

# LONG COVID



# Long COVID

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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

## Preface and Acknowledgments

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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.

## Executive Summary

**The East Asia and Pacific (EAP) region is suffering a reversal of fortune.** In 2020, many EAP countries successfully contained COVID-19 and economic activity swiftly revived as other regions struggled with the pandemic and economic recession. Now the region is being hit hard by the COVID-19 Delta variant while many advanced economies are on the path to economic recovery.

**The disease is damaging the economy and is unlikely to disappear in the foreseeable future.** In the near term, the persistence of the pandemic will prolong human and economic distress unless individuals and firms can adapt. In the longer term, COVID-19 will reduce growth and increase inequality unless the scars are remedied and the opportunities grasped. Policy action must help economic agents to adjust today and make choices that avert deceleration and disparity tomorrow.

### What Is Happening Now?

**The uneven recovery in the EAP region is now facing a setback.** China is projected to grow at 8.5 percent in 2021, though growth momentum has eased. Overall regional growth is projected at 7.5 percent, reflecting the scale of China's economy. The rest of the region is anticipated to grow by 2.5 percent, compared to 4.4 percent forecast in our April update, with significant heterogeneity across countries. While China, Indonesia, and Vietnam have already surpassed pre-pandemic levels of output, Cambodia, Malaysia, and Mongolia will only do so in 2022, and the Philippines, Thailand, and many Pacific Islands will remain below pre-pandemic levels of output even in 2023.

**As a result, employment has declined, poverty will persist and inequality is increasing across several dimensions.** Regional employment rate dropped by about 2 percentage points on average between 2019 and 2020. As many as 24 million people will not be able to escape poverty in 2021 in developing EAP, excluding China, because of COVID-19. While all households have suffered, poorer ones were more likely to lose income, sell off productive assets, suffer food insecurity, and lose schooling for children.

### Why?

**Restrictions to contain COVID-19 are constraining economic activity.** Testing-tracing-isolation, a successful strategy in 2020, has been less effective against the more infectious Delta variant. Vaccinations, which would have helped reduce mortality and transmission, have been slow. Therefore, governments have been forced to impose restrictions to stop the spread of the virus. In general, economic disruption has been less in countries with higher vaccination. A 10 percentage point higher vaccination coverage was associated with a one-half of a percentage point higher quarterly gross domestic product (GDP) growth.

**Constraints on vaccination differ for countries in the region.** Availability held back vaccination rates in larger countries like Indonesia, the Philippines, and Vietnam. Smaller, poorer countries, such as some of the Pacific islands, benefited from vaccine donations, but some are constrained by limited distribution infrastructure. In several countries, as vaccination levels increase, hesitancy is likely to be a constraint.

**Two factors have softened the consequences of the present outbreak.** First, domestic economic activity has so far been less sensitive to infections. One additional case per one thousand reduced industrial production by an average of

5 percent in May 2020 but had a negligible effect in June 2021. Second, the buoyant external environment has helped to sustain regional exports. In August 2021, China's merchandise exports increased by 31 percent in value terms over 2019-Q4 and those of other EAP countries by 21 percent.

**But goods trade conditions are changing, and exports of tourism services will recover only slowly.** Global goods import demand peaked in 2020-Q2, and regional exports face stronger competition as other regions recover. Commodity prices have stopped increasing. The Delta variant is disrupting production at home and in source countries, leading to shortages as well as increased shipping times and costs. The Delta variant has set back the recovery of tourism in the region.

**The prolonged economic distress is straining the capacity of governments to provide economic support.** As intertemporal budget constraints begin to bite, fiscal support across the region declined from an average of 7.7 percent in 2020 to 4.9 percent in 2021, even though economies are still operating below their potential. In contrast, as consumer price increases remain within central bank targets in most countries, monetary policy remains supportive and interest rates have not been increased, unlike in some other emerging markets. Despite increases in loans at risk, most countries other than China have not yet tightened financial sector regulations or rolled back regulatory forbearance.

## The Near-Term Economic Risks

**COVID-19 could hit all countries in the region even harder.** Continued deficiencies in vaccination and limited testing could lead to recurrent waves of infections, possibly driven by new variants of concern, while health systems remain unprepared to deal with long COVID.

**The region has less to fear from inflation at home than inflationary pressures abroad.** Domestic inflationary pressures are low, except in Mongolia and the Philippines, because expectations are well anchored. But faster recovery and inflation in industrial countries could induce higher interest rates there, and premature financial tightening in the lagging EAP region.

**Macro-financial risks are rising, and caution is warranted.** The accumulation of record levels of debt by firms and households and of nonperforming loans by banks are a source of concern. All countries in the region have adequately capitalized banks but regulatory forbearance could hide deeper financial sector problems. The highly leveraged corporate sector, with strong links to the nonbank financial institutions, also 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. Firms in other countries are also facing difficulties: between June and August 2020, almost one-half the businesses in Vietnam and more than 70 percent of businesses in Mongolia were in arrears or anticipating entering arrears within six months.

## Policies for Recovery

### Containing COVID-19

**Current trends in vaccination could help the EAP transition to a relatively benign phase of COVID-19 by June 2022.** Countries with vaccination rates higher than 60 percent, like Germany, Israel, and the United Kingdom, have reduced serious illness and mortality. Across EAP countries, vaccination rates are picking up: the share of the population

that received at least one dose was an average of 18 percent by the end of June 2021 but had increased to 35 percent by the end of August 2021. Many EAP economies could reach 60 percent vaccine coverage by the first half of next year. A 60 percent coverage would not eliminate infections or the generation of new variants and countries will need to seek to achieve higher coverage. But the experience of countries with high vaccination rates reveals that it would significantly reduce the incidence of serious illness, hospitalization and mortality, allowing for a resumption of economic activity.

**EAP countries must take other measures to contain COVID-19.** Testing, tracing and isolation must be used to contain the spread of infections, as Singapore is doing. Precautionary behavior, such as some levels of social distancing and masks in crowded spaces, will also need to continue. Otherwise, new variants can lead to increased levels of infection and hence mortality, as Delta is doing. Health systems must be strengthened to deal with the lingering presence of COVID-19. And production of vaccines, including regionally, must expand to cope with sustained high demand and unreliable imported supply.

## Macro-financial support

**Domestic and international policy action can help governments extend fiscal support without undermining fiscal stability.** Domestically, countries can (re-)introduce fiscal rules—as Indonesia and Malaysia are planning to do—as a commitment to limiting future deficits and debt; and enact legislation that commits to deeper reforms of both expenditure and revenue. Internationally, countries can coordinate fiscal stimulus and deepen cooperation on taxation to enable domestic revenue mobilization in the face of mobile capital.

**Many EAP countries can use monetary policy space to support economic recovery in the near term but must remain alert to the risk of abrupt global financial tightening.** Boosting the independence and credibility of central banks will help anchor inflationary expectations. More flexible exchange rate regimes would allow greater monetary policy autonomy and relieve pressures on reserves, for example, in the Lao People’s Democratic Republic (PDR) and Myanmar.

**Allowing easier access to credit must guard against potential financial instability.** Current forbearance measures coexist with record accumulation of private sector debt in several jurisdictions, such as China, Malaysia, Thailand, and Vietnam. Such measures should be accompanied by greater transparency to help assess asset quality and the scale of nonperforming loans. Forbearance measures need to be gradually unwound in a coordinated and transparent manner to avoid destabilizing markets. Countries across the region need to strengthen their insolvency frameworks to facilitate firm exit and debt resolution.

## Harnessing international integration

**Open trade policies are more likely to support global economic recovery.** Onshoring policies by industrial countries may “bring value chains home” but would reduce real incomes in the EAP region by 3 percent relative to the baseline in 2030, with trade-dependent Vietnam worst affected. Responding by liberalizing and facilitating trade, rather than through retaliatory restrictions, could lead to a net increase in real incomes for most countries, including in the EAP, and contribute to recovery.

**FDI reforms too can boost growth.** The recent investment reform in Indonesia could increase the annual GDP growth rate by as much as 0.2 percentage points. China, Malaysia, Thailand, and Vietnam could further reform their regimes for investment in the services sectors.

**Bilateral and regional cooperation can facilitate international mobility of tourists and temporary workers.** The Pacific Islands could develop a mutually recognized digital “vaccine passport,” as well as credible testing certificates, with some of the countries which are major sources for tourists and destinations for temporary workers.

## The Longer-Term Economic Risks

**COVID-19 threatens to create a combination of slow growth and increasing inequality for the first time this century in the EAP.** The result could be deprivation to an extent that the region has not seen in the last two decades. In Indonesia and the Philippines, as many as 8 million more people would remain trapped in poverty in 2023 if recovery is not accompanied by inequality reducing policies.

**The adverse effects of the pandemic are likely to dampen long-term economic growth.** In Indonesia, Mongolia, and the Philippines, firms lost on average at least 40 percent of their typical monthly sales and cut jobs. The failure of otherwise viable firms is leading to the loss of valuable intangible assets, such as supplier or customer relationships and know-how. Surviving firms are deferring productive investments. Unemployment can erode human capital and hurt future earnings. These negative effects on growth are likely to be stronger than any benefits of creative destruction induced by the crisis.

**Increased inequality between firms could increase inequality between workers.** Large firms’ sales were only 15 percent lower by Winter 2020 than the year before, compared to 48 percent lower for micro firms; were more likely to adopt sophisticated technologies; and were more likely to receive government support. Workers of shrinking firms suffer because they cannot move easily between firms and locations, and the destinies of the poor are tied to family-run microbusinesses.

**Increased inequality among households today can worsen inequality tomorrow.** Income shocks among the poor have adverse long-term consequences. The distress selling of productive assets and increased debt can hurt longer-term incomes. Food insecurity increases the risk of stunting, which impedes children’s development and earnings as adults. Limited engagement in online learning could cost the average student in school today a reduction of 3.8 percent in expected earnings every year.

**As shown in the report, fiscal policy has not traditionally played a significant redistributive role in EAP, but social protection has stepped into the breach.** The systems of direct taxes and transfers in developing East Asia neither worsen nor mitigate inequality, except in Mongolia. In 2020, a scaling up of cash transfers helped protect millions of people from the worst economic effects of the pandemic but may fall short of needs in 2021 in Myanmar, the Philippines, and Timor-Leste.

## Policies to Promote Equitable Growth

### Supporting firms

**COVID-19 is also creating opportunities.** The opportunity is primarily arising from the rapid diffusion of technology, which could boost productivity, improve learning, and transform state institutions. But harnessing technology will require policy reform.

**Policies should support firms but not inhibit entry and exit.** Extending support to productive firms must be accompanied by facilitating entry of new innovative firms through reforms of the business environment and allowing exit of weak firms through better bankruptcy laws and resolution frameworks. Services sector reforms will help finance, communication, transport, and other services be more effective. Countries must reduce remaining barriers to trade in both goods and services and strengthen procompetitive regulation.

**Policies are needed to support broader technology diffusion.** Equipping firms with the skills to embed technology in their business must be complemented with openness and competition policies to increase the incentives for firms to exploit such technologies. While digital infrastructure for basic technologies is often available, broadband access needs to be widened to facilitate the use that more advanced technologies requires.

### Ensuring inclusion

**Build adaptive social protection systems.** Social protection in the region is still characterized by significant coverage gaps. These can be remedied by expanding eligibility for need-based assistance to the uncovered poor, increasing coverage of social insurance, and moving from the traditional static to dynamic targeting methods that can quickly capture those affected by shocks.

**Education reform will help build stronger, more equitable human capital, taking advantage of new technological opportunities.** Many countries in the region already faced learning crises with poor educational outcomes pre-COVID-19. Schools need to be reopened safely, with more individualized remedial support provided to recover learning losses. To build human capital to meet tomorrow's demands, reforms of teacher preparation, curricula, and teaching materials will need to complement investments in EdTech.

# Long COVID

The title of this report has two meanings. First, that COVID-19 will durably damaged the economy through lower public and private investment and the loss of human and intangible capital. Second, that the disease may be here to stay. This duality reflects the two themes of this update. In the near term, the persistence of the pandemic will prolong human and economic distress unless individuals and firms can adapt. In the longer term, COVID-19 will reduce growth and increase inequality unless we can remedy the scars and grasp the opportunities created by the pandemic. Accordingly, policy actions must help economic agents not just to adjust today but also to make choices that avert deceleration and disparity tomorrow.

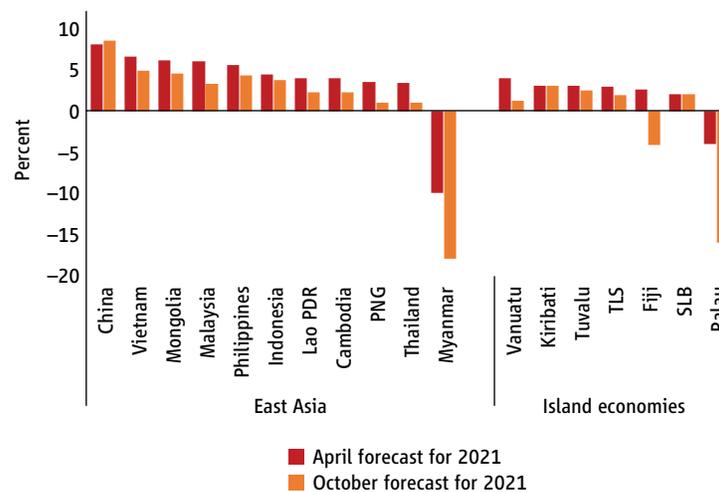
We begin by addressing four proximate questions: What is happening to the East Asia and Pacific economies? Why? What can we expect? And what can be done? We then discuss the longer-term impact of COVID-19, on growth through the impact on firms and on inequality through the impact on households. We conclude with a brief discussion of policies for equitable growth.

## Part I. Recent Developments

### What Is Happening to the Economy?

**The multispeed recovery in the region is now facing a setback.** The recent economic performance of East Asia and Pacific (EAP) countries reveals once again the pattern of uneven recovery identified in the previous update, but in slower motion (figure O.1). China is projected to grow by 8.5 percent in 2021, faster than expected, while the rest of the region is projected to grow by 2.5 percent, about 2 percentage points slower compared to the last update. Output in China and Vietnam had already exceeded pre-pandemic levels in 2020, but economic activity has been disrupted in Vietnam and is threatened in China, as revealed by the activity indicators and Purchasing Managers Index (PMI) (figure O.2). Output in Indonesia and Malaysia had come close to pre-pandemic levels, while Thailand and the Philippines were further away, but now all of them are showing signs of slowing down. The worst affected and the slowest in recovering are Myanmar and several Pacific Island Countries.

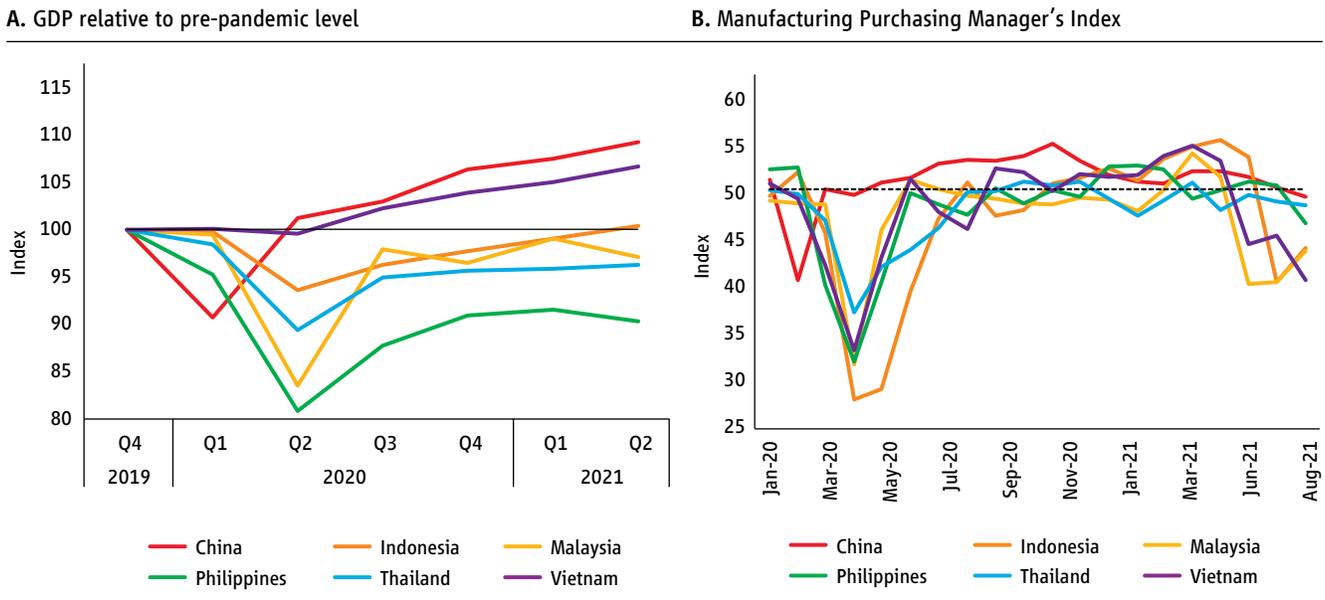
**Figure O.1.** China is projected to grow faster than was expected, most other countries slower



Source: World Bank staff estimates.

Note: Refer to Table O.1 for further details. PNG = Papua New Guinea, TLS = Timor-Leste, SLB = Solomon Islands.

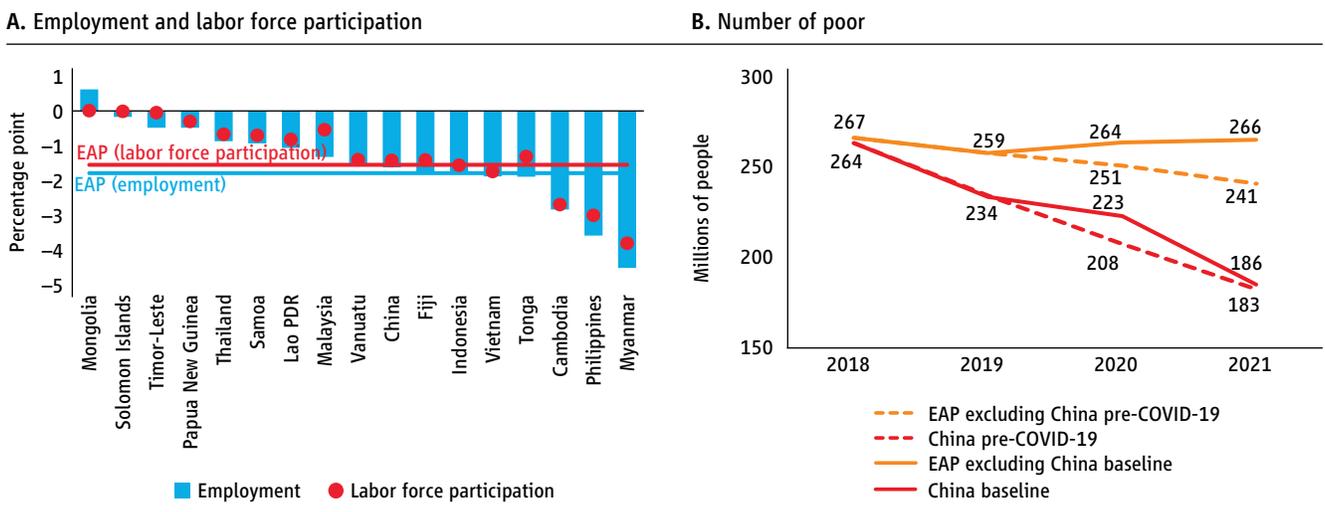
**Figure O.2.** A downturn in economic activity has interrupted the EAP region’s uneven recovery



Sources: Haver Analytics.  
 Note: Figure A shows seasonally adjusted real GDP indexed to 2019-Q4 (100). Figure B shows Purchasing Manager’s Index (PMI; 50+ = expansion).

**The COVID-19 shock has reduced employment and increased poverty.** The regional employment rate dropped by about 2 percentage points on average in 2020 compared to 2019, with the sharpest declines observed in Cambodia, Myanmar, and the Philippines (figure O.3). 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. Workers have also moved from urban formal jobs to informal rural jobs. As a result, fewer people will escape poverty. While the estimated number of poor for China is expected to drop to the level projected pre-COVID-19 for 2021, there will be 24 million more poor people in 2021 than expected pre-COVID-19 in the rest of developing EAP, based on the US\$5.50/day poverty lines. More than 90 percent of those who will remain poor are expected to come from Indonesia, the Philippines, and Myanmar—the only country where the number of poor people will increase in 2021.

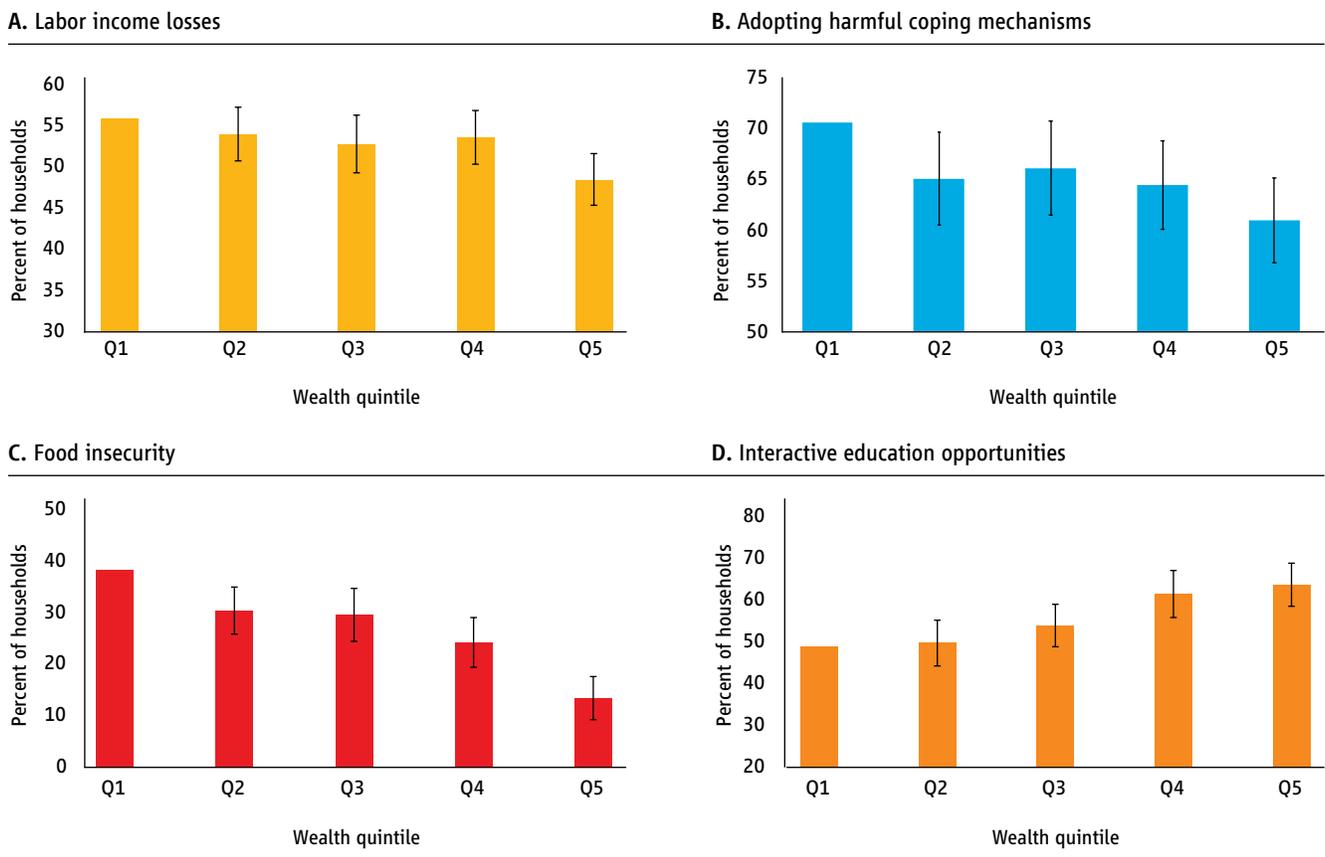
**Figure O.3.** Employment declined and fewer people will escape poverty



Source: World development Indicators, World Bank Staff estimations.  
 Note: B. The baseline forecasts are as of September 15, 2021. Estimations are for US\$5.50 per-person-per-day poverty line (2011 PPP).

**Inequality is increasing across several dimensions.** While all households suffered, the poorer were significantly more likely to experience a loss of income than the wealthier (figure O.4). With little or no savings, poorer households have often resorted to coping mechanisms, such as the distress sale of productive assets and increased debt. Poorer households also have greater food insecurity, raising the risk of increased child malnutrition and stunting. Children in poorer households were less likely to engage in online or other forms of interactive learning, raising the risk of losses in human capital. As we discuss in section II.C, each of these adverse effects on inequality today could have long lasting consequences.

**Figure O.4. Inequality is rising across multiple 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.

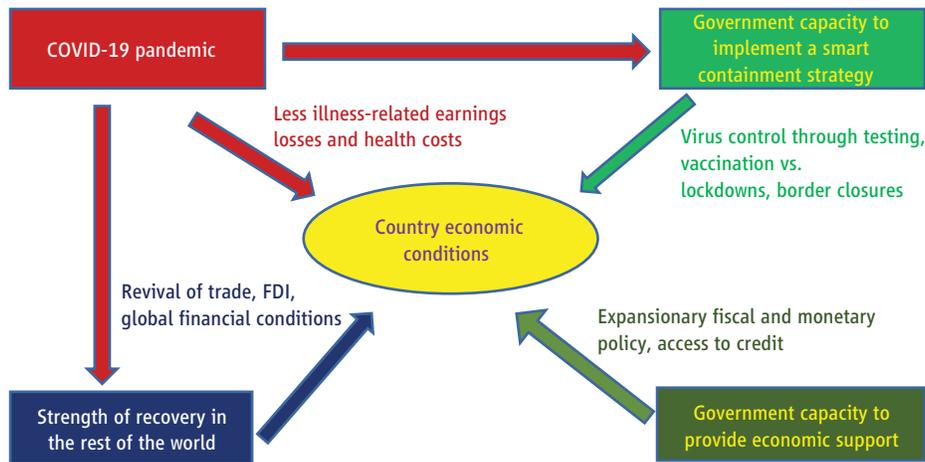
## What Explains Economic Performance?

**The EAP region is suffering a reversal of fortune.** In 2020, many EAP countries had contained the spread of the disease and economic activity had revived but other regions of the world were struggling with the disease and in economic recession (figure O.5). Now in 2021, it is the region which is being hit harder by the disease while the advanced countries are on the path to recovery, thanks to their greater success in limiting the severe consequences of the disease and the stronger stimuli provided by major country governments.

**The heterogeneity of economic performance across EAP countries is explained primarily by four factors.** These are the scale of the COVID-19 shock, the measures by which the disease is being contained, the ability to take advantage of buoyant external conditions, and the capacity of the government to provide support. Table O.2 in the appendix

presents information on these four dimensions for each country. Since the efforts of several EAP countries to contain the disease through less disruptive measures such as testing-tracing-isolation are not as effective against the Delta variant, and vaccination has been slow, several governments have been forced to impose restrictions which are hurting domestic economic activity. The buoyant external environment has helped sustain exports of some countries that export manufactured goods and commodities. EAP governments’ ability to provide continued policy support differs, and for some is increasingly constrained by rising debt.

**Figure O.5. COVID-19 continues to hit countries directly and indirectly**



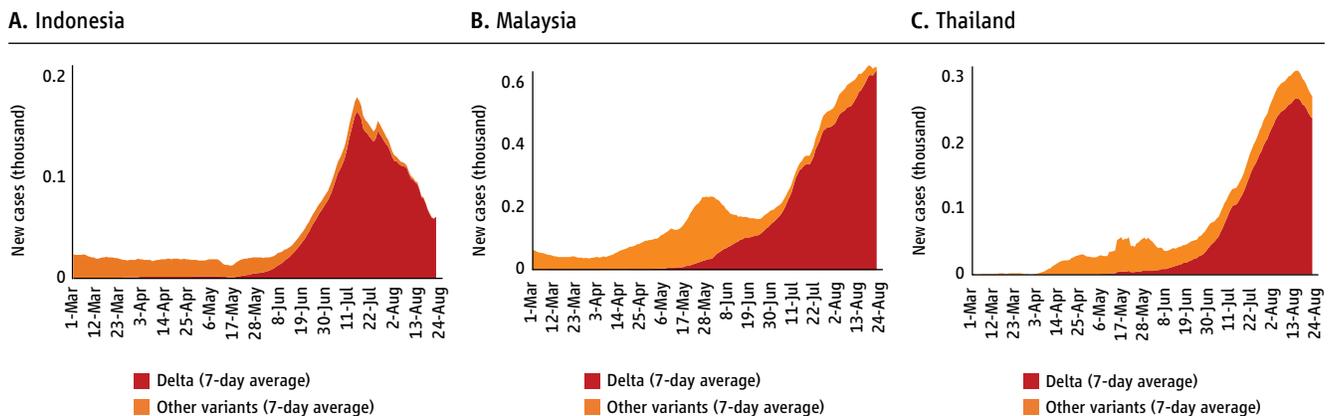
Source: World Bank staff elaboration.  
Note: FDI = foreign direct investment.

**Some countries’ performance is also shaped by idiosyncratic factors.** The military takeover in Myanmar in February 2021 and the subsequent surge in COVID-19 cases have severely impacted the economy. Economic activity has been affected by reductions in mobility, employment, and incomes, as well as the disruption of banking, transport, and telecommunications services. The Philippines and the Southern Pacific Islands have been affected by a series of natural disasters.

### The COVID-19 shock and containment strategies

**The Delta variant is fueling new and serious outbreaks in the region.** All major EAP economies, except China, are suffering from the largest COVID-19 outbreaks of infection and fatalities since the beginning of the pandemic. The Delta variant currently accounts for over 97 percent of total new COVID-19 cases in Indonesia and Malaysia, and over 80 percent in Thailand—the three countries with frequently reported genome sequencing (figure O.6).

**Figure O.6. The resurgence of COVID-19 is driven by the Delta variant**

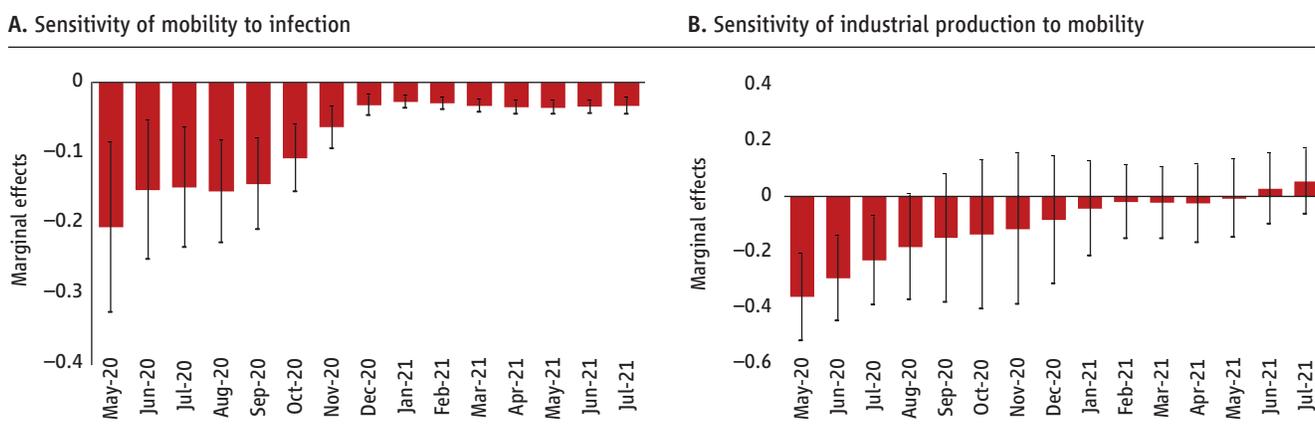


Source: Oxford Covid-19 Government Response Tracker (OxCGRT), Our World in Data.

**Delta is spreading because pre-vaccine containment strategies are proving insufficient, and vaccination has been slow.** In the pre-COVID-19 vaccine era, many countries in the region were able to contain the disease by imposing short periods of stringent restrictions on domestic and international mobility and then transitioning to intensive testing-tracing-isolation. This approach proved very effective and was implemented with varying degrees of success in Cambodia, the Lao People’s Democratic Republic (PDR), and Vietnam, and less so in Indonesia and the Philippines. 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 longer restrictions on mobility. A cross-country econometric analysis 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 who were able to contain the disease through less economically burdensome measures.

**Economic activity is now less sensitive to infections and has helped cushion the negative impact of COVID-19 outbreaks on output.** High frequency indicators of economic activity presented in figure O.2B and econometric analysis reveals that recent economic activity has been relatively resilient to infections even in countries with low vaccination rates. In most countries, the public health measures provoked by the outbreak restrict overall mobility less, and economic agents have learned to function in the face of infections and diminished mobility. On average, 10 additional infected cases per 1 million are associated with less than one-half of a percent reduction in mobility now compared to over a two percent reduction in the first half of 2020 (figure O.7). Similarly, countries imposing a stricter degree of domestic lockdown experienced over a 10 percent reduction in mobility in all months prior to December 2020, but the impact was one-half that much in the first half of 2021. Industrial production declined by an average three index points (out of 100) in May 2020 in response to approximately 20 additional cases per million or every 10 percent reduction in mobility; all of such effects became negligible in 2021.

**Figure O.7. Mobility has become less sensitive to disease severity, and economic activity less sensitive to reductions in mobility**



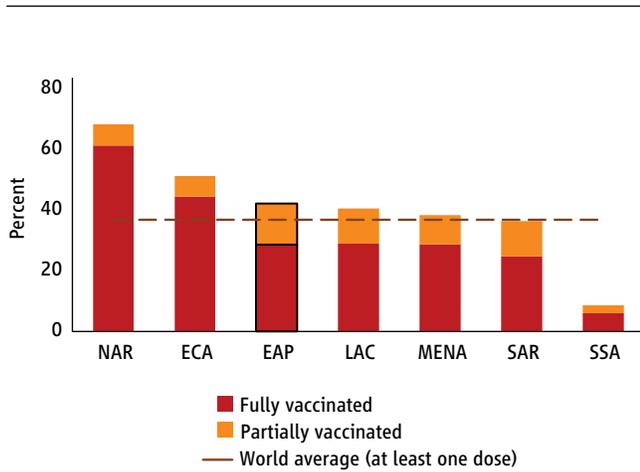
Source: EAP staff illustrative, based on data from Oxford Covid-19 Government Response Tracker (OxCGRT) and Google Community Mobility Reports.

Note: Bars show estimates from rolling three-month panel regressions for all the countries for which data are available. Similar progression of effects is observed for both high and low vaccination countries.

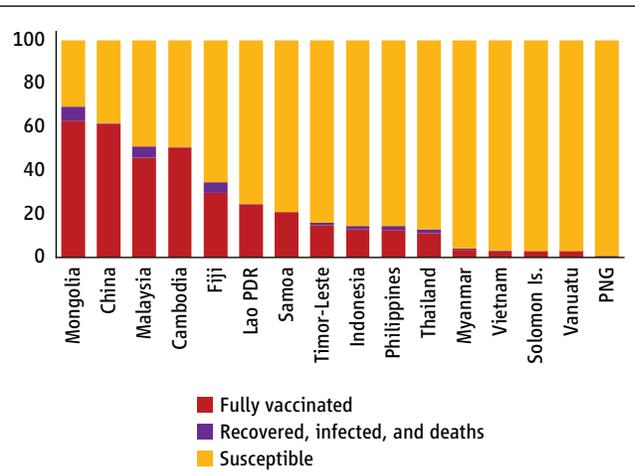
**Widespread vaccination with safe and effective vaccines is needed to revive growth and reduce poverty.** Given the high levels of susceptibility of the populations in EAP countries, only widespread vaccination would obviate the need for mobility restrictions that hurt economic activity. The quarterly GDP of countries that had vaccinated at least one-half 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 20 percent vaccine coverage experienced an output *contraction* on average of 0.8 percent in the same period. Cross-country econometric analysis reveals that delayed vaccination is hurting economic activity. A 10 percentage point increase in a country’s vaccine coverage is associated with an approximately one-half of a percentage point increase in quarterly GDP (box I.2).

**Figure O.8.** The relatively low level of vaccination and high levels of susceptibility are necessitating stringent lockdowns and hurting growth in many EAP countries

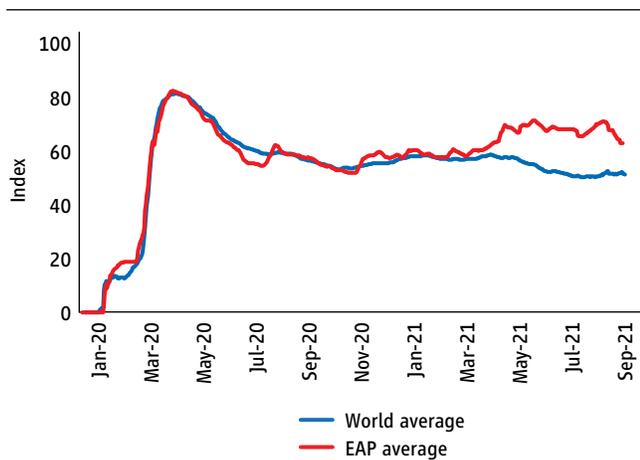
**A. Vaccine coverage by regions**



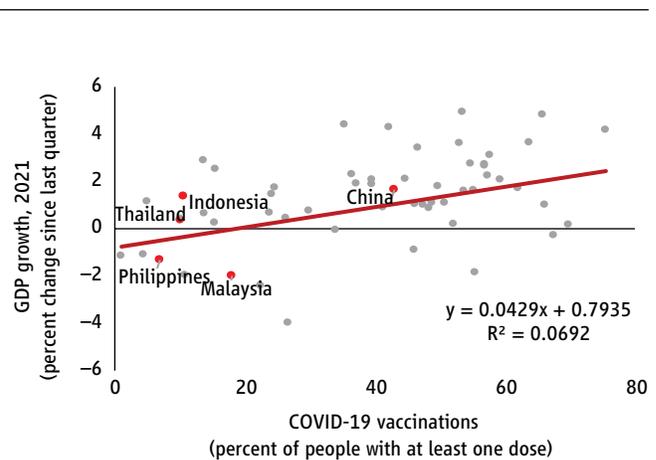
**B. Vaccinated and susceptible**



**C. Stringency of lockdowns**



**D. COVID-19 vaccinations and GDP growth**

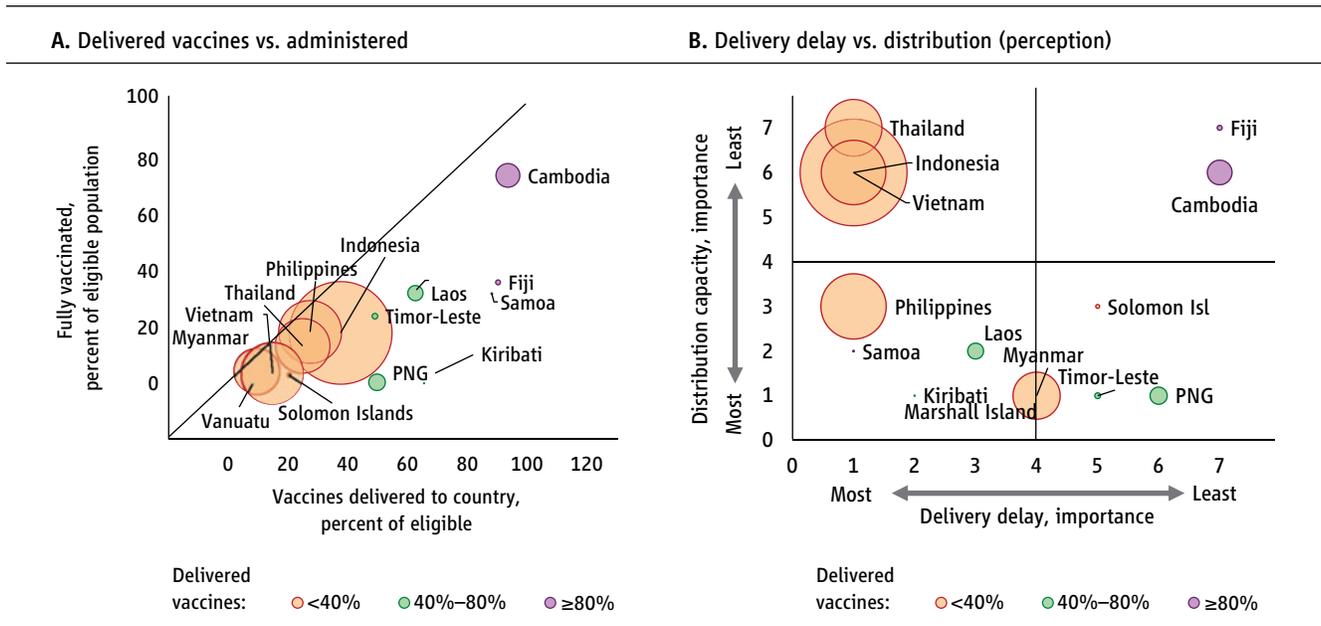


Source: Oxford Covid-19 Government Response Tracker (OxCGRT), Global Economic Prospects June 2021.

Note: Based on latest vaccination observations as of August 31, 2021. Fully vaccinated, recovered, infected, and deaths populations (panel B) assumed to be nonoverlapped. PNG = Papua New Guinea.

**Vaccination faces constraints that differ across countries in the region.** A survey shows that vaccine availability is the now the binding constraint on vaccination in the larger EAP countries such as Indonesia, the Philippines, and Vietnam (figure O.9). Smaller, poorer countries such as Papua New Guinea (PNG) and Fiji have benefited from vaccine donations, but some, such as Papua New Guinea, are constrained by inadequacies in their distribution infrastructure. Several countries, including China, must still persuade a significant minority of citizens to be vaccinated.

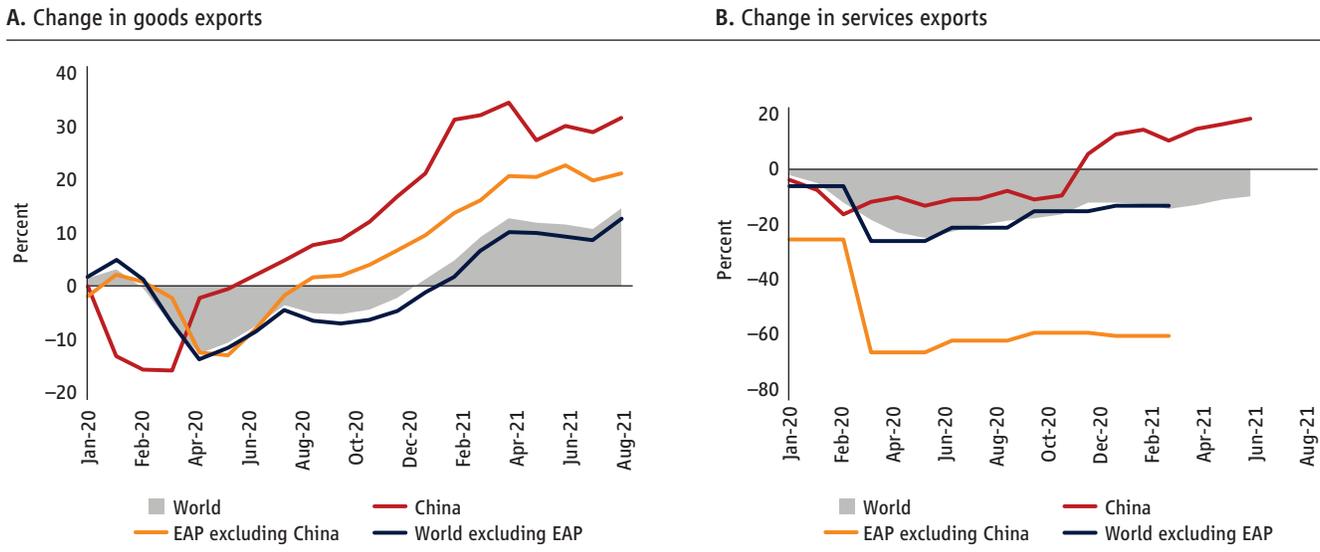
**Figure O.9.** Delivery drives vaccination, and delays are perceived as major problems for larger EAP countries; distribution capacity perceived to be the major constraint for the smaller and poorer countries



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: the most—7: the least) was assessed among potential constraints (delivery delays, financing, procurement process, domestic production, distribution capacity, regulation, 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. The information on secured/expected and delivered vaccines is in appendix table O.3.

**The external environment has been more supportive, and that has helped to sustain regional exports.** 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. In August 2021, China’s merchandise exports saw a 31 percent increase, whereas other EAP countries’ exports grew by 21 percent over 2019-Q4 (figure O.10). Continued high demand for electronics is driving export growth in China, Malaysia, and Vietnam, while high commodity prices are boosting the export earnings of Indonesia and Mongolia. The pandemic seems to have durably increased the EAP’s share in global goods exports. However, services exports continue to suffer because of the virtual disappearance of tourism which is of vital significance to many of the region’s economies. China and the Philippines have seen a recovery in services exports thanks to increased exports of information, computer and telecommunication, and business services.

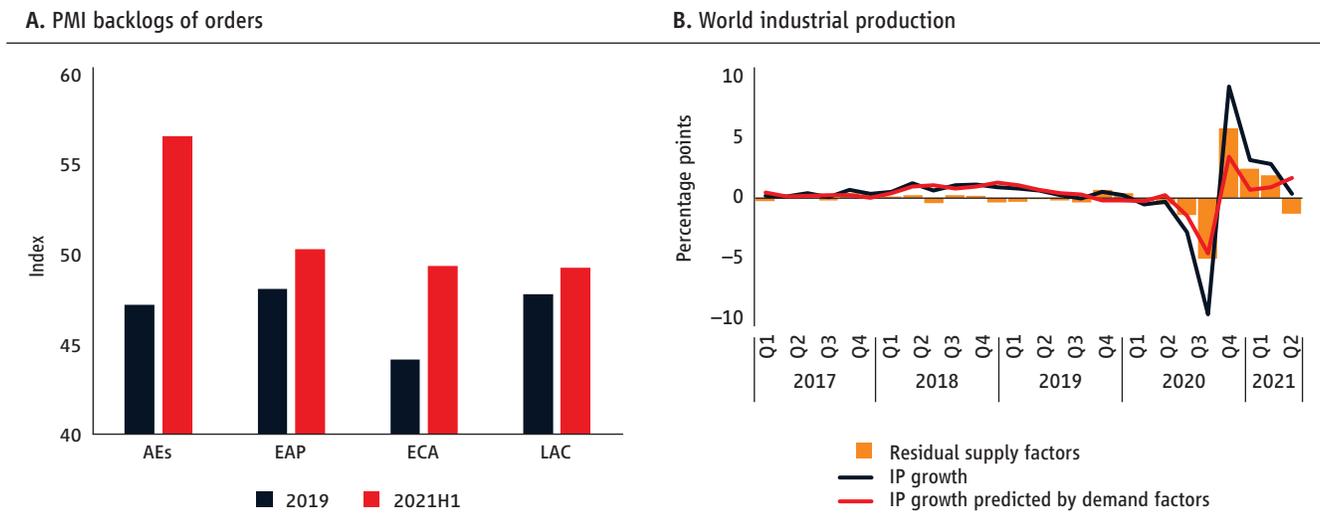
**Figure O10.** EAP goods exports plateaued recently at higher than pre-pandemic levels, but services exports continue to languish except in China



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

However, the recent plateauing of EAP goods exports suggests that both external demand and domestic supply conditions may be changing. First, world import demand peaked in 2020-Q2 and its composition is shifting slightly away from EAP’s comparative advantage sectors, such as machinery and electronics. Second, exports from other countries have recovered, and EAP exports are no longer outperforming the rest of the world. Third, commodity prices have stopped increasing, affecting the exports of countries like Indonesia, Myanmar, and Mongolia. Fourth, the spread of the Delta variant through East Asia is disrupting production at home and in regional source countries. The result is shortages of vital inputs like semiconductors which ripple upstream and downstream through the global value chains, affecting other industries such as electronics, medical devices, and automobiles. Finally, recent increases in shipping costs and delays, attributable in part to COVID-19–related port disruptions, are also hurting EAP exports. Our analysis confirms that supply-related factors are increasingly weighing on global industrial output growth and trade in recent months (figure O.11; box I.6).

**Figure O.11.** Backlogs of orders have increased across manufacturing reflecting growing supply constraints

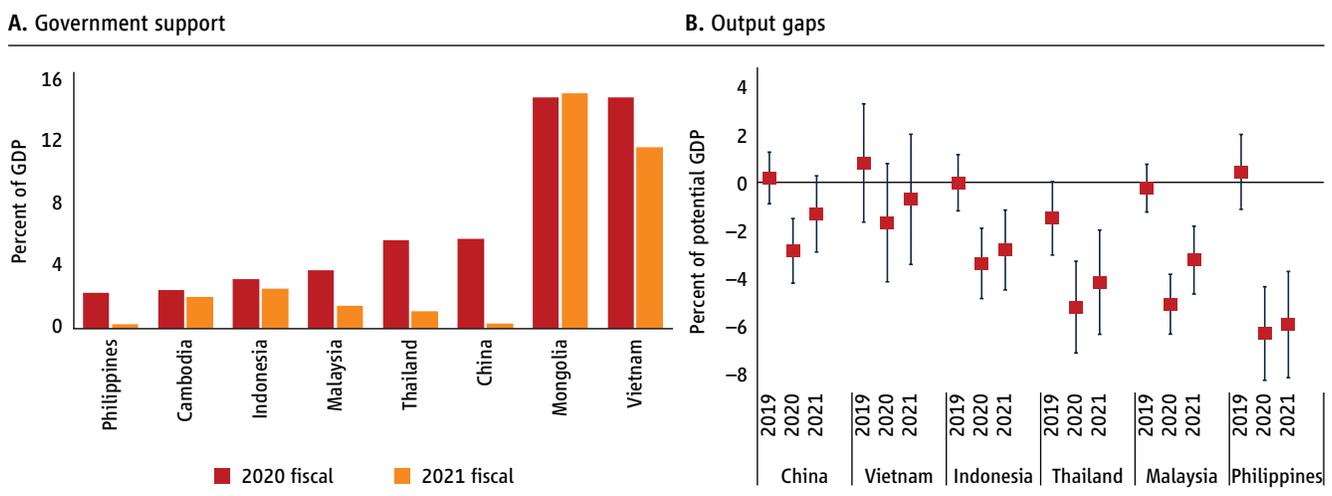


Source: Haver Analytics.  
 Note: B. Estimates from a model where global industrial production is regressed on its own lags and the global PMI new orders (proxy for demand). The model is estimated over the period 2000–2021-Q2. Last observation is 2021-Q2.

## Macroeconomic policy support

**As EAP governments extend economic support, long COVID-19 poses fiscal policy challenges.** As intertemporal budget constraints began to bite, fiscal support across the region declined from an average of 7.7 percent in 2020 to 4.9 percent in 2021 (figure O.12). Measures of the output gap suggest that the EAP economies are operating below their potential economic activity. However, all EAP countries have experienced an increase in public debt and widening of budget deficits. Reconciling expansionary policies with narrowing fiscal space is a challenge for several countries.

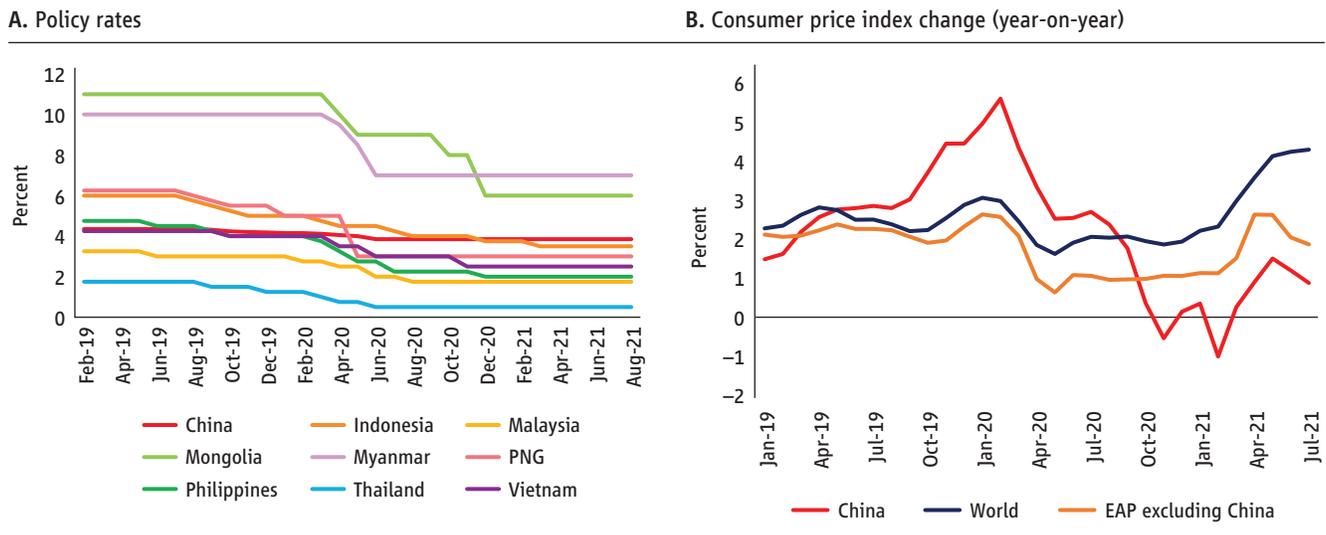
**Figure O.12. Government support has been declining while output gaps endure**



Source: World Bank staff estimates.

Note: A. Figure shows governments' additional spending on support to households, firms, public investment, and public works in response to COVID-19. It excludes health measures, below-the-line measures, and contingent liabilities.

**As consumer price increases remain within central bank targets in most countries, monetary policy remains supportive.** Key actions since COVID-19 struck included cuts in policy rates and reserve requirement ratios, as well as new asset purchases in some countries (figure O.13). Interest rates have not been increased during 2021, unlike in some other emerging markets. 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 (World Bank 2021a). 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 O.13.** Supportive monetary policy has not yet provoked consumer price inflation beyond targeted ranges

Source: Haver Analytics.

## What Are the Near-Term Economic Risks?

**One risk is that COVID-19 will now hit the rest of the region.** More generally, continued deficiencies in vaccination, as well as the plateauing of other non-pharmaceutical interventions such as testing-tracing-isolation could lead to recurrent waves of infections, possibly driven by new variants of concern. And to avert high infections and mortality, governments will need to resort frequently to strict measures that disrupt economic activity.

**Another risk arises from monetary policy actions abroad.** The region's recovery now lags that of the industrial countries, and regional production disruptions could accentuate inflationary pressures abroad by creating input shortages. The concern is that rapidly growing economies such as the United States are likely to raise interest rates to counteract inflationary pressures. The prospect of higher interest rates in the United States could lead to capital outflows and depreciation pressures in some of the region's economies—an echo of the “taper tantrum” of 2013, when the Federal Reserve began normalizing monetary policy after the financial crisis. While the Fed has signaled that it will continue to keep interest rates low as they unwind the asset purchases, rising inflation in the United States may lead them to change that position. The presence of foreign currency-denominated debt in firms' balance sheets is a source of vulnerability in some EAP countries, such as Cambodia, Indonesia, and Malaysia, 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.

**The risk of inflation is low in the near term for most countries in the region.** Long-term inflation expectations remain well-anchored at levels that are within central bank target ranges, except in Mongolia and the Philippines where inflation lies slightly above the upper bound of the official target band. Evidence of well-anchored expectations is the limited pass-through to consumer prices despite the increase in producer prices due to food and oil price increases (box I.7). Furthermore, output gaps remain wide in most countries, suggesting lack of demand pressures on consumer prices. Finally, the currencies of countries in the region have not depreciated significantly, as has been the case in some other emerging markets and developing economies (EMDEs).

**Macro-financial risks are moderate, but caution is warranted.** The accumulation of record levels of debt by firms and households and of nonperforming loans by banks are a source of concern. All countries in the region have a regulatory capital to 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 ratio exceeding the 8.5 percent minimum required by Basel III. The latter is in the double digits in all countries, except for Vietnam. Similarly, most EAP economies seem to have adequate liquid assets relative to short-term liabilities, and liquid assets relative 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 hide 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.

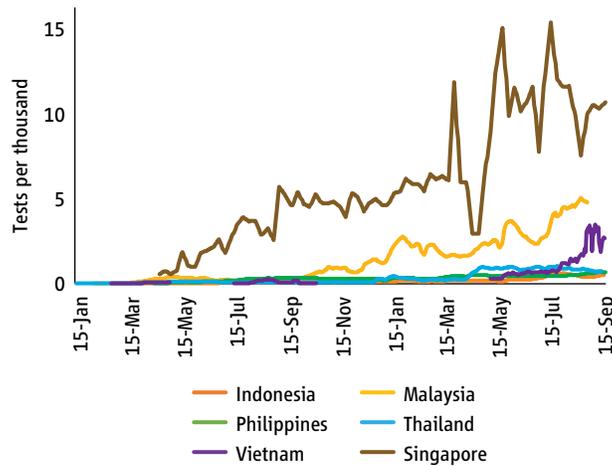
## What Are the Policy Priorities for Recovery?

We describe below a set of reforms which are either essential for recovery, such as the containment of COVID-19, or may be easier to enact during the current crisis but would be implemented later, such as taxing incomes more fairly and phasing out investment restrictions.

### Containing COVID-19

**Widespread vaccination with safe and effective vaccines is a necessary condition for a sustainable economic recovery.** China, Malaysia, Mongolia, Nauru, and Palau have already fully vaccinated more than 60 percent of their people. The report estimates that most countries in the region, including Indonesia and the Philippines, can vaccinate more than 60 percent of their populations by the first half of 2022 (box I.3). But the attainment of these goals cannot be taken for granted and will require a major effort to acquire vaccines, distribute them, and persuade people to be vaccinated. Also, the experience of high vaccination countries such as the United Kingdom reveals that while currently available vaccines significantly reduce hospitalization and mortality among the infected, they do not eliminate infections. High infections can lead to higher overall hospitalization and mortality, prompting limits on mobility that hurt economic activity. Therefore, the region will need to make a serious effort to enhance testing, encourage precautionary behavior, and strengthen health systems. International assistance is needed to support national efforts in all these areas, especially in countries with limited capacity.

**Most importantly, EAP countries must sustain emphasis on non-pharmaceutical interventions, especially testing, tracing, and isolation.** The evidence presented in the report 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. In the EAP region, a group of high vaccination/high testing countries is emerging, of which China; Taiwan, China; 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, but the levels are still low compared to Singapore (figure O.14). Testing coverage has increased to a lesser extent in Indonesia, Thailand, and the Philippines since Q2-2021, and is plateauing, in part due to diminished demand.

**Figure O.14. Testing coverage uneven across EAP countries and plateauing in some**

Source: EAP staff illustrative, based on latest testing data from Our World in Data.  
 Note: Lines show 7-day average of daily tests per one thousand. Based on latest data as of September 15, 2021.

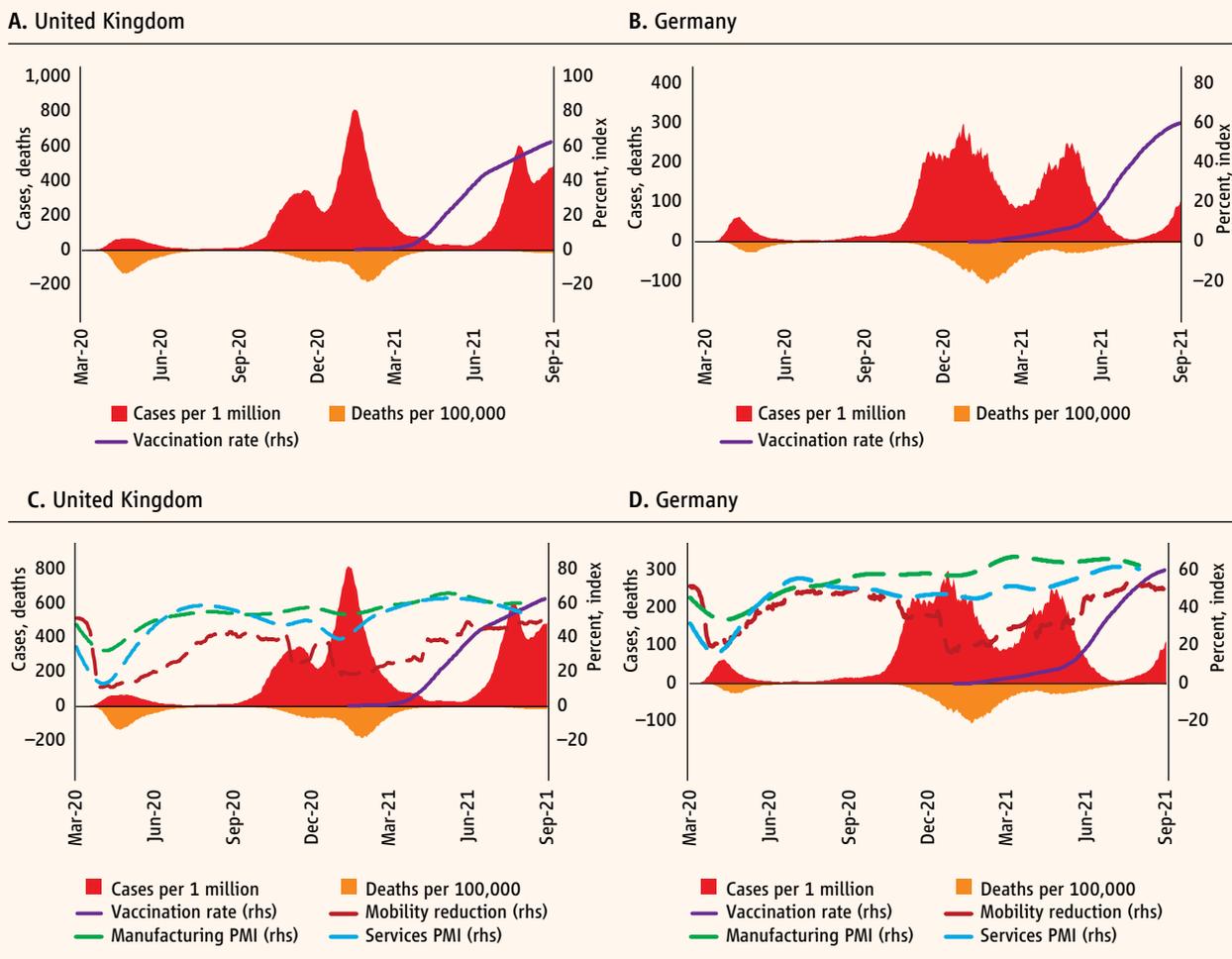
**Since zero COVID-19 may not be an affordable option for most EAP countries, they must adapt their health systems to live with long COVID.** When COVID-19 first struck, several countries, such as Australia, China, and New Zealand, sought to eliminate it completely. The highly infectious Delta variant significantly raised the economic cost of elimination because of the stringency and duration of the shutdowns required to prevent transmission. Vaccination helps soften the trade-off by reducing transmission and the adverse consequences of the infection. However, the economic costs of elimination will remain steep for EAP countries because the vaccines available in the region will not prevent significant transmission, and vaccine coverage as well as the duration of immunity will be limited. Therefore, most countries in the region living with the disease may be politically more acceptable than striving for zero COVID-19 through economically debilitating measures. In these circumstances, the priority will be to strengthen the health systems. Data on hospitalizations and deaths will be as important to guide the response, as 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 the disease. Countries may also explore options for the early treatment of COVID-19 rather than waiting for mild cases to get worse and then manage their complications (including respiratory distress).

**In parallel, the production of vaccines, including production in the region, 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 be 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 the 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 efforts must therefore be made to expand regional production by acquiring technology, repurposing production lines, and facilitating the operation of supply chains. While the scope for expanding production of mRNA vaccines may be limited in the near term because of the difficulty in transferring technology, there is greater scope for the expansion of vector vaccines, like Oxford-AstraZeneca, and protein adjuvant vaccines, like Novavax. Production of the AstraZeneca has already been initiated in China, 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 protein-based 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 considering domestic production options for both mRNA and subunit protein vaccines (e.g., Novavax).

**Box O.1. Vaccines, mortality, and availability**

The experience of high vaccination 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 that were associated with high levels of infection and significant mortality. As vaccination rates surpassed 60 percent, UK relaxed social restrictions allowing for a resumption of economic activity (figure O.B1.1). The expectation was that a certain threshold level of immunity, due to a combination of vaccination and infection, would usher in a phase where we still see waves of infection but 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 is 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 2020 when nobody was vaccinated but less infectious variants prevailed. The country has found the sustainability of this benign phase is conditional on vaccination 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 suggests (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 BO.1.1.** Increases in the vaccination rate reduce mortality but not necessarily infections, and vaccination above certain thresholds is associated with increased mobility and economic activity



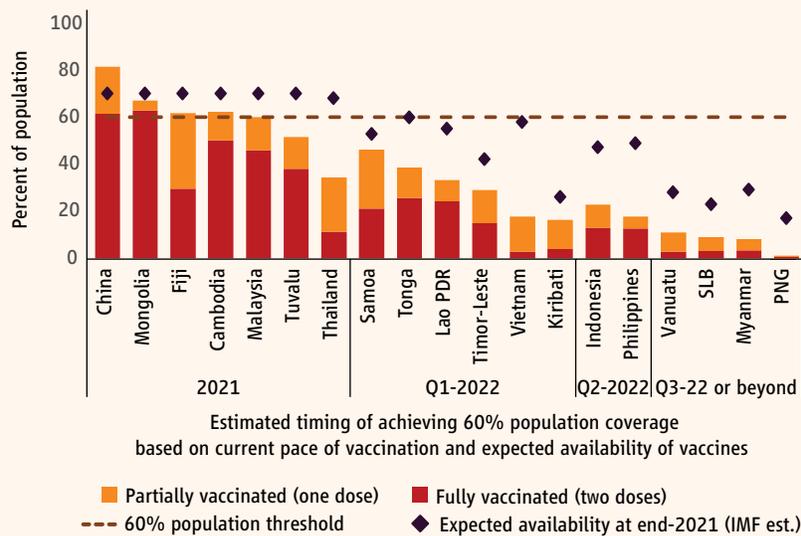
Source: Haver Analytics; Oxford Covid-19 Government Response Tracker (OxCGRT).  
 Note: Latest available data as of September 15, 2021.

(continued)

(Box O.1. continued)

Despite the limited availability of vaccines in the near term, many of the EAP countries could also achieve more than 60 percent coverage by the end of June 2022 (figure O.B1.2). 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 a 60 percent share of their 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 one-half of next year. But 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.

**Figure BO.1.2.** More than half of the economies in the EAP region will not reach widespread vaccination threshold in 2021



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. PNG = Papua New Guinea, SLB = Solomon Islands.

## Sustaining macroeconomic support

### • Fiscal policy

**Four types of policy actions can help governments extend fiscal support without undermining longer-term fiscal stability.** Fiscal policy is expected to play a demanding triple role (World Bank 2021a). 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. Sustainable growth requires public investment to improve the hard infrastructure of clean energy generation, roads, ports, smart cities, telecommunications, and cables and the soft infrastructure of schools and hospitals, as well as to facilitate

sustainable and inclusive growth. As governments wrestle with the challenge of extending domestic support to cope with long COVID-19 in the face of tightening intertemporal budget constraints, acting domestically and internationally can mitigate the trade-offs.

- Domestically, *committing to future fiscal discipline* can buy space for current fiscal support. Among the countries that have fiscal rules, those that have relaxed them temporarily will need to restore them (Indonesia, Malaysia). Some other countries, especially the ones with high public debt, will benefit from introducing fiscal rules that can reassure markets by credibly committing to limit borrowing (Fiji, Lao PDR).
- While raising revenue and cutting spending during a crisis is difficult, *committing to future fiscal reforms*, by enacting legislation today to be implemented later, may be politically easier. That is because opposition from vested interests is likely to be weaker when they are currently benefiting from government support and bailouts. Revenue generation is low in Indonesia, Lao PDR, Myanmar, and the Solomon Islands, and all countries have scope to cut wasteful spending, e.g., on energy subsidies (see Indonesia example below), and devote resources to public investment.
- Global and regional *coordination of fiscal stimulus* could boost its impact by dispelling individual governments' tendencies to limit fiscal support fearing leakages through spending on imports. Coordination could also be tailored to differences in fiscal space across countries and help avoid unilateral withdrawals with negative spillover effects.
- EAP countries should support *stronger international tax cooperation*. These efforts would make a race to the bottom of corporate taxes less likely. A step in the right direction is the recent agreement on OECD's Inclusive Framework, which proposes to reallocate taxing rights to the location of a company's sales and to institute a global minimum corporate income tax. Although implementation details are still uncertain, the proposed two-pillar solution is expected to generate only moderate revenue gains at the global level and in EAP (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.** These trade-offs are steeper in countries with high foreign currency–denominated corporate debt (Indonesia, Malaysia), and in countries where inflation expectations are not well anchored. Monetary policies in these countries should include a combination of tools that target price as well as exchange rate stability. Boosting the credibility of the central bank by ensuring its independence and a 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. But 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, including Cambodia, China, Malaysia, Thailand, and Vietnam. Some 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 for many countries in the region. Forbearance measures need to be unwound in a carefully coordinated, sequenced, and transparent manner. During recovery, the focus should turn to transparency and pricing risks correctly.

**Countries across the region should strengthen their insolvency frameworks to facilitate firm restructuring and debt resolution.** Surveys conducted between June and August 2020 showed that almost 50 percent of businesses in Vietnam and more than 70 percent of businesses in Mongolia were in arrears or anticipating entering arrears within six months. Many countries, including China and the Philippines, have recently introduced policies to improve their insolvency processes. But more needs to be done to develop simplified liquidation and small business restructuring frameworks to facilitate low-cost restructuring and liquidation of micro, small, and medium enterprises (box I.12).

## Harnessing international integration

**Open trade 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 the domestic availability of essential products like vaccines and to decrease foreign access to cutting-edge technology. Onshoring policies by industrial countries may “bring value chains home” but would hurt both trade and global incomes, and hence impede recovery (box I.5). Real incomes in the EAP region could decline by nearly 3 percent relative to the baseline in 2030, with trade-dependent Vietnam the most affected. Interestingly, a retaliatory response to such policies would make developing countries, including in the EAP region, even worse off. But liberalizing and facilitating trade could lead to a net increase in real incomes for most countries, including in the EAP, and contribute to recovery. Removing import restrictions, especially in the form of non-tariff measures, could also boost exports (box I.6). For example, in Indonesia, a 1 percent reduction in average firm exposure to nontariff measures (NTMs) could boost export values by 0.7 percent. And refraining from export restrictions, such as those imposed recently on medical goods and hi-tech products, could avoid a long-term adverse impact on exports. Thus, departing from trade openness hurts national and global real incomes, now when recovery is fragile and in the future when growth is uncertain.

**Investment reforms can help attract foreign direct investment (FDI) and boost growth.** Several countries in the region restrict FDI despite compelling evidence that openness to foreign investment can boost growth. In recent years, Indonesia and the Philippines have had the most restrictive FDI regimes in East Asia, but the two are now setting the pace for reform. A comprehensive investment reform program in Indonesia removed restrictions on investments and foreign equity limits across a wide range of sectors so that the number of business activities subject to an investment restriction declined from 813 to 260. In the Philippines, the Congress is considering legislation which would remove the “practice of professions” from the foreign investment negative list, lower the paid-up capital required for foreign retail enterprises, and lift the nationality restriction on power generation and supply, transportation, and telecommunication. A 10 percent liberalization of FDI restrictions, as measured by the OECD FDI Regulatory Restrictiveness Index, could increase bilateral FDI stocks by an estimated average of 2 percent. And reforms could lead to an increase in the annual GDP growth rate by as much as 0.2 percentage points. More could be done, however, to broaden the scope and accelerate the pace of reform. In Indonesia, further reforms could include reducing burdensome minimum local content requirements across various sectors. The Philippines could do more to guarantee the rights of foreign investors and to simplify the complex and long negative list of still restricted sectors. China, Malaysia, Thailand, and Vietnam are among the countries that could further reform their regimes for foreign investment in the services sectors.

**Remittances and tourism both depend on the movement of people, which bilateral and regional cooperation can facilitate.** 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 the 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, New Zealand, and the COVAX initiative. The Pacific Islands could develop a mutually recognized “vaccine passport,” as well as credible testing certificates, with some of the important 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. 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 emerge from a long period of dormancy.

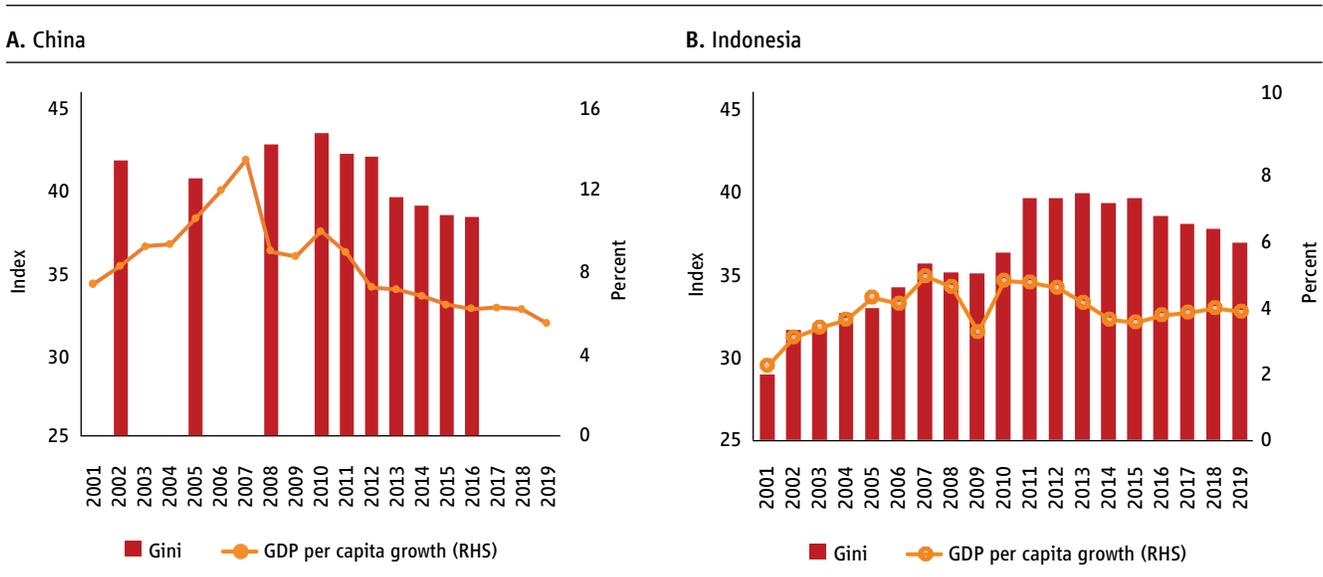
## Part II. Growth and Inequality

### The Longer-Term Economic Risks

**In this section, we first provide a macro perspective on trends in growth and inequality.** And then take a closer look at the firm and household data to assess the impact of COVID-19.

**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 lifted incomes also of the relatively poor, and most people were better off. After the Great Recession, growth slowed in the 2010s, but declining inequality ensured that even the lower deciles saw improved standards of living (figure O.15). Now COVID-19 threatens to create a combination without a 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 one result could be social and political unrest that would further hurt growth and the poor.

**Figure O.15.** The 2000s were a period of increasing growth and increasing inequality; the 2010s saw a growth slowdown and declining inequality



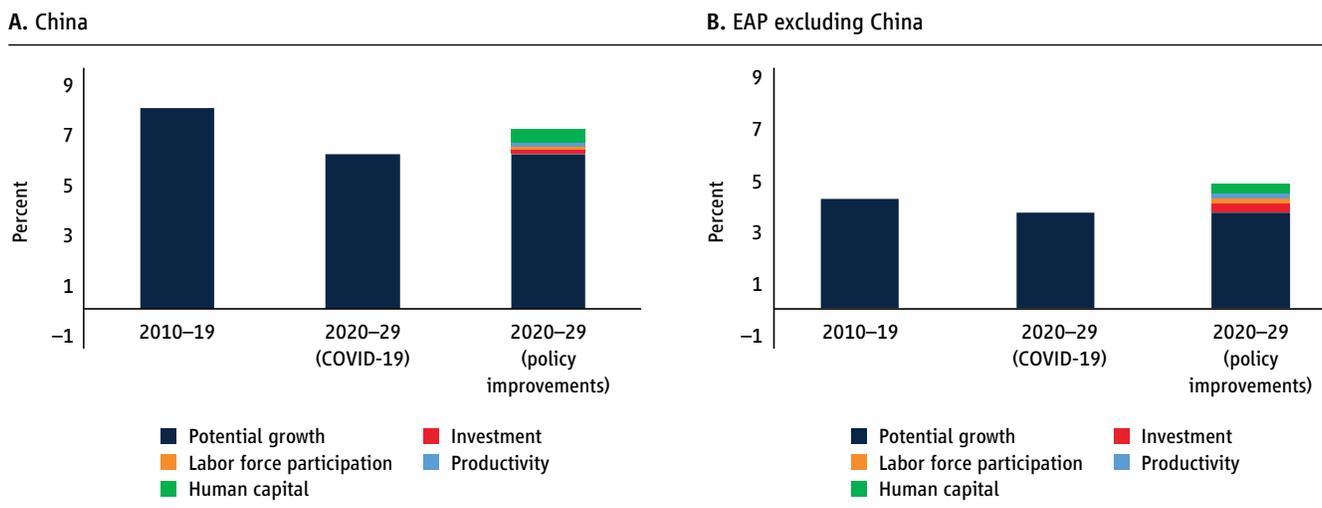
Source: World Bank staff calculations.

**However, 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. It remains to be seen whether these political changes contribute to the policy reform needed to both remedy the scars and exploit opportunities.

**COVID-19 is likely to reduce potential growth in the region.** 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. The *October 2020 EAP Economic Update* identified the channels: public and private indebtedness, along with worsening bank balance sheets and increased uncertainty, are likely to inhibit public and private investment; sickness, food insecurity, job losses, and school closures could lead to the erosion of human capital; firm closures and disruption in firm-worker relationships could hurt productivity through a loss of valuable intangible assets; the disruption of trade and global value chains could also hurt global productivity by leading to a less efficient allocation of resources across sectors and firms, and by dampening the diffusion of technology.

**Bold reforms could offset some of the adverse impacts.** Reforms to enhance labor force participation, human and physical capital, and total factor productivity could boost potential growth by more than 1 percentage point (figure O.16). 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 investment in infrastructure. In most countries, investment in (resilient and greener) infrastructure, including through public-private partnerships, could contribute to more efficient cities, watershed management, and climate-smart agriculture, and hence more sustainable and stable growth.

**Figure O.16. Bold and comprehensive reforms could offset COVID-19 damage and spur growth**

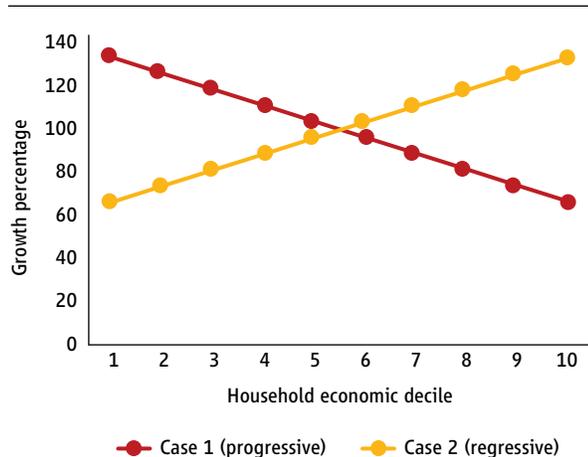


Source: World Bank staff calculations.  
 Note: The positive scenario assumes that over the next decade, each country will raise its investment growth as much as its largest increase over any historical ten-year interval. The female labor force participation rate is assumed to close one-third of the gap between its male counterparts. Positive scenarios also include improvement in TFP growth via acceleration in digitalization due to positive spillovers of COVID-19. In addition to the policies above, further improvements assume that education (both secondary education completion rate and average years of schooling) will increase as much as its largest increase over a ten-year interval since 2010. Refer to Part II.A for further details.

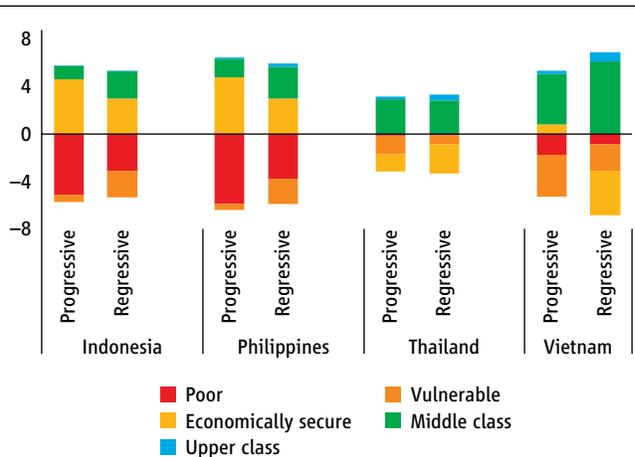
**Unless progressive policies are implemented, inequality will increase and the pace of poverty reduction will decline in EAP countries.** The effect of rising inequality can be illustrated through simulations for four large EAP countries: Indonesia, the Philippines, Thailand, and Vietnam. These stylized 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 O.17). In the progressive scenario, which roughly mirrors the more equitable patterns observed in the 2010s, growth benefits the poorest five deciles of households by more than average with the growth rate increasing as households get poorer; the poorest decile, for example, gets 1.33 times the average growth rate. In the regressive scenario, which more closely resembles the early 2000s, the pattern reverses, with richer households experiencing better than average growth and poorer households less than average growth. A regressive recovery in Indonesia and the Philippines would mean slower declines in poverty and a smaller expansion of the economically secure class, which can already be observed by 2023. In Indonesia, poverty would decline 2.0 percentage points more slowly, and the economically secure class would only grow by 3.0 points compared to 4.6 points. This translates into 5.7 million fewer people escaping poverty and 4.6 million fewer people becoming economically secure in Indonesia, than in the progressive scenario. In the Philippines, poverty would decline 2.1 points more slowly, and the economically secure class would grow by only 2.9 points compared to 4.8 points. This represents 2.4 million fewer people escaping poverty and 2.1 million fewer people rising into economic security in the Philippines by 2023.

**Figure O.17.** Rising inequality can slow poverty reduction and impede inclusive growth

**A.** Stylized growth incidence curves under progressive and regressive scenarios



**B.** Changes in economic classes under progressive and regressive scenarios (pre-COVID-19—2023)



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

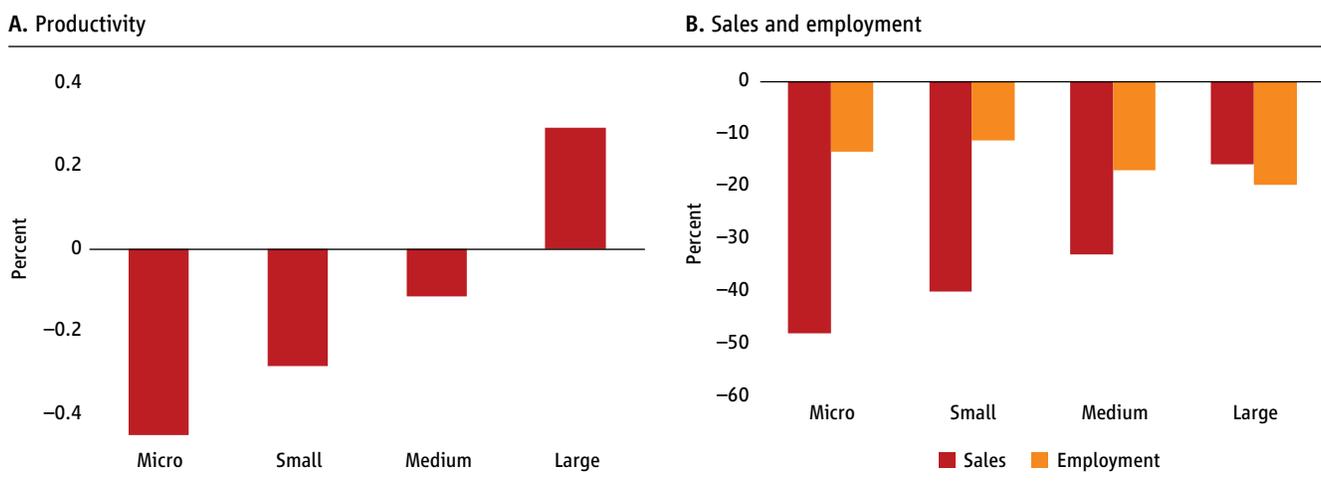
## Firms and Technology

**While growth is affected by several factors, including public investment, we focus here on the impact on firms, the key protagonist.** We first examine the impact on productivity within the firm and because of the reallocation of resources, between firms 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 policy is playing and should play in fostering growth.

## Who is feeling the pain?

**Large firms avoided the worst of the pandemic.** By winter 2020, micro firms' monthly sales were 48 percent lower than the year before, compared to 15 percent lower for large firms (figure O.18). This implies widespread distress and potential economic scars in EAP economies where micro firms account for large shares of the firms' distribution. The decline in productivity for the average firm drove the drop in aggregate productivity observed in EAP. Again, the largest falls in productivity were for the smaller firms.

**Figure O.18. Micro firms experienced the largest drop in sales and productivity**



Source: World Bank Business Pulse Surveys. 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, and large firms have at least 100 employees. Percentage changes in productivity are differences in log sales per worker between survey wave 2 and baseline.

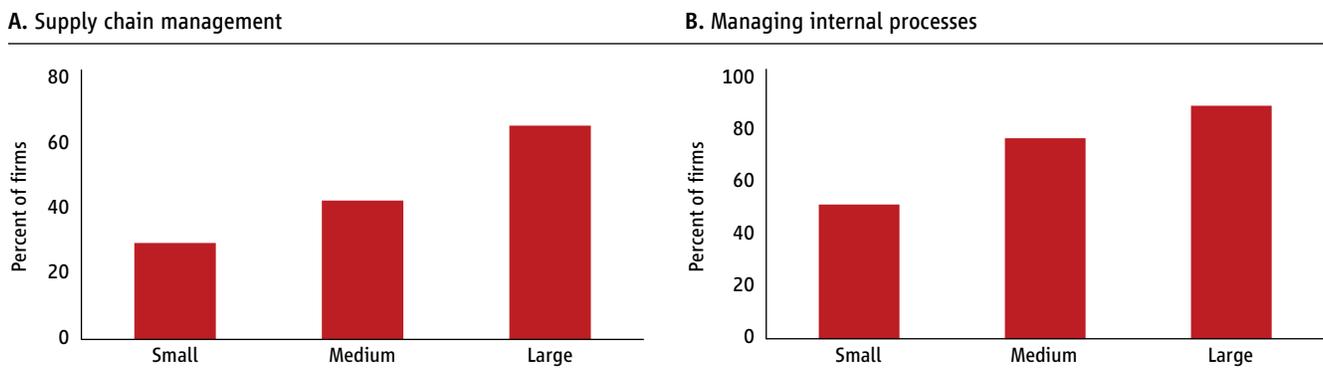
**The adverse impact of the pandemic is likely to hurt growth, but the crisis may also spur some creative destruction.** On the one hand, current pain can slow future growth. Surviving firms are likely to defer nonessential productive investments, for example, nearly one-half of the firms in the United Kingdom cut back on research and development (R&D) investment during COVID-19. 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 among 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 both productive and inefficient Indonesian firms alike. However, preliminary World Bank Enterprise Survey evidence from a sample of 31 countries—mostly from Eastern European economies (but also Mongolia)—suggests that less productive firms are more likely to exit during a pandemic.

## Who is grasping the opportunity?

**The pandemic catalyzed the use of technology, but unevenly.** Pre-pandemic technology diffusion was narrow: a minority of frontier firms in EAP had adopted new advanced technologies, while a broader group of firms were left

behind. The pandemic 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 responded rapidly to the pandemic shock, adopting technology within two to three months of the first COVID-19 cases in their country. Despite the widespread rush to adopt technology, differences in the type of technology adopted remained. Larger firms that were already more likely to use more advanced technologies prior to the pandemic, were more likely to adopt sophisticated technologies related to supply chains or internal processes when the pandemic struck (figure O.19).

**Figure O.19. Larger firms are more likely to use platforms for managing internal processes and supply chains**



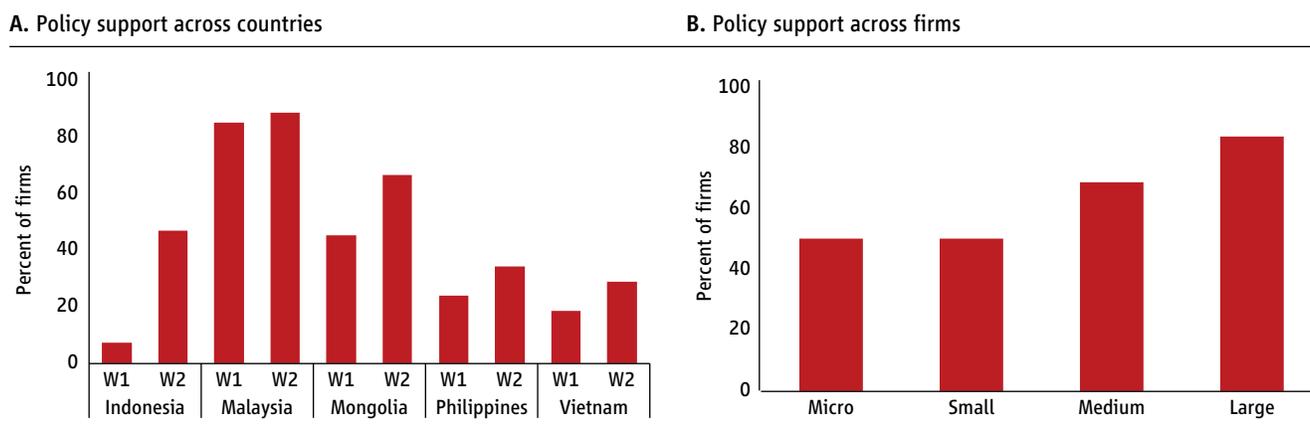
Source: World Bank Business Pulse Surveys. Indicators can be found at [www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard](http://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard).

Note: Adoption between baseline and wave 2 is shown conditional on firms increasing use of digital platforms, and shown for EAP countries comprising Indonesia, Mongolia, the Philippines, and Vietnam. Digital adoption data is not available for micro firms. Internal processes include business administration or production planning.

**Adopting any technology is associated with lower falls in employment and sales.** But adopting technologies related to supply chains is particularly correlated with better sales performance. 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. If technology that matters most for productivity does not diffuse beyond the few, the majority may be relatively worse off.

## Who is receiving the support?

**To stave off the worst of the pandemic, EAP governments have provided support to firms.** But the share of firms accessing support has remained uneven across countries and 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 missed out on support (figure O.20). Getting policy support is only weakly associated with improvements in net job changes: policy support appears to curb job destruction, but it doesn't help job creation. Job destruction is also mitigated by trade openness and financial development.

**Figure O.20.** Share of firms receiving support has been uneven across countries and firms

Source: World Bank Business Pulse Surveys. Indicators can be found at [www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard](http://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard).  
 Note: Figures show share of firms receiving any policy support.

**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 appears insufficient to promote job creation. Conversely, firms that received policy support destroyed fewer jobs. The ability to defer payments, 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.

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

**Unequal firm performance may not hurt measured productivity.** Preliminary evidence, mostly from Eastern Europe, suggests that COVID-19 led to the exit of less productive firms, and hence allowed resources to flow to more productive firms. Furthermore, larger firms have avoided big falls in sales and labor productivity and have also disproportionately invested in more sophisticated technology, both of which may lead to future productivity gains. The reallocation of activity toward larger and more productive firms may mean higher short-term productivity than would otherwise be the case.

**But unequal firm performance matters because it impacts workers and may lead to increased inequality.** Studies suggest that the bulk of the dispersion in workers' wages is explained by differences between the best and the worst firms. Outcomes of firms have been shown to matter for their workers in countries ranging from Mexico to Vietnam, because moving between firms, occupations, and locations is difficult. 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. The growth of larger firms may also increase returns to capital owners and reduce labor's share of revenue, since these firms tend to need fewer workers than capital. Together, the evidence suggests the need to coordinate direct transfers to informal workers, who dominate micro and small enterprises, with support to formal sector firms, in order to ensure an appropriate balance.

**Increased inequality today can also 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.

## Households and Inequality

**Increased inequality today can worsen inequality tomorrow.** 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 earnings as adults. Limited opportunities to engage in online or other forms of interactive learning raise the risk of long-term losses in human capital and, with it, economic opportunity.

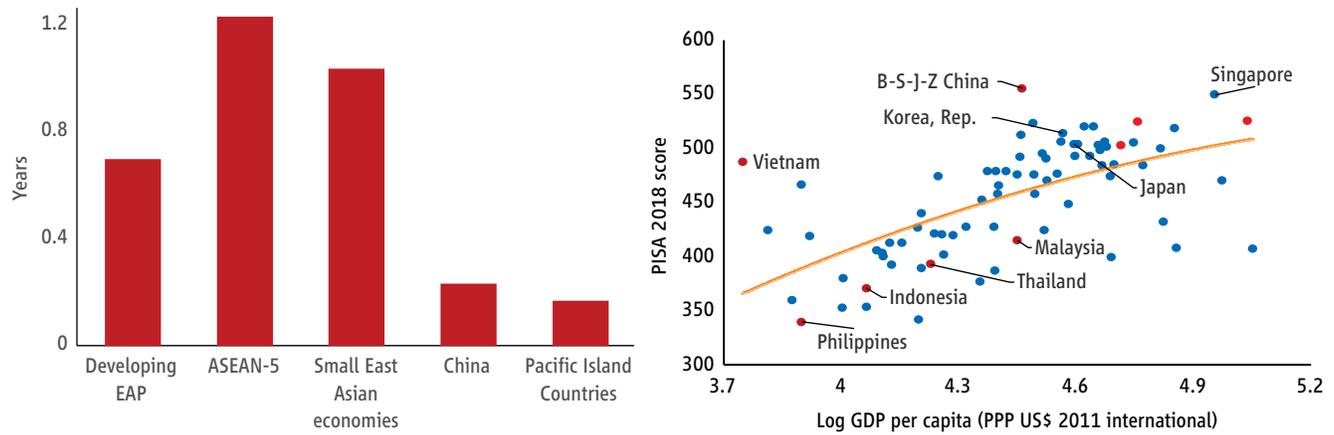
**Distress sales of assets and increased debt can hurt productivity and incomes.** Given the prevalence of small household-run enterprises in the region, depletion of scarce family assets and rising debt levels can prevent households from making new investments or resuscitating their enterprises. The 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. Evidence from several countries outside the region suggest that negative shocks may indeed generate “poverty traps” if household asset levels fall below a certain threshold.

**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. 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 error, 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.

**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. 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 O.21). Given the patterns of COVID-19–related school disruptions, 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 or on other assessment tests.

**Figure O.21.** COVID-19–related schooling disruptions are causing significant learning losses, compounding long-standing learning challenges in the region

**A.** Estimated losses in Learning Adjusted Years of Schooling (LAYS), **B.** Country PISA 2018 reading scores, by GDP per capita by EAP subregion

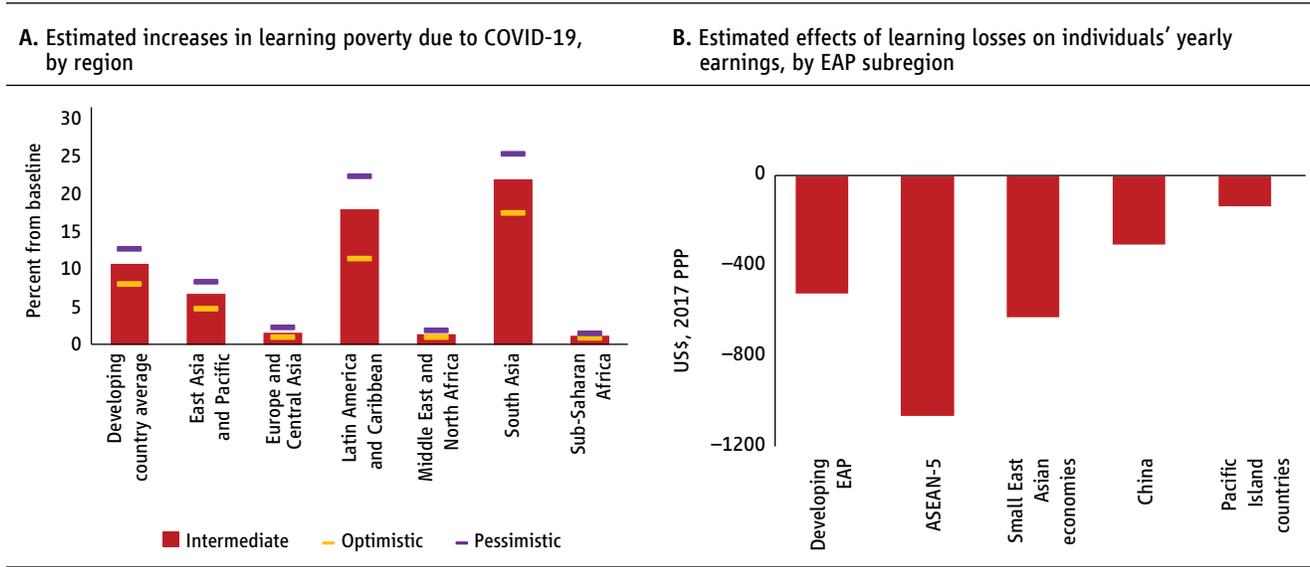


Source: World Bank staff estimates.

Source: Cirera et al. 2021a.

**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 O.22). 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. 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. 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 O.22.** COVID-19–related school disruptions are causing significant learning losses, compounding long-standing learning challenges in the region

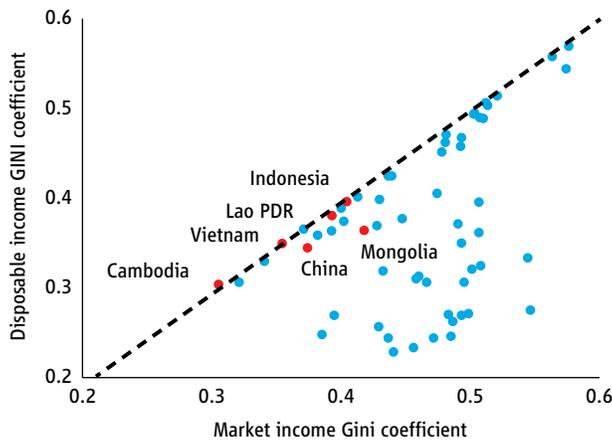


Source: World Bank staff calculations.

Source: World Bank staff calculations.

**Fiscal policy in its pre-pandemic form—both spending and taxation—cannot be expected to play a significant redistributive role.** As can be seen in figure O.23, all developing East Asian countries are situated close to the 45-degree line. While 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. Only in the case of Mongolia, with its universal child grant, is the Gini coefficient for disposable income markedly lower than the Gini coefficient for market income, suggesting redistribution. 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 O.23.** Direct taxes and transfers have limited redistributive impacts in developing East Asia

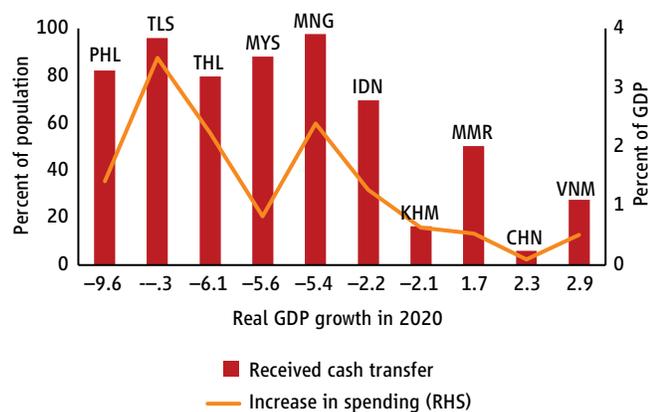


Source: Mason and Shetty 2019.

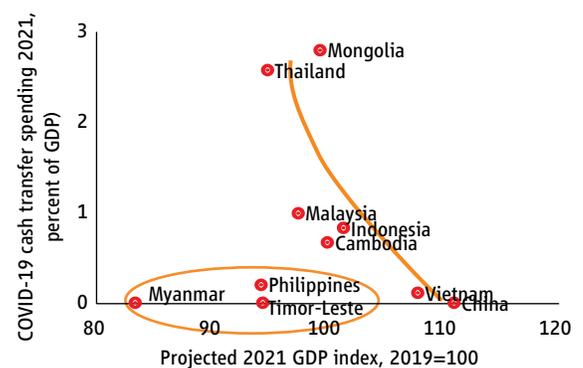
**Social protection spending increased to unprecedented levels in 2020, but it may fall short of needs in 2021 in some countries.** In sharp contrast to the pre-pandemic situation, EAP countries have mounted some of the largest expansions of social protection programs in the world in response to the pandemic, especially in countries experiencing large contractions (Figure O.24). Governments 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. With a few important exceptions, the impact of new lockdowns has led to similar patterns of cash transfer spending to date in 2021. The major deviation from this pattern is the reduction in spending 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 O.24. EAP countries scaled up social assistance dramatically in response to the pandemic**

A. Country cash transfer responses and economic growth in 2020



B. Projected economic recovery and cash transfer responses in 2021



Source: World Bank 2021b and 2021c.

Note: A. PHL = Philippines, TLS = Timor-Leste, THL = Thailand, MYS = Malaysia, MNG = Mongolia, IDN = Indonesia, KHM = Cambodia, MMR = Myanmar, CHN = China, VNM = Vietnam.

## Policies for Equitable Growth

**While COVID-19 has had adverse effects, it has also created opportunities.** The adverse effects 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. It remains to be seen whether these political changes contribute to the policy reform needed to both remedy the scars and exploit opportunities.

### Box O.2. COVID-19–related policy issues examined in recent economic updates

Previous updates have focused on a number of other policy issues, including: (1) *vaccination* to contain COVID-19; (2) *fiscal policy* for relief, recovery, and growth; (3) *climate policy* to build back better; (4) *smart containment* of COVID-19, especially through non-pharmaceutical interventions like testing-tracing-isolation; (5) *smart schooling* to prevent long-term losses of human capital, especially for the poor; (6) *social protection* to help households smooth consumption and workers reintegrate as countries recover; (7) *support for firms* to prevent bankruptcies and unemployment, without unduly inhibiting the efficient reallocation of workers and resources; (8) *financial sector policies* to support relief and recovery without undermining financial stability; and (9) *trade reform*, especially of still-protected services sectors—finance, transport, communications—to enhance firm productivity, avert pressures to protect other sectors, and equip people to take advantage of the digital opportunities whose emergence the pandemic is accelerating.

## Supporting firms

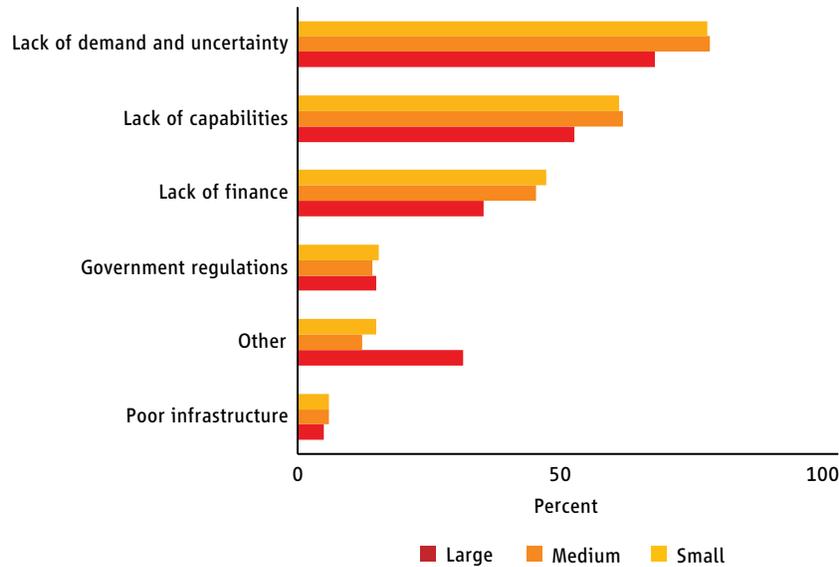
**Policy support to firms must protect valuable intangible assets without inhibiting creative destruction.** Helping firms through the initial shock is important for recovery to avoid the loss of intangibles, such as firm-to-firm and firm-to-worker relationships, that matter for productivity. However, trying to protect the status quo runs the risk that support may keep zombie and less productive firms afloat, slowing the flow of employment and capital to more productive uses. At this stage, Indonesia and Malaysia are among those who continue to provide direct income support to firms. The longer support continues, the greater the drag on creative destruction. As noted above, our analysis suggests getting policy support is only weakly associated with improvements in net job changes: policy support appears to curb job destruction, but it does not help job creation.

**Broader policy reforms that strengthen the business environment may be more effective at creating jobs.** Although supporting existing productive firms today is important, the recovery also depends upon new innovative firms—and the entry and growth of start-ups is particularly sensitive to the business environment. The more muted job creation may reflect a stifling environment for doing business in some countries. The performance of the services sector, on which all firms depend for finance, communication, transport and a range of business services, may also reflect inefficiencies and weaknesses that predate the pandemic and emanate from restrictions on competition that should be phased out.

**Policy needs to support broader technology diffusion and ensure that more firms can leverage the COVID-19 digital dividend.** 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 O.25). Equipping firms with the skills to embed technology in their business and policies to disseminate information are 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. Finally, the digital infrastructure for basic technologies is often broadly available, such as the use of e-commerce platforms using basic mobile broadband. The challenge is to improve access to modern data infrastructure, such as high-speed broadband, cloud data centers, and internet exchange

points, needed for more sophisticated technologies and data-intensive business models that are likely to be increasingly relevant in the future.

**Figure O.25. Demand and firm capabilities are among the biggest barriers to technology adoption**



Source: Cirera et al. 2021b.

## Building stronger, more equitable human capital

**Education reform, including to harness new technologies, will help remedy the pandemic’s scars and strengthen human capital.** To enable a return to learning, EAP countries need to focus on the safe reopening of schools, including through investments in school infrastructure to minimize disease transmission. To recover learning losses, emphasis will also need to be given to adjusting curriculum and providing more individualized remedial support to struggling students. Building the human capital to support countries’ long-term growth and development will require raising education quality and promoting equality of educational opportunity. To achieve these objectives, policy makers will need to undertake multiple reforms, including strengthening teacher preparation, streamlining curricula, and improving teaching materials and textbook availability. Investments in EdTech can also help when combined with other reforms, but education technology alone will not be a panacea.

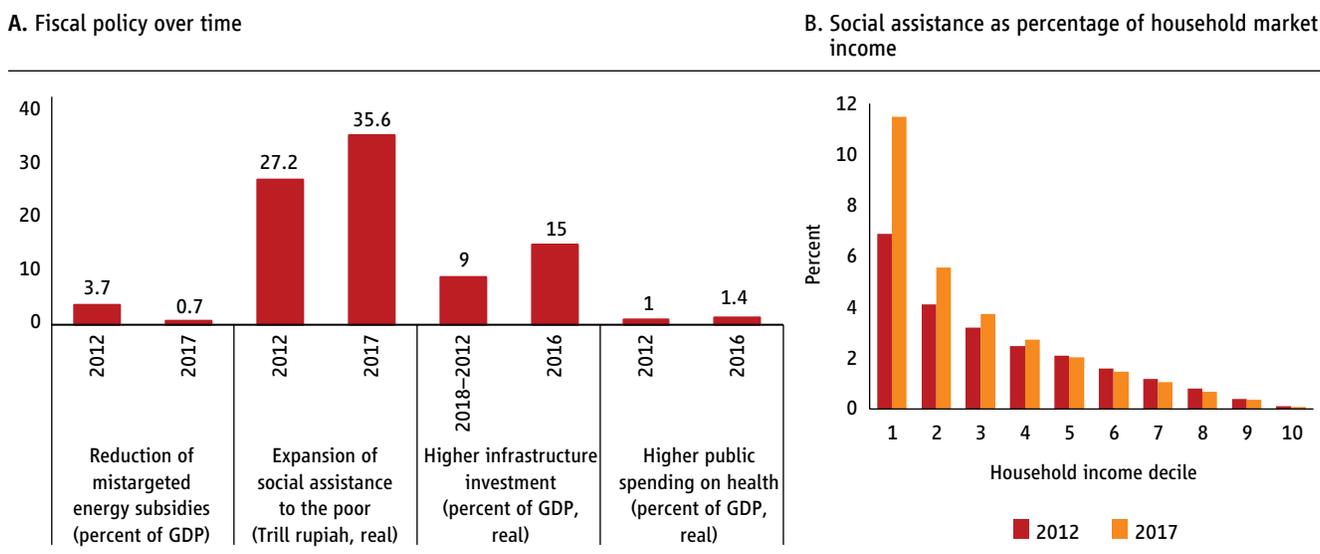
## Reorienting fiscal policy

**Increasing the use of progressive taxation instruments and redirecting inequitable spending can play important roles in redressing inequality.** Most countries in middle-income East Asia still rely on indirect taxes for the lion’s share of their revenues, and they could increase the progressivity of taxation through the increased use of direct taxes, such as personal and corporate income taxes and/or wealth taxes. Improving the redistributive impacts of spending, including through the elimination of indirect subsidies, can also make a difference. For example, most indirect subsidies go to richer households because they consume more of the subsidized good.<sup>1</sup> Indonesia undertook significant fiscal reforms

<sup>1</sup> See Fuchs, Sosa and Wai-Poi 2021.

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 revenue going to the poorest 40 percent and significantly increasing the value of benefits received for the poorest households. Figure O.26 likely underestimates the redistributive impact of the reforms, as the main expansion in social assistance happened after the 2017 analysis was carried out.<sup>2</sup> However, even the beginning of the expansion in 2017 contributed to the fiscal policy reducing inequality by 0.3 points on the Gini index compared to 2012.

**Figure O.26. Fiscal policy can more effectively address inequality in EAP countries: An illustration from Indonesia**



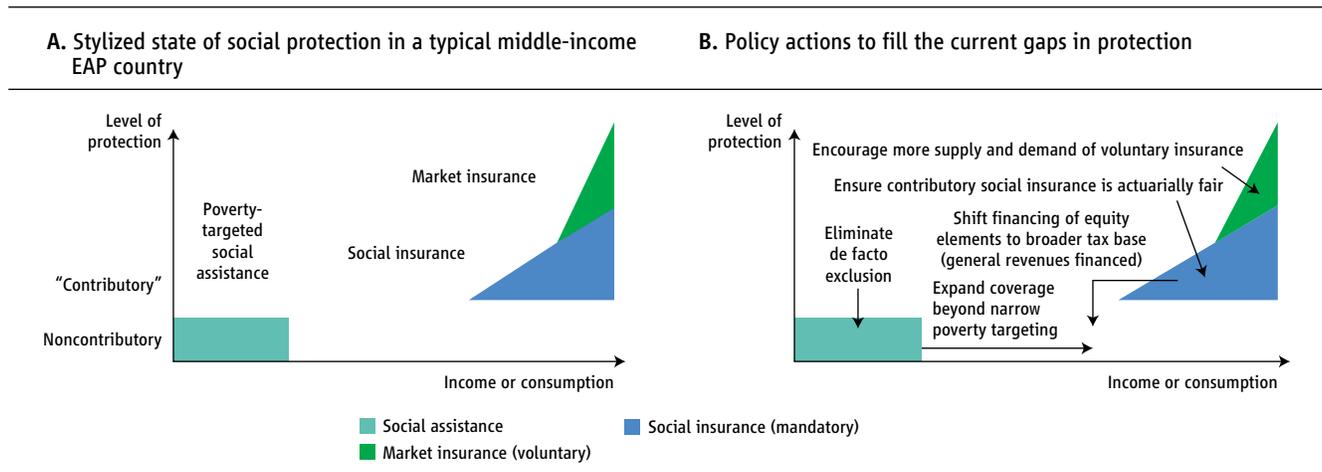
Source: Ministry of Finance and World Bank 2020 *Revisiting the Impact of Government Spending and Taxes on Poverty and Inequality in Indonesia*.

## Strengthening social protection

**To provide adequate protection during the pandemic and promote inclusive development in the longer term, countries will need to build social protection systems that are more agile and targeted.** 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, those in the formal sector, covered by social insurance (figure O.27). By learning the lessons from the pandemic—including on developing effective delivery systems using digital technologies as Thailand has done—governments in the region 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. Given evolving economic circumstances in the region—rapid technological change and automation; increased frequent job transitions by workers; increased risks of natural disasters associated with climate shocks; and rapid population aging—it will be important that over time governments extend protection to all on the basis of need, blurring the lines between social insurance (traditionally available only for formal sector employees) and social assistance.

<sup>2</sup> The longer-term impacts are expected to be analyzed in a future analysis.

**Figure O.27.** Governments in the region should move progressively to close coverage gaps, making social protection systems more inclusive and dynamic



Source: Packard et al. 2019.

## Appendix Tables

Table O.1. GDP forecasts

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

Source: World Bank; World Bank staff estimates and projections

Notes: 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.

**Table O.2.** Growth, COVID-19 infections and vaccinations, exports, and fiscal and monetary policy support

Country	GDP 2021 estimates relative to pre-pandemic level (2019)	Year when output reached or is expected to reach its pre-COVID-19 level	COVID-19 infections and vaccinations			Export categories (share of GDP, average 2015-19)			Fiscal and monetary policy support	
			Total COVID-19 cases per thousand (at end-Aug 2021)	Fully vaccinated population (at end-Aug 2021)	Expected time of 60% vaccination coverage	Manufacturing	Services	Commodity	Fiscal deficit (% of GDP, 2021)	Interest rate cut (2020–latest)
China	11.0	2020	0.1	61.6	Q3-2021	17.4	1.8	1.1	-7.6	30
Vietnam	7.8	2020	4.7	2.8	Q1-2022	77.1	6.0	13.5	-6.0	200
Lao PDR	4.1	2020	2.0	24.3	Q4-2021	6.8	5.5	18.9	-4.7	100
Indonesia	1.5	2021	14.8	13.0	Q2-2022	7.3	2.6	8.0	-5.6	150
Cambodia	-1.0	2022	5.5	50.3	Q3-2021	46.6	20.6	2.6	-6.5	
Mongolia	-1.1	2022	64.2	62.9	Q3-2021	1.2	7.8	41.3	-6.6	500
Malaysia	-2.5	2022	53.3	45.9	Q3-2021	45.1	11.5	19.6	-6.4	100
Thailand	-5.1	2023+	17.2	11.1	Q4-2021	37.7	15.1	9.5	-7.4	75
Philippines	-5.7	2023+	17.9	12.6	Q2-2022	16.0	10.4	2.9	-7.6	200
Timor-Leste	-6.8	2023+	12.4	14.8	Q1-2022	0.1	4.2	1.0	-29.7	
Myanmar	-15.4	2023+	7.3	3.3	2023 or beyond	5.4	6.4	13.7	-8.5	300
Tuvalu	3.5	2020	0	38.0	Q4-2021	1.5	19.6	24.5	-3.4	
Nauru	2.3	2020	0	67.0	Q3-2021	4.6	19.5	15.8	15.9	
Kiribati	1.0	2021	0.02	3.8	Q1-2022	0.9	5.2	5.0	-11.6	25
Solomon Islands	-2.4	2022	0.03	2.9	2023 or beyond	1.4	8.2	7.2	-2.5	
Tonga	-2.5	2022	0	26.0	Q1-2022	0.5	16.2	3.2	-1.7	
Papua New Guinea	-2.9	2022	2.0	0.3	2023 or beyond	0.2	0.9	37.8	-7.2	200
Marshall Islands	-4.6	2023+	6.8	33.0	2023 or beyond	15.7	8.3	47.9	0.6	150
Micronesia, Fed. Sts.	-4.9	2023+	0	32.0	2023 or beyond	0.3	10.5	18.9	-3.4	
Vanuatu	-5.7	2023+	0.01	2.8	Q3-2022	0.4	37.9	13.2	-5.8	65
Samoa	-10.5	2023+	0.01	21.0	Q4-2021	1.2	28.2	5.0	-3.4	
Fiji	-19.2	2023+	51.7	29.5	Q4-2021	4.2	26.7	11.6	-13.8	25
Palau	-22.7	2023+	16.6	84.0	Q3-2021	1.4	51.9	0.4	-16.6	

Source: Global Economic Prospect, World Development Indicators, World Trade Organization, Oxford Covid-19 Government Response Tracker (OxCGRT), Our World in Data, WHO Coronavirus (COVID-19) Dashboard, Worldometers.com, Covidvax.live, Agarwal and Gopinath (2021), and International Monetary Fund, World Bank.

Note: Expected timing of 60 percent vaccination coverage is estimated based on average daily vaccine rate in August 2021 and IMF's estimates of vaccine availability at end-2021 (Agarwal and Gopinath, 2021). Color scale represents country percentile in the region.

**Table O.3.** Contracted vaccines by country

Country	Total population	% of total population (adjusted for two doses per person)		Contracted company
		Secured	Delivered	
Cambodia	16,718,971	69	60	AstraZeneca, Sinovac, Sinopharm
China*	1,439,323,774	76	76	Sinopharm, Sinovac, CanSino, Anhui Zhifei Longcom
Fiji	896,444	125	52	None
Indonesia	273,523,621	95	32	AstraZeneca, Novavax, Pfizer/BioNTech, Sinovac, Sinopharm
Kiribati	119,446	30	43	None
Lao PDR	7,275,556	60	30	None
Marshall Islands	59,194	30	Not available	None
Micronesia, Fed. Sts.	548,927	30	Not available	None
Mongolia	3,278,292	87	66	Gamaleya, Sinopharm
Myanmar	54,409,794	65	7	AstraZeneca, Sinopharm
Papua New Guinea	8,947,027	30	3	None
Philippines	109,581,085	113	22	AstraZeneca, Bharat Biotech, Gamaleya, Janssen, Moderna, Novavax, Pfizer/BioNTech, Sinovac
Samoa	198,410	49	48	None
Solomon Islands	686,878	38	11	None
Thailand	69,799,978	101	31	AstraZeneca, Janssen, Moderna, Pfizer/BioNTech, Sinovac, Sinopharm
Timor-Leste	1,318,442	35	24	None
Vanuatu	307,150	30	8	None
Vietnam	97,338,583	90	14	AstraZeneca, Gamaleya, Moderna, Pfizer/BioNTech, Sinopharm

Source: Multilateral Leaders Task Force on COVID-19 (<https://data.covid19taskforce.com/data>, accessed on 22 September 2021) for total population, secured/expected and delivered vaccines; COVID-19 Vaccine Market Dashboard (<https://www.unicef.org/supply/covid-19-vaccine-market-dashboard>, accessed on 17 September 2021) for contracted companies.

Note: In the region, all contracted vaccines except Gamaleya (Sputnik V) are included in WHO Emergency Use Listing. This table includes secured/expected and delivered doses acquired through all sources, namely, bilateral and multilateral agreements with pharmaceutical companies, donations, and COVAX arrangements. Secured/expected and delivered doses as share of total population were calculated adjusting for two doses per person. Contracted company includes those with bilateral and multilateral agreements. "None" indicates that the country did not sign contracts with individual companies but relied on donations and COVAX.

\* For China, the Multilateral Task Force Dashboard used the administered doses as the proxy of secured doses.

## References

- Agarwal, Ruchir, and Gopinath, Gita. 2021. "A Proposal to End the COVID-19 Pandemic."
- Cirera, Xavier, Mason, Andrew D., de Nicola, Francesca, Kuriakose, Smita, Mare, Davide S., Tran, Trang Thu. 2021a. The Innovation Imperative for Developing East Asia. World Bank East Asia and Pacific Regional Report. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/35139>.
- Cirera, X., Comin, D. A., Vargas Da Cruz, M. J., Lee, K., and Soares Martins Neto, A. 2021b. Firm-Level Technology Adoption in Vietnam (No. 9567). The World Bank.
- Cloutier, Marie-Hélène, João Pedro Azevedo, Diana Goldemberg, and Dilaka Lathapipat. Forthcoming. "Back to the Future: Why as schools reopen, we cannot go back to the past," Unpublished manuscript, Education Global Practice, East Asia and Pacific Region, World Bank, Washington, DC.
- Fuchs, Alan, Mariano Sosa, and Matthew Wai-Poi. 2021. "Progressive Domestic Resource Mobilization for a COVID-19 Recovery," Policy Brief, Washington, DC: World Bank Group.
- Kim, Lydia, Maria Ana Lugo, Andrew Mason, and Ikuko Uochi. Forthcoming. "Inequality under COVID-19. Taking stock of high frequency data for East Asia and the Pacific." Washington, DC: World Bank.
- Mason, Andrew D., and Sudhir Shetty. 2019. A Resurgent East Asia: Navigating a Changing World. World Bank East Asia and Pacific Regional Report. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/30858>.
- Ministry of Finance, Indonesia, and World Bank. 2020. *Revisiting the Impact of Government Spending and Taxes on Poverty and Inequality in Indonesia*.
- Packard, Truman, Ugo Gentilini, Margaret Grosh, Philip O'keefe, Robert Palacios, David Robalino, and Indira Santos. 2019. "Protecting All: Risk Sharing for a Diverse and Diversifying World of Work," World Bank.
- World Bank. 2021a. "Uneven Recovery" East Asia and Pacific Economic Update (April), World Bank, Washington, DC.
- World Bank. 2021b. "Social Protection Responses to the COVID-19 Pandemic in East Asia and the Pacific," internal memorandum.
- World Bank. 2021c. "Global Economic Prospects," Washington DC.

