increased use of data during the pandemic. The use of videoconferencing, remote working, livestreaming, and e-commerce has also risen rapidly during the pandemic, with these services often delivered via the cloud.

Figure BII.B1.1. Many new firms are adopting cloud computing in 2020



Source: Aberdeen GTDB data.

Note: Percentage of firms that start using cloud during 2019 or during 2020 is calculated for medium and large firms (with more than 20 employees) in the manufacturing or services sector. Adoption data over 2019 is not available for all emerging economies. Advanced economies include Australia, Belgium, Canada, Denmark, Finland, France, Germany, the Netherlands, Norway, New Zealand, Sweden, Switzerland, the UK, and the US.

However, the following three challenges for the use of cloud exist.

First, while cloud allows firms to avoid IT capital costs, it increases the importance of human capital. Cloud can allow firms to avoid some costs of IT investment and also reduce the size of IT departments needed to install and maintain IT equipment. However, cloud requires new skills from workers to use it and to reorganize and adapt

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(Box II.B1. continued)

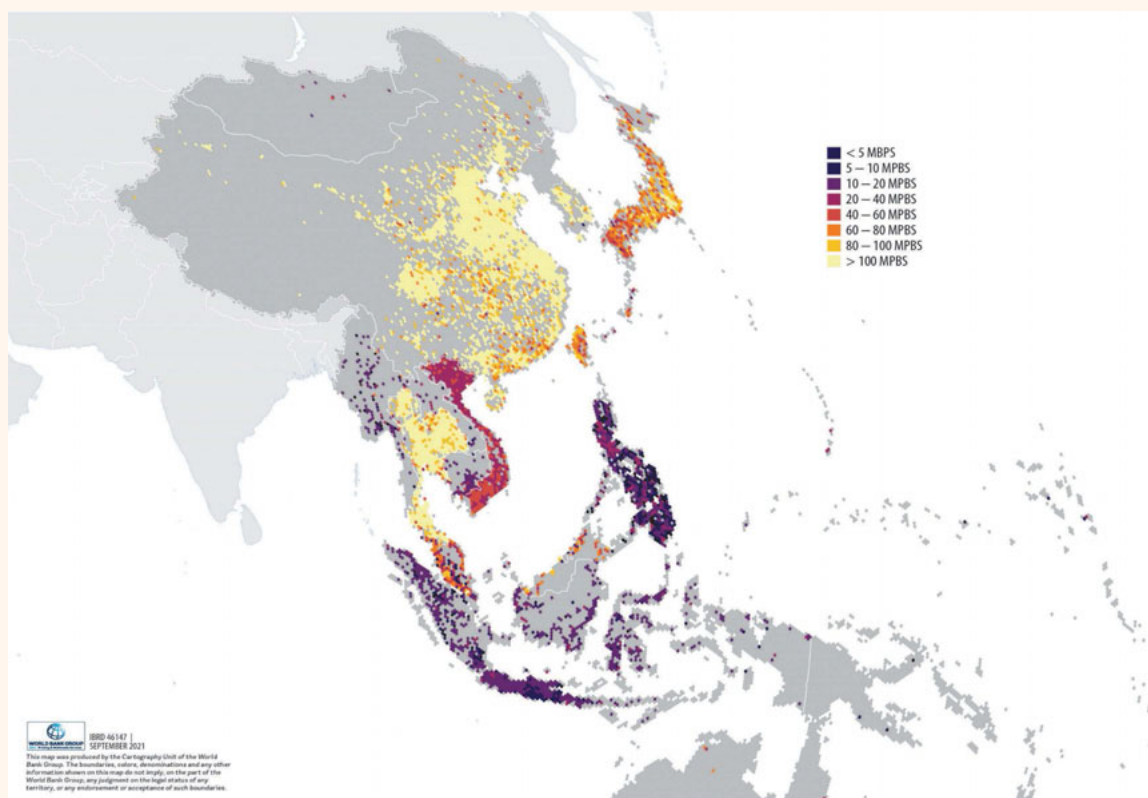
their existing business processes (Bommadevara, Del Miglio, and Jansen 2018). Investment in management skills and digital literacy is strongly related to the ability to adopt cloud (Nicoletti, von Rueden, and Andrews 2020). Unfortunately, these skills are often not widely available, especially in developing countries and in smaller and less productive firms. This may partially explain why smaller firms, despite having potentially the most to gain from cloud, are actually less likely to adopt than larger firms (Andres et al. 2020). A greater investment in skills is needed for the potential of cloud to be broadly realized.

Second, digital infrastructure needed for the cloud is not widely available—potentially increasing inequalities across locations. Stable high-speed broadband is needed for cloud use, especially for data-intensive cloud services relating to the processing and storage of data. These types of cloud can facilitate adoption of data-driven business models that are likely to be increasingly relevant for future competitiveness, including the use of big data and artificial intelligence (DeStefano et al. 2020). UK firms with expected fiber broadband speeds of at least 80 megabits per second (Mbps) were more than twice as likely to adopt cloud as those with 30 Mbps that were available under basic broadband (DeStefano, Kneller, and Timmis 2020). However, there are considerable differences in high-speed fiber broadband access across countries and also between locations within a country, with particularly patchy availability in developing economies (World Bank 2021). For example, while in EAP there is widespread access to basic 2G mobile broadband access, fast fiber speeds are unequally available in the region (map BII.B1.1). China’s Eastern provinces have broad access to fast broadband, whereas other countries such as Indonesia or Myanmar have much slower speeds. However, average speeds mask inequality at more granular levels. In addition, limited competition in telecoms and the lack of interoperability between providers can make data prohibitively expensive. Less than 20 percent of low- and middle-income countries have the data infrastructure needed to support the cloud, such as cloud data centers (World Bank 2021). Investments in prerequisite digital infrastructure are needed to allow broader diffusion of the cloud within developing countries.

Third, traditional policies to stimulate investment in physical capital may unintentionally slow down cloud diffusion. The accelerated growth in demand for cloud computing during the pandemic raises challenges for a policy to adapt. Cloud computing allows firms to access digital technologies through an “on-demand” service, but policies are often targeted toward investment in physical IT capital. These policies, such as tax allowances, subsidies, and grants, lower the cost of capital investment for a firm. However, by incentivizing traditional forms of IT investment, policy may inadvertently be slowing the diffusion of newer technologies, such as the cloud, that are delivered as online services. Recent work in the UK and Germany found that investment incentives lower the probability of cloud adoption, as well as delaying big data business models that rely on it (DeStefano et al. 2020; Andres et al. 2020). Capital incentive policies often have a larger impact on small and medium enterprises (SMEs), because these policies often explicitly target SMEs or smaller investments, and small firms tend to be more capital constrained. Consequently, capital incentives can particularly inhibit cloud adoption for smaller firms—precisely the firms expected to benefit most from cloud. Large firms in the UK that received a corporate tax rebate on their capital investment were 8 percent less likely to adopt cloud, compared to 45 percent for SMEs (DeStefano et al. 2020). Policies designed for firms comprised of personal computers (PCs), servers, and brick-and-mortars may need to be reconsidered for businesses models that increasingly comprise of data and other intangibles.

(continued)

(Box II.B1. continued)

Map BII.B1.1. Inequalities in fixed broadband speeds across and within EAP countries

Source: World Bank calculations using Ookla fixed broadband speed test data for Q4-2020.

Note: Colors reflect the average reported speeds within each 25 kilometer cell, subject to a minimum number of 100 tests per cell. Gray areas reflect either lack of broadband availability or an insufficient number of reported tests.

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Box II.B2. Digital markets and the role of competition policy

The rise of digital businesses has disrupted traditional markets and reduced market fragmentation; however, at the same time, digital markets raise new challenges for competition and competition policy.

The growth of digital businesses and the adoption of digital technologies by firms has spurred innovation, generating new products and services, and has generated efficiencies by reducing transaction costs and improving market intermediation, creating new market access opportunities for small entrepreneurs. Digital platforms are at the center of such developments and provide digital infrastructure and intermediation services in different markets, including marketplaces, search engines, financial services, and passenger transport, among others. At the same time, however, digital markets have a greater tendency to tip toward entrenched concentration and market power as a result of a combination of strong network effects, economies of scale and scope, and the possession of proprietary data by digital firms.

New market dynamics arising from digital markets have challenged policy makers to rethink their approach to competition rules. New strategies and guidelines are being published by jurisdictions around the world in order to mitigate risks and harness opportunities from digital markets.^a Debate and refinement continue, including on tailoring competition analyses and solutions to account for multisided markets, the importance of data as an asset for firms, and the potential for nominally free products that are essentially paid for by the data or attention of users. Competition authorities are also considering the need to increase their vigilance regarding potentially anticompetitive mergers. This includes updating thresholds for merger review to help ensure that potentially anticompetitive mergers can be reviewed by authorities (as discussed in the Grab-Uber case below).^b

There is need for policy makers around the world to monitor market concentrations early on and implement ex ante pro-competitive policies. Whereas economies of scale and scope are drivers of efficiency and productivity gains when digital businesses are at early stages of development, they may cause innovation hindering effects if left unchecked (e.g., “killer acquisitions” of firms that pose a competitive threat to incumbents). Rather than a “wait-and-see,” policy, policy makers should consider introducing adequate ex ante pro-competition policies early on to counter market-distorting conglomerations, and not rely only on a traditional ex post competition law. This is essential for long-run innovation capability and a broad-based and inclusive development of the digital economy.

The merger review policy has been the focus of much discussion on the impact of competition policy on innovation in the digital economy. On the one hand, merger and acquisitions (M&A) is seen as a key path to exit for digital start-ups. This prospect provides start-ups with early incentives to innovate, since they may realize the value of their businesses in the future through an acquisition. Overly stringent enforcement of the competition policy on merger reviews, which results in an increased number of merger prohibitions, might limit incentives for digital start-ups to enter the market. On the other hand, markets should be protected against acquisitions of small firms/start-ups by large cash rich firms that could reduce competition. For example, digital markets are prone to “small” mergers or vertical mergers, which are typically not considered to pose a risk to competition, but that may be damaging to the competitive dynamics of digital markets when the target firm holds data or intellectual property that provides an advantage to the acquirer.^c

(continued)

(Box II.B2. continued)

Another way that competition policy can balance innovation and protection of competition is through the development of remedies or conditions on firms. For example, when reviewing a merger, an authority may allow a merger to proceed even when there are some concerns over the competition effects, as long as the firm(s) agree(s) to implement certain conditions that can help mitigate competition risks. These remedies can either be structural (e.g., the sale of certain assets) or behavioral (e.g., impositions on pricing or sharing of key data). While structural remedies have been traditionally favored by authorities, behavioral remedies are becoming more popular, especially in digital markets where firms hold fewer tangible assets. If well executed, the design of remedies can help balance between innovation and competition. However, because such conditions intervene in market functioning, it is important that they are well designed and based on strong economic evidence.

Case study: Grab-Uber merger in the East Asia Pacific region

The Grab-Uber merger that affected several countries in the East Asia Pacific region exemplifies the difference in approaches that competition authorities can have for competition policy enforcement in digital platform markets.

Background to the merger: In March 2018, the Singapore based ride-hailing platform Grab (the leader in the Southeast Asia market) acquired the Southeast Asia operations of Uber (the second largest player in the region) integrating Uber's ridesharing and food delivery business into Grab's existing multi-modal transportation and fintech platform. This implied that Grab would take over Uber's operations and assets in Cambodia, Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.^d

Of the competition authorities in the region in which the Grab-Uber merger took place, only Singapore and the Philippines decided to fully analyze the transaction. Both Singapore and the Philippines found the merger significantly lessened competition in their jurisdictions based on an ex post analysis. In making this decision, their assessments included factors that are particularly relevant to digital markets, such as multihoming,^e multisided markets, and network effects. In Vietnam and Indonesia, the competition authorities determined that the acquisition did not constitute a merger that required review by the authority. In the other jurisdictions where the merger took place, competition laws or authorities were not yet functional or did not have merger control provisions. Table BII.B2.1 summarizes the different approaches and decisions made by various authorities in the region to the merger.

(continued)

(Box II.B2. continued)

Table BII.B2.1. Comparison of approaches and decisions of different authorities in Southeast Asia where the Grab-Uber merger took place

<i>Country/authority</i>	<i>Approach</i>	<i>Decision</i>
Singapore^f Competition and Consumer Commission of Singapore (CCCS)	<ul style="list-style-type: none"> • Merger notification is not compulsory. This was the first time that the CCCS had investigated and penalized an unnotified merger. • The CCCS concluded that the relevant market does not include “offline” methods of transportation (i.e., “offline” methods do not compete with Grab and Uber, which increases the competition risks of them merging) • Factors assessed: <ul style="list-style-type: none"> • Barriers to entry and expansion are high due to strong indirect network effects with risks of market “tipping.” • Low levels of multihoming by drivers due to incentives and exclusivities put in places by Grab. • High switching costs for riders due to exclusive contracts of car rentals with Grab-Uber. • High costs of building sufficient network and scale makes entry of new competitors and growth of existing competitors difficult. 	<ul style="list-style-type: none"> • Merger led to a substantial lessening of competition (SLC) due to actual or potential price increases, reduced quality, and Grab’s imposition of exclusive contracts on drivers, car fleets, and rental companies. • CCCS found that efficiencies alleged by the parties could not outweigh SLC: <ul style="list-style-type: none"> • Parties did not demonstrate that claimed efficiencies arising from a higher network density (expanding network of drivers in favor of a higher offer for riders) are merger specific and likely to arise only because of the merger.
Philippines^g Philippine Competition Commission (PCC)	<ul style="list-style-type: none"> • There was uncertainty over whether the merger surpassed the thresholds to be considered notifiable. Nevertheless, PCC decided to go forward with the review due to competition concerns. • PCC imposed interim measures that ordered the parties to maintain their operations separately until the review was concluded. Nevertheless, Grab and Uber went ahead with the merger, and Uber exited the market. • PCC found that the relevant market does not include “offline” methods of transportation (“offline” methods do not compete with Grab and Uber, which would increase the competition risks of them merging). • Analysis was based on actual and potential price increases, decreases in quality, and exclusivities imposed on drivers as barriers to entry. 	<ul style="list-style-type: none"> • PCC concluded the transaction had resulted in a substantial lessening of competition: <ul style="list-style-type: none"> • Post-transaction, Grab had 93 percent of on-demand car-based private transportation online booking services. And the transaction creates or strengthens Grab’s dominance in the market. • Prior to the transaction, prices charged by Grab had been flat or even declining, while post-transaction prices increased, despite the increased supply of drivers available to Grab. • Barriers to entry are significant. Entry into the relevant market will not be timely, likely, and significant. It would take significant time and cost for a competitor to build a driver and rider base sufficient to compete with Grab.

(continued)

(Box II.B2. continued)

<i>Country/authority</i>	<i>Approach</i>	<i>Decision</i>
Vietnam^h Vietnam's Competition Council (VCC) and Vietnam Competition Authority (VCA)	<ul style="list-style-type: none"> The VCA decided that the merger was illegal because Grab failed to alert authorities to the accumulated market share of over 50 percent that the acquisition would result in. Nevertheless, the VCC ruled that Grab broke no competition laws when it acquired Uber, overruling the VCA. VCC decided that Grab did not take control of the exiting company since it did not participate in the management of Uber Vietnam and did not hold any voting rights in its management. No review of the merger was conducted. 	<ul style="list-style-type: none"> The transaction did not constitute an economic concentration under the law and therefore was not reviewed in depth, and no sanctions or remedies were applied.
Malaysia Malaysia Competition Commission	<ul style="list-style-type: none"> Did not review the merger as it does not have a merger control provision under the Competition Act. 	
Indonesiaⁱ Competition Commission of Indonesia (KPPU)	<ul style="list-style-type: none"> No review of the merger was conducted since KPPU concluded that the transaction was not a notifiable merger since it determined there would be no transfer of control from Uber Indonesia to Grab Indonesia and since Uber Indonesia's legal entity would still exist. 	<ul style="list-style-type: none"> The transaction did not constitute a business combination and therefore the merger was not reviewed.
Myanmar, Cambodia and Thailand^j	<ul style="list-style-type: none"> No functional Competition Law/Competition Authority in effect at the time of the merger. 	

Despite a similar analysis, some remedies imposed by the authorities of Singapore and the Philippines to mitigate competition concerns differed (table BII.B2.2). Both authorities imposed restrictions on imposing exclusive contracts on drivers in an attempt to increase the use of multiple platforms by drivers, thereby reducing barriers to entry for potential ride-hailing platforms. Both authorities imposed pricing remedies, but the Philippines' approach of establishing maximum price increases allowed for less flexibility than Singapore's approach. Only Singapore imposed a structural remedy on the merging parties as part of its decision and ordered Uber to sell its car rental business to any potential competitor that makes a reasonable offer. Since the impact of remedies is an area where evidence is mixed and scarce, the differing approaches taken indicate a need to harmonize approaches and increase coordination between authorities across the region, especially when such global or regional mergers affect several markets in the region.

(continued)

(Box II.B2. continued)

Table BII.B2.2. Comparison of remedies/fines imposed in Singapore and the Philippines

<i>Competition and Consumer Commission of Singapore (CCCS)^k</i>	<i>Philippines Competition Commission (PCC)^l</i>
<p>Behavioral</p> <ul style="list-style-type: none"> • Drivers should be free to use any ride-hailing platform and not be required to use Grab exclusively, to allow multihoming. • Remove exclusive arrangements with any taxi fleet in Singapore and not engage in any new ones in the future. • Grab should maintain its pre-merger pricing algorithm and driver commission rates to avoid excessive price and commission surges. 	<p>Behavioral</p> <ul style="list-style-type: none"> • Keep fares within a price level that does not deviate by more than 22 percentage points from where it was prior to the exit of Uber. • Drivers and operators must not be subject to any policy that would result in them being exclusive to Grab. • Since incentives may result in drivers remaining exclusive to Grab, and thus affect competitors' ability to enter and expand, the commission shall monitor Grab's incentives. • Continue to provide licensing and regulatory support to drivers, although they also operate under other platforms. • Ensure fare transparency by revising trip receipts to show consumers the fare breakdown per trip. • Improve service quality to pre-transaction levels (e.g., acceptance and cancellation rates).
<p>Structural</p> <ul style="list-style-type: none"> • Prohibition of the sale of Uber's car rental company (Lion City) to Grab unless CCCS authorizes. • Uber must sell Lion City if any new/existing platform service makes a reasonable offer without imposing any restrictions in relation to the use of its vehicles. 	<p>Structural</p> <ul style="list-style-type: none"> • None
<p>Temporality</p> <ul style="list-style-type: none"> • Conditions imposed can be suspended on an interim basis if a platform competitor without any direct or indirect common control with Grab attains 30 percent or more of total rides in the market for one month. • CCCS can unconditionally eliminate the conditions if a platform competitor without any direct or indirect common control with Grab attains 30 percent or more of total rides for six months. 	<p>Temporality</p> <ul style="list-style-type: none"> • One year
<p>Fines US\$9.6 million^m since the merger resulted, or was expected to result, in a substantial lessening of competition.</p>	<p>Fines US\$3 millionⁿ for violating interim measures that ordered the parties to maintain pre-transaction conditions during PCC's merger review.</p>

(continued)

(Box II.B2. continued)

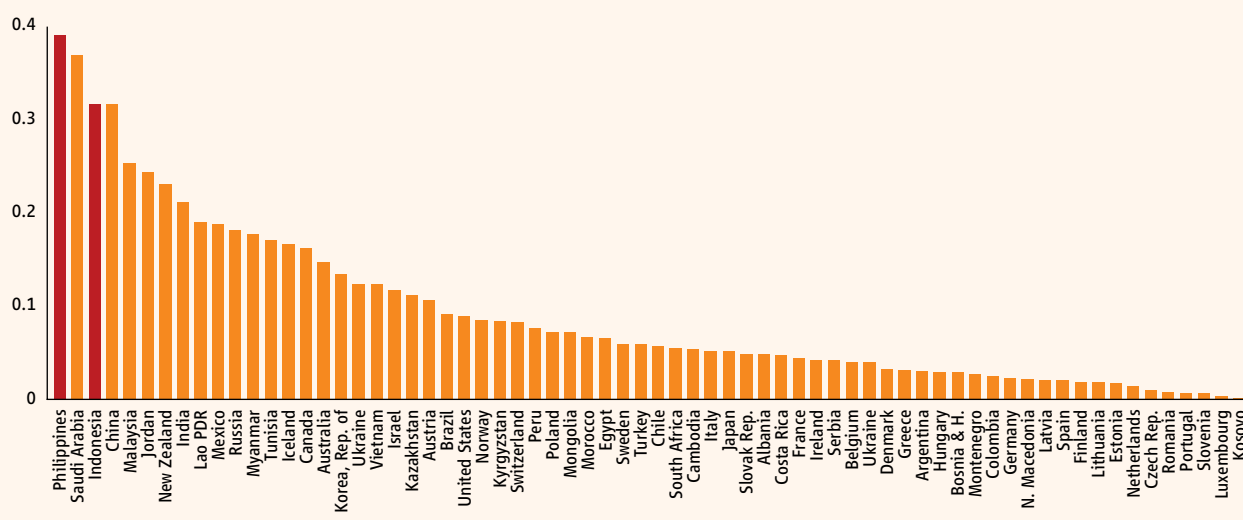
Overall, the Grab-Uber merger that brought together the largest players in the ride-hailing digital platforms in the region proved to be challenging for less mature competition authorities in the EAP region. The fact that only two authorities fully analyzed the merger—and did so only after the merger had taken place rather than before, as is good practice—limited the conditions imposed on the merger to eliminate its potential negative impacts on the market. The lack of pre-merger notification regimes and appropriate thresholds for merger notification in the region (only 55 percent of authorities in the EAP region have a notification regime and none include a stand-alone transaction value test that is more suited to the digital economy) prevented a number of authorities from evaluating the effects of the merger ex ante and from blocking or imposing conditions on the transaction. There is a need to examine whether merger rules, procedures, and authority capacity are adequate to review the active stream of mergers and acquisitions being generated in EAP’s growing digital markets. Moreover, further harmonization and coordination across jurisdictions in the region could support case assessments and the design of effective remedies.

- a Reports and papers commissioned by expert groups on addressing competition policy in the digital economy have been released by Australia, the BRICS (Brazil, Russian Federation, India, China, and South Africa), Canada, the European Union, Germany, Mexico, the Netherlands, Portugal, the United Kingdom, and the United States, among others. In EAP, Singapore has published papers on competition in the digital economy and the role of data. Indonesia conducted the “Study on the Determination of Relevant Market in Law Enforcement in the Digital Economy Sector.” Japan has been conducting a series of surveys on digital markets, including for online shopping, app retailing, cloud services, and advertising. Additionally, Japan’s competition authority has published guidelines concerning the abuse of bargaining positions in transactions between digital platform operators and consumers that provide personal data. The Philippines Competition Commission published a paper on the Philippine digital commerce market.
- b More generally, governments also look at implementing ex ante regulations to help boost the contestability of digital markets and to prevent platform firms with significant market positions from abusing their market power.
- c “Killer” or “zombie” acquisitions (where a large firm buys a small firm to put its innovations on hold before it becomes a competitive threat) have also been identified as a potential issue.
- d “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/>.
- e Multihoming refers to the possibility for users to use more than one platform at a time in the same market, as opposed to singlehoming in only one platform that is frequented by users.
- f CCCS “Notice of Infringement Decision. Sale of Uber’s Southeast Asian business to Grab in consideration of a 27.5% stake in Grab,” September 2018, Case number: 500/001/18. https://www.ccs.gov.sg/public-register-and-consultation/public-consultation-items/uber-grab-merger?type=public_register.
- g PCC, Acquisition by Grab Holdings, Inc. and MyTaxi.PH Inc., of Assets of Uber B.V. and Uber Systems, Inc. (M-2018-012) Statement of Concerns. Executive Summary, https://www.phcc.gov.ph/wp-content/uploads/2018/05/PCC_CompetitionConcerns_ExecSummary_28May2018.pdf; PCC, “PCC binds Grab to service quality, price conditions for Uber takeover,” August 2018, <https://www.phcc.gov.ph/press-releases/pcc-binds-grab-to-service-quality-price-conditions-for-uber-takeover/>; PCC, “Holding Grab by the Horns,” <https://www.phcc.gov.ph/column11-bm-cjrb-holding-grab-by-the-horns/>.
- h *Saigoneer*, “Vietnam Officials Find No Competition Violations in Grab-Uber Deal,” <https://saigoneer.com/saigon-technology/16768-officials-rule-no-violations-in-grab-uber-deal/>; *Saigoneer*, “Grab’s Acquisition of Uber Might Have Violated Vietnam’s Competition Law: Authorities,” <https://e.vnexpress.net/news/business/companies/why-vietnam-bucked-the-trend-on-grab-uber-deal-3942842.html>; Dat Nguyen, VNEexpress, “Why Vietnam bucked the trend on Grab-Uber deal,” <https://e.vnexpress.net/news/business/companies/why-vietnam-bucked-the-trend-on-grab-uber-deal-3942842.html>.
- i KPPU, “The acquisition of Uber assets in Indonesia,” <https://eng.kppu.go.id/the-acquisition-of-uber-assets-in-indonesia/>.
- j Myanmar Competition Commission established in October 2018. Cambodia does not have a competition law yet. In Thailand, the Trade Competition Act BE 2542 (1999) was repealed by Trade Competition Act BE 2560 (2017) (TCA). Nevertheless, this new law became effective until October 2018, and the merger control review came under effect until December 2018, after the Grab-Uber merger took place. <https://www.inhouselawyer.co.uk/legal-briefing/merger-control-in-thailand-what-you-need-to-know/>; <https://www.lexology.com/library/detail.aspx?g=f1e3c603-1855-4513-a1ba-5933b1f01a23>; <https://www.lexisnexis.co.uk/legal/guidance/thailand-merger-control>.
- k CCCS “Notice of Infringement Decision. Sale of Uber’s Southeast Asian business to Grab in consideration of a 27.5% stake in Grab,” September 2018, Case number: 500/001/18, https://www.ccs.gov.sg/public-register-and-consultation/public-consultation-items/uber-grab-merger?type=public_register.
- l PCC, Acquisition by Grab Holdings, Inc. and MyTaxi.PH Inc., of Assets of Uber B.V. and Uber Systems, Inc. (M-2018-012) Statement of Concerns. Executive Summary, https://www.phcc.gov.ph/wp-content/uploads/2018/05/PCC_CompetitionConcerns_ExecSummary_28May2018.pdf; PCC, “PCC binds Grab to service quality, price conditions for Uber takeover,” August 2018, <https://www.phcc.gov.ph/press-releases/pcc-binds-grab-to-service-quality-price-conditions-for-uber-takeover/>; PCC, “Holding Grab by the Horns,” <https://www.phcc.gov.ph/column11-bm-cjrb-holding-grab-by-the-horns/>.
- m \$513 million at a 0.7414 US dollar exchange rate. Rate taken from: <https://www.exchangerates.org.uk/SGD-USD-spot-exchange-rates-history-2018.html>.
- n P16 million at a 0.19 US dollar exchange rate: Rate taken from: <https://www.exchangerates.org.uk/PHP-USD-spot-exchange-rates-history-2018.html>.

Box II.B3. Investment reform in Indonesia and the Philippines

In recent years, Indonesia and the Philippines have had the most restrictive foreign direct investment (FDI) regimes in East Asia. Even among high- and middle-income countries, for whom the Organisation for Economic Co-operation and Development (OECD) computed an FDI regulatory restrictions index in 2019, the two countries were ranked as the most restrictive, along with Saudi Arabia and China (figure BII.B3.1).^a In the Philippines, many sectors were subject to foreign ownership equity limitations of 40 percent. Indonesia's negative investment list (*Daftar Negatif Investasi*—DNI) imposed a variety of restrictions on investments, particularly foreign equity limits. Until early 2021, the DNI applied at least one investment restriction in almost 35 percent of all economic sectors, and in 20 percent of them it either limited foreign equity participation or prohibited foreign investment altogether.

Figure BII.B3.1. As of 2019, Indonesia and the Philippines imposed tight regulatory restrictions on FDI



Source: Organization for Economic Cooperation and Development (OECD).

FDI inflows into both Indonesia and the Philippines were weaker than those into comparator Association of Southeast Asian Nations (ASEAN) countries. In the Philippines, FDI inflows as a share of GDP were half the ASEAN average in the last decade. The electronics industry was the Philippines' largest manufacturing export industry, yet ASEAN peers received more FDI and exported more electronics than the Philippines.^b In Indonesia too, tight regulatory restrictions on FDI limited the size of FDI flows relative to GDP, when compared to regional peers in the same period. Further, FDI composition has shifted from export-oriented sectors (i.e., efficiency driven) to natural resource and domestic-oriented sectors (resource and market seeking).^c

Previous analyses suggest that restrictions deprive countries of beneficial FDI flows. Liberalizing FDI restrictions by about 10 percent, as measured by the OECD FDI Regulatory Restrictiveness Index, could increase bilateral FDI stocks by an estimated average of 2.1 percent.^d A World Bank analysis finds that previous foreign investment led to important productivity effects for domestic firms in Indonesia. Around 60 percent of this impact was found to come from technology spillovers from multinational corporations (MNCs), while around 40 percent

(continued)

(Box II.B3. continued)

of this impact stems from stronger competitive pressure that induces incumbents to innovate and preserve market shares.^e

Recent reforms in Indonesia and the Philippines

The Government of Indonesia (GoI) recently implemented its most comprehensive investment reform program in decades. Most direct restrictions on investments were removed through the February 2021 Presidential Regulation on Investment, which may have been spurred by the COVID-19 crisis. This Regulation (PerPres 10/2021)^f reduced the number of business activities subject to at least one investment restriction from 813 to 260. This reform eliminates foreign equity limits across a wide range of sectors.^g The reform has turned many sectors where FDI was either not allowed or restricted by minority shareholding into sectors fully open to FDI (i.e., up to 100 percent foreign equity). Examples of such sectors include fishing, horticulture, small- and medium-sized supermarkets, seaports, airports, shipping lines, mobile and fixed telecom services, power plant generation and distribution, auto repair services, manufacturing of alcohol, wine, malt, and main equipment. Government Regulation No. 34/2021 on Foreign Workers also complemented these reforms by facilitating a more adequate supply of high-skilled professionals for the labor market.^h The implementation of these reforms, and the adoption of complementary reforms, could support recovery and the economy's long-term growth potential.

In the Philippines, the Congress is examining legislation amending three FDI-related laws as of August 2021. These are amendments to the Retail Trade Liberalization Act (RTLTA), the Public Services Act (PSA, Government of the Philippines, 1936, 1991, and 2000), and the Foreign Investments Act (FIA). Two amendments to the 1991 FIA are proposed to remove the “practice of professions” from the foreign investment negative list, and to reduce mandatory direct local hires by foreign investors. This is expected to attract more skilled foreign professionals so that Filipinos can gain new knowledge and broaden their existing skills. The amendment to the RTLTA seeks to lower the required paid-up capital for foreign retail enterprises to enter the Philippine market. The amendment to the PSA defines public utilities and lifts the nationality restriction on industries, such as power generation and supply, transportation, and telecommunication, among others.

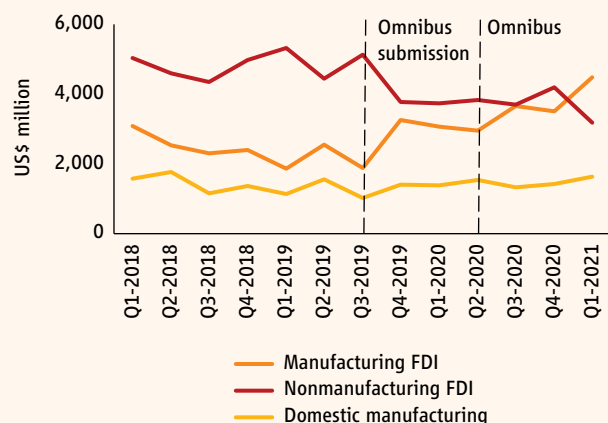
Recent data show a strong pickup in FDI in manufacturing for Indonesia, although the causal link to recent reforms is yet to be established. The data suggest that FDI in manufacturing has grown significantly since the Omnibus Bill was submitted to Parliament, whereas other FDI categories have remained stagnant (see figure BII.B3.2, panel A). The growth in manufacturing FDI inflows in Indonesia has outpaced the performance in other economies in the region, including the Philippines (see figure BII.B3.2, panel B). This growth has been recorded in traditional manufacturing strongholds such as basic metals and paper product sectors, as well as in emerging sectors such as motorized vehicles and machinery equipment following the liberalization of several manufacturing sectors. Manufacturing sectors dependent on service inputs are also benefiting from the wide-ranging services liberalization of the DNI.ⁱ The Philippines received significantly less FDI in 2020, down by 71 percent. The decline can be attributed in part to concerns and uncertainty surrounding the effect of a prolonged pandemic on the global economy, but the implementation of reform may encourage future flows.

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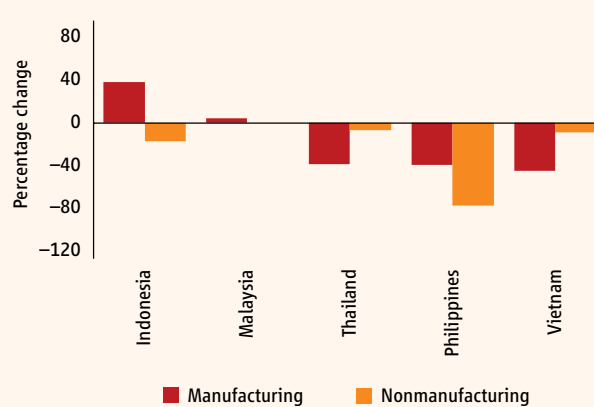
(Box II.B3. continued)

Figure BII.B3.2. FDI inflows in manufacturing in Indonesia increased following the submission to parliament of the Omnibus bill

A. FDI inflows in Indonesia



B. FDI inflows in East Asian economies



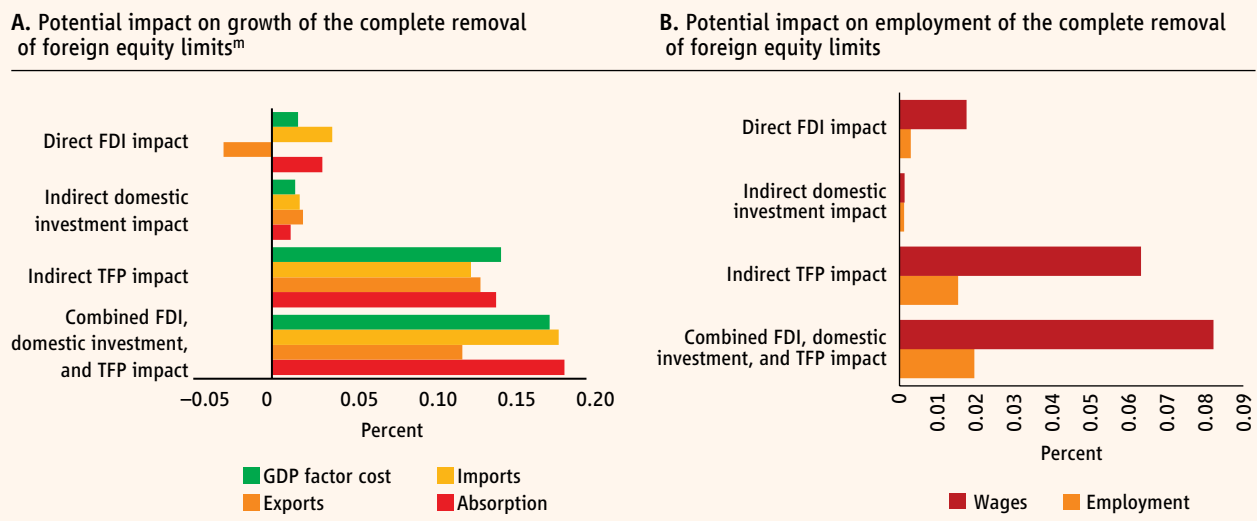
Source: BKPM data, downloaded from CEIC.

Sources: Authors' compilation from BKPM, Bank of Thailand, Philippine Statistics Authority, Vietnam Investment Review, Vietnam Foreign Investment Agency, and Malaysian Investment Development Authority.
Note: Data for Malaysia nonmanufacturing FDI is not available.

In time, the liberalization of investment could lead to significant new investments and macroeconomic benefits for Indonesia. A World Bank analysis suggests that the removal of investment restrictions may generate between US\$4.1 billion and US\$6.0 billion per annum in additional investments in the liberalized sectors (both foreign and domestic investments). The positive impact of reforms on domestic investment suggests a complementary relation between FDI and domestic investment where the influx of the former crowds the latter.^j These additional FDI and domestic investments can increase the productive capacity of the economy and affect relative prices in product and factor markets. The analysis also shows that reforms could lead to an increase in the annual GDP growth rate of between 0.12 and 0.17 percentage points. A higher GDP growth of 0.2 percent per year is estimated from the complete removal of the foreign equity restrictions on all sectors (figure BII.B3.3, panel A).^k A combined effect of the estimated increase in FDI, domestic investment, and total factory productivity (TFP) is also associated with a positive impact on absorption, exports, and imports compared to the business-as-usual (BAU) scenario.^l In turn, the investment flows are expected to raise employment and wages and will ensure a reduction in poverty. For instance, a combined potential impact of increase in FDI, domestic investment, and TFP is expected to increase the average growth rate of employment and increase wages (figure BII.B3.3, panel B).

(continued)

(Box II.B3. continued)

Figure BII.B3.3. Removal of restrictions to FDI is likely to increase GDP growth

Source: Cali, M., Cicowiez, M., Doarest, A., Hidayat, T., and Sharma, D. 2020. "The economic impact of investment provisions: Evidence from Indonesia," World Bank (mimeo).

Although these reforms address many of the restrictions in the Philippines and Indonesia, more could be done in terms of broadening the scope and accelerating the pace of reform. In Indonesia, further reforms could include reducing—and eventually eliminating—the list of sectors reserved for small and medium enterprises (SMEs) and reducing burdensome minimum local content requirements across various sectors. These changes could be complemented by enhancing investment promotion and addressing investors' grievances more effectively, which could also increase the retention rate of investments. Finally, investment reforms need to be complemented by trade reforms, especially of non-tariff measures. Similarly, for the Philippines, the proposed amendments to the FIA do not define the rights and obligations of investors and the state, and they do not guarantee some fundamental rights to foreign investors. The law contains a complex and long negative list, and the amendment to exclude the practice of professions from the scope of the FIA may not be sufficient to achieve the stated objective of attracting foreign professionals for bringing their know-how to the Philippines. The proposed amendments are certified as urgent by the president, but they are still in flux and have some ways to go in terms of the legislative process. Thus, there is room for further reform in the new proposed act.

- a The OECD FDI Index gauges the restrictiveness of a country's FDI rules by looking at the four main types of restrictions on FDI: foreign equity limitations; screening or approval mechanisms; restrictions on the employment of foreigners as key personnel; and operational restrictions, such as restrictions on branching, capital repatriation, or land ownership (OECD, 2019).
- b The World Bank. 2021. "A New Dawn for Global Value Chain Participation in the Philippines" (mimeo).
- c World Bank. 2020. Indonesia Systematic Country Diagnostic Update. World Bank, Washington, DC. World Bank. <https://openknowledge.worldbank.org/handle/10986/34107>.
- d Mistura, F., and Roulet, C. 2019. The determinants of Foreign Direct Investment: Do statutory restrictions matter? OECD.
- e Cali, M., A. Doarest, and G. Presidente. Forthcoming. "Foreign entry and domestic performance: Evidence from Indonesia" (mimeo).
- f In February 2020, the GoI submitted the Omnibus Bill on Job Creation to Parliament. The first wave of implementing regulations in the form of government regulations (PP) and presidential regulations (PerPres) was issued in February 2021.
- g This is at the detailed business activity level. At the KBLI 5 digit level (2015 publication), these are from 467 to 149 out of a total of 1,573.
- h Details of these reforms can be found in Indonesia—Investment and Trade Reforms Development Policy Financing (English). Washington, DC. World Bank Group. <http://documents.worldbank.org/curated/en/145081622032496602/Indonesia-Investment-and-Trade-Reforms-Development-Policy-Financing>.
- i Duggan, Rahardja, and Varela (2013) showed how policy restrictions on FDI in the Indonesian service sector affected the performance of manufacturers.
- j Such complementarity may be related to competitive pressure on domestic investors, positive technology spillovers from FDI, and/or the expansion of the sector following the FDI increase, all of which stimulate increased investments by domestic firms, but formal testing for the channels is left for further research.
- k This is compared to a BAU scenario. Note these estimates were conducted prior to the reforms. It assumes reforms are enacted on all 467 KBLI industries/sectors (thus 0 percent). Current reforms reduced the affected sectors from 467 to 149 of 1,573, which at 9 percent have 9 percentage of the sectors still projected.
- l These results are from a computable general equilibrium (CGE) model named GEM-Core (see Cicowiez and Lofgren 2017). The BAU scenario is a projection without policy changes and serves as a benchmark for comparisons. It runs from 2010 (base year) to 2030. In this scenario, the analysis imposes the observed growth rates in real GDP at factor cost for the years 2010 to 2018, and an average growth of 5.3 percent during 2019 to 2030. There is no interaction in the model between FDI and domestic investment and no interaction between FDI and productivity; hence domestic investment and TFP are treated separately in the simulations.
- m However, when considering the impact from increased TFP, domestic firms increase their output and exports. In fact, the increased TFP in the last two scenarios compensates for the negative effect of the real exchange rate appreciation and exports decrease. In these scenarios, there is a net positive impact on exports.

Box II.B4. Technology and inequality

With the rapid adoption of automation and artificial intelligence (AI), a perennial concern about technology is attracting renewed attention. Technology will boost growth, but it may lead to redundant workers or a wider gap between the skilled and the unskilled. Today, the concern is not only about agriculture or light manufacturing jobs, which historically competed with mechanization, but also about heavy manufacturing jobs being replaced by industrial robots, and even service white-collar jobs by specialized software using AI.

Much of the recent empirical work is on the US labor market, which has been experiencing job polarization and a divergence of wage growth among workers of different education levels since the 1980s.^a A recent study shows that the sluggish growth of labor demand, especially since 2000 in the US, is because of the combination of adverse shifts in the task content of production—driven by accelerated automation and decelerating reinstatement (new task creation)—and weak productivity growth (Acemoglu and Restrepo 2019). Technology’s distinct effect on the task content of production explains formerly hard-to-interpret phenomenon in the advanced economies, such as the disappearance of middle-skill occupations rather than general skill upgrading.^b

The balance between automation and new tasks in the US may have changed for two reasons: (1) the shifts in the innovation possibilities frontier makes the creation of new tasks more difficult, and (2) the incentives in the US economy favor the employment of capital over labor. The latter reason arises from the US tax code, in which the use of equipment is heavily subsidized while the employment of labor is taxed. The oligopolistic structure of tech industries (their business model is based on automation and small workforces) and declining government support for longer horizontal innovation have also been identified as relevant factors. This changing institutional architecture suggests, at the same time, that the negative consequence of automation is not inevitable. It has been suggested that policy could soften the adverse balance between automation and new tasks by removing incentives for excessive automation and creating incentives to rebalance the direction of technological change.

How relevant are these concerns about technology for emerging markets? As new technology tends to be first adopted in advanced economies and then disseminated to emerging markets, the literature has explored two channels of technology adoption. One is indirectly through trade with partner countries who adopt technology, and the other directly through technology adoption by firms in emerging markets. Evidence on the former channel suggests that robots in advanced economies may not have a negative impact on employment in export-producing developing countries because the increase in productivity and scale of production outweigh any negative substitution effects, although there may exist an adverse distributional impact locally (Artuc, Bastos, and Rijkers 2018; Artuc, Christiaensen, and Winkler 2019; Faber 2020; and Oldenski 2015).

On the latter channel, a recent study using data from manufacturing plants in Indonesia shows that although robot adoption increased average employment, it reduced the share of labor in value added and increased skill wage premia (Cali and Presidente 2021). Poole et al. (2017) document areas with access to digital technologies in Vietnam that experienced a slower growth of manual and routine employment in response to trade shock. On the other hand, evidence about internet and digital technology adoption suggests adoption of these technologies has positive employment effects, even for low-skilled or low-educated worker

(continued)

(Box II.B4. continued)

groups (Dutz, Almeida, and Packard 2018; Hjort and Poulsen 2019; Cusulito, Lederman, and Pena 2020). One plausible channel of technology adoption to greater employment is through the lowered cost of entry for salaried firms. This explains that digital adoption by firms is linked to lower self-employment rates in developing countries, but not to lower unemployment rates (Shapiro and Mandelman 2021).

The literature suggests that technology is not by itself likely to increase or reduce inequality in either advanced or developing countries. The nature of technology being adopted, specifically its interplay with displacement, reinstatement, and productivity effects, determines whether the technology promotes inclusive growth. As seen with the US labor market, the role of the government will be ever more important for emerging markets as well. Traditional labor supporting policies, including social security, education, and skill upgrading, will be key to enable workers to seek high-wage jobs and adapt to increasing within occupation changes (Freeman, Ganguli, and Handel 2020). At the same time, government needs to ensure that its taxes and other incentives do not favor capital over labor and hence lead to excessive automation.

Finally, technology impacts workers, and not just through the traditional employee-employer channel. Using technology such as a job matching app or engaging in emerging gig works workers or job seekers can have access to wider job opportunities. While the emergence of the gig economy has raised concerns in the industrial countries about the weakening of labor market regulations and workers' rights, in developing countries such opportunities could empower low-skill workers previously unemployed or underpaid to seek better jobs. Empirical evidence of this effect is still scarce, especially in emerging markets, but a recent labor force survey in Indonesia shows that monthly earnings for digital gig workers are 15.8 percent higher than for other informal workers, conditioning on location, sector of employment, age, gender, education, internet use, and hours worked (World Bank 2021). Thus, technology per se is neither a blessing nor a curse, it is up to us to design policies that lead to a favorable labor-technology relationship.

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(Box II.B4. continued)

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a See for example, Autor, Katz, and Kearney (2006), and Autor and Dorn (2013).

b In the canonical model of the Skill-Biased Technological Change, technological change takes a factor augmenting form and increases the productivity of skilled workers more than those of less skilled workers.

