

INTERNATIONAL MONETARY FUND

# REGIONAL ECONOMIC OUTLOOK

ASIA AND PACIFIC

Challenges to Sustaining  
Growth and Disinflation

**2023**  
OCT



INTERNATIONAL MONETARY FUND

# REGIONAL ECONOMIC OUTLOOK

ASIA AND PACIFIC

Challenges to Sustaining  
Growth and Disinflation

**2023**  
OCT



Copyright ©2023 International Monetary Fund

Cataloging-in-Publication Data  
IMF Library

Names: International Monetary Fund, publisher.

Title: Regional economic outlook. Asia and Pacific : challenges to sustaining growth and disinflation.

Other titles: Asia and Pacific : challenges to sustaining growth and disinflation. | Challenges to sustaining growth and disinflation. | World economic and financial surveys. | Regional economic outlook: Asia and Pacific.

Description: Washington, DC : International Monetary Fund, 2023. | World economic and financial surveys. | Oct. 2023. | Includes bibliographical references.

Identifiers: ISBN:

9798400253591 (paper)

9798400253720 (ePub)

9798400253676 (Web PDF)

Subjects: LCSH: Economic forecasting–Asia. | Economic forecasting–Pacific Area. | Asia–Economic conditions. | Pacific Area–Economic conditions. | Economic development–Asia. | Economic development–Pacific Area.

Classification: LCC HC412.R44 2023

The *Regional Economic Outlook: Asia and Pacific* is published twice a year, in the spring and fall, to review developments in the Asia and Pacific region. Both projections and policy considerations are those of the IMF staff and do not necessarily represent the views of the IMF, its Executive Board, or IMF Management.



Publication orders may be placed online, by fax, or through the mail:

International Monetary Fund, Publication Services

P.O. Box 92780, Washington, DC 20090 (USA)

T. +(1) 202.623.7430

F. +(1) 202.623.7201

publications@IMF.org

www.IMFbookstore.org

www.elibrary.IMF.org

# Contents

<b>Acknowledgments</b> .....	v
<b>Definitions</b> .....	vi
<b>Executive Summary</b> .....	vii
<b>1. Outlook for Asia and the Pacific: Challenges to Sustaining Growth and Disinflation</b> .....	1
1.1. Recent Economic Developments... ..	1
1.2. Factors Shaping the Outlook.....	3
1.3. Risks to the Outlook Are Still Tilted to the Downside, albeit More Balanced .....	7
1.4. Policies .....	8
References.....	13
<b>2. Recent Inflation Experiences in Asia and the Pacific</b> .....	15
2.1. Inflation Facts .....	15
2.2. Inflation Pressures and Their Propagation.....	17
2.3. The Role of Monetary Policy.....	21
2.4. Conclusions.....	21
References.....	22
<b>3. How Will Trend Growth in China Impact the Rest of Asia?</b> .....	24
3.1. China's Growing Importance and the Role of GVCs .....	24
3.2. China's Baseline, Catching-Up Potential, and Fragmentation Risks .....	27
3.3. Model-Based Spillovers .....	29
References.....	32

## FIGURES

Figure 1.1. Growth Outturns in First Half of 2023 .....	1
Figure 1.2. Developments in Economic Activity in 2023 .....	2
Figure 1.3. Inflation.....	3
Figure 1.4. Financial Conditions.....	4
Figure 1.5. Regional Impact Due to Changing US and China Growth Outlook.....	5
Figure 1.6. Output Losses in Asia .....	5
Figure 1.7. Inflation Outlook.....	6
Figure 1.8. Spillovers from China's Growth, by Drivers.....	7
Figure 1.9. Impact of Financial Tightening .....	8
Figure 1.10. Medium-Term Risks .....	9
Figure 1.11. Monetary Tightening Cycles and Financial Conditions from a Historical Perspective .....	9
Figure 1.12. Monetary Transmission amid Eased Financial Conditions .....	10
Figure 1.13. Financial Stability in Asia.....	11
Figure 1.14. Fiscal Policies in Asia .....	12
Figure 1.15. Climate Adaptation Needs .....	13
Figure 2.1. Inflation Patterns.....	16
Figure 2.2. Contributions to Headline Inflation .....	17

Figure 2.3. Drivers of Core CPI Inflation in Asia .....	18
Figure 2.4. Evolution of Lockdown Stringency .....	19
Figure 2.5. Drivers of Producer Price Index Inflation .....	20
Figure 2.6. Inflation Expectations .....	20
Figure 2.7. Supply and Demand Drivers of Deflator Inflation .....	21
Figure 3.1. China’s Growing Importance and the Role of Global Value Chains .....	25
Figure 3.2. China’s Growing Importance for Asia .....	26
Figure 3.3. Impact of Greater Linkages with China on Growth .....	27
Figure 3.4. China’s Baseline, Catching-Up Potential, and Fragmentation Risks .....	28
Figure 3.5. Spillovers from Upside Scenarios: Long-Term Spillovers from Reigniting Convergence in China ..	29
Figure 3.6. De-Risking Scenarios .....	31

## TABLES

Table 1. Asia: Real GDP .....	34
-------------------------------	----

# Acknowledgments

This *Regional Economic Outlook* was prepared by a team led by Shanaka J. Peiris and Alasdair Scott, under the overall direction of Krishna Srinivasan and Thomas Helbling. Chapter 1 was prepared by Tristan Hennig and Yizhi Xu (lead), with contributions from Melih Firat, Julia Estefania Flores, Pablo Gonzalez Dominguez, Daniel Jiménez, Paulo Medas, and Chris Redl. Chapter 2 was prepared by Pragyan Deb, Julia Estefania Flores, Melih Firat, Otso Hao, Daniel Jimenez, Shujaat Khan, Siddharth Kothari, Chris Redl, Alasdair Scott (lead), and John Spray, with contributions from Yan Carrière-Swallow. Chapter 3 was prepared by Diego A. Cerdeiro (co-lead), Julia Estefania-Flores, Parisa Kamali, Siddharth Kothari (co-lead), Dirk Muir, Chris Redl, and Weining Xin, with contributions from Pablo Gonzalez Dominguez, Daniel Jimenez, and Rui C. Mano. The online box contributors are Yizhi Xu for Box 1.1; Yan Carrière-Swallow, Purva Khera, and Kaustubh Chahande for Box 1.2; Siddharth Kothari for Box 2.1; Daniel Jimenez for Box 2.2; Shujaat Khan for Box 2.3; and Diego Cerdeiro, Parisa Kamali, and Siddharth Kothari for Box 3.1. Maribel Cherras and Judee Yanzon assisted in the preparation of the report. Cheryl Toksoz of the IMF's Communications Department edited the volume and coordinated its publication and release.

## Definitions

In this *Regional Economic Outlook: Asia and Pacific*, the following groupings are employed:

- “ASEAN” refers to Brunei Darussalam, Cambodia, Indonesia, Lao P.D.R., Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam, unless otherwise specified.
- “ASEAN-5” refers to Indonesia, Malaysia, the Philippines, Singapore, and Thailand.
- “Advanced Asia” refers to Australia, Hong Kong SAR, Japan, Korea, New Zealand, Singapore, and Taiwan Province of China.
- “Emerging Asia” refers to China, India, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.
- “South Asia” refers to Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka.
- “Asia” refers to ASEAN, East Asia, Advanced Asia, South Asia, and other Asian economies.
- “EU” refers to the European Union.

The following abbreviation is used:

ASEAN            Association of Southeast Asian Nations

The following conventions are used:

- In figures and tables, shaded areas show IMF projections.
- “Basis points” refer to hundredths of 1 percentage point (for example, 25 basis points are equivalent to  $\frac{1}{4}$  of 1 percentage point).
- “Billion” means a thousand million; “trillion” means a thousand billion.

As used in this report, the term “country” does not in all cases refer to a territorial entity that is a state as understood by international law and practice. As used here, the term also covers some territorial entities that are not states but for which statistical data are maintained on a separate and independent basis.

# Executive Summary

Economic activity in Asia and the Pacific remains on track to contribute around two-thirds of global growth in 2023, despite a challenging environment shaped by a global demand rotation from goods to services and synchronized monetary tightening. Upside growth surprises in the first half of 2023 have been driven by robust domestic demand, reflecting in part a draw-down in excess savings, and by China's reopening after the pandemic. However, growth momentum is slowing, with China's reopening losing steam and lackluster investment, partly responding to weaker external demand. Headline inflation has declined from postpandemic peaks as global commodity prices have receded.

Growth in the region is projected at 4.6 percent in 2023, an increase from 3.9 percent in 2022, and broadly as projected in the May 2023 *Regional Economic Outlook*. Growth is projected to moderate to 4.2 percent in 2024. The slowdown in China's property sector will weigh on demand throughout the region. Upgrades to growth in the United States and Japan will do less to offset the drag from China than historical patterns suggest, as global demand is rotating from goods to services and from foreign sources to domestic manufacturers—both factors that provide less of a boost to the Asia and Pacific region. Medium-term growth is expected to moderate further, to 3.9 percent, as China's structural slowdown and weaker productivity growth in many other economies weigh on the region—developments that reflect in part the specter of global de-risking. Inflation is expected to fall in 2024 within central bank target ranges in most countries—a faster pace of disinflation than in other regions.

Risks to the near-term outlook—globally and in the Asia and Pacific region—remain tilted to the downside but are more balanced than six months ago. A weaker-than-expected recovery in China could trigger negative spillovers to its trading partners. Abrupt financial tightening in the United States or within the region would inhibit growth, especially in highly leveraged economies and sectors. On the upside, a soft landing—with a better outlook for manufacturing and capital expenditures, an earlier turning point of the technology cycle, and accelerated disinflation in Asia—is becoming more plausible and would provide scope for easing monetary policy in 2024. Medium-term prospects are clouded by risks from geoeconomic fragmentation, with de-risking policies of major economies creating a potentially significant drag to growth. On the other hand, a comprehensive set of reforms in China would boost medium-term growth prospects, especially for smaller and more open economies. Several emerging market and developing economies are in or close to debt distress and face refinancing risks. Temperatures and natural disaster costs are rising, particularly for some of the most vulnerable countries in Asia.

Central banks should carry through with policies to ensure that inflation is anchored at target over the forecast horizon. As tight monetary conditions can place strains on financial stability, strengthening financial supervision, vigilant monitoring of systemic risks, and modernizing resolution frameworks are critical. Credible medium-term fiscal frameworks and consolidation could safeguard budgetary room for maneuver and debt sustainability.

Medium-term output losses relative to prepandemic trends are sizable and inequality remains high, calling for a multipronged regional growth strategy. Strengthening multilateral cooperation and mitigating the effects of fragmentation are vital for Asia's medium-term outlook. At the same time, the risks posed by de-risking strategies across all of Asia only add urgency to the need for structural policies to boost productivity growth, facilitate the green transition, and secure inclusive and sustained growth.





# 1. Outlook for Asia and the Pacific: Challenges to Sustaining Growth and Disinflation<sup>1</sup>

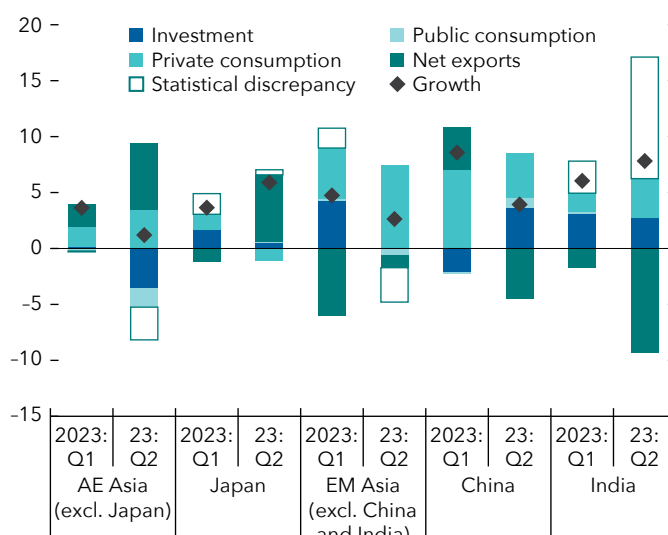
## 1.1. Recent Economic Developments

The global economic backdrop has remained challenging for economies in the Asia and Pacific region. Central banks further tightened monetary policy across the globe, although the fall in global commodity prices from their 2022 peak supported disinflation. Forceful policy action limited contagion from bank failures in the United States and Switzerland in the spring. As Asia's economic reopening from COVID health restrictions took place later than elsewhere, the region benefited from the associated domestic demand bounce later. External demand has been slowing noticeably, however, reflecting the global demand rotation from goods to services and a stronger-than-expected technology cycle downturn.

In the first quarter of the year, growth in the region generally surprised to the upside, while second-quarter surprises were to both sides. Robust private consumption supported growth (Figure 1.1), as households in Asia drew down some excess savings accumulated during the pandemic (Figure 1.2, panels 1 and 2). The boost from China's reopening in the first half of the year was above expectations. Strong private demand yielded positive growth surprises in India. Growth in Japan also exceeded expectations, driven first by strong domestic demand and then by a rebound in automobile exports as a result of supply chain normalization. For open economies in the region specializing in merchandise exports—mostly Association of Southeast Asian Nations economies, Korea, and Taiwan Province of China—weak global demand for goods has been a drag, while service-orientated economies have performed better.

However, more recent data suggest slowing growth momentum across the region. In China, the recovery is losing steam, with manufacturing purchasing managers' indexes entering contracting territory from April to August and conditions in the real estate sector weakening further (Figure 1.2, panels 3 and 4). While some economies in the region have benefited from an increase in arrivals of Chinese tourists, China's outbound tourism is still far from a full recovery. Fixed investment has weakened, likely reflecting external demand weakness and the technology cycle. There are now clear signs of economic scarring in investment, with marked deviations from prepandemic trends (Figure 1.2, panels 5 and 6).

**Figure 1.1. Growth Outturns in the First Half of 2023**  
(Percentage points, quarter-over-quarter)



Sources: Haver Analytics; and IMF staff calculations.

Note: AE Asia (excl. Japan) includes Australia, Hong Kong SAR, Korea, New Zealand, and Singapore. EM Asia (excl. China and India) includes Indonesia, Malaysia, Philippines, and Thailand. India numbers are calculated on a year-over-year basis. AE = advanced economy; EM = emerging market.

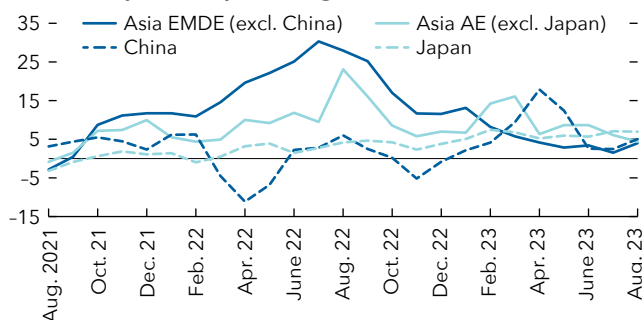
<sup>1</sup> The authors of this chapter are Tristan Hennig and Yizhi Xu (lead), with contributions from Melih Firat, Julia Estefania Flores, Pablo Gonzalez Dominguez, Daniel Jiménez, Paulo Medas, and Chris Redl.

Figure 1.2. Developments in Economic Activity in 2023

Private consumption held up ...

### 1. Retail Sales

(Percent, year-over-year change)



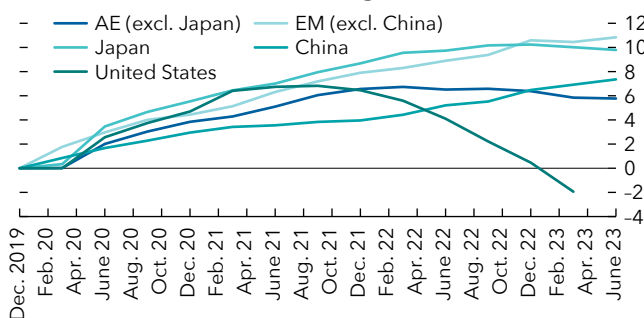
Source: Haver Analytics.

Note: Asia AE includes Australia, Hong Kong SAR, Japan, Korea, New Zealand, Singapore, and Taiwan Province of China. Asia EMDE includes China, Indonesia, and Vietnam. AE = advanced economies; EMDE = emerging market and developing economies.

... supported by households' excess savings.

### 2. Cumulative Excess Saving

(Percent of GDP; cumulative change since end of 2019)



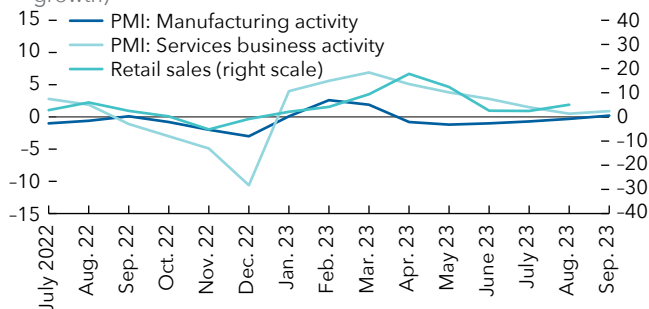
Sources: Haver Analytics; and IMF staff calculations.

Note: Excess saving is defined as the difference between actual household saving and prepandemic projected household saving. AE (excl. Japan) includes Australia, Hong Kong SAR, Korea, New Zealand, and Singapore. EM (excl. China) includes India, Indonesia, Philippines, and Thailand. AE = advanced economies; EMDE = emerging market and developing economies.

China's reopening provided a boost to services and retail sales, but manufacturing activity contracted from April to August ...

### 3. China: Manufacturing and Services Indexes

(PMI Indexes are subtracted by 50; retail sales year-over-year growth)



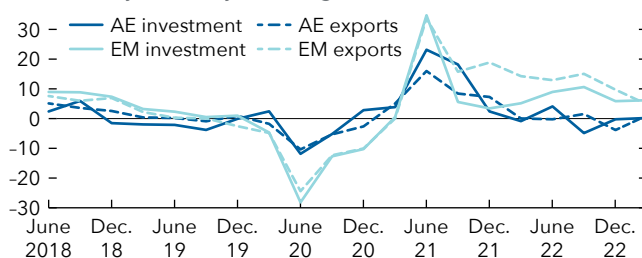
Source: Haver Analytics.

Note: PMI = purchasing managers' index.

Weak external demand over the past year has dragged down domestic investment ...

### 5. Investment and Export Growth

(Percent, year-over-year change)



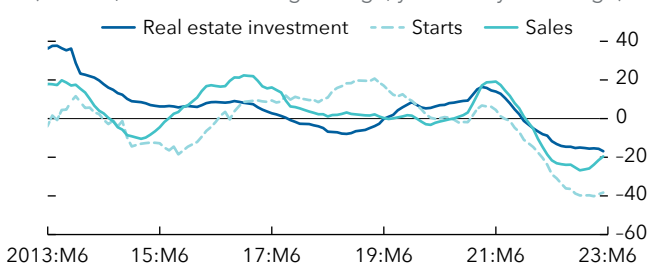
Sources: Haver Analytics; and IMF staff calculations.

Note: AE = advanced economies; EM = emerging markets.

... and the property sector is showing renewed weakness.

### 4. Real Estate Sector Indicators

(Percent; 12-month moving average, year-over-year change)

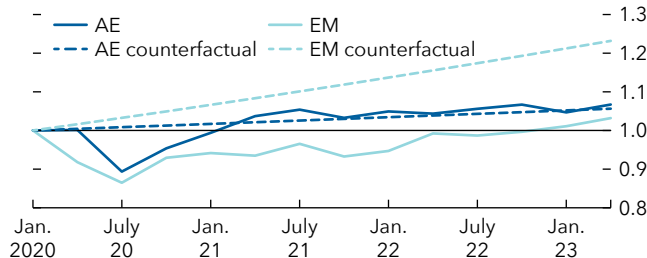


Sources: NBS; and IMF staff calculations.

... providing another setback to the investment recovery in Asia's emerging markets.

### 6. Real Gross Fixed Capital Formation

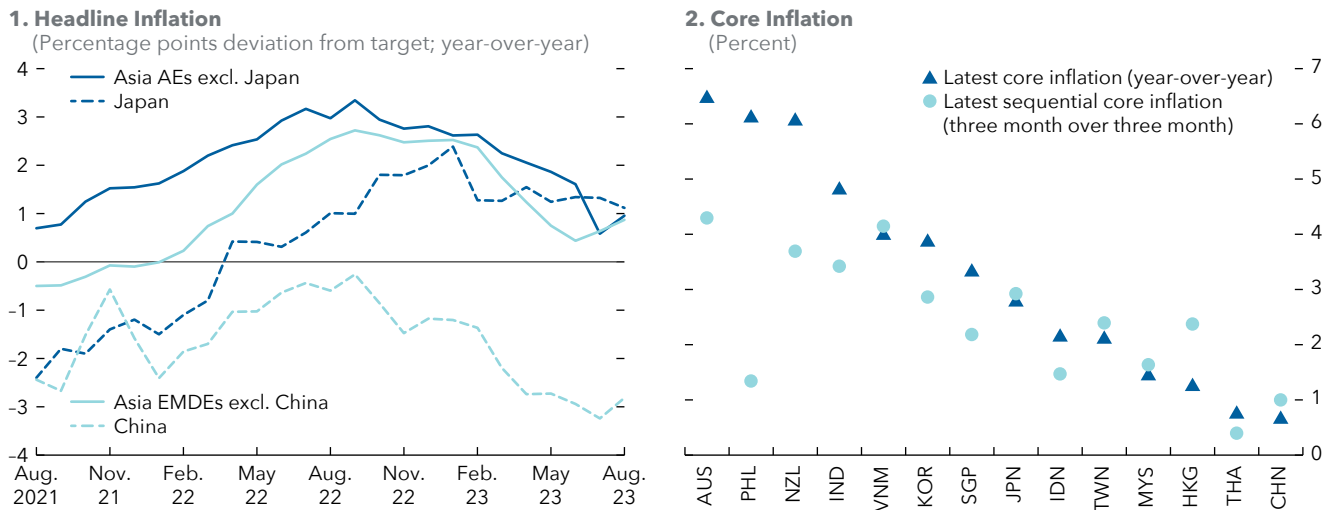
(Relative to 2019:Q4)



Sources: Haver Analytics; and IMF staff calculations.

Note: Counterfactual assumes average 2014-19 growth rate.

AEs include Australia, Japan, Korea, New Zealand, and Singapore. EMs include China, India, Malaysia, the Philippines, Thailand, and Vietnam. AE = advanced economies; EM = emerging markets.

**Figure 1.3. Inflation**

Sources: Haver Analytics; and IMF staff calculations.

Note: Asia AE includes Australia, Hong Kong SAR, Japan, Korea, Macao SAR, New Zealand, Singapore, and Taiwan Province of China. Asia EMDE includes Bangladesh, China, India, Indonesia, Malaysia, Philippines, Thailand, and Vietnam. AEs = advanced economies; EMDE = emerging market and developing economies.

Sources: Consensus Forecasts; and IMF staff calculations.

Note: Data as of September 7, 2023. Country abbreviations are International Organization for Standardization (ISO) country codes.

With falling food and energy prices and restrictive monetary stances, headline inflation in Asia and the Pacific has generally been declining, albeit with renewed price pressures emerging recently (Figure 1.3, panel 1). Core inflation has been easing more gradually, as in the rest of the world (Figure 1.3, panel 2). In Japan, inflation has risen to levels not seen in decades on pent-up domestic demand, still-accommodative policies, and rising tourist arrivals. China's inflation remains low and well-below target, reflecting falling food and fuel prices and still sizable economic slack. Headline inflation in India rose in the third quarter due to a weather-related vegetable price shock. In Australia and New Zealand, core inflation pressures are moderating slowly, with still tight labor markets and positive output gaps.

The impact of monetary policy tightening has differed between advanced and emerging Asia. Financial conditions in advanced economies in the region except for Japan have tightened substantially (Figure 1.4, panel 1), as in most other advanced economies (October 2023 *Global Financial Stability Report*, Chapter 1; Borraiccia and others 2023). However, in Asia's emerging markets, financial conditions remain relatively accommodative, as sovereign yields have not increased much since the tightening cycle began (Figure 1.4, panel 2; [Online Box 1.1](#)). Reasons include strong demand from the domestic investor base (both financial sector and central banks) and a compression in term premiums. Additionally, Asian currencies have regained value against the US dollar and the Chinese yuan this year, while bank lending conditions have remained favorable.

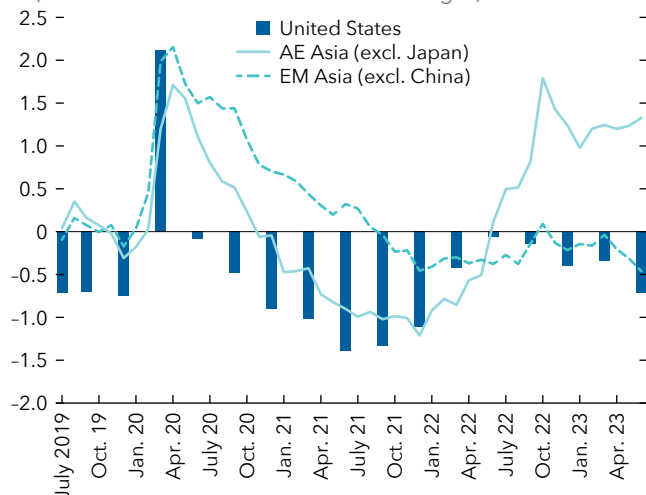
## 1.2. Factors Shaping the Outlook

Asia and Pacific will remain the most dynamic region this year, with growth expected to rise from 3.9 percent in 2022 to 4.6 percent in 2023. China and India are projected to contribute jointly about half of world growth in both 2023 and 2024. IMF staff estimate that Asia's growth will slow to 4.2 percent in 2024 and to 3.9 percent in the medium term—the lowest in the past two decades except for 2020. In Asia's advanced economies, tight financial conditions will hold back demand, while the outlook for exports will depend on price movements of global

Figure 1.4. Financial Conditions

## 1. Financial Condition Index

(Standard deviations from historical averages)

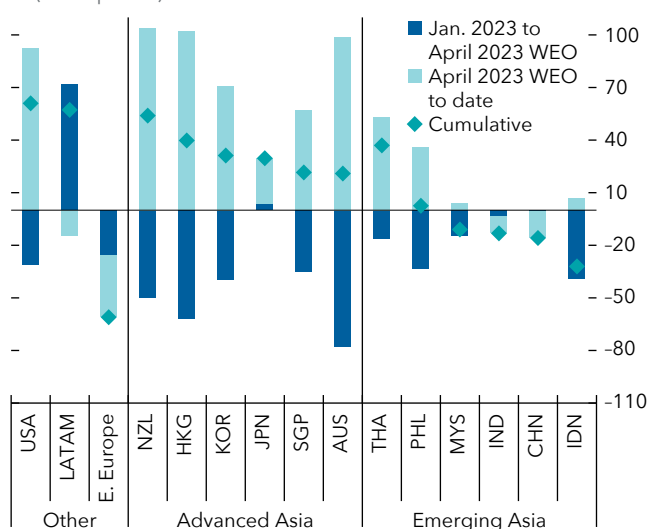


Sources: Bank for International Settlements; Bloomberg Finance L.P.; Haver Analytics; Thomson Reuters Datastream; and IMF staff calculations.

Note: AE = advanced economy; EM = emerging market.

## 2. Changes in 10-Year LCY Sovereign Yields

(Basis points)



Sources: Bloomberg Finance L.P.; Haver Analytics; and IMF staff calculations.

Note: LATAM includes Brazil, Chile, Colombia, Mexico, and Peru. Eastern Europe includes Croatia, Czech Republic, Hungary, Poland, and Slovakia. April WEO defined as date of WEO press release (April 11, 2023). Country abbreviations are International Organization for Standardization (ISO) country codes. LCY = local currency; WEO = *World Economic Outlook*.

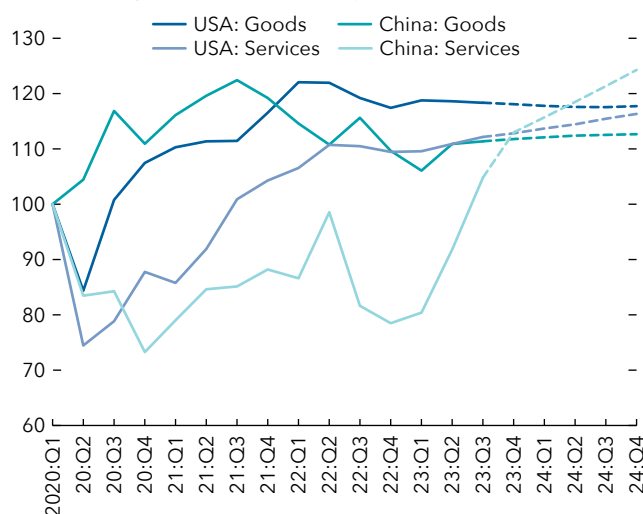
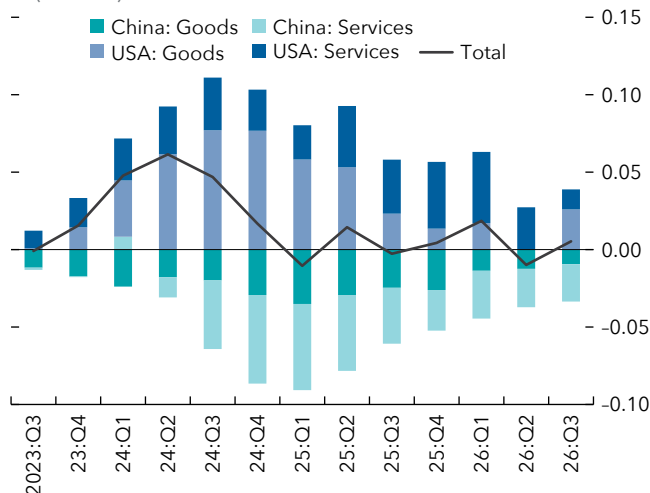
commodities (Australia, New Zealand) and the technology cycle (Korea, Singapore, Taiwan Province of China). In Asia's emerging markets, relatively accommodative financial conditions will support domestic demand despite monetary policy tightening, but external demand and lackluster investment will be headwinds to growth.

China's weaker near-term growth outlook will weigh on regional growth. The Chinese economy is expected to expand by 5 percent in 2023 and by 4.2 percent in 2024. Compared to the April 2023 *World Economic Outlook*, this is a downward revision of 0.2 and 0.3 percentage points, respectively. It reflects mainly renewed weakness in the property sector, as discussed earlier, despite more policy support than previously assumed.

The global demand rotation toward services will be a headwind for the region for some time, despite a stronger US growth outlook. Owing to strong business investment and resilient consumption growth, US growth for 2023 and 2024 was upgraded in the October 2023 *World Economic Outlook* by 0.5 and 0.4 percentage points, respectively, compared to April. While the large upgrade to US growth compared to a smaller downgrade for China would normally be a net positive for the region, the composition of US demand may mean that Asia will benefit less this time, for three reasons: first, the rotation in demand from goods to services has been reflected in lackluster global goods imports but rising global services imports (Figure 1.5, panel 1). Second, the demand for electronic goods has also moderated—a still-low book-to-bill ratio suggests a delayed turning of the technology cycle. Third, de-risking policies by major economies are reorienting demand for goods toward domestic instead of import supplies. Empirical analysis that accounts for these contrasting changes in the demand for goods and services in the United States and China shows that the net effect is still positive for the rest of Asia, but with a relatively small and short-lived impact (Figure 1.5, panel 2).

**Figure 1.5. Regional Impact Due to Changing US and China Growth Outlook****1. US and China: Goods and Services Imports**

(Constant price; national currency; 2020:Q1 = 100)

Sources: IMF, July 2023 *World Economic Outlook Update*; and IMF staff calculations.**2. Net Spillovers with Calibrated US and China Growth Shocks Decomposed by Goods and Services**  
(Percent)Sources: Copestake and others (2023); and IMF staff calculations.  
Note: GDP growth spillovers from a 0.5 percentage point upgrade in the United States and a 0.2 percentage point downgrade in China.

The latest medium-term growth paths projected for emerging Asia are below prepandemic growth trajectories (Figure 1.6). One reason is lower medium-term growth in China, which is expected to weigh on the outlook for the rest of Asia. Strong global value chain links to China have translated into strong growth spillovers for the past two decades, which, absent wide-ranging reforms in China, are expected to be weaker, as outlined in Chapter 3.

**Advanced Economies**

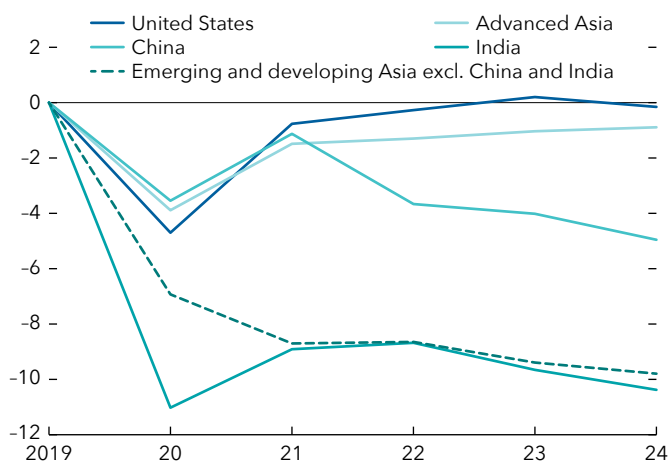
Growth in Asia's advanced economies (excluding Japan) is slowing, as tight monetary conditions negatively affect interest-sensitive demand and as external demand remains subdued. In Australia and New Zealand, where higher mortgage payments have lowered real disposable household income, domestic demand growth is expected to slow further. In Korea, growth is projected to slow to 1.4 percent in 2023, reflecting a drag from the semiconductor cycle and a weaker boost from China's recovery. Growth in Japan and Singapore has been revised on account of developments in the first half of 2023: up in Japan, to 2.0 percent from 1.4 percent, and down for Singapore, to 1 percent from 1.5 percent previously.

**Emerging Markets**

The emerging market economies of the Association of Southeast Asian Nations are expected to see growth of 4.2 percent in 2023 and 4.6 percent in 2024—a 0.3 percentage point downward revision relative to April. The downgrade reflects not only weaker

**Figure 1.6. Output Losses in Asia**

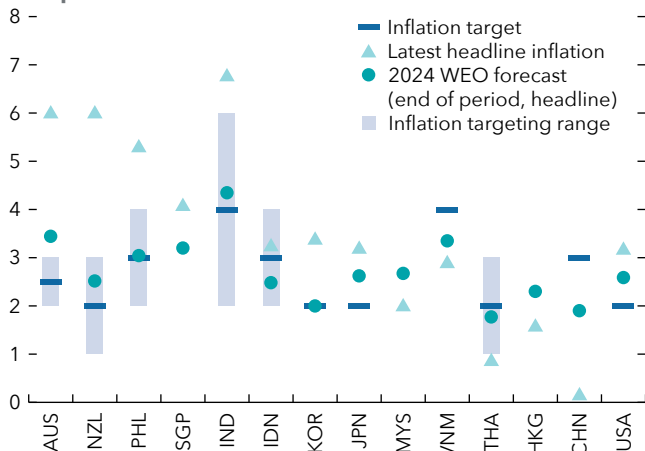
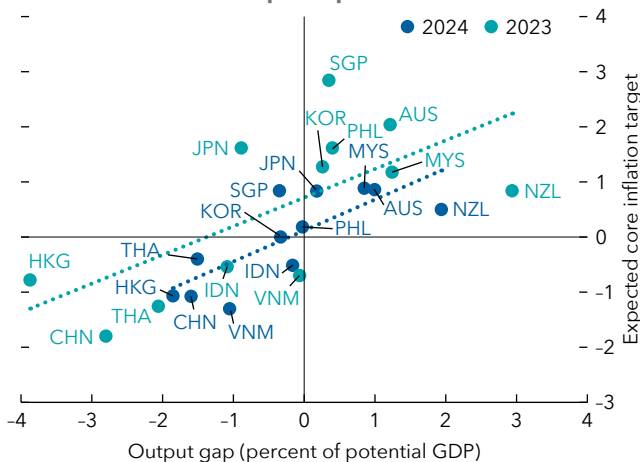
(Percent deviation from January 2020 projections)



Source: IMF, World Economic Outlook database.

**Figure 1.7. Inflation Outlook**

(Percent)

**1. Expected Inflation****2. Core Inflation and Output Gaps**

Sources: Consensus Forecasts; and IMF staff calculations.

Note: Data as of August 7, 2023. Latest inflation and consensus forecasts are for headline inflation. Some countries do not have explicit inflation targeting regimes or target, while target ranges apply to core inflation in some countries. Country abbreviations are International Organization for Standardization (ISO) country codes. WEO = *World Economic Outlook*.

Source: IMF, World Economic Outlook database.

Note: 2024 (2023) bubbles: expected core inflation 2024 (2023) and output gap 2023 (2022). Country abbreviations are International Organization for Standardization (ISO) country codes.

external demand, but also lackluster domestic demand as a result of monetary policy tightening. In India, however, growth has been revised up to 6.3 percent in 2023, due to resilient domestic demand and strong investment inflows.

## Frontier Markets and Small States

The near-term outlook remains favorable for many of Asia's frontier markets and small states, supported by lower commodity price pressure and increased tourist inflows. In Sri Lanka, the economy is bouncing back from the economic crisis, on the back of reduced inflationary pressure and easing foreign exchange pressures. Growth momentum remains robust in other South Asian frontier market economies (Bangladesh, Bhutan, Maldives, Nepal), with near-term growth exceeding 5 percent in this region. The growth outlook varies across Southeast Asia (Cambodia, Lao P.D.R., Myanmar), reflecting a diverse set of economic conditions and challenges. In Mongolia, the government's efforts and favorable external conditions helped lift economic activity. GDP in Pacific Island countries with high dependence on tourism is still more than 10 percent below prepandemic levels, with challenges from higher fiscal deficits, elevated debt, and shrinking fiscal policy space.

## Inflation

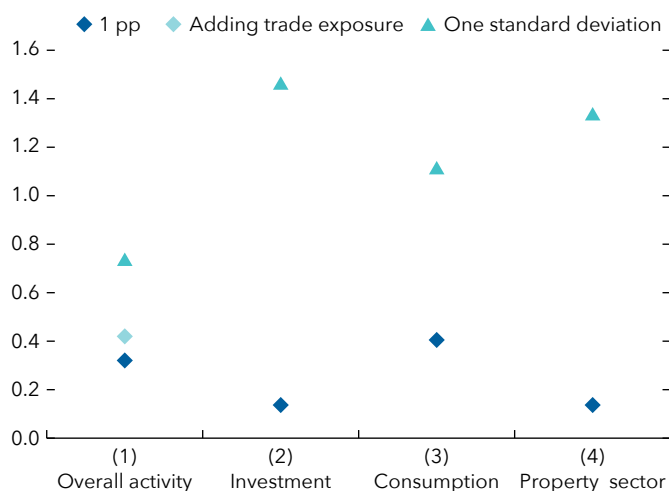
Inflation is projected to continue the decline toward central bank targets. Except for Japan, inflation is expected to return to within target ranges by the end of 2024 (Figure 1.7, panel 1). This puts Asia ahead of the rest of the world, which, in general, will not see inflation returning to target until at least 2025 (October 2023 *World Economic Outlook*, Chapter 1). Even in economies where output is still above potential (Australia, Malaysia, New Zealand), gaps will narrow until 2024, and core inflation is expected to moderate (Figure 1.7, panel 2). In China, where food and fuel prices are expected to increase, the baseline outlook is for a gradual increase in inflation as output gaps close. In Japan, core inflation has reached a historically high level due to strong domestic demand and rising wages, and it is expected to stay above 2 percent until early 2025.

### 1.3. Risks to the Outlook Are Still Tilted to the Downside, albeit More Balanced

While still tilted to the downside, risks to the near-term outlook are now more balanced. Key downside risks include more persistent global inflationary pressures and the need to tighten monetary policy further, a deeper downturn in the property sector in China (Figure 1.8), and an abrupt tightening of financial conditions. However, upside risks have also emerged. A soft-landing scenario after the monetary policy tightening cycle is now more plausible, featuring both a stronger recovery in domestic demand and accelerated global disinflation. This would support a rebound in Asia's exports and provide scope for monetary easing in 2024 (October 2023 *World Economic Outlook*, Box 1.2). In the medium term, a stronger slowdown in productivity and investment in China or greater geoeconomic fragmentation would reduce growth in Asia and the Pacific.

**Figure 1.8. Spillovers from China's Growth, by Drivers**

(Percent, peak cumulative decline in GDP)

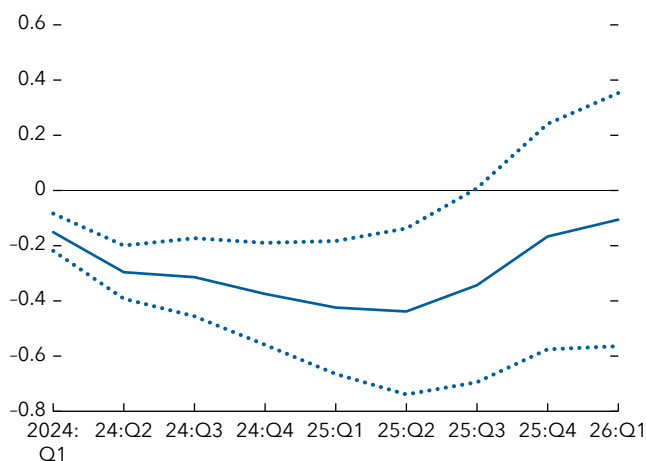


Sources: Copestake and others (2023); and IMF staff calculations.  
Note: Peak responses of a shock to (1) overall activity measure from Fernald and others (2021), (2) private investment, (2) private final consumption, (3) and value added in the property sector. Triangles represent mean response in a panel of 50 countries (excluding China); lines are 68 percent confidence intervals. pp = percentage point.

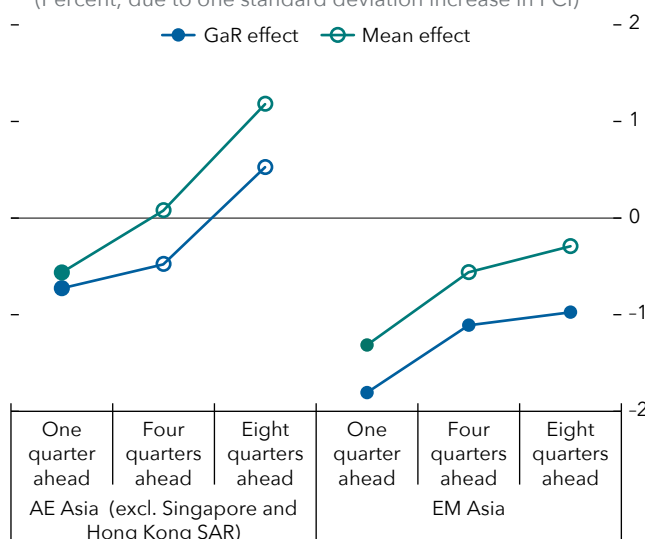
#### Near-Term Risks

- A deeper or more prolonged housing market correction in China would trigger greater financial stress among property developers and larger asset quality deterioration. Both banks and nonbanks would be affected through balance sheet losses and lower profitability, causing tighter financial conditions. In addition, spillovers to and from highly leveraged local government financing vehicles could result in unintended fiscal tightening. In a downside scenario, China's GDP would decline by as much as 1.6 percent relative to the baseline by 2025, while world GDP would decline by 0.6 percent relative to the baseline (October 2023 *World Economic Outlook*, Chapter 1). Spillovers would be larger for countries whose exports are linked strongly to investment or commodity demand in China. Such a downside scenario would also entail less outbound tourism from China, affecting service sectors across Asia (including in Cambodia, Maldives, and Thailand).
- Upside risks to inflation could be triggered by further commodity price spikes and tighter labor markets. Inflation in Asia's emerging market and low-income economies is particularly exposed to global rice prices, which have recently experienced a bout of volatility, and other essential food prices. Core inflation in emerging Asia is particularly susceptible to global commodity shocks (Carrière-Swallow and others 2023). In advanced economies, core inflation could be more persistent than currently expected, as tight labor market conditions have yet to ease.
- The relatively accommodative financial conditions in both the United States and emerging market Asia come with the risk of a sharp reversal. In the United States, tighter conditions could materialize if markets reprice risks when expectations about the monetary tightening path or monetary transmission lags shift, or if term premiums increase (Figure 1.9, panel 1). Tighter domestic financial conditions could stress sectors whose balance sheets are vulnerable to interest rate risks (May 2023 *Regional Economic Outlook: Asia and Pacific*, Box 2), putting growth at risk, particularly in Asia's emerging markets (Figure 1.9, panel 2). An abrupt adjustment of the Bank of Japan's yield curve control operations could cause cross-border financial spillovers across Asia, especially in countries with close financial and trade links with Japan ([Online Box 1.2](#)).



**Figure 1.9. Impact of Financial Tightening****1. Growth Spillovers from Tighter US Financial Conditions**  
(Percent)

Sources: Copestake and others (2023); and IMF staff calculations.  
Note: GDP growth spillovers from a one standard deviation increase in US Financial Conditions in 2023:Q4, similar to an increase between 2021:Q3 and 2022:Q3. Dotted lines are 90 percent confidence intervals.

**2. Asia: Mean and Growth-at-Risk Impact of Tightening Financial Conditions**  
(Percent; due to one standard deviation increase in FCI)

Sources: Haver Analytics; IMF, World Economic Outlook database; and IMF staff calculations.  
Note: Solid bubbles indicate significant at 90 percent confidence interval. GDP growth spillovers from one standard deviation increase in Asia's domestic financial conditions. AE = advanced economy; EM = emerging market; FCI = financial conditions index; GaR = growth-at-risk.

## Medium-Term Risks

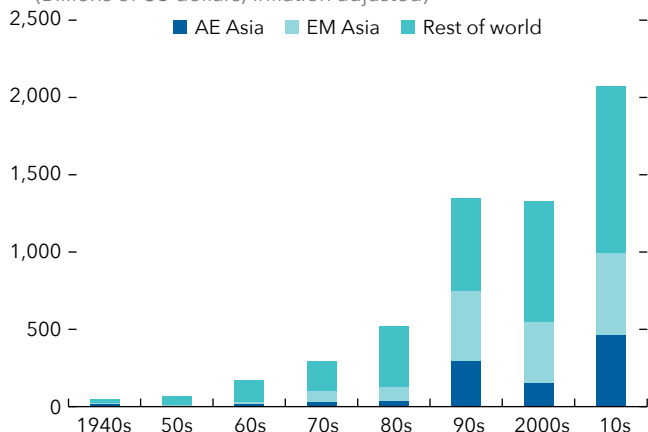
Medium-term potential growth in China is projected to slow amid uncertainty about the underlying moderation in productivity and labor force growth. Productivity-enhancing reforms in China could moderate the slowdown and lift growth in the region. Goeconomic fragmentation pressures are clouding medium-term regional growth prospects (see Chapter 3), given the increase in restrictions on trade (Figure 1.10, panel 1), the impact on cross-border portfolio and foreign direct investment flows, and concentrated availability of critical minerals (October 2023 *World Economic Outlook*, Chapter 3). While friend-shoring may bring trade-diversion benefits to some countries, these are more than offset by the contraction in China and other major economies that such policies would cause—and this would only be exacerbated by “re-shoring” policies (see Chapter 3). Although Asia's emerging market and developing economies are benefiting from the fact that sovereign spreads are lower than one year ago (October 2023 *World Economic Outlook*, Chapter 1), several vulnerable low- and middle-income economies in Asia could be at risk of debt distress without measures to improve debt sustainability. Increasing threats from natural disasters and the resulting rising economic losses could affect the most vulnerable populations in Asia and pose a risk to food security (Figure 1.10, panel 2).

## 1.4. Policies

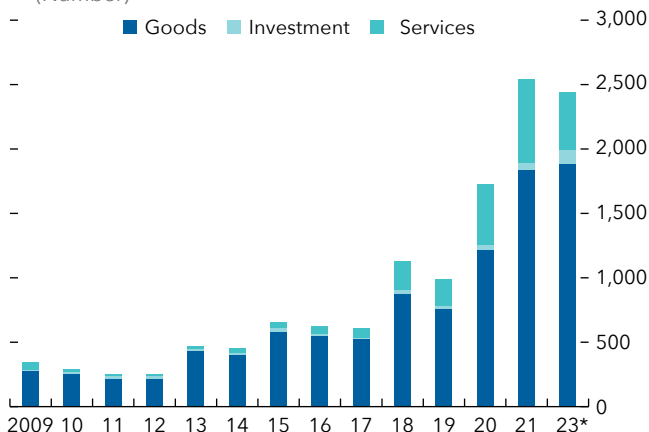
The task of bringing inflation back to target appears increasingly achievable with current policies, given recent monetary policy tightening in most of the region and the unwinding of some recent supply shocks. However, with challenges from headwinds to the outlook and limited policy space, continued fiscal and financial policy normalization is essential to support disinflation, preserve financial stability, and rebuild fiscal buffers. In addition, structural reforms to mitigate the negative impact from pandemic scarring, global climate change, and geoeconomic fragmentation are urgently needed.

**Figure 1.10. Medium-Term Risks**

**1. Total Damage from Natural Disasters**  
(Billions of US dollars; inflation adjusted)



**2. Harmful Trade Restrictions Imposed**  
(Number)



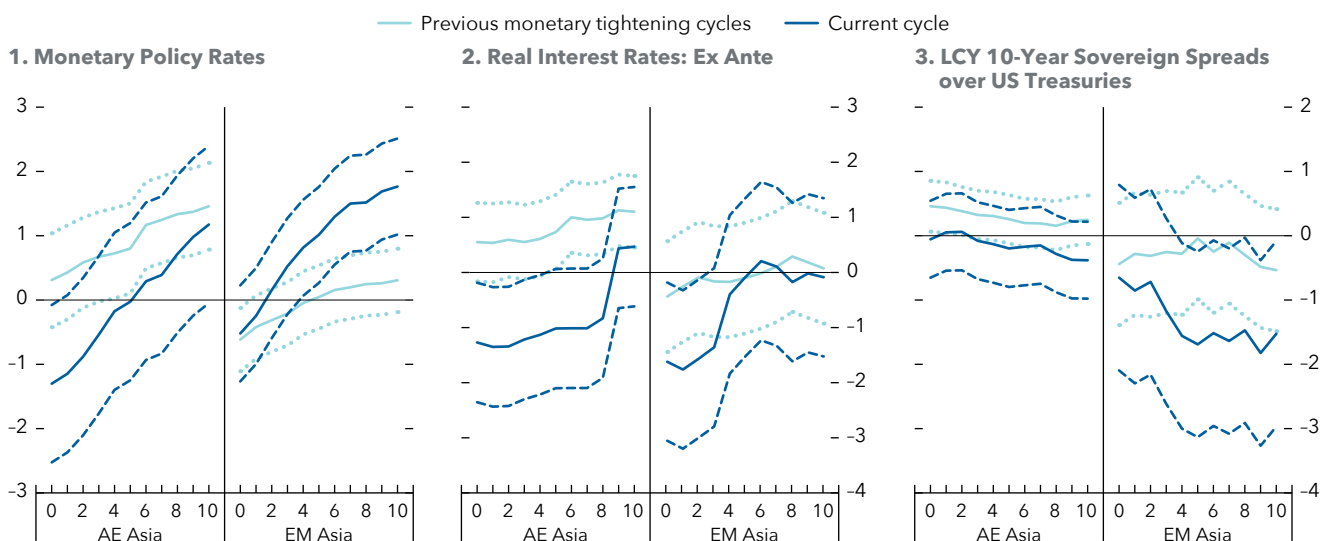
Sources: Emergency Events Database; and IMF staff calculations.  
Note: Emergency Events Database does not report the actual economic impact of an event but only provides estimates. AE = advanced economy; EM = emerging market.

Sources: Global Trade Alert; and IMF staff calculations.  
Note: \* 2023 interpolated values to the end of the year.

## Monetary Policy

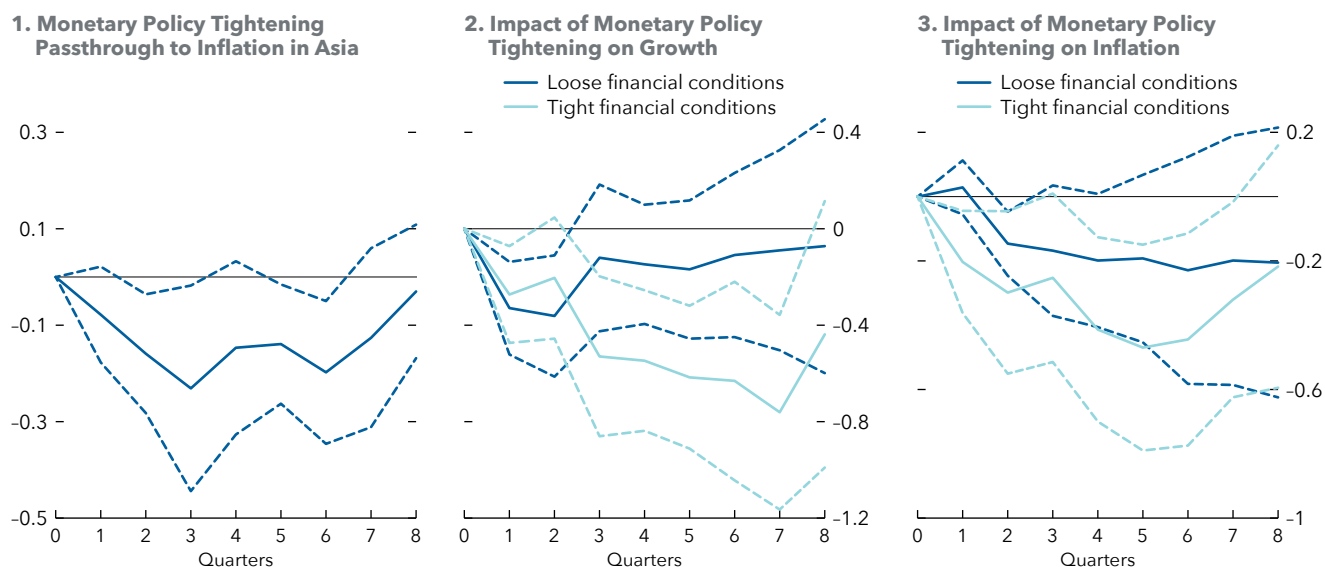
Faced with rising inflation in the last two years, central banks in Asia and Pacific (except for the Bank of Japan and the People’s Bank of China) have tightened their monetary policy stances, in line with their price stability mandates. Compared with previous monetary tightening cycles in the new millennium, the pace of nominal policy rate increases has been faster in both advanced and emerging market economies (Figure 1.11, panel 1). Historical pass-through estimates suggest that this tightening has contributed to recent disinflation (Figure 1.12, panel 1).

**Figure 1.11. Monetary Tightening Cycles and Financial Conditions from a Historical Perspective**  
(Percent; T = 0 on the horizontal axis represents the first month of a monetary tightening cycle)



Sources: Bloomberg Finance L.P.; Haver Analytics; and IMF staff calculations.  
Note: Dashed lines are 90 percent confidence intervals. AE = advanced economy; EM = emerging market; LCY = local currency.

**Figure 1.12. Monetary Transmission amid Eased Financial Conditions**  
(Percent)



Sources: Deb and others (2023); and IMF staff calculations.

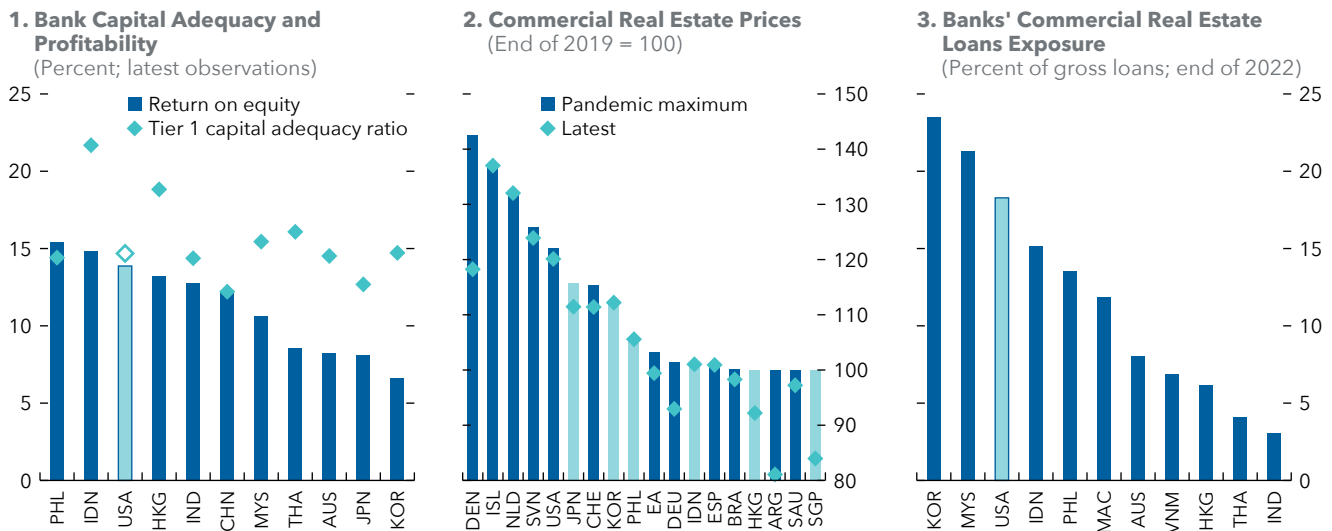
Note: Dotted lines show 90 percent confidence intervals. Results are derived from a sample of nine Asian economies—AUS, IDN, IND, JPN, KOR, MYS, NZL, PHL, and THA—following the methodology in Deb and others (2023). Country abbreviations are International Organization for Standardization (ISO) country codes.

Going forward, central banks in the region should guard against easing monetary policy prematurely:

- Despite the tightening cycle, ex ante real policy interest rates are only at about zero (Figure 1.11, panel 2), which is close to or still somewhat below neutral levels. Financial conditions, especially in emerging market economies, also remain more accommodative than in earlier monetary tightening cycles (Figure 1.11, panel 3). This possible disconnect between financial conditions and policy rates could reduce both the disinflationary impact of hikes (Figure 1.12, panel 2) and their negative impact on growth and employment (Figure 1.12, panel 3).
- Core inflation in a few advanced economies of the region—including Australia, Japan (see [Online Box 1.2](#)), and New Zealand—is still substantially above target. The greater persistence mirrors labor markets that continue to be tight (as seen in high vacancy-to-unemployment ratios and rising wages) and output that remains above potential. In these circumstances, central banks should stay the course in their monetary policy response or be ready to tighten until inflation is expected to decline firmly to the target range.
- There are uncertainties about inflation paths. Risks to inflation from food (particularly rice) and fuel prices remain tilted to the upside; core inflation itself is susceptible to food, fuel, and shipping cost shocks, especially in emerging market and developing economies (Chapter 2 and October 2023 *World Economic Outlook*, Chapter 2). There is also considerable uncertainty around lags of policy transmissions and the relative size of supply and demand shocks.

## Financial Stability

Asia's banking sector has remained resilient, underpinned by strong capital buffers and rising profitability (Figure 1.13, panel 1). However, as interest rates remain higher for longer, associated asset quality risk could increase and lead to financial sector stresses in Asia. Policymakers should respond by strengthening supervision, including through implementation of Basel III standards, phasing out forbearance measures, and closely monitoring systemic risks.

**Figure 1.13. Financial Stability in Asia**

Sources: IMF Financial Soundness Indicators database; and IMF staff calculations.

Note: Country abbreviations are International Organization for Standardization (ISO) country codes.

Real estate sectors in Asia could also become a source of financial stability risks in a tighter-for-longer environment. In China, continued stress in the property sector may lead to material losses for smaller banks. Regulators should facilitate the restructuring or bankruptcy proceedings of insolvent developers while protecting buyers' interests and restoring market confidence. Outside of China, high-leverage property sector segments could face challenging funding conditions and liquidity shortfalls (April 2023 *Regional Economic Outlook: Asia and Pacific*). While the commercial real estate sector in Asia is relatively small (April 2021 *Global Financial Stability Report*) and price increases since the pandemic have generally been modest (Figure 1.13, panel 2), regional financial centers such as the Hong Kong Special Administrative Region and Singapore have experienced substantial commercial property price declines recently. Banking sector lending to commercial real estate is high in a few Asian economies (Figure 1.13, panel 3), but vulnerabilities remain contained.

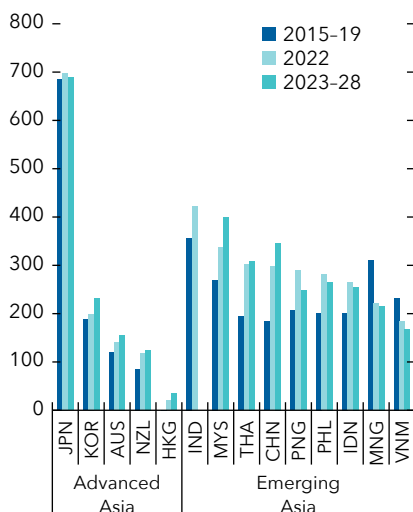
Macroprudential measures should be used preemptively to address emerging risks in banks and nonbanks, including those linked to highly indebted corporate borrowers (April 2023 *Regional Economic Outlook: Asia and Pacific*) and increasingly vulnerable real estate sectors (for example, limits on loan-to-value ratios and debt-service-to-income ratios). For economies where financial conditions remain accommodative, increasing banks' countercyclical buffers and provisions for sectors with pockets of vulnerabilities could mitigate excessive risk taking. If financial sector stress were to emerge, deploying liquidity support promptly while mitigating the risk of moral hazard would limit contagion.

## Fiscal Policy

Fiscal consolidation in Asia continues to support disinflation, although the pace is expected to slow in 2024. Debt service burdens are higher than before the pandemic due to higher debt levels and interest rates (Figure 1.14, panel 1)—hence stronger primary balances are needed to ensure debt sustainability. This is a particular concern for countries with limited fiscal space for priority spending or increased risks of debt distress. Market-oriented structural reforms could ease the trade-off by promoting economic growth and strengthening public finances. Gains from structural reforms would materialize through higher tax revenues and narrower sovereign debt spreads, and translate eventually into sizable and long-lasting reductions in the debt-to-GDP ratios (Aligishiev and others 2023).

Figure 1.14. Fiscal Policies in Asia

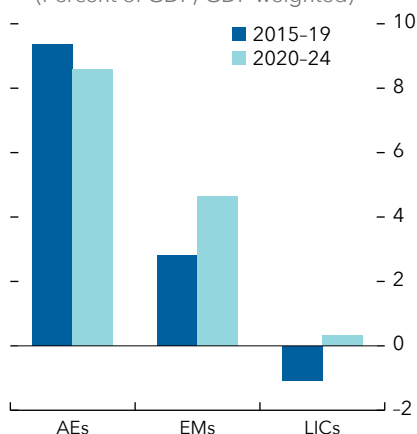
### 1. Public Debt to Fiscal Revenue Ratio (Percent)



Source: IMF, World Economic Outlook database.

Note: Public debt burden is defined as the ratio of general government gross debt to fiscal revenue. Country abbreviations are International Organization for Standardization (ISO) country codes.

### 2. Government Revenue—Gap between Asia and the Rest of the World (Percent of GDP; GDP weighted)

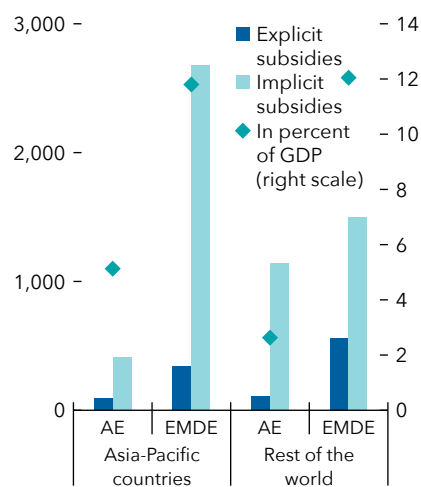


Sources: IMF, World Economic Outlook database; and IMF staff calculations.

Note: Gap between Asia and the rest of the world is defined as Asia's government revenue-to-GDP ratio minus rest-of-world government revenue-to-GDP ratio. AEs = advanced economies; EMs = emerging markets; LIC = low-income countries.

### 3. Fuel Subsidies

(Millions of US dollars; right scale: percent of GDP, GDP weighted)



Sources: Fossil Fuels Subsidies Database 2023; and IMF staff.

Note: AE = advanced economies; EMDE = emerging market and developing economies.

Government revenue in the region remains low compared to international peers. The gap is increasing, among both emerging markets and low-income countries (Figure 1.14, panel 2). Revenue-enhancing reforms, including expanding the tax base and strengthening revenue administration, will be critical to fund development needs and manage high debt levels. In countries with limited fiscal space, public spending should focus on measures that protect the most vulnerable households and boost future productivity. This could be achieved by prioritizing subsidy reforms, strengthening weak social safety nets, and augmenting public investment to boost productivity growth. Reducing the region's large energy subsidies (Figure 1.14, panel 3) would also help tackle climate change by creating incentives for greater energy efficiency and generating fiscal space to invest in renewable energy.

A few frontier market economies (for example, Maldives, Mongolia, and Papua New Guinea) and low-income countries (such as Lao P.D.R.) face high short-term external financing needs or debt servicing costs. Stronger fiscal adjustment may be required in some cases to achieve debt stabilization at a sustainable level. Communication and implementation of credible medium-term fiscal frameworks would facilitate such adjustments.

## Structural Policies

To boost productivity and mitigate scarring from the pandemic and fragmentation, countries should implement targeted and carefully sequenced structural reforms. Prioritizing reforms that alleviate the most critical constraints to activity can help front-load output gains and ensure public buy-in. Reforms such as expanding health care coverage, increasing access to early childhood and higher education, supporting start-ups, and deepening digitalization would boost medium-term output. Mitigating potentially adverse distributional effects of structural reforms across economic groups (including gender and age) might require complementary policies, including targeted support to ensure that the reforms' benefits are shared.

Speeding up the green transition would help mitigate the effects of climate change. Temperatures across Asia have risen in recent decades, accompanied by an increasing frequency of natural disasters. Investment in climate change adaptation needs to be scaled up from both public and private sources, including green financing mechanisms (Figure 1.15)—especially in regions most vulnerable to climate shocks. Reductions in global emissions are needed to mitigate climate change. Asia has a large role to play, as 5 of the 10 largest emitters are in Asia (Lim and others, forthcoming). Carbon pricing can benefit Asian economies by discouraging fossil fuel use, promoting the development of renewable energy, and incentivizing technological development. Green industrial policies (currently pursued in China, the European Union, and the United States) can complement carbon pricing to speed up the transition. However, they should be designed to avoid distortions to international trade (such as domestic content provisions) and investment, in line with World Trade Organization rules. Enhancing climate risk monitoring systems and risk management frameworks, and building stronger safety nets and insurance, are also needed to enhance climate resilience (October 2023 *Fiscal Monitor*).

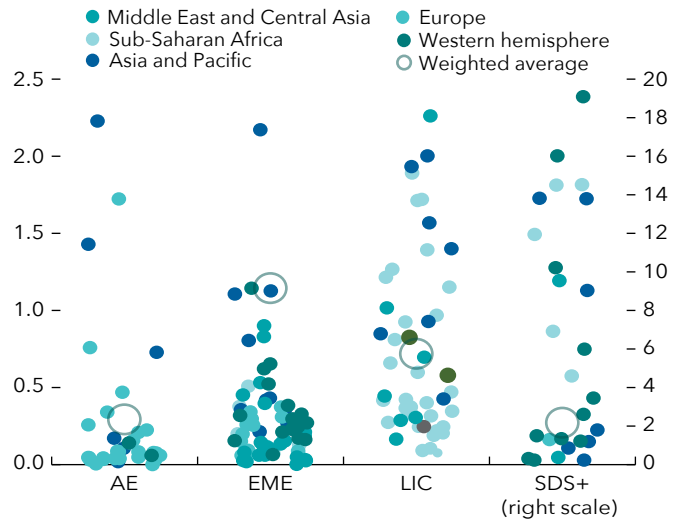
Finally, Asian countries should step up reforms that would mitigate the impact of China’s medium-term growth slowdown and of global de-risking. As Asia is highly integrated into global supply chains, strengthening multi-lateral and regional cooperation and mitigating the effects of fragmentation would help maintain the gains from trade and economic integration. This requires efforts to lower inter- and intraregional nontariff trade barriers, improve connectivity, and strengthen regional integration through agreements such as the Association of Southeast Asian Nations plus China, Japan, and Korea forum; the Comprehensive and Progressive Agreement for Trans-Pacific Partnership; and Regional Comprehensive Economic Partnership. Nontariff trade barriers remain high in Asia, and historical experience suggests that their removal could benefit growth (October 2021 *Regional Economic Outlook: Asia and Pacific*). Furthermore, reform measures to improve business environments and regulatory frameworks are essential for attracting more foreign and domestic investment. To enhance innovation and productivity, more investment in research and development, education, and skills development is critical (Dabla-Norris and others 2023).

## References

Aligishiev, Zamid, Gabriela Cugat, Romain Duval, Davide Furceri, João Tovar Jalles, Margaux MacDonald, Giovanni Melina, Futoshi Narita, and Chris Papageorgiou. 2023. “Market Reforms and Public Debt Dynamics in Emerging Market and Developing Economies.” IMF Working Paper 23/005, International Monetary Fund, Washington, DC.

Aligishiev, Zamid, Emanuele Massetti, and Matthieu Bellon. 2022. “Macro-Fiscal Implications of Adaptation to Climate Change.” IMF Staff Climate Note 2022/002, International Monetary Fund, Washington, DC.

**Figure 1.15. Climate Adaptation Needs**  
(Percent of GDP)



- Borraccia, Giovanni, Raphael Espinoza, Vincenzo Guzzo, Fuda Jiang, Romain Lafarguette, Vina Nguyen, Miguel Segoviano, and Phillippe Wingender. 2023. "Financial Conditions in Europe: Dynamics, Drivers, and Macroeconomic Implications." IMF Working Paper 23/209, International Monetary Fund, Washington, DC.
- Copestake, Alex, Melih Firat, Davide Furceri, and Chris Redl. 2023. "[China Spillovers: Aggregate- and Firm-Level Evidence.](#)" IMF Working Paper 23/206, International Monetary Fund, Washington, DC.
- Carrière-Swallow, Yan, Pragyan Deb, Davide Furceri, Daniel Jiménez, and Jonathan D. Ostry. 2023. "Shipping Costs and Inflation." *Journal of International Money and Finance* 130 (February): 102771. <https://doi.org/10.1016/j.jimonfin.2022.102771>.
- Dabla-Norris, Era, Tidiane Kinda, Kaustubh Chahande, Hua Chai, Yadian Chen, Alessia De Stefani, Yosuke Kido, Fan Qi, and Alexandre Sollaci. 2023. "Accelerating Innovation and Digitalization in Asia to Boost Productivity." IMF Departmental Paper 2023/001, International Monetary Fund, Washington, DC.
- Deb, Pragyan, Julia Estefania-Flores, Melih Firat, Davide Furceri, and Siddharth Kothari. 2023. "[Monetary Policy Transmission Heterogeneity: Cross-Country Evidence.](#)" IMF Working Paper 23/204, International Monetary Fund, Washington, DC.
- Fernald, John, Eric Hsu, and Mark Spiegel. 2021. "Is China Fudging its GDP Figure? Evidence from Trading Partner Data." *Journal of International Money and Finance* 114 (June): 102406.
- Lim, Cheng Hoon, Ritu Basu, Yan Carrière-Swallow, Ken Kashiwase, Mahmut Kutlukaya, Mike Li, Ehraz Refayet, Mouhamadou Sy, Dulani Seneviratne, and Ruihua Yang. Forthcoming. "Mobilizing Climate Finance in Asia-Pacific." IMF Departmental Paper, International Monetary Fund, Washington, DC.

## 2. Recent Inflation Experiences in Asia and the Pacific<sup>1</sup>

*Recent inflation experiences in Asia and the Pacific raise important questions: why was inflation lower on average than in other regions, and why has it varied so much within the region? The differences between regions do not appear to be because of the transmission of inflationary shocks, but instead the ways inflationary shocks manifested in each country. External shocks to food, fuel, and supply chains were important, but Asian economies generally felt these pressures less than elsewhere, partly because of the type of products and services dominant in their economies, and also because of direct policies to restrict price increases. Pandemic responses set off a complex mix of demand and supply shocks that varied over time. Lockdowns were generally longer lasting in Asia and Pacific countries, dampening demand and inflation. Policy support during the pandemic varied across the region. However, recent fiscal and monetary policies have helped manage and reduce inflation rates.*

Inflation has surged in recent years across Asia and Pacific, but it has generally not been as strong as in some other regions. Inflation experiences across the region have varied considerably: inflation in some countries is still high, while others appear as if they will experience deflation soon. Two sets of questions follow:

- How and why have inflation dynamics been different for the Asia and Pacific region on average compared with economies elsewhere? And what explains the differences in inflation outcomes across the region?
- What are the implications for monetary policy? How should policy have reacted to the shocks that drove inflation? Was it effective?

The first section in what follows summarizes inflation experiences for the entire region and within the region. The second section considers potential explanations of inflation in relation to inflation pressures and their propagation, concentrating on external price pressures. The third section evaluates monetary policy, and the final section presents conclusions.

### 2.1. Inflation Facts

Understanding inflation in the region begins with three facts (Figure 2.1):

- The Asia and Pacific region overall saw a noticeable increase in inflation, but inflation on average has been lower through this period than in other regions.
- Country experiences vary considerably—some countries have experienced historically high inflation, and others have experienced markedly low inflation.
- Transportation, food, and fuel costs also increased substantially, though the increase in food costs was less than in other regions, and fuel costs increased by a smaller amount in Asian emerging markets.

The inflation patterns suggest the following groupings:

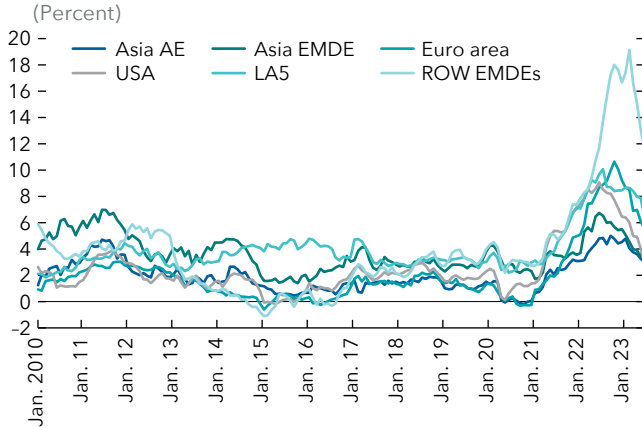
- In the advanced economies of Australia, Korea, New Zealand, and Singapore, inflation patterns are similar to those in the United States and the euro area (though varying in amplitude): headline consumer price index (CPI) inflation dipped early in the pandemic, then increased steadily; producer price index and imported inflation led CPI inflation, but there is little sign that wage-price spirals drove the inflation cycle.

<sup>1</sup> This chapter's authors are Pragyan Deb, Julia Estefania Flores, Melih Firat, Otso Hao, Daniel Jimenéz, Shujaat Khan, Siddharth Kothari, Chris Redl, Alasdair Scott (lead), and John Spray, with contributions from Yan Carrière-Swallow.



**Figure 2.1. Inflation Patterns**

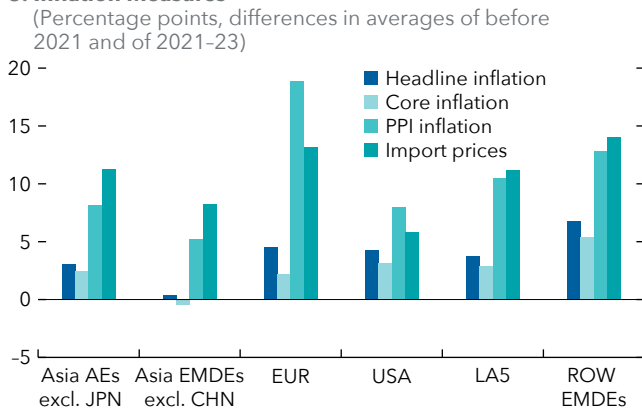
The increase in inflation in Asia and Pacific coincided with the striking increase in inflation across the world but was less pronounced.

**1. Headline Inflation**

Sources: Haver Analytics; and IMF staff calculations.

Note: Asia AEs include AUS, HKG, JPN, KOR, MAC, NZL, SGP, and TWN. Asia EMDEs include BGD, BRN, BTN, CHN, FJI, IDN, IND, KHM, LAO, LKA, MAC, MDV, MMR, MNG, NPL, PHL, THA, and VNM. ROW EMDEs include HUN, POL, and ZAF. Country abbreviations are International Organization for Standardization (ISO) country codes. AE = advanced economy; EMDE = emerging market and developing economy; LA5 = Latin America 5 (Brazil, Chile, Colombia, Mexico, Peru); ROW = rest of the world.

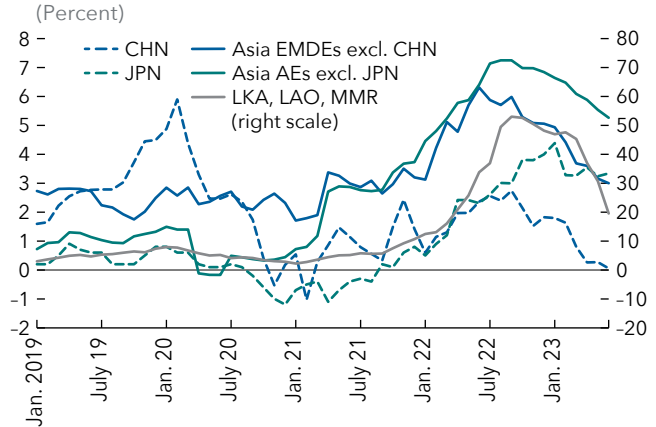
Increases in PPI inflation and import inflation were notably smaller in Asian emerging markets than in other regions.

**3. Inflation Measures**

Sources: Haver Analytics; and IMF staff calculations.

Note: Data start on 2010 (or when the first data are available). ROW EMDEs include HUN, POL, and ZAF. Country abbreviations are International Organization for Standardization (ISO) country codes. AE = advanced economy; EMDE = emerging market and developing economy; LA5 = Latin America 5 (Brazil, Chile, Colombia, Mexico, Peru); PPI = producer price index; ROW = rest of the world.

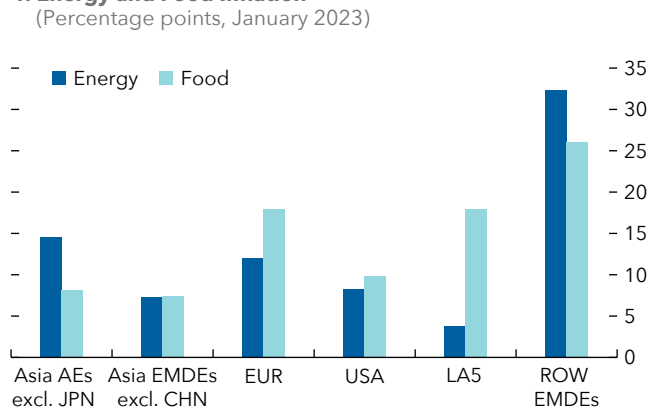
However, there was considerable variation in inflation within the region—very high in some cases, very low in others.

**2. Headline Inflation**

Sources: Haver Analytics; and IMF staff calculations.

Note: Asia AEs include AUS, KOR, NZL, SGP, and TWN. Asia EMDEs include BGD, BRN, BTN, FJI, IDN, IND, KHM, MAC, MDV, MNG, NPL, PHL, THA, and VNM. Country abbreviations are International Organization for Standardization (ISO) country codes. AE = advanced economy; EMDE = emerging market and developing economy.

Food inflation was relatively low in Asia and Pacific compared with the rest of the world; fuel price increases were higher than peers for advanced economies but lower than peers for emerging markets.

**4. Energy and Food Inflation**

Sources: Haver Analytics; and IMF staff calculations.

Note: Data start on 2010 (or when the first data are available). Asia AEs include AUS, KOR, NZL, and SGP. Asia EMDEs include IDN, IND, MYS, PHL, THA, and VNM. ROW EMDEs include HUN, POL, and ZAF. Country abbreviations are International Organization for Standardization (ISO) country codes. AE = advanced economy; EMDE = emerging market and developing economy; LA5 = Latin America 5 (Brazil, Chile, Colombia, Mexico, Peru); ROW = rest of the world.

- In several low-income and emerging markets in the region (such as Bangladesh, Bhutan, Cambodia, Fiji, Indonesia, Malaysia, Nepal, Philippines, and Thailand), similar patterns are seen, though inflation increases are less striking compared with those in previous cycles. In India, Maldives, and Vietnam, headline inflation has been only slightly higher than before the pandemic period, without clear troughs or peaks.
- In Japan, the inflation cycle has been later than the other advanced economies. Inflation has been above the 2 percent target since the middle of 2022, with core inflation currently above headline measures (mainly due to large energy subsidies), following currency depreciation and wage growth.
- In China, Hong Kong Special Administrative Region, and Macao Special Administrative Region, inflation rates have been lower during the pandemic than before it ([Online Box 2.1](#)).
- By contrast, inflation rates have been much higher than the rest of the region in countries experiencing heightened economic stress (such as Lao P.D.R., Myanmar, and Sri Lanka), mostly associated with substantial exchange rate depreciations.

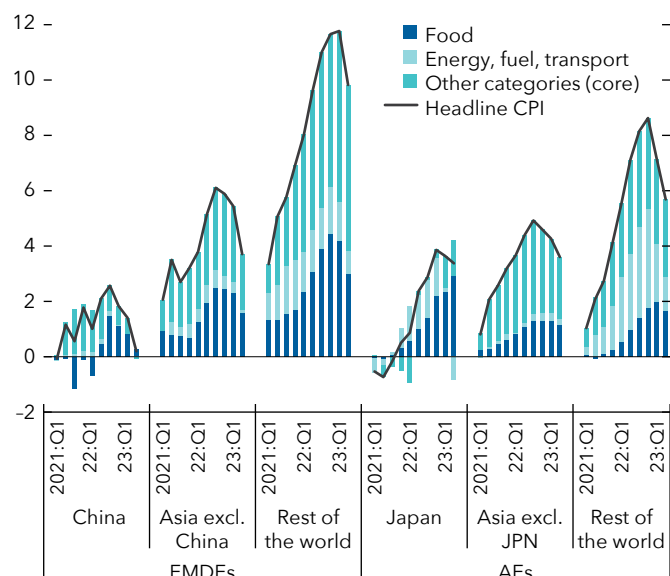
## 2.2. Inflation Pressures and Their Propagation

Understanding these inflation outcomes starts with looking at external price pressures, such as from global food and fuel price changes and from exchange rate fluctuations. However, understanding the pandemic's impact is crucial because it set off a complex series of demand and supply shocks across sectors.

### External Shocks and CPI Inflation

From the second half of 2020, shipping costs soared by more than 400 percent from prepandemic levels. Later, global food and fuel costs increased sharply, by about 17 percent and 58 percent, respectively, from the start of 2021 to the end of 2022. The direct impact on headline CPI inflation was significant (Figure 2.2), as would have been expected based on structural analysis of exchange rate pass-through and the impact of changes in food, fuel, and transportation costs.<sup>2</sup> On average, increases in the prices of food, fuel, and transportation account for nearly 2 percentage points out of 4½ percent inflation for the region in 2022, for example. The largest contribution was from food, which has a high weight—considerably higher for emerging markets and higher in Asia and Pacific advanced economies than other advanced peers—whereas fuel and transportation carry a lower weight.

**Figure 2.2. Contributions to Headline Inflation**  
(Percent)

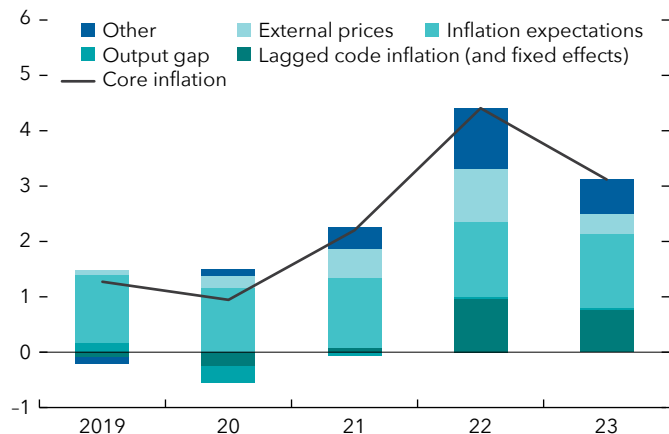


Sources: Haver Analytics; and IMF staff calculations.

Note: Core refers to CPI basket excluding food and energy, fuel, and transport. The exact categories used in the decomposition of these categories varies across countries. Asia AEs includes AUS, HKG, KOR, MAC, NZL, SGP, and TWN. Asia EMDEs includes IDN, IND, MYS, PHL, and THA. Rest of the world AEs includes BEL, CAN, CHE, DEU, FRA, GBR, ITA, NLD, SWE, and USA. Rest of the world EMDEs include BRA, CHL, COL, HUN, MEX, and ZAF. Country abbreviations are International Organization for Standardization (ISO) country codes. AE = advanced economy; CPI = consumer price index; EMDE = emerging market and developing economy.

<sup>2</sup> Carrière-Swallow and others (2022) estimate the effects of changes in global shipping, food, and fuel costs on import prices. Import prices respond quickly and strongly, followed by changes in producer prices; the responses of core inflation peak at about 8 to 12 months. The size of responses depends on the importance of the costs in the domestic economy and were found to be somewhat higher than the global average for Asian economies and especially high for Pacific islands. Carrière-Swallow and others (2023) show that exchange rate pass-through in Asian economies is within the range of pass-through estimates for other countries. It is strong and quick to import prices and is especially high during periods of high inflation and elevated uncertainty (for example, the pandemic period).

**Figure 2.3. Drivers of Core CPI Inflation in Asia**  
(Percent)



Source: IMF staff calculations.

Note: Asia includes AUS, IDN, KOR, NZL, MYS, PHL, SGP, THA, and TWN. Country abbreviations are International Organization for Standardization (ISO) country codes. CPI = consumer price index.

inflation expectations—in Asia and Pacific economies is quite similar to that in advanced and emerging market peers ([Online Box 2.2](#)). The fitted model attributes significant effects from external price pressures to core inflation in recent years (Figure 2.3). However, much remains unexplained or attributed to lags, motivating additional analysis.<sup>3</sup>

## The Pandemic and Its Repercussions

The external price pressures described can be characterized as typical “cost-push” shocks, but the pandemic created a mixture of demand and supply shocks both over time and across sectors.<sup>4</sup> To understand the pandemic’s repercussions, producer price index inflation data was modeled (Chau and others 2023), which shows how lockdowns generated both supply and demand shocks.<sup>5</sup> It also shows how those shocks contributed to inflation, along with policy stimulus (monetary and fiscal) and external shocks (transportation, fuel, and exchange rates).

- *Lockdowns and supply and demand shocks.* Differences in the recovery of demand because of differences in lockdowns and reopening play a substantial role in explaining differences in inflation. Across Asia and the rest of the world, negative demand effects from lockdowns in 2020 outweighed upward price pressures from production inefficiencies, pulling inflation down. Later, demand recovered, boosting inflation. But lockdowns were maintained for longer in Asia, contributing to later and weaker recoveries on average (Figure 2.4).<sup>6</sup>
- *Policy support.* Policymakers in the region acted quickly to support their economies through a range of monetary and fiscal support measures to households and firms. Although policy support persisted into 2021 in other regions, it was withdrawn relatively quickly in Asia and Pacific countries. Within the region, policy support was generally stronger in advanced than emerging markets ([Online Box 2.3](#)).

<sup>3</sup> See also Gopinath (2022), who argues that Phillips curves are unable to explain the surges in inflation elsewhere.

<sup>4</sup> Guerrieri and others (2022) show how negative supply shocks in one sector can reduce demand in others, even to the point where aggregate demand is below potential output.

<sup>5</sup> Supply shocks would cause prices to increase downstream from a given sector “A” more in sectors that have a higher share of sector A’s inputs in production. Demand shocks would cause prices to increase more in sectors that have large demand shares and/or input shares to the final good.

<sup>6</sup> Lockdowns were also maintained for long periods in Australia and New Zealand, which still experienced relatively high inflation, but closed border policies allowed those economies to function without lockdowns in the early stages of the pandemic, supporting demand.

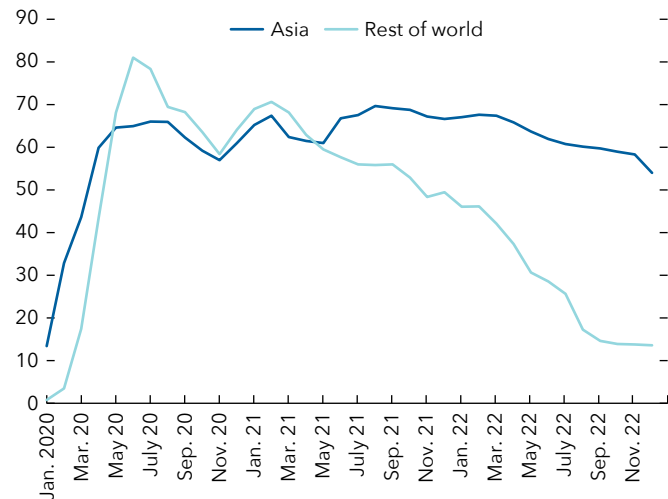
However, the contributions to headline CPI were lower than in peer countries. Two factors are important: first, unique factors such as a solid harvest in India, a hog population rebound from a recent swine flu epidemic in China, and relatively small increases in rice prices contained food prices. Second, several countries used direct measures (such as subsidies, excise tax cuts, and administered prices) to mitigate the impact on local costs.

However, this accounting does not give insight into the broader effects of external price pressures through the economy or the impact of economic slack. Following the October 2016 *World Economic Outlook* and Baba and others (2023), core CPI inflation was examined through the lens of a canonical open economy Phillips curve. The analysis indicates that the propagation of shocks—that is, how much inflation is affected by changes in output gaps, import prices, and

- *Supply chains, transportation costs, and commodity prices.* These contributed substantially to inflation in the region, more so in absolute terms than in the rest of the world on average. The model implies that fuel prices had a slightly larger impact on inflation dynamics for Asian countries than the rest of the world, associated with the larger size of manufacturing sectors in the region. However, weaker positive demand shocks offset these price pressures, because lockdowns were typically lifted later than in other regions.

As a result, producer price index inflation was lower in Asia and the Pacific than in the rest of the world, especially in Asian emerging market economies, which suffered more persistent effects on output than advanced economies, which tended to recover more strongly (Figure 2.5).

**Figure 2.4. Evolution of Lockdown Stringency**  
(Index; GDP weighted, three-month moving average)



Source: Oxford COVID-19 Government Response Tracker.

### Additional Factors: Consumption Shifts, Labor Markets, and Inflation Expectations

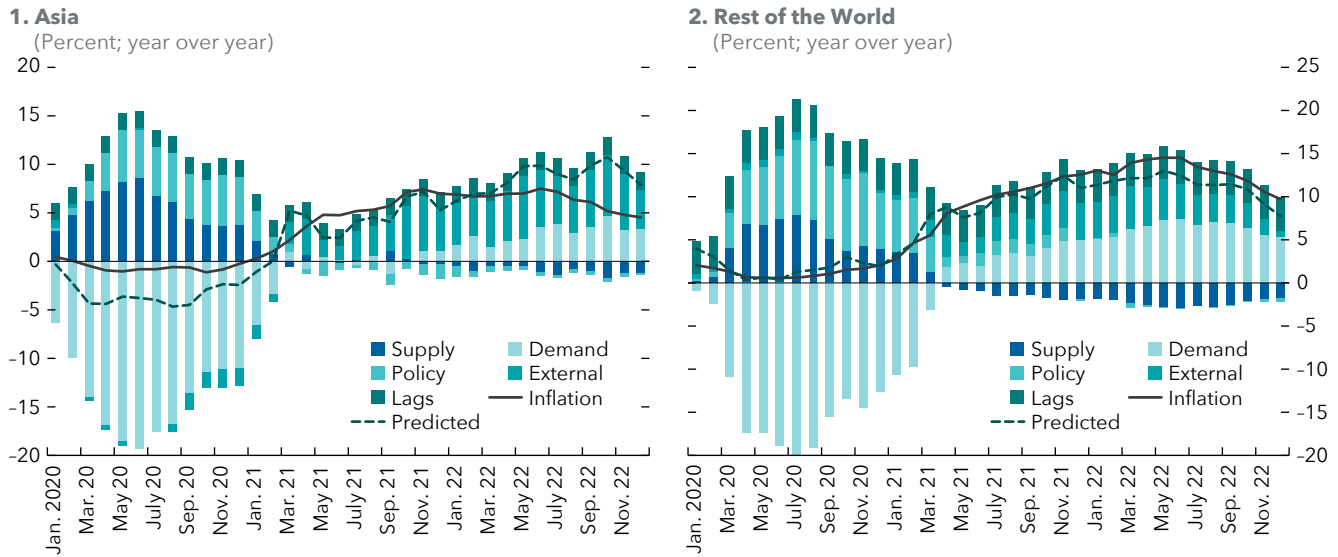
Several other factors have been suggested to explain inflation in other regions. This section briefly assesses the relevance of three of them to Asia and Pacific inflation:

- *Shifts in consumption patterns.* Bernanke and Blanchard (2023), Gopinath (2022), and Koch and Noureldin (2023) point to the strong shift in US consumer demand as stoking inflation pressures early in the pandemic. An examination of personal consumption expenditure data shows similar patterns in Asia and Pacific advanced economies, but not as strong. The hypothesis does not appear to carry over to Asia and Pacific emerging market economies, where demand for both goods and services fell.<sup>7</sup>
- *Labor markets.* Labor markets in the United States were very tight in 2021 as workers stopped participating (for example, Abraham and Rendell 2023), which generated fears of wage-led inflation. By contrast, employment and participation rates bounced back strongly in the region (except for East and Southeast Asia; ILO 2022), with firms adjusting the number of hours worked (ILO 2022). Malaysia, Thailand, and Singapore and, more recently, Australia (Causa and others 2022) and New Zealand suffered from a lack of migrant workers while borders were closed, but wage increases remained relatively weak.<sup>8</sup>
- *Inflation expectations.* Sharp increases in inflation pressures raised fears that inflation expectations could become unanchored. Data on firms' earnings reports (Albrizio, Dizioli, and Simon 2023) show a noticeable increase in concerns over future price pressures from the onset of the pandemic through the middle of 2022 (Figure 2.6), suggesting that had global commodity prices not fallen, the expectations mechanism might have proved stronger.

<sup>7</sup> The ratio of goods to services personal expenditures in the United States was 10–15 percent higher than its prepandemic level from the second quarter of 2020 onward, but the ratio for Asia and Pacific increased by about 5 percent in 2020 and reverted afterward.

<sup>8</sup> See also Bernanke and Blanchard (2023), who find that inflation in the United States was the result of shocks to prices (sharp increases in commodity prices, supply chain problems, and changes in the sectoral composition of demand) given wages.

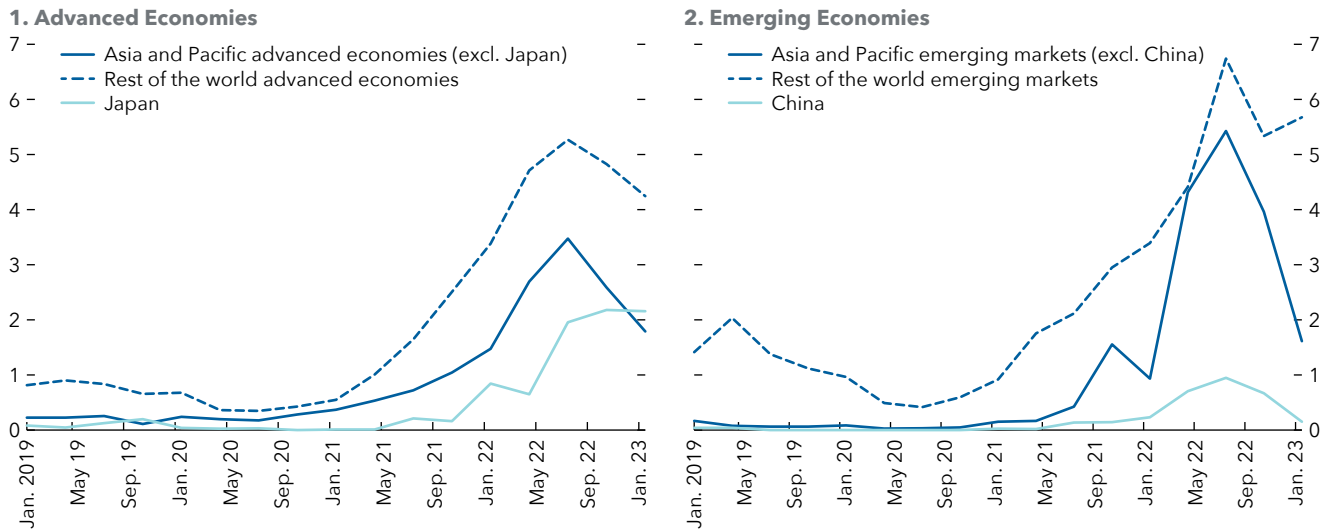
**Figure 2.5. Drivers of Producer Price Index Inflation**



Source: Chau and others (forthcoming).

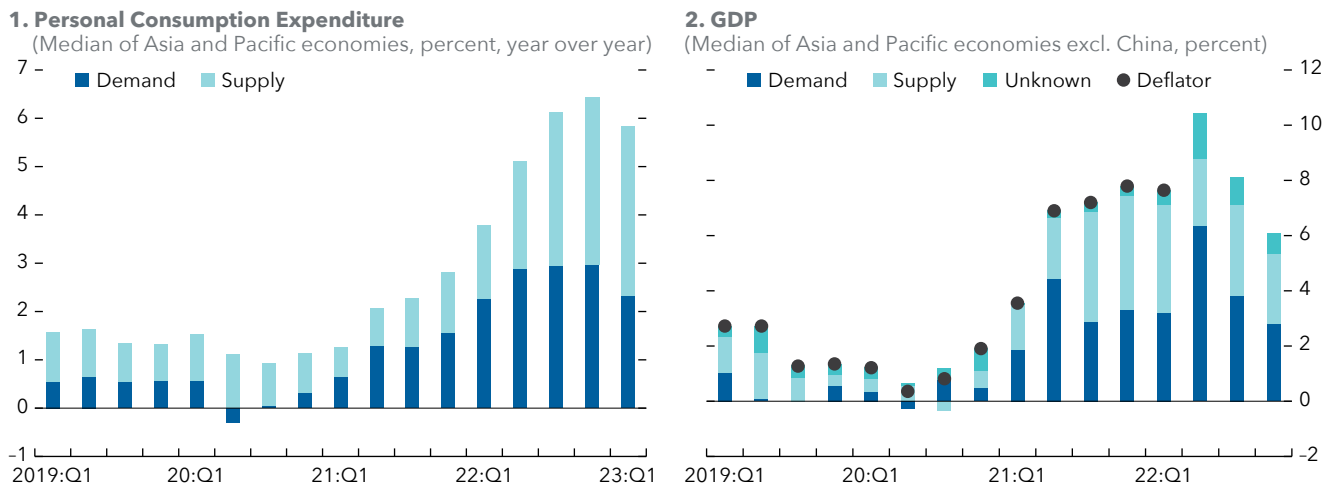
Note: “Policy” denotes combined stimulus from monetary and fiscal policies. “External” denotes the contribution of transportation, fuel, and exchange rate shocks. “Lags” includes fixed effects in addition to the contribution from lagged inflation.

**Figure 2.6. Inflation Expectations**  
(ECFIE Index, simple average)



Sources: Albrizio, Dizioli, and Simon (2023); and IMF staff calculations.

Note: Earnings Call Firms Inflation Expectations (ECFIE) Index is a novel measure constructed by Albrizio, Dizioli, and Simon (2023) where they extract firm-level expectations using their earnings conference calls. Asia and Pacific advanced economies includes HKG, JPN, KOR, NZL, and SGP. Asia and Pacific emerging markets includes CHN, IND, MYS, and THA. Country abbreviations are International Organization for Standardization (ISO) country codes.

**Figure 2.7. Supply and Demand Drivers of Deflator Inflation**

## 2.3. The Role of Monetary Policy

Central banks across the Asia and Pacific region eased monetary policy soon after the onset of the pandemic, and later tightened as economies recovered and inflation pressures increased. Some (for example, Korea and New Zealand) started raising policy rates before the Federal Reserve initiated its tightening cycle. Most central banks followed and have maintained rates ([Online Box 2.3](#)).

How should policymakers have reacted? Conventional wisdom is that policymakers can afford to “look through” supply-driven inflation if inflation expectations remain well anchored (Brainard 2022). Cost-push shocks certainly played a major role in driving inflation. But lockdowns caused both supply and demand shocks—at first bringing inflation down, while later demand recovery and unwinding negative supply pressures raised inflation. This pattern is seen in both advanced economies and emerging markets in the region in the personal consumption expenditure deflators (Firat and Hao 2023), which are closely related to CPI data (Figure 2.7, panel 1). The findings are corroborated with analysis of more widely available GDP deflators (Redl 2023) (Figure 2.7, panel 2).

On this basis, central banks were correct to respond with easing and then tightening, which appears to have helped restrain inflation. Evidence on monetary transmission (Deb and others 2023) shows that the effects of policy rate changes on activity are not statistically different from those in peer countries, which implies that monetary tightening has contributed to moderating inflation, allowing for lags.

## 2.4. Conclusions

Inflation outcomes have been on average lower than in other regions, but the variation has been wide within the region. Inflation has also been higher in most of the region’s advanced economies than in emerging markets. Two sets of shocks are important. The effects of external cost-push shocks—especially from food prices—are undoubtedly important to both headline CPI inflation and core CPI. The impact of food price pressures was generally lower in Asian emerging markets than in other regions, despite relatively high weights on food in headline CPI, partly because of compositional effects and policy measures. Pandemic policies had complex effects. Lockdowns set off demand and supply shocks. They constrained production, while border closures

generated shortages in migrant labor in some countries. But overall, demand effects dominated: the lockdowns were generally longer lasting for Asia and the Pacific than elsewhere, dampening demand and inflation. Policy support was stronger for advanced economies in the region, supporting some increase in demand for goods that stretched capacity but not to the extent that was seen in the United States. Support was withdrawn relatively quickly in emerging markets, constraining a rebound in demand.

Understanding the differences in how these shocks propagated through economies also has implications for policy. Rather than treating the pressures as entirely driven by supply shocks, policymakers eased monetary conditions amid negative demand shocks and tightened as demand recovered, which was appropriate and helped contain inflation.

## References

---

- Abraham, Katharine, and Lea Rendell. 2023. "Where Are the Missing Workers?" Brookings Papers on Economic Activity, Brookings Institution, Washington, DC.
- Albrizio, Silvia, Allan Dizioli, and Pedro Vitale Simon. 2023. "Mining the Gap: Extracting Firms' Inflation Expectations from Earning Calls." IMF Working Paper 23/202, International Monetary Fund, Washington, DC.
- Baba, Chikako, Romain Duval, Ting Lan, and Petia Topalova. 2023. "The 2020-2022 Inflation Surge across Europe: A Phillips-Curve-Based Dissection." IMF Working Paper 23/30, International Monetary Fund, Washington, DC.
- Bernanke, Ben, and Olivier Blanchard. 2023. "What Caused the US Pandemic-Era Inflation?" Hutchins Center Working Paper 86, Brookings Institution, Washington, DC.
- Brainard, Lael. 2022. "What Can We Learn from the Pandemic and the War about Supply Shocks, Inflation, and Monetary Policy?" Remarks prepared for the 21st Bank for International Settlements Annual Conference, "Central Banking after the Pandemic: Challenges Ahead," Basel, Switzerland, June 24.
- Carrière-Swallow, Yan, Pragyan Deb, Davide Furceri, Daniel Jiménez, and Jonathan D. Ostry. 2022. "Shipping Costs and Inflation." *Journal of International Money and Finance* 130 (February): 102771.
- Carrière-Swallow, Yan, Melih Firat, Davide Furceri, and Daniel Jiménez. 2023. "State-Dependent Exchange Rate Pass-Through." IMF Working Paper 23/86, International Monetary Fund, Washington, DC.
- Causa, Orsetta, Michael Abendschein, Nhung Luu, Emilia Soldani, and Chiara Sorio. 2022. "The Post-COVID-19 Rise in Labour Shortages." OECD Economics Department Working Paper 1721, Organisation for Economic Co-operation and Development, Paris.
- Chau, Vu, Marina Conesa Martinez, Taehoon Kim, and John Spray. Forthcoming. "Global Value Chains and Inflation Dynamics." IMF Working Paper, International Monetary Fund, Washington, DC.
- Deb, Pragyan, Julia Estefania-Flores, Melih Firat, Davide Furceri, and Siddharth Kothari. 2023. "[Monetary Policy Transmission Heterogeneity: Cross-Country Evidence.](#)" IMF Working Paper 23/204, International Monetary Fund, Washington, DC.
- Firat, Melih, and Otso Hao. 2023. "[Demand versus Supply: Decomposition of Inflation and Some Applications.](#)" IMF Working Paper 23/205, International Monetary Fund, Washington, DC.
- Gopinath, Gita. 2022. "How Will the Pandemic and War Shape Future Monetary Policy?" Remarks prepared for the Jackson Hole Economic Symposium, "Structural Shifts in the Global Economy," Jackson Hole, WY, August 24-26.

- Guerrieri, Veronica, Guido Lorenzoni, Ludwig Straub, and Iván Werning. 2022. "Macroeconomic Implications of COVID-19: Can Negative Supply Shocks Cause Demand Shortages?" *American Economic Review* 112 (5): 1437-74.
- International Labour Organization (ILO). 2022. *Asia-Pacific Employment and Social Outlook 2022: Rethinking Sectoral Strategies for a Human-Centered Future of Work*. Geneva.
- Koch, Christoffer, and Dina Noureldin. 2023. "How We Missed the Inflation Surge: An Anatomy of Post-2020 Inflation Forecast Errors." IMF Working Paper 23/102, International Monetary Fund, Washington, DC.
- Redl, Chris. 2023. "[Monitoring Demand and Supply in Asia.](#)" IMF Working Paper 23/203, International Monetary Fund, Washington, DC.



## 3. How Will Trend Growth in China Impact the Rest of Asia?<sup>1</sup>

*China's importance in the global economy has increased dramatically over the past few decades, and its insertion into global value chains (GVCs) has underpinned its rise. China has been a crucial driver of trade integration for Asia and has also, more recently, become a key supplier of inputs to production. Major forces such as convergence and demographics will partly determine China's future growth, but key structural policy drivers, including domestic reform momentum and international geoeconomic developments, may alter this path significantly. Given China's importance for the region, different paths may carry sizable spillovers for Asia. This chapter uses a macroeconomic model with GVC production to assess the potential spillovers from an upside scenario of domestic reforms in China and a downside scenario from de-risking between China and Organisation for Economic Co-operation and Development (OECD) economies. Productivity-enhancing reforms in China can lift growth in Asia, especially in smaller and more open economies with strong GVC links with the country. Non-OECD Asian countries can benefit from the trade diversion effects of "friend-shoring" by both China and the OECD, though those benefits largely dissipate once one accounts for the global slowdown caused by friend-shoring trends and the "reshoring" dimension involved in de-risking strategies. In the specific case of export restrictions aimed at curtailing access to high-quality inputs, staff analysis finds empirically significant potential losses in both the aggregate and critical areas such as environmental goods, because the quality frontier is highly product-specific.*

### 3.1. China's Growing Importance and the Role of GVCs

*China's growing importance:* China's weight in the global economy has increased dramatically over the past few decades. Starting in the mid-1990s and accelerating in the 2000s, China's above-average growth made it the second largest economy in the world by the late 2010s, measured at market US dollar exchange rates (Figure 3.1, panel 1). China's importance in global trade grew accordingly, its share rising from less than 2½ percent in 1997 to 12 percent in 2022 (Figure 3.1, panel 2), making it one of the largest trading nations. As with other economies as they developed, China's rise has also been accompanied by an increasing role in innovation. As of 2019, total research and development expenditures in China, when measured in purchasing power parity terms, was second only to the United States (Figure 3.1, panel 3).

*The role of GVCs in China's rise:* China's rise in global importance was underpinned by its insertion into GVCs. China's share of global GVC exports, defined as exports that either use inputs from other countries or become inputs into other countries' exports, increased fivefold since the early 1990s (Figure 3.1, panel 4). China's assembly of other countries' inputs drove this rise initially. Starting in the mid-2000s, however, China has increasingly become a supplier of inputs to other countries (Figure 3.1, panel 5): sourcing of intermediate inputs from China has increased significantly across countries, both as a share of total inputs (that is, including domestic trade) and as a share of foreign inputs (Figure 3.1, panel 6).

*China's rising role in Asia:* Trade with China has been a driver of trade integration in Asia over the past few decades, with Chinese trade as a share of GDP increasing by 9 percentage points between 2000 and 2022 (Figure 3.2, panel 1). GVC trade links have also been crucial in Asia as Chinese inputs used for exports have become increasingly important over time (Figure 3.2, panel 2). However, although trade in intermediates has

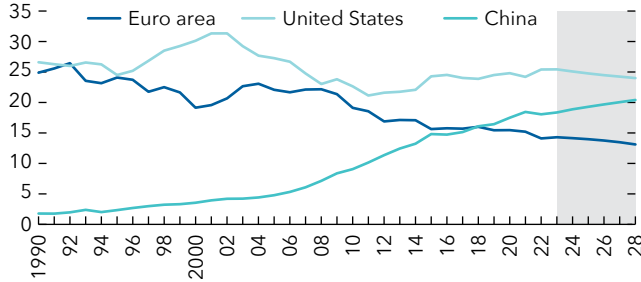
<sup>1</sup> The authors of this chapter are Diego A. Cerdeiro (co-lead), Julia Estefania-Flores, Parisa Kamali, Siddharth Kothari (co-lead), Dirk Muir, Chris Redl, and Weining Xin, with contributions from Pablo Gonzalez Dominguez, Daniel Jimenez, and Rui C. Mano.

**Figure 3.1. China’s Growing Importance and the Role of Global Value Chains**

*China’s above-average growth has made it the second largest economy in the world ...*

**1. Weight in Global GDP**

(Percent, GDP in US dollars)

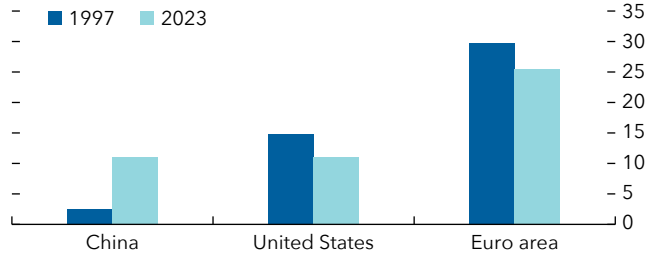


Sources: Direction of Trade Statistics; and IMF staff calculations.

*... with its importance in global trade growing accordingly ...*

**2. Share of Global Trade**

(Percent, exports plus imports in US dollars)

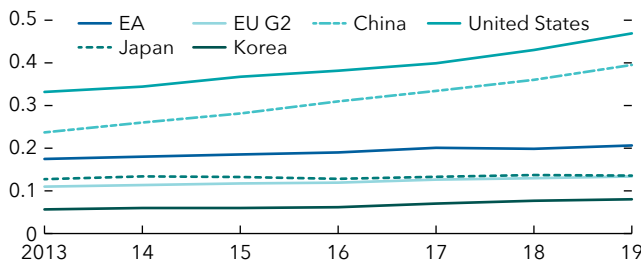


Sources: IMF, World Economic Outlook database; and IMF staff calculations.

*... and also becoming an innovation hub.*

**3. Gross Research and Development Expenditure**

(Trillions of US dollars, constant PPP)



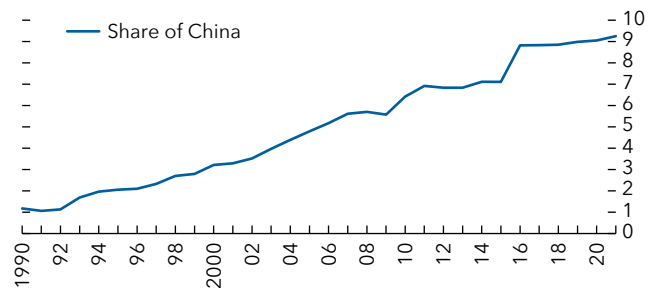
Sources: Organisation for Economic Co-operation and Development; and IMF staff calculations.

Note: Data for France are missing after 2018. It is assumed that expenditures in research and development in this country grow at the same rate as in Germany. EA = euro area; EU = European Union; EU G2 = Germany and France.

*China’s rise was underpinned by its insertion into GVCs ...*

**4. GVC-Related Exports**

(Percent of world GVC exports)



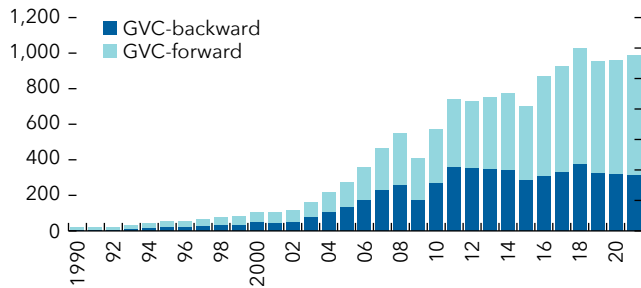
Sources: Eora Global Supply Chain Database; and IMF staff calculations.

Note: GVC = global value chain.

*... increasingly becoming a supplier of inputs to other countries, both for exports ...*

**5. China’s GVC-Related Exports**

(Trillions of US dollars)



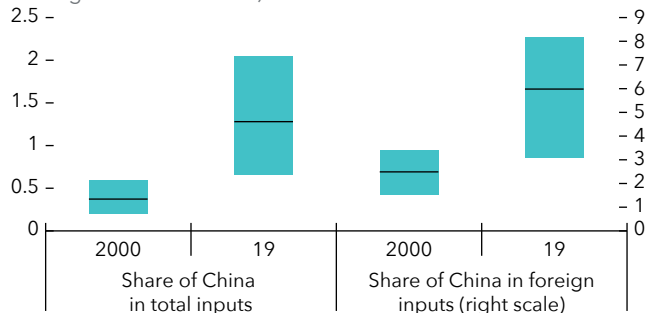
Sources: Eora Global Supply Chain Database; and IMF staff calculations.

Note: Backward linkages refer to the use of imported value added as inputs in the production of exports. Forward linkages refer to the export of value. GVC = global value chain.

*... and for production more generally.*

**6. China’s Share in Intermediate Inputs**

(Percent of total input purchases, median and interquartile range across countries)



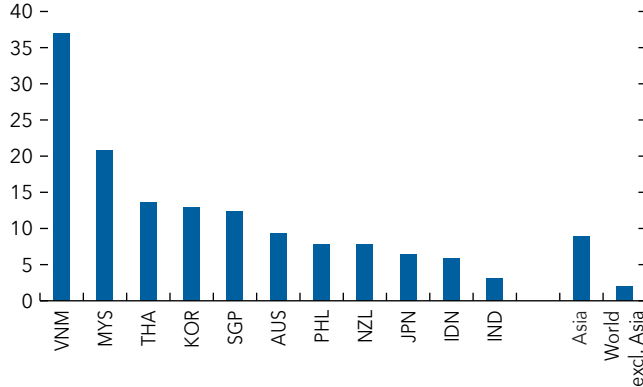
Sources: Eora Global Supply Chain Database; and IMF staff calculations.

**Figure 3.2. China’s Growing Importance for Asia**

Trade with China has been a driver of trade integration in Asia over the past two decades ...

**1. Increase in Trade with China 2000-22**

(Percentage points, exports plus imports as a share of GDP)



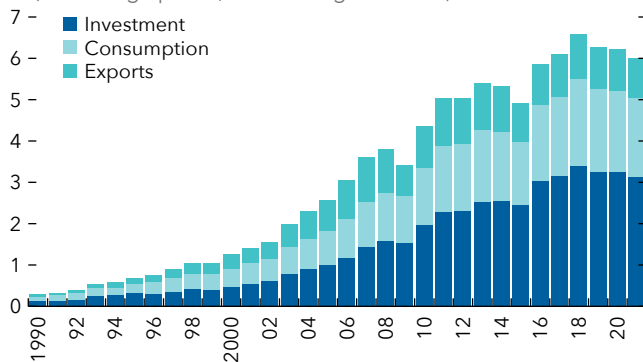
Sources: IMF, Direction of Trade Statistics database; and IMF staff calculations.

Note: Country abbreviations are International Organization for Standardization (ISO) country codes.

... although the region also plays an important role in serving Chinese final demand, particularly investment ...

**3. Asia’s Value Added Embedded in China’s Demand**

(Percentage points, share of regional GDP)

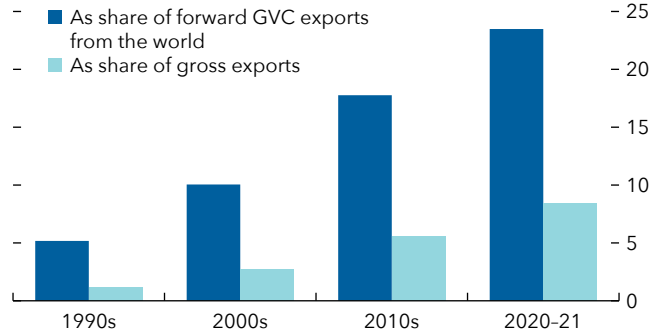


Sources: Aslam, Novta, and Rodrigues-Bastos (2017); Eora Global Supply Chain Database; and IMF staff calculations.

... and Chinese inputs used for exports have become increasingly important over time ...

**2. Forward GVC Exports from China to Asia**

(Percentage points)



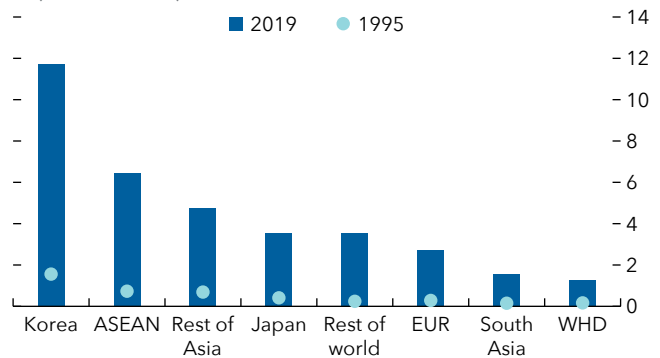
Sources: Eora Global Supply Chain Database; and IMF staff calculations.

Note: GVC = global value chain.

... with Korea and ASEAN countries being particularly dependent on Chinese final demand.

**4. Value Added Embedded in China’s Final Demand**

(Share of GDP)



Sources: Aslam, Novta, and Rodrigues-Bastos (2017); Eora Global Supply Chain Database; and IMF staff calculations.

Note: “Final demand” denotes final absorption and thus excludes value added embedded in Chinese exports. ASEAN = Association of Southeast Asian Nations; EUR = European department; WHD = Western Hemisphere department.

become a key aspect of trade integration with China, the region also plays an important role in serving Chinese final demand and investment specifically (Figure 3.2, panel 3). This is especially the case for Korea and the Association of Southeast Asian Nations countries (Figure 3.2, panel 4).

*Benefits from greater trade links with China:* Given China’s unprecedented growth over the last three decades, looking back at how growth patterns in other countries have been associated with the extent of trade integration with China can give an initial sense of spillovers from China to Asia and elsewhere. To that end, Figure 3.3 uses a simple panel growth regression to show the extent to which greater trade links with China were associated with higher GDP growth, after controlling for overall trade openness of the country. Interestingly, while greater gross

trade links with China were associated with higher growth on average, the effect is significantly larger when looking at GVC linkages, particularly backward linkages. For example, going from the average backward linkages of non-Asian countries to the Asian average is associated with higher growth of about 0.5 percentage point. Consistent with earlier literature (see, for example, Constantinescu, Mattoo, and Ruta [2019] and its references), this suggests that in addition to direct demand channels, GVC trade can also have other benefits, such as greater specialization to exploit comparative advantages, technology transfers, and knowledge diffusion.

### 3.2. China's Baseline, Catching-Up Potential, and Fragmentation Risks

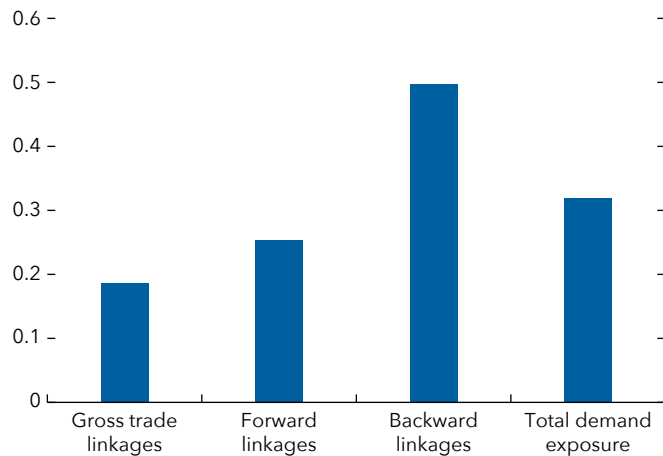
*China's baseline:* IMF staff expect growth in China to slow over the coming years, reaching 3.4 percent by 2028, with more declines further into the future (Oeking, Novta, and Zhang 2022). This represents a slower growth path compared with earlier projections and is underpinned (as in other major economies) by demographic headwinds with the working-age population shrinking, and declining productivity growth, including from a slowdown in reform momentum (Figure 3.4, panel 1).

Although various developments and policies can potentially affect growth in China in the near term, the chapter's focus is on spillovers from changes in China's trend growth.<sup>2</sup> From a medium- to long-term point of view, two upside and downside scenarios stand out: the potential for further catching-up, and the risks from fragmentation.

*Further catching-up potential:* A standard convergence regression estimated over a panel of 162 economies and 29 years suggests that China's growth in the past three decades was significantly higher than average, considering its per capital income levels (Figure 3.4, panel 2). The overperformance was of 5.5 percent on average and with a gradual decline in the 2010s—a period that was also characterized by excessive investment and debt accumulation. The IMF baseline forecast implies that this excess growth gradually fades into the medium term. Although medium-term growth could plausibly fall short of latest staff projections, the current productivity gaps with the frontier remain very large, with the GVC-intensive sector having larger gaps (Figure 3.4, panel 3), suggesting scope for faster convergence if reform momentum is rebuilt.<sup>3,4</sup>

**Figure 3.3. Impact of Greater Linkages with China on Growth**

(Percentage points impact on growth of moving from non-Asia and Pacific to Asia and Pacific level exposure for each variable)



Sources: Eora Global Supply Chain Database; IMF, World Economic Outlook database; and IMF staff calculations.

Note: The figure is based on a panel regression of growth on lagged purchasing power parity GDP per capita, aggregate trade openness, and a measure of trade linkages with China. Each bar multiplies the coefficient on the trade linkage variable with the difference in the median level of the variable in Asia and Pacific and non-Asia and Pacific countries. The first bar is based on gross trade of the country with China as a share of total gross trade; the second and third bar are based on backward and forward linkages of the country with China as a share of total backward and forward linkages, respectively; and the fourth bar is based on share of a countries' value added that is absorbed by Chinese demand.

<sup>2</sup> For an analysis of short-term growth spillovers, see Box 1.1 in the October 2022 *Regional Economic Outlook: Asia and Pacific*.

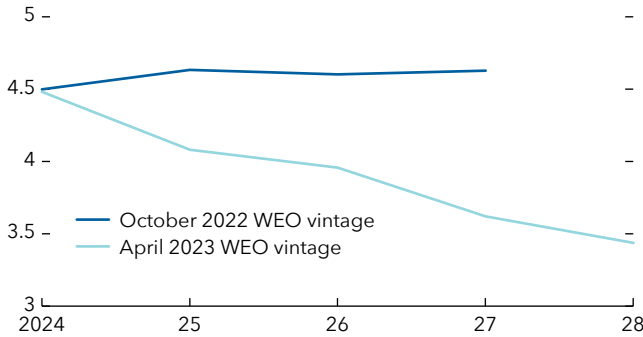
<sup>3</sup> In fact, specific policy levers can help boost productivity in China: reforms that would close productivity gaps between state-owned enterprises and private firms could lift total factor productivity by about 6 percent (Jurzyk and Ruane 2021), with further gains possible as market-oriented reforms improve productivity via higher firm entry and exit (Brandt and others 2020; Cerdeiro and Ruane 2022).

<sup>4</sup> In the medium to long term, in addition to reigniting productivity, reforms in China should also aim to rebalance the economy toward consumption. This is explored in [Online Annex: Chapter 3](#), where analysis finds small negative spillovers.

**Figure 3.4. China’s Baseline, Catching-Up Potential, and Fragmentation Risks**

*Growth in China is expected to be slower than earlier projections ...*

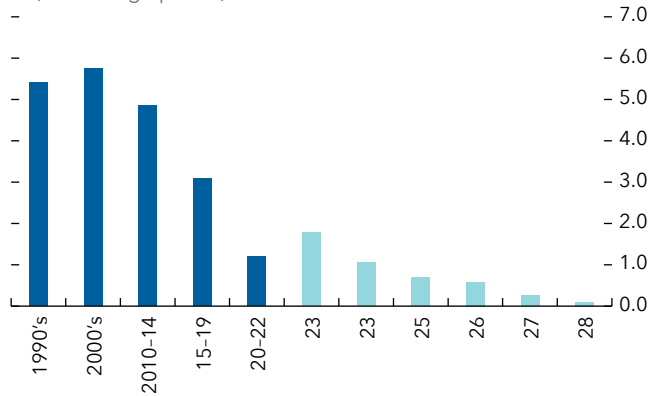
**1. China’s Baseline Medium-Term Growth Projection**  
(Percent)



Source: IMF, World Economic Outlook database.  
Note: WEO = *World Economic Outlook*.

*... ending more than three decades of economic overperformance.*

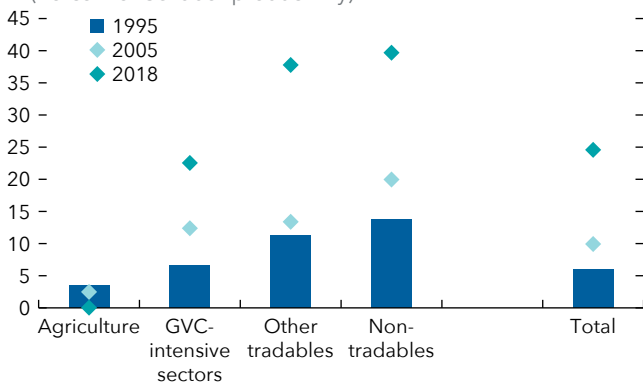
**2. China: Residuals from Unconditional Convergence Regression**  
(Percentage points)



Sources: IMF, World Economic Outlook database; Penn World Tables; and IMF staff calculations.  
Note: For 1991 to 2019, the chart plots the residual for China for a standard unconditional convergence growth regression where real GDP growth rate is regressed on lagged per capita GDP purchasing power parity (log). For 2020 to 2028, the chart plots out of sample residuals based on latest *World Economic Outlook* projections for GDP growth.

*Ample room for catch up remains, suggesting upside potential if reforms are implemented ...*

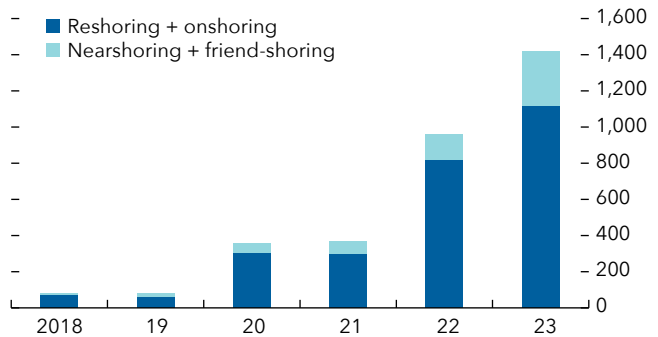
**3. China: Sectoral Labor Productivity Relative to the United States**  
(Percent of US labor productivity)



Sources: EU KLEMS; Productivity Level’s Database; Structural Transformation Database; and IMF staff calculations.  
Note: Sector-level labor productivity is adjusted for 2005 sector-level purchasing power parity from Groningen Productivity Level’s Database. GVC = global value chain.

*... while rising de-risking sentiments globally are a key downside risk.*

**4. Mentions of Key Terms in Corporate Presentations**  
(Number of mentions)



Sources: Bloomberg Finance L.P.; document search and analytics tool; and IMF staff calculations.  
Note: The panel shows the number of times specific terms are mentioned in transcripts from corporate presentations. For 2023, numbers are rescaled to account for the availability of data only through July.

*Fragmentation risks:* The baseline forecast for China (as for other economies) currently assumes that fragmentation pressures remain contained to specific products and sectors, without rising to a macro-critical level. However, trade-restrictive measures continue to creep up (see Figure 1.10 in Chapter 1 of this report), with a resurgence in export controls having the potential for large drops in input quality for major economies because they are blocked from importing specific cutting-edge technologies and products ([Online Box 3.1](#)). Policies that distort trade and investment—such as certain components of recent legislation in the United States, the

European Union’s Green Deal Industrial Plan, and export restrictions of minerals (China, Indonesia)—are proliferating, increasing the risk of fragmentation (IMF 2023; October 2023 *World Economic Outlook*). There is also growing evidence that companies are exploring options to reshape their supply chains (Figure 3.4, panel 4), echoing data on greenfield foreign direct investment showing signs of fragmentation (April 2023 *World Economic Outlook*, Chapter 4). In all, the downside risk coming into focus is not of extreme fragmentation (as in, for example, the October 2022 *Regional Economic Outlook: Asia and Pacific* and Cerdeiro and others 2023) but of a global de-risking, whereby countries reshore production home more generally and friend-shore away from certain partners.

### 3.3. Model-Based Spillovers

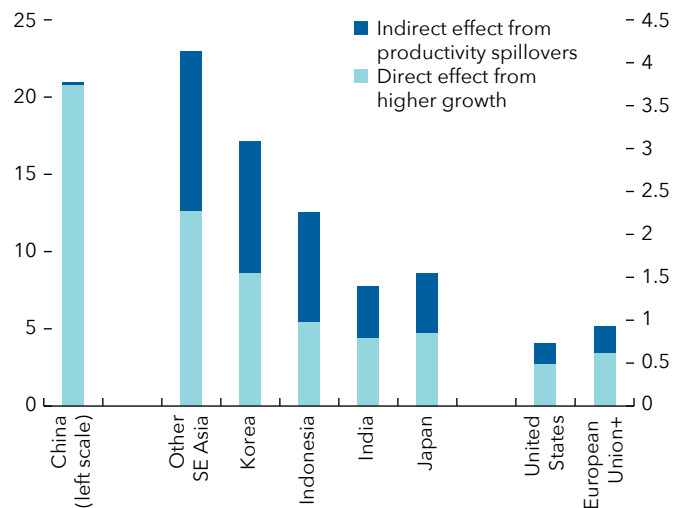
To quantify the spillovers from potential upside and downside scenarios, this section uses the IMF’s multiregion dynamic stochastic general equilibrium model, GIMF (Global Integrated Monetary and Fiscal Model), additionally featuring GVCs. The model has three sectors: a standard tradables and nontradables sector with value-added production functions, and a third GVC sector, which is based on roundabout production: imported and domestic GVC inputs along with capital and labor are used to produce GVC goods, which are subsequently sold domestically and exported (see [Online Annex: Chapter 3](#) for details).<sup>5</sup> This allows us to capture the key role that GVCs have played in China’s rise.

*Upside: spillovers from further catching-up.* An upside scenario is considered first, in which reforms in China reignite faster convergence, with aggregate annual productivity growing about 1 percentage point higher than in the baseline for 15 years. Given the larger productivity gaps relative to the frontier in the GVC sector in China, GVC sector productivity is assumed to grow twice as fast as nontradables productivity. As in Oeking, Novta, and Zhang (2022), broad-based reforms such as closing productivity gaps for state-owned enterprises, opening domestic markets to foreign competition, and other market-oriented reforms could deliver such an upside.

Figure 3.5 shows the long-term effects. The level of GDP in China is about 21 percent higher in the new steady state. The higher GDP level 15 years out is equivalent to about 1.3 percentage points higher annualized growth. Assuming that spillovers in the model occur only through trade channels (light blue bars), GDP in the rest of the world increases by about 1.4 percent or 0.1 percentage point higher annualized growth (about 7 percent of the size of the impact on China), though with significant heterogeneity across regions. Spillovers are largest in other southeast Asian economies (southeast Asia excluding Indonesia), where GDP increases by about 2.3 percent in the long term (about 11 percent of the size of the impact on China), reflecting the fact that these are relatively open economies that also trade

**Figure 3.5. Spillovers from Upside Scenarios: Long-Term Spillovers from Reigniting Convergence in China**

(GDP level, percent deviation from baseline)



Source: IMF staff calculations.

Note: European Union+ = European Union and Switzerland; SE = southeast.

<sup>5</sup> See Kumhof and others (2010) and Anderson and others (2013) for a detailed exposition of the model and its properties.

intensively with China. Korea also sees sizable benefits (about 7.5 percent of the size of the impact on China). The spillovers are generally smaller in larger advanced economies (Japan, the United States, Europe), which tend to be more closed and have smaller links to China.<sup>6</sup>

The positive spillovers from reforms in China can be significantly larger if they also result in direct productivity gains in other regions (Figure 3.5, dark blue bars). The spillover structure captures both the direct effects of technology spillovers from technology embodied in imports and the indirect effects of the dissemination of technological advances.<sup>7</sup> All regions see larger spillovers, though the amplification from productivity spillovers is larger for countries that are further from the technological frontier and that have stronger trade links with China. In other Southeast Asia economies, GDP in the long term is about 4 percent higher—as high as one-quarter percentage point in annualized growth terms (and about one-fifth the effect within China).

*Downside: growth and spillovers under de-risking.* The chapter defines “de-risking” as countries changing how they source goods and services along two dimensions. A “friend-shoring” dimension measures how much countries want to change between different foreign sources while minimizing the change to overall dependence on foreign sourcing. A reshoring dimension measures how much more countries seek to rely on domestic sourcing versus foreign sourcing, beyond the already-high home bias in domestic sourcing as documented in the April 2022 *World Economic Outlook*, Chapter 4. The downside focuses on the relationship between China and the OECD regions (which in the model includes the European Union plus Switzerland, Japan, Korea, the United States, and the other advanced economies region—see [Online Annex: Chapter 3](#) for details). Other economies do not actively seek to reshore or friend-shore.

Panel 1 in Figure 3.6 summarizes the scenarios’ assumptions. For reshoring, the OECD and China reduce reliance on imports from all countries. For friend-shoring, China reduces its reliance on OECD sources, and the OECD reduces its reliance on China sources. This reduction dials back the observed changes in foreign sourcing that took place between the years 2000 and 2021.

An example can be helpful to fix ideas. In 2000, global input-output data from Eora Global Supply Chain Database show that OECD countries procured about 10 percent of their investment goods from abroad (both from other OECD economies and from non-OECD economies). As of 2021, the same data source suggests that this figure had risen to about 13 percent (see [Online Annex Figure 3.2.2](#) for more details). In the reshoring simulations, we therefore increase nontariff barriers of OECD countries to reduce (dial back) this reliance on foreign sourcing for each OECD economy by 3 percentage points.<sup>8</sup> In the friend-shoring simulation, we adjust nontariff barriers to alter this mix between foreign sources (in the case of OECD economies, against China and in favor of other non-OECD economies) by doing the same comparison of shares in the data between the years 2000 and 2021.

In the friend-shoring scenario, the OECD and China impose nontariff trade barriers (NTBs) on each other to reduce mutual interdependence but do not restrict trade with other countries. Global GDP declines by 1.8 percent, with the economic losses being the largest for China (6.8 percent of GDP in the long term) because of reduced demand for Chinese goods by key trading partners and amplification through GVCs as higher input costs cascade through the supply chain (Figure 3.6, panel 2, dark blue bars).

GDP losses are also large for OECD countries, with the extent of losses depending on the countries’ dependence on Chinese inputs, which become more costly.

<sup>6</sup> In addition to this general convergence scenario, [Online Annex: Chapter 3](#) also considers a specific policy scenario in which China closes the productivity gap between state-owned enterprises and private firms. In this case, GDP increases by about 8.5 percent in China, and the spillovers are smaller (about 2 to 5 percent of the size of the impact on China for the other regions), as the state-owned enterprises reforms affect the GVC sector and the nontradables sector more symmetrically, and the nontradables sector in China has smaller spillovers to the rest of the world.

<sup>7</sup> The productivity spillover calculations are based on the methodology found in the IMF model, FSGM (Flexible System of Global Models; Andrie and others 2015), drawing on Franco, Montresor, and Marzetti (2011) and Lumenga-Neso, Olarreaga, and Schiff (2005).

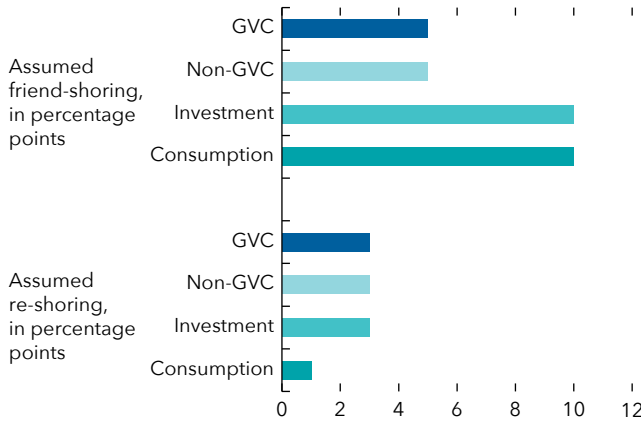
<sup>8</sup> Because changes were considered through 2021, changes were effectively considered along these margins that largely go beyond the changes that took place between the years 2017 and 2022, as documented in Alfaro and Chor (2023) for the case of the United States.

**Figure 3.6. De-Risking Scenarios**

Scenarios assume a dialing back of foreign sourcing in production either from all partners (reshoring) or from specific competitors (friend-shoring) ...

**1. Assumed Increase in Friend-Shoring and Reshoring as Share of Total Sourcing**

(Percentage points by type of goods and services trade)



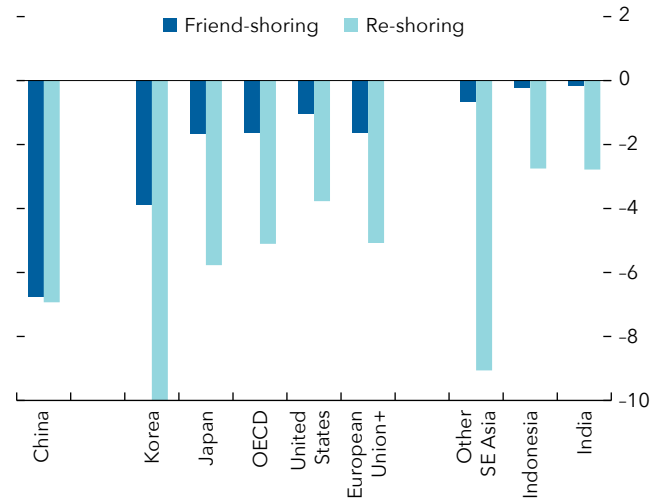
Sources: Eora Global Supply Chain Database; and IMF staff calculations.

Note: GVC = global value chain.

... with potentially large GDP losses for China and the Organisation for Economic Co-operation and Development.

**2. GDP Losses from Friend-Shoring and Reshoring Scenarios**

(GDP levels, percent deviation from baseline)



Sources: Eora Global Supply Chain Database; and IMF staff calculations.

Note: European Union+ = European Union and Switzerland; OECD = Organisation for Economic Co-operation and Development; SE = southeast.

The economic effects are small for the rest of the world, with two offsetting forces as play. Higher NTBs between China and the OECD result in trade being diverted to other countries, increasing demand for their exports, which rise above the baseline in the short term. However, the large economic losses in China and the OECD notably lower their demand from the rest of the world, dampening the positive effects from trade diversion. Therefore, GDP and exports in the rest of world decline marginally in the long term (in the range of -0.2 to -0.7 percent for GDP).<sup>9</sup>

A reshoring scenario, in which China and the OECD increase NTBs on all countries to reduce dependence on foreign inputs, results in significantly larger global output losses of about 4.5 percent in the long term, as the additional distortions from NTBs lead to less-efficient resource allocation and higher input costs that are amplified through GVC linkages (Figure 3.6, panel 2, light blue bars). China experiences a 6.9 percent loss as the OECD regions are reducing their demand for their goods. For the OECD regions, losses range from 3.8 percent to up to 10.2 percent of GDP, with larger losses for more open economies with stronger China linkages. For the rest of the world, the positive trade diversion effects of the friend-shoring scenario are no longer present because they also face higher NTBs from China and the OECD. For example, the other Southeast Asia region experiences a large loss of 9.1 percent because it is highly open with strong trade links with China and the OECD economies (particularly in the GVC sector in relation to China). Therefore, the demand for its exports is falling enough to induce a large GDP contraction, with significant negative spillovers on the domestic economy.

<sup>9</sup> Given the distortive nature of friend-shoring policies, the preferred calibration of friend-shoring is one where the changes between foreign suppliers is achieved by introducing higher barriers on the opposing bloc. Still, the robustness of the results were checked if friend-shoring is achieved via a revenue-neutral combination of taxes on the use of goods of the opposing bloc and subsidies on all other economies. Even under this calibration, non-OECD Asian economies gain only marginally, in the range of 1 percent level gains in the long term.



In summary, for each percentage point of reshoring and friend-shoring, long-term global GDP losses are about 1.5 percent and 0.25 percent, respectively, while specifically dialing back these two margins to 2000 levels translates into global GDP losses of 4.5 percent and 1.8 percent, respectively. While (by definition) these are smaller than potential losses from extreme fragmentation, these estimates underscore how de-risking can still present a nontrivial drag on growth in Asia and beyond.

## References

---

- Alfaro, Laura, and Davin Chor. 2023. "Global Supply Chains: The Looming 'Great Reallocation.'" Paper presented at the Jackson Hole Economic Symposium, Jackson Hole, WY, August 24.
- Anderson, Derek, Benjamin Hunt, Mika Kortelainen, Michael Kumhof, Douglas Laxton, Dirk Muir, Susanna Mursula, and Stephen Snudden. 2013. "Getting to Know GIMF: The Simulation Properties of the Global Integrated Monetary and Fiscal Model." IMF Working Paper 13/55, International Monetary Fund, Washington, DC.
- Andrle, Michal, Patrick Blagrove, Pedro Espailat, Keiko Honjo, Benjamin Hunt, Mika Kortelainen, René Lalonde, and others. 2015. "The Flexible System of Global Models—FSGM." IMF Working Paper 15/64, International Monetary Fund, Washington, DC.
- Aslam, Aqib, Natalija Novta, and Fabiano Rodrigues-Bastos. 2017. "Calculating Trade in Value Added." IMF Working Paper 17/178, International Monetary Fund, Washington, DC.
- Belotti, Federico, Alessandro Borin, and Michele Mancini. 2020. "ICIO: Economic Analysis with Intercountry Input-Output Tables in Stata." Policy Research Working Paper 9156, World Bank, Washington, DC.
- Brandt, Loren, John Litwack, Elitza Mileva, Luhang Wang, Yifan Zhang, and Luan Zhao, 2020, "China's Productivity Slowdown and Future Growth Potential." Policy Research Working Paper 9298, World Bank, Washington, DC.
- Cerdeiro, Diego A., and Cian Ruane. 2022. "China's Declining Business Dynamism." IMF Working Paper 22/32, International Monetary Fund, Washington, DC.
- Cerdeiro, Diego A., Johannes Eugster, Rui C. Mano, Dirk Muir, and S. Jay Peiris. 2023. "Sizing Up the Effects of Technological Decoupling." CEPR Book.
- Constantinescu, Cristina, Aaditya Mattoo, and Michele Ruta. 2019. "Does Vertical Specialization Increase Productivity?" *The World Economy* 42 (8): 2385–402. <https://doi.org/10.1111/twec.12801>.
- Franco, Chiara, Sandro Montresor, and Giuseppe V. Marzetti. 2011. "On Indirect Trade-Related R&D Spillovers: The 'Average Propagation Length' of Foreign R&D." *Structural Change and Economic Dynamics* 22 (3): 227–37. <https://doi.org/10.1016/j.strueco.2011.04.003>.
- International Monetary Fund (IMF). 2023. "G20 Surveillance Note: G20 Finance Ministers and Central Bank Governors' Meetings July 17-18, 2023, Gandhinagar, India." Washington, DC.
- Jurzyk, Emilia, and Cian Ruane. 2021. "Resource Misallocation among Listed Firms in China: The Evolving Role of State-Owned Enterprises." IMF Working Paper 21/75, International Monetary Fund, Washington, DC.
- Kumhof, Michael, Douglas Laxton, Dirk Muir, and Susanna Mursula. 2010. "The Global Integrated Monetary and Fiscal Model (GIMF)—Theoretical Structure." IMF Working Paper 10/34, International Monetary Fund, Washington, DC.

- Lenzen, Manfred, Keiichiro Kanemoto, Daniel Moran, and Arne Geschke. 2012. "Mapping the Structure of the World Economy." *Environmental Science and Technology* 46 (15): 8374–81. <https://doi.org/10.1021/es300171x>.
- Lenzen, Manfred, Daniel Moran, Keiichiro Kanemoto, and Arne Geschke. 2013. "Building Eora: A Global Multiregional Input-Output Database at High Country and Sector Resolution." *Economic Systems Research* 25 (1): 20–49. <https://doi.org/10.1080/09535314.2013.769938>.
- Lumenga-Neso, Olivier, Marcelo Olarreaga, and Maurice Schiff. 2005. "On 'Indirect' Trade-Related R&D Spillovers." *European Economic Review* 49 (7): 1785–98. <https://doi.org/10.1016/j.euroecorev.2004.06.004>.
- Oeking, Anne, Natalija Novta, and Fang Zhang. 2022. "Sustainable and Balanced Growth in the Longer Term." In *People's Republic of China: Selected Issues*. Washington, DC: International Monetary Fund.

**Table 1. Asia: Real GDP**

(Percent; year-over-year change)

	Actuals and Latest Projections					Difference from April 2023 WEO			
	2021	2022	2023	2024	2025	2022	2023	2024	2025
<b>Asia</b>	<b>6.8</b>	<b>3.9</b>	<b>4.6</b>	<b>4.2</b>	<b>4.3</b>	<b>0.1</b>	<b>0.0</b>	<b>-0.2</b>	<b>0.1</b>
<b>Advanced Economies</b>	<b>4.1</b>	<b>1.8</b>	<b>1.7</b>	<b>1.7</b>	<b>1.6</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>
Australia	5.2	3.7	1.8	1.2	2.0	0.0	0.2	-0.5	-0.1
New Zealand	6.1	2.7	1.1	1.0	2.1	0.3	0.0	0.2	-0.3
Japan	2.2	1.0	2.0	1.0	0.6	-0.1	0.7	0.0	0.0
Hong Kong SAR	6.4	-3.5	4.4	2.9	2.9	0.0	0.9	-0.2	0.0
Korea	4.3	2.6	1.4	2.2	2.3	0.0	-0.1	-0.2	0.0
Taiwan Province of China <sup>1</sup>	6.5	2.4	0.8	3.0	2.8	-0.1	-1.3	0.4	0.6
Singapore	8.9	3.6	1.0	2.1	2.5	0.0	-0.5	0.0	0.0
<b>Emerging Market and Developing Economies<sup>2</sup></b>	<b>7.5</b>	<b>4.5</b>	<b>5.2</b>	<b>4.8</b>	<b>4.9</b>	<b>0.1</b>	<b>-0.1</b>	<b>-0.3</b>	<b>0.1</b>
Bangladesh	6.9	7.1	6.0	6.0	6.6	0.0	0.5	-0.5	-0.5
Brunei Darussalam	-1.6	-1.6	-0.8	3.5	2.8	-0.1	-4.1	0.0	-0.3
Cambodia	3.0	5.2	5.6	6.1	6.4	0.2	-0.2	-0.1	0.0
China	8.4	3.0	5.0	4.2	4.1	0.0	-0.2	-0.3	0.0
India <sup>3</sup>	9.1	7.2	6.3	6.3	6.3	0.4	0.4	0.0	0.1
Indonesia	3.7	5.3	5.0	5.0	5.0	0.0	0.0	-0.1	0.0
Lao P.D.R.	2.1	2.3	4.0	4.0	4.1	0.0	0.0	0.0	0.0
Malaysia	3.3	8.7	4.0	4.3	4.4	0.0	-0.5	-0.2	0.0
Myanmar	-17.9	2.0	2.6	2.6	2.5	0.0	0.0	0.0	0.0
Mongolia	1.6	5.0	5.5	4.5	3.5	0.2	1.0	-1.0	-2.5
Nepal	4.8	5.6	0.8	5.0	5.2	-0.2	-3.6	-0.1	0.0
Philippines	5.7	7.6	5.3	5.9	6.1	0.0	-0.7	0.1	0.0
Thailand	1.5	2.6	2.7	3.2	3.1	0.0	-0.7	-0.4	-0.2
Vietnam	2.6	8.0	4.7	5.8	6.9	0.0	-1.1	-1.1	0.1
<b>Pacific Island Countries<sup>4</sup></b>	<b>-1.4</b>	<b>1.0</b>	<b>3.2</b>	<b>3.8</b>	<b>3.5</b>	<b>0.0</b>	<b>-0.7</b>	<b>0.2</b>	<b>0.5</b>
Fiji	-4.9	20.0	7.5	3.9	3.7	5.5	0.5	-1.1	-1.1
Kiribati	7.9	1.2	2.6	2.4	2.3	0.0	0.1	0.0	0.0
Marshall Islands	1.0	-4.5	3.0	3.0	2.0	-5.8	0.0	1.0	0.2
Micronesia	-2.2	-0.6	2.6	3.1	1.9	0.0	-0.2	0.3	0.6
Nauru	2.9	1.9	0.5	1.3	2.4	-1.1	-0.5	-0.7	-0.1
Palau	-13.4	-2.0	0.8	12.4	11.9	0.9	-7.9	2.8	7.0
Papua New Guinea	0.1	4.3	3.0	5.0	3.1	-0.2	-0.7	0.6	0.0
Samoa	-7.1	-5.3	8.0	3.6	3.4	0.7	3.0	0.0	0.0

	Actuals and Latest Projections					Difference from April 2023 WEO			
	2021	2022	2023	2024	2025	2022	2023	2024	2025
Solomon Islands	-0.6	-4.1	2.5	2.4	3.0	0.0	0.0	0.0	0.0
Tonga <sup>5</sup>	-2.7	-2.0	2.6	2.5	2.2	0.0	0.1	-0.3	-0.4
Tuvalu	1.8	0.7	3.9	3.5	2.4	0.0	-0.4	0.4	-0.2
Vanuatu	0.6	1.9	1.5	2.6	3.5	0.0	-2.0	-1.0	-0.4
<b>ASEAN<sup>6</sup></b>	<b>3.2</b>	<b>5.7</b>	<b>4.2</b>	<b>4.6</b>	<b>4.8</b>	<b>0.0</b>	<b>-0.4</b>	<b>-0.3</b>	<b>0.0</b>
<b>ASEAN-5<sup>7</sup></b>	<b>4.0</b>	<b>5.5</b>	<b>4.2</b>	<b>4.5</b>	<b>4.5</b>	<b>0.0</b>	<b>-0.3</b>	<b>-0.1</b>	<b>-0.1</b>
<b>EMDEs excluding China and India</b>	<b>3.3</b>	<b>5.6</b>	<b>4.6</b>	<b>4.9</b>	<b>5.2</b>	<b>0.0</b>	<b>-0.1</b>	<b>-0.2</b>	<b>0.0</b>

Sources: IMF, World Economic Outlook database; and IMF staff estimates and projections.

Note: ASEAN = Association of Southeast Asian Nations; EMDEs = emerging market and developing economies; WEO = *World Economic Outlook*.

<sup>1</sup> Taiwan Province of China forecast data source is from Consensus Forecasts.

<sup>2</sup> EMDEs exclude Pacific Island countries and other small states.

<sup>3</sup> India's data are reported on a fiscal year basis. Its fiscal year starts on April 1 and ends on March 31.

<sup>4</sup> Pacific Island countries aggregate is calculated using simple average; all other aggregates are calculated using weighted average.

<sup>5</sup> Tonga's data are reported on a fiscal year basis. Its fiscal year starts on July 1 and ends June 30.

<sup>6</sup> ASEAN comprises Brunei Darussalam, Cambodia, Indonesia, Lao P.D.R., Malaysia, Myanmar, Philippines, and Singapore.

<sup>7</sup> ASEAN-5 comprises Indonesia, Malaysia, Philippines, Singapore, and Thailand.

