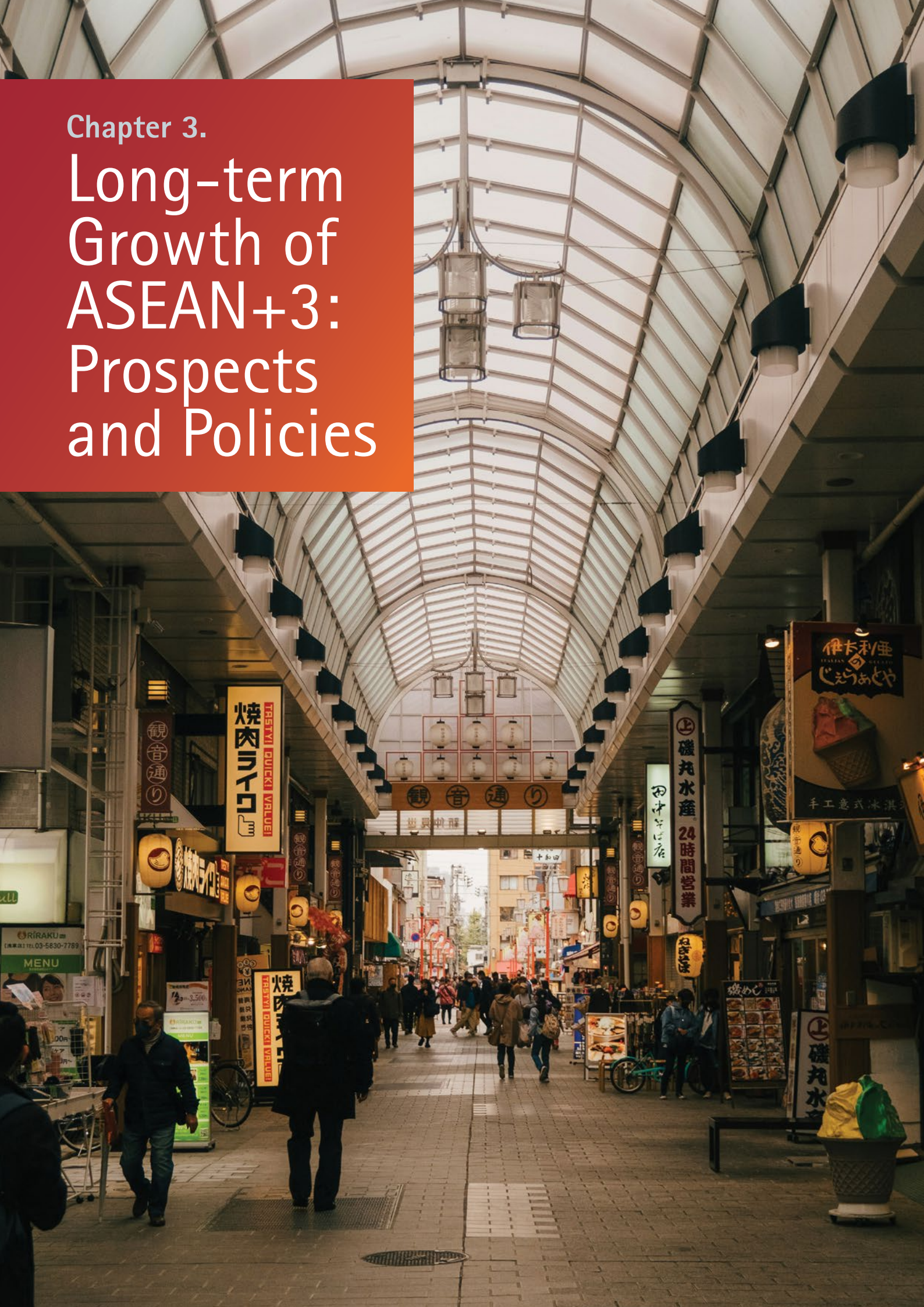
Chapter 3.

Long-term Growth of ASEAN+3: Prospects and Policies



Highlights

- The ASEAN+3 region remains well-positioned to be a key global growth driver in the next few decades. However, its pace of expansion has been slowing since the global financial crisis, further exacerbated by the pandemics and other shocks in the past 10 years. Amid major secular trends confronting the region's economies—such as rapid aging, climate change, and global trade reconfiguration—its declining growth momentum raises critical questions about the region's ability to manage new and emerging risks while sustaining its long-term potential growth.

- Potential growth in the region has decelerated from about 6.0 percent in the early 2000s to 4.0 percent in 2023. About 70 percent of the decline is due to slower capital accumulation, with sluggish total factor productivity accounting for another 10 percent. In some economies, slow human capital development and a shrinking labor force have also limited the boost to growth from increased investment. The growth potential is projected to further ease to about 3.0 percent by the end of 2050—but it could fall below that if downside risks, such as deeper geoeconomic fragmentation, failure to contain climate change, and more rapid fertility rate declines, were to materialize.

- The productivity slowdown is due in part to the scarring effects of the pandemic which impaired the balance sheets of households and firms and the diverse pace of structural change and industrialization experienced across the region. In particular, productivity gains from structural change have fallen by a third of those over the past two decades. In some economies, industrialization has stalled, while shares of manufacturing in employment and output have not increased. In addition, sectoral productivity gaps compared to the global frontier remain wide in most economies, while the shift to services has primarily been toward lower-productivity activities.

- The region is facing not only the enormous task of revitalizing economic growth but also ensuring its future pathway is dynamic and can respond to challenges ahead. While there is no "one-size fits all" formula for sustaining high-quality growth, ASEAN+3's long experience with economic transformation helps provide a compass for development strategies. However, it is imperative that these new growth strategies be tailored to address the new economic challenges that ASEAN+3 economies are facing, including aging workforces, climate change, and geoeconomic fragmentation.

- While the precise policy prescription will differ across ASEAN+3 economies based on their specific context, this chapter identifies five policy themes that could guide the region's policymakers craft new growth pathways for the future. These encompass (1) upgrading existing manufacturing capabilities to respond to new demand dynamics; (2) prioritizing the shift toward high skills and quality services; (3) closing investment gaps, especially in productivity-enhancing infrastructures; (4) boosting innovation and leveraging on technology to redefine traditional development pathways; and (5) strengthening state capacity, without which successful growth outcomes would be impossible. Undertaking these policy adjustments would be, in many ways, bolstered by stronger regional cooperation, helping ensure that the ASEAN+3 region of the future not only exhibits high growth, but also growth that is inclusive, equitable, and sustainable.

I. Introduction

"The advantage of economic growth is not that wealth increases happiness, but that it increases the range of human choice."

W. Arthur Lewis, The Theory of Economic Growth (1955)

ASEAN+3 is one of the world's most dynamic regions, and a significant driver of global growth. In the last 10 years, nearly 45 percent of global economic growth was contributed by ASEAN+3 economies (Figure 3.1). For the rest of the decade, the ASEAN+3 region is projected to grow by 4.0 percent on average—outpacing the world economy's forecast growth of 3.2 percent (Figure 1.27). A key node of global trade and manufacturing activity, home to some of the world's most innovative economies and fast-growing cities, and possessing a large labor force, the ASEAN+3 region is well-positioned to be a global growth driver—with some of its middle-income economies forecast to drive a larger portion of global economic activity in the years to come (Figure 3.1).

However, its pace of economic expansion has been slowing down in the last two decades, especially in the aftermath of the global financial crisis and the pandemic health crisis. From an average of about 6.5 percent annually between 2000 and 2007, the region's average growth rate has slowed to around 5.1 percent over 2008 – 2024 (Figure 3.2).[1] This represents a deceleration in ASEAN+3's growth momentum by about 20 percent since 2008, which has also been exacerbated by the scarring effects of the COVID-19 pandemic (Figure 3.3). Along with slowing productivity gains, these trends raise valid concerns about the ASEAN+3 economies' ability to sustain their robust growth and development in the period ahead. While a slowdown in growth has been experienced by many other economies in the world since the global financial crisis, the more pertinent issue is that ASEAN+3 economies are experiencing this slowdown amid major secular trends that pose considerable headwinds and uncertainty to long-term growth, including rapid demographic changes, global trade reconfiguration, and heightened geopolitical tensions (AMRO 2024b). With the more complicated landscape, the current consensus expectation is that ASEAN+3's overall growth by the end of the next decade would be around 3.0 percent—or two-thirds of what it was in the preceding decade (Figure 3.4).

In this context, this thematic chapter dives deep into the underlying factors driving the long-term growth trend in ASEAN+3 and explores how structural transformation is influencing productivity growth across the region.

- ***Section II*** unpacks the region's growth dynamics from a growth accounting perspective to provide an understanding of which production factors—capital, labor inputs, human capital, or productivity gains—are primarily driving the downward trend in ASEAN+3's potential growth. These are projected into the future to explore a long-term trajectory for the region, given existing trends.

- ***Section III*** hones in on the slowdown in ASEAN+3's long-term growth and productivity gains over time, examining the issue from the perspective of structural change and tracking the transitions of the region's economies across different economic sectors. ASEAN+3 economies' experience is benchmarked against global peers to identify the salient characteristics of structural change in the region over the last three decades.

- ***Section IV*** offers five key policy considerations, informed by the foregoing analyses, for the region's policymakers as they explore new growth strategies for a high-quality, inclusive economic future. While ASEAN+3's long experience with economic transformation and development policies provides insights that are helpful for the future, new growth strategies must also consider the new realities that the region is facing and how to leverage on the rapid technological advances to meet the challenges.

This chapter follows up on several annual editions of the *ASEAN+3 Regional Economic Outlook (AREO)*, which together provide a panoramic, *extrospective* view of major secular shifts confronting the region and how they affect the region's long-term prospects. This year's chapter follows up with an *introspection* of the region's growth experience, with the objective of uncovering insights on the region's potential growth and structural transformation that could, in turn, help inform the path toward high-quality, inclusive, and sustainable growth for ASEAN+3 economies amid ongoing global shifts.

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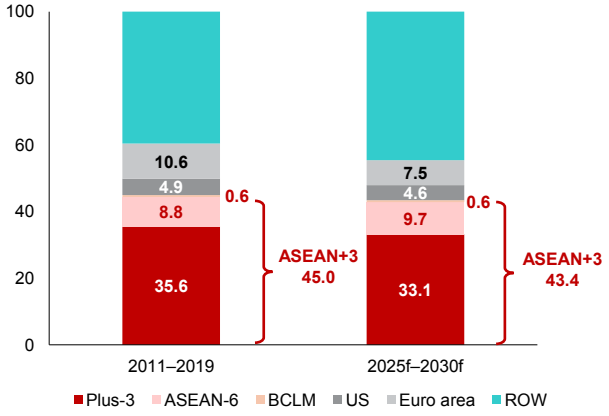
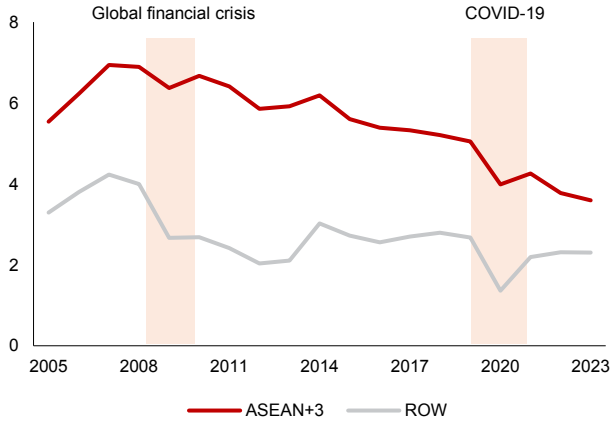
[1/] If excluding the pandemic years 2020 and 2021, ASEAN+3 aggregate growth over this period is 5.4 percent.

Figure 3.1. World: Contribution to Real GDP Growth, on PPP Basis
(Percent share)



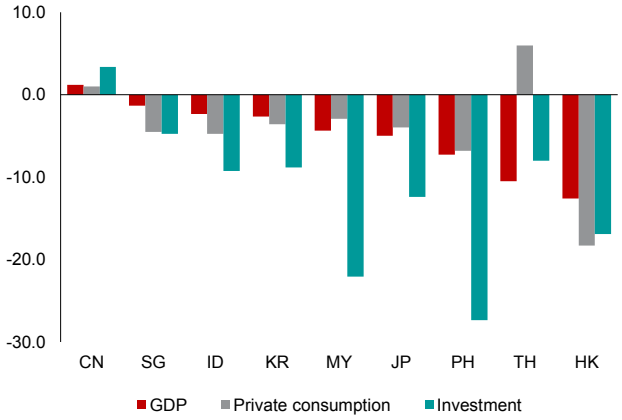
Source: National authorities via Haver Analytics; Oxford Economics; International Monetary Fund; AMRO staff calculations.
Note: f = forecast; ASEAN-6 = Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam; BCLM = Brunei, Cambodia, Lao PDR, and Myanmar; Plus-3 = China, Hong Kong, Japan, and Korea; ROW = rest of the world. Real GDP is forecast in local currency and converted to purchasing power parity (PPP).

Figure 3.2. ASEAN+3 and World: GDP Growth
(Percent year-on-year, five-year moving average)



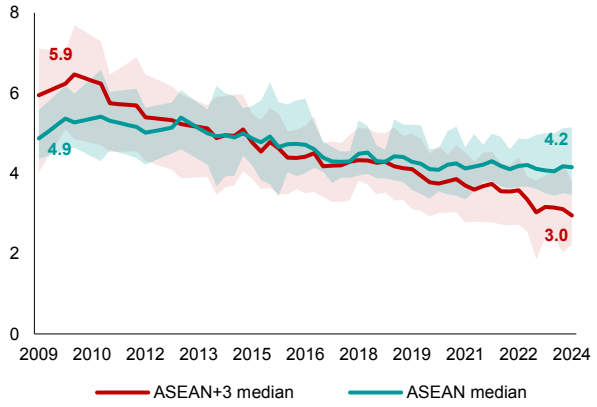
Source: International Monetary Fund; AMRO staff calculations.
Note: ROW = rest of the world. The aggregate growth is weighted by purchasing power parity-adjusted GDP.

Figure 3.3. Selected ASEAN+3: Deviation of GDP, Investment, and Private Consumption from Pre-Pandemic Trend Level
(Percent of pre-pandemic trend, 2024)



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand. One-sided HP filters are applied to quarterly data to obtain pre-pandemic (2010Q1–2019Q4) and post-pandemic trends (2020Q1–2024Q4). Deviation is calculated as a percentage difference between the post-pandemic trend and the pre-pandemic trend for 2024 (Q1–Q4) quarterly data (2024 yearly data for China's investment and private consumption). Some economies are excluded due to data availability.

Figure 3.4. Selected ASEAN+3: Consensus Forecast of Long-Term Growth
(Percent, year-on-year)



Source: Consensus Economics; International Monetary Fund; and AMRO staff calculations.
Note: Figures for each year represent the 10-year-ahead growth forecast. Regional aggregate is the weighted average (using purchasing power parity-adjusted GDP) of growth expectations for China, Hong Kong, Japan, Korea, Indonesia, Malaysia, the Philippines, Singapore and Thailand.

II. Long-term Trend Growth in ASEAN+3

ASEAN+3's "catch-up" with richer peers was already slowing down in the years following the global financial crisis as global growth slowed, but even more so with the shocks from the COVID-19 pandemic. In the aftermath of the pandemic health crisis, some economies shifted to even lower growth trajectories, in part because of scarring effects on labor supply, the balance sheets, and capital stock (AMRO 2022). However, the pandemic also accelerated the shift to digital technology which provided a boost to factor productivity and mitigated the impact of the pandemic. Altogether, this growth slowdown has raised critical questions about the structural factors determining ASEAN+3's long-term potential growth. Understanding the causes of this decline—whether stemming from demographic shifts, slowing capital accumulation, or varying rates of productivity improvement—is becoming increasingly crucial for policymakers seeking to reinvigorate economic dynamism in their respective economies.

The region's longer-term growth trend and potential growth can be analyzed from a growth accounting perspective. Potential growth refers to the rate at which an economy can grow while at full capacity and full

employment without triggering inflationary pressure or external imbalance. First, ASEAN+3 economies' growth is decomposed into four underlying factor inputs—capital accumulation, labor input, human capital, and total factor productivity (TFP)—to understand how each has driven past economic growth and their role in the observed growth slowdown.[2] Second, while growth accounting through a production function approach has been widely used to analyze historical developments, this study extends the analysis to project long-term growth for the ASEAN+3 region, based on how each of the four drivers is expected to evolve in the next decades to 2050. By doing so, the analysis aims to offer a novel perspective on ASEAN+3's historical and future growth dynamics, in turn helping identify areas that need to be prioritized to ensure long-term growth resilience.

Understanding the Past

ASEAN+3's potential growth has decelerated from around 6.0 percent in 2001 to 4.0 percent in 2023; more than two-thirds of this decline is due to decelerating capital accumulation and TFP growth.[3] Capital accumulation—or the process of increasing productive assets through investment in physical capital like machinery and infrastructure—has been the primary growth driver across ASEAN+3 economies since the early 2000s, accounting for about 70 percent of potential growth (Figure 3.5). However, its contribution gradually declined as economies matured, lowering ASEAN+3 regional growth by half a percentage point between 2001 and 2023. The contribution from TFP, which measures productivity gains in combining the different factor inputs and technological progress, has also fallen over the same period, reducing regional growth by about 1.0 percentage point. Altogether, these two factors account for 90 percent of the decline in ASEAN+3's potential growth over 2001–23. Human capital—measured by education attainment—and labor inputs have seen milder declines in their historical growth contributions. The declining trend observed from labor inputs, in particular, largely reflects the region's rapidly aging demographic profile (AMRO 2024b).[4]

Potential growth in the Plus-3 fell from 5.6 percent in 1980 to 4.3 percent in 2023—reflecting slower capital and TFP growth in China and lower capital accumulation in Japan and Korea. China's potential growth rate increased from about 9 percent in the late 1970s and early 1980s to over 10 percent in the early 2000s, driven by robust capital accumulation and TFP growth—fueled by rapid industrialization and economic reforms following its accession to the World Trade Organization (Cheremukhin and others 2015). Growth began to taper off in the late-2000s, as capital accumulation decelerated and TFP growth began to slow (Figure 3.6, left panel). A similar pattern is observed in Japan and Korea, where potential growth began to decline noticeably in the late 1980s (Figure 3.6, right panel). Japan's potential growth declined from around 4 percent in the 1980s to less than 1 percent by the early 2000s, in part due to the persistent negative contribution of labor inputs since the early 1990s and the sharp slowdown in capital accumulation after the bursting of the asset bubble at around the same time. Meanwhile, Korea's potential growth has averaged about 2.5 percent in the last five years—less than a third of the 9 percent growth in the 1980s—because of a marked decline in capital accumulation over the years.

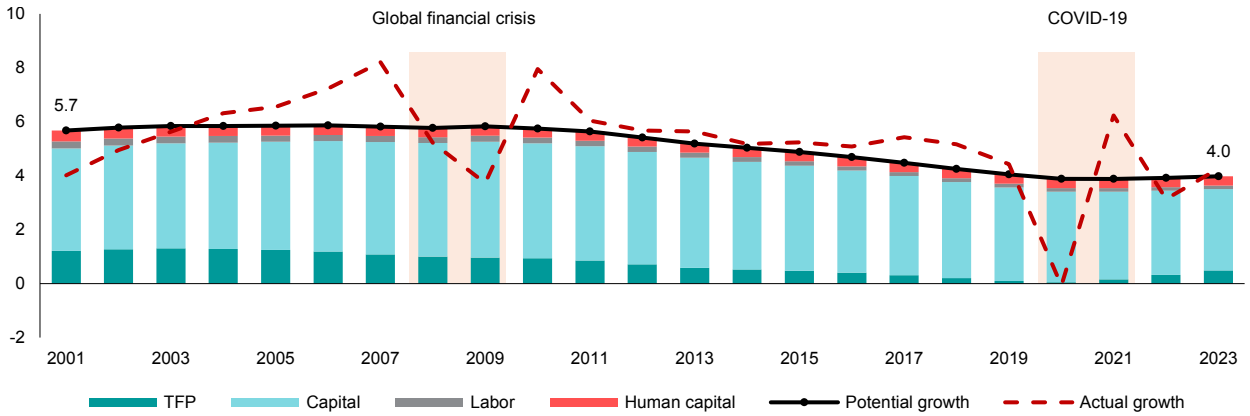
In ASEAN-5, potential growth slowed from 6.2 percent in 1986 to 3.9 percent in 2023, with broad declines seen across labor, human capital, and TFP growth. Capital accumulation has remained the primary engine of growth in ASEAN-5 economies, but this has not been matched by corresponding improvements in TFP and human capital development, thus limiting the efficiency gains from growing capital stock (Figure 3.7, left panel). Decomposing growth in the past two decades at the individual-economy level also reveals the ASEAN-5 economies' unique experience in sustaining balanced growth drivers (Online annex 2). Despite its substantial room to "catch up" with advanced economies in terms of productivity levels, Indonesia's potential growth has been hampered by a weak contribution from TFP and human capital growth. Malaysia has experienced a significant decline in capital accumulation since the Asian Financial Crisis, but neither TFP growth nor human capital improvements have increased sufficiently to offset the fall in investment. Thailand, on the other hand, appears to have struggled with a sharp decline in capital accumulation in both the public and private sector reflecting the political uncertainties and weak state capacity despite a relatively steady contribution from TFP (AMRO 2024a). This is in contrast with the Philippines, which has managed to increase its rate of capital investment steadily in the past two decades but appears to have difficulty in shoring up its TFP. Reflecting its higher income status, Singapore has demonstrated more mature growth dynamics with steady but moderating contributions across all four components (Online annex 2).

2/ The growth accounting exercise conducted by AMRO staff in this section draws on data from the Penn World Tables, World Development Indicators, United Nations Population Prospects, and national sources to estimate historical growth drivers and their evolution through time. Online annex 1 features indicators used and other technical details.

3/ Although the data used in the analysis extends to 1970 for some individual economies (Online annex 2), the regional aggregates can only be computed from 2001 due to data availability.

4/ More specifically, labor inputs are measured as total hours worked, adjusted for participation rates and employment.

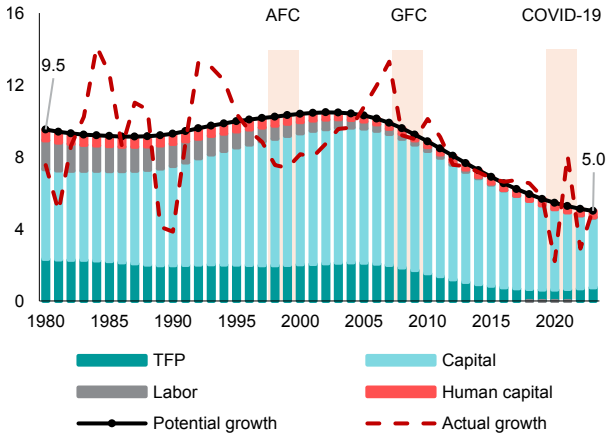
Figure 3.5. ASEAN+3: GDP Growth, by Factor Input
(Percent, year-on-year)



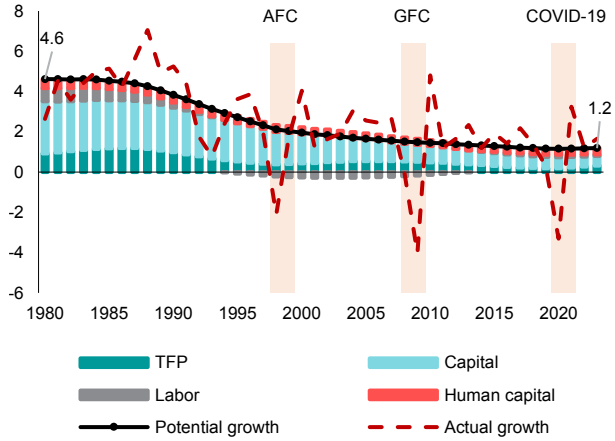
Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: TFP = total factory productivity. The aggregate growth and components are weighted by purchasing power parity-adjusted GDP. Data for Cambodia are up to 2022 and AMRO staff forecast is used for 2023.

Figure 3.6. Plus-3: GDP Growth, by Factor Input
(Percent, year-on-year)

China



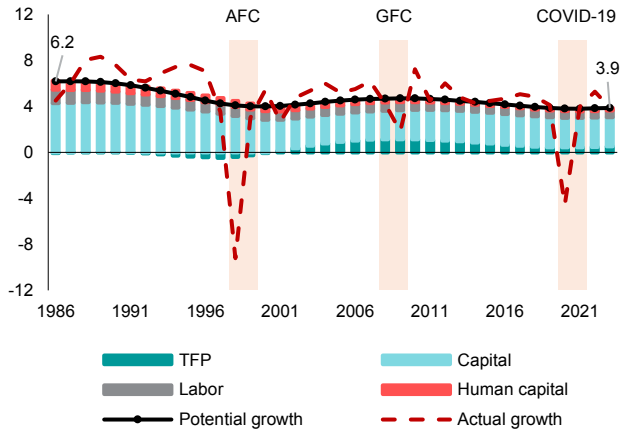
Plus-3 ex China



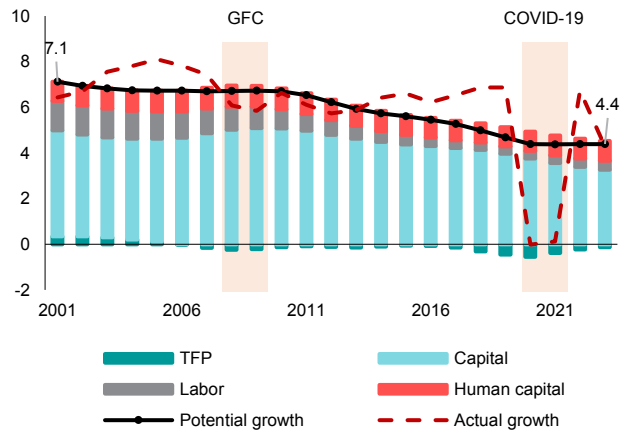
Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: Plus-3 ex China = Hong Kong, Japan, and Korea. AFC = Asian financial crisis; GFC = global financial crisis; TFP = total factor productivity. The aggregate growth and components are weighted by purchasing power parity-adjusted GDP.

Figure 3.7. ASEAN: GDP Growth, by Factor Input
(Percent, year-on-year)

ASEAN-5



BCMLV



Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; UN World Population Prospects; World Bank; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam. AFC = Asian financial crisis; GFC = global financial crisis; TFP = total factor productivity. The aggregate growth and components are weighted by purchasing power parity-adjusted GDP.

Potential growth in BCLMV —while higher than other subregions, at 4.4 percent in 2023—also eased owing to the slowdown in capital accumulation since 2010 and notably weak TFP growth.[5] Capital accumulation has been the primary growth driver for these economies, typical for those in earlier stages of development, in part thanks to increasing foreign direct investment (FDI) (Figure 3.7, right panel). While capital accumulation contributed about two-thirds of historical potential growth, economies have varied significantly in their ability to translate this investment into productivity gains. Vietnam stands out, in particular, having achieved a higher TFP contribution of nearly 10 percent to overall growth over the most recent decade (Online annex 2). Cambodia, Lao PDR, and Myanmar have yet to increase the growth in their respective TFP contributions in line with the stronger accumulation of capital, indicating potential inefficiencies in resource allocation. This was also the case for Brunei, where weak TFP growth fully offset the positive effect of capital deepening on labor productivity, especially in the years prior to the pandemic (Box 3.1). This observation aligns with other studies that highlight sluggish TFP growth in these economies (Asian Development Bank [ADB] 2017; International Monetary Fund [IMF] 2019; World Bank 2023a).

5/ The BCLMV economies include Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam.

Box 3.1:

Spurring Growth through Productivity Enhancements in Brunei

Sustaining long-term economic growth requires a strong focus on productivity improvements. For resource-rich economies like Brunei, prioritizing this is vital to mitigate the risks associated with the exhaustibility of non-renewable resources (Auty 1993; Sachs and Warner 1995; Gylfason 2005; Van der Ploeg 2010). By investing in technology diffusion and fostering innovation, resource-rich economies can leverage their resource wealth to diversify their economies, while creating productivity spillovers across various sectors. In the context of Brunei's aging population, enhancing both total factor productivity (TFP) and labor productivity becomes especially fundamental to unlock new growth potential, shifting the focus from not just increasing primary inputs—like labor and capital—to prioritizing the adoption and spread of innovative technologies.

Key drivers of productivity shifts in Brunei: 2005–2023

Output decomposition using the production function approach reveals that between 2005 and 2019, Brunei's economic growth was largely driven by increases in primary inputs (Figure 3.1.1). Labor played a key role, supported by peak labor force participation rates and robust employment growth, particularly in the mid-2000s. Similarly, capital stock expanded significantly, spurred by substantial investments in downstream fertilizer and petrochemical projects. However, while the volume of labor and capital inputs grew sharply during this period, TFP was a drag on overall output growth.[1]

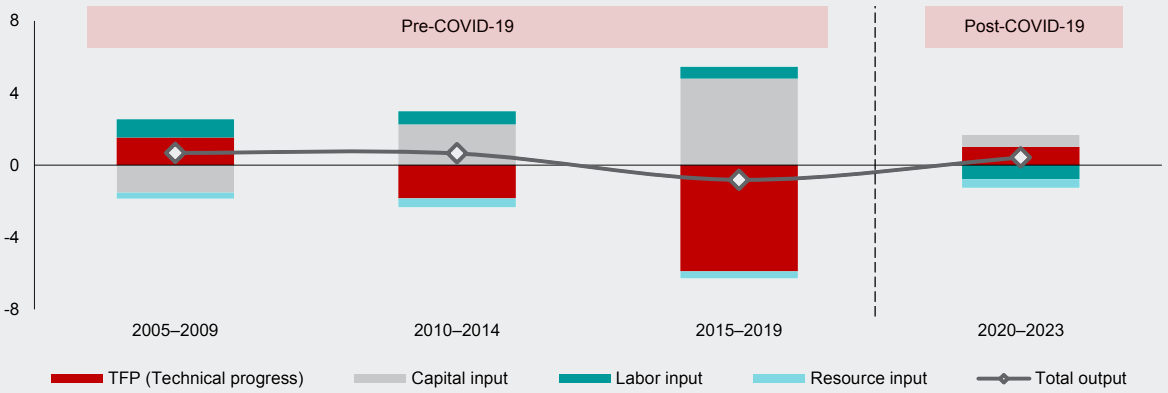
Similarly, factor decomposition revealed that even though increased investments in capital goods—such as machinery and equipment—supported gains in labor productivity (i.e., capital deepening), TFP consistently weighed on labor productivity throughout most of the pre-pandemic years (Figure 3.1.2, left panel). Sectoral analysis showed that the oil and gas (O&G) sector, despite being a central pillar of Brunei's economy, struggled with declining output resulting from maturing fields and aging infrastructure that led to negative labor productivity growth (Figure 3.1.2, right panel). The non-O&G sector also faced challenges, such as shortages of skilled labor and slower technology adoption especially among smaller enterprises. These findings highlight the challenges to technological innovation and efficiency improvements in Brunei (Cheong 2013; Koh 2014).

Encouragingly, between 2020 and 2023, Brunei achieved significant gains in TFP, driven by rapid digital transformation that accompanied the transition to the post-pandemic environment. The swift adoption of digital tools, automation, and e-commerce platforms allowed businesses to maintain operations despite mobility restrictions—a trend that has continued to drive efficiencies until today. The non-O&G sector saw the most pronounced TFP improvements. The sector was supported by government-led initiatives such as the BRUHealth system and the Smart Nation projects, which significantly modernized Brunei's digital infrastructure. These advancements not only streamlined service delivery and enhanced connectivity but also laid the groundwork for sustainable productivity growth across various sectors. As a result, the economy is better positioned to leverage technology for economic diversification, reducing its dependency on oil and gas while fostering long-term resilience.

This box was written by Anthony Tan and Lay Lay Aung.

1/ The growth accounting framework, based on the Cobb-Douglas production function, has some limitations. It treats productivity as a residual, which can overlook the effects of important factors like institutional quality, infrastructure improvements, and spillovers. For example, positive spillovers from technology adoption or negative ones like environmental damage may not be fully captured, resulting in an incomplete picture of the actual drivers behind economic growth and efficiency.

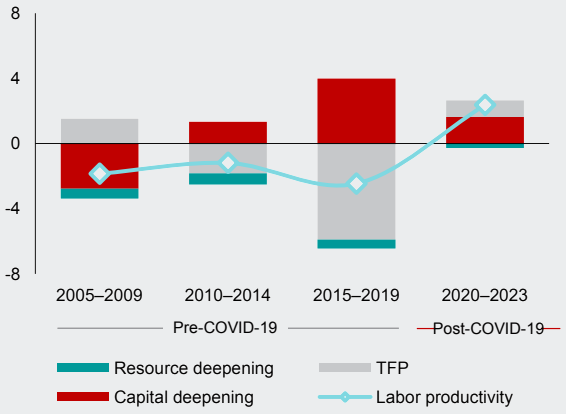
Figure 3.1.1. Brunei: Decomposition of Output Growth
(Percentage point contribution)



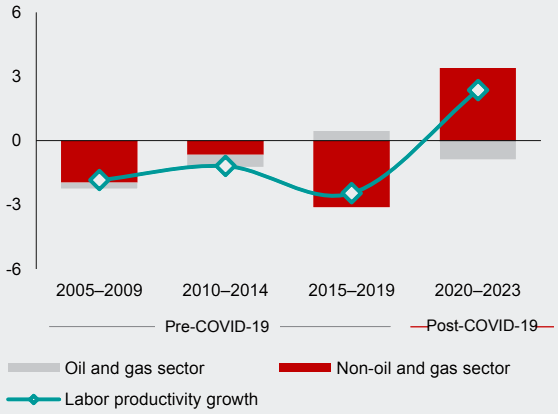
Source: National authorities; Penn World Tables; United Nations Development Program; World Bank; AMRO staff estimates.
Note: TFP = total factor productivity. The decomposition of output growth is estimated using the extended Cobb-Douglas production function, which incorporates natural resources as an additional factor of production. This extended model is better suited for analyzing growth in economies where natural resources—such as oil, gas, and minerals—are central to output (Tan and Aung 2025).

Figure 3.1.2. Brunei: Decomposition of Labor Productivity Growth
(Percentage point contribution)

Factor Decomposition



Sectoral Decomposition



Source: National authorities; Penn World Tables; United Nations Development Program; World Bank; AMRO staff estimates.
Note: TFP = total factor productivity.

Strategic approaches and policy priorities for enhancing productivity growth

Brunei's focus on enhancing productivity has been a key priority since the early days of its national development plans. The emphasis on productivity can be traced back to the 2nd National Development Plan, which is aligned with the Wawasan Brunei 2035 (also known as Brunei Vision 2035). While the government has made strides in targeting labor market efficiency, human capital development, and private sector innovation, there is significant potential for further progress in these three areas.

- ***Promoting greater labor market competition and flexibility.*** Addressing structural rigidities in the labor market remains key to promoting labor market competition and flexibility. This would require a suite of complementary and market-based policies. First, encouraging greater mobility of migrant workers would help reduce labor market segmentation. Currently, local and foreign workers occupy distinct roles with differing wages, job security, and working conditions. Second, narrowing wage differentials between locals and migrant workers would help promote flexible wage dynamics. One feasible option is to target mid-skill, mid-wage jobs where local employees can contribute more significantly to the workforce. To support this, a productivity-based wage subsidy, funded by migrant worker

levies, would not only make local hires more affordable but also incentivize employers to invest in training and upskilling (Koh 2020).

- ***Addressing staffing gaps.*** To close the talent gap, deliberate and targeted policies to align educational and training programs with industry needs are key priorities. The establishment of the Manpower Planning and Employment Council and the Manpower Industry Steering Committee is vital for fostering collaboration between industry, regulators, and educational institutions. Their focus on identifying critical occupations and developing competency frameworks is a step in the right direction. Further, strengthening public-private collaboration—such as through the i-Ready Apprenticeship Program—will bridge the gap between academic knowledge and practical skills, enhancing job readiness among graduates. Continued reform of the Technical and Vocational Education and Training system is essential to better align curricula with market demands. It is crucial that these policies align with efforts to enhance labor market competition, as misalignment could distort education choices and lead to skills and qualifications that do not meet industry demand.

- ***Promoting technological innovation.*** To drive productivity in non-O&G sectors, a "whole-of-nation" approach needs to be geared toward enhancing digital infrastructure and innovation. The Digital Economy Masterplan 2025 is a key initiative that focuses on building a robust digital foundation to support economic diversification. Continuing investments in cloud computing, artificial intelligence, and digital literacy are essential to modernizing industries and creating high-value job opportunities. Encouraging micro, small, and medium-sized enterprises to adopt digital technologies is also crucial, alongside policies that improve firms' access to finance, reduce regulatory burdens, and provide incentives for research and development.

By working to solve structural challenges using targeted strategies, Brunei can make significant strides toward enhancing overall productivity, supporting economic diversification, and achieving the ambitious goals outlined in Wawasan Brunei 2035.

Exploring the Future

Extending the analysis to the long term, ASEAN+3's potential growth is projected to decelerate from around 4.0 percent in 2023 to less than 3.0 percent by the end of 2050. Long-term growth projections for the region combine two key assumptions: one, that historical growth trends continue; and two, that ASEAN+3 economies will be able to "catch up" over time, which means that their TFP, capital stock (per capita), and human capital will gradually converge with levels in more advanced peers. Future growth thus reflects the pace at which the region's economies close their respective gaps with frontier economies. In the next 10 years, potential growth for the region will remain resilient at above 4 percent through 2030 but will moderate to 2.8 percent by 2050 (Figure 3.8). This projected slowdown is also consistent with the market consensus on the region's long-term outlook for the next decade (Figure 3.4).

This deceleration over the next three decades primarily reflects weaker contribution from capital accumulation and slower labor force growth in ASEAN+3. Capital accumulation, historically the dominant engine powering the region's above-global-average growth rates, is projected to contribute significantly less across all subregional aggregates (Figure 3.9). The growth rate of capital stock is projected to gradually decline as ASEAN+3 economies continue to mature in the next 20–30 years. The contribution from human capital—while showing consistent growth contributions across economies—is likely to be insufficient to offset the projected decline in capital stock accumulation, which in part could be owing to underinvestment in skills upgrading in some economies. TFP growth for the region as a whole is projected to increase driven by productivity convergence to the frontier, but there is substantial variation across economies. As the roles of capital stock and human capital in ASEAN+3's long-term growth gradually decline over time, boosting TFP will become even more critical for sustaining the region's growth momentum. Individual economies' capabilities to enhance productivity will be the key differentiator of long-term growth—with successful ones being those who can generate sustained productivity improvements such as through technological progress or structural transformation (Dieppe 2021; Zymek 2024).

Demographic headwinds could heavily constrain potential growth across the Plus-3 economies over the projection horizon, with China facing the additional challenge of decelerating capital accumulation. Aggregate potential growth in Plus-3 economies is projected to slow to 3.0 percent by 2050; absent China, potential growth is estimated to fall below 1.0 percent beginning in 2040. China's potential growth, while moderating, is projected to remain at a relatively robust level of above 4.5 percent through 2035, before declining to 3.3 percent by 2050 (Figure 3.10, top panel). Primarily this is due to a gradual reduction in capital and TFP contributions coupled with declining labor contribution because of demographic headwinds. This suggests that China's growth will increasingly rely on innovation and technological advancements to offset the diminishing returns from traditional capital investments (World Bank 2019; IMF 2024b).[6] In Japan, the projected potential growth below 1.0 percent in the next 30 years reflects persistent demographic challenges that are unlikely to be counterbalanced by the stable—though modest—TFP gains (Online annex 2). Korea, while facing similar demographic constraints, is likely to experience a more gradual transition path—with potential growth slowing to around 1.6 percent by 2050. Long-term projections for these economies—alongside China—show that as economies advance in growth and development, generating sustained TFP improvements and enhancing productivity gains are key to sustaining long-term growth momentum, especially as the contributions of traditional factors (like labor) inevitably decline (Figure 3.10, bottom panel).

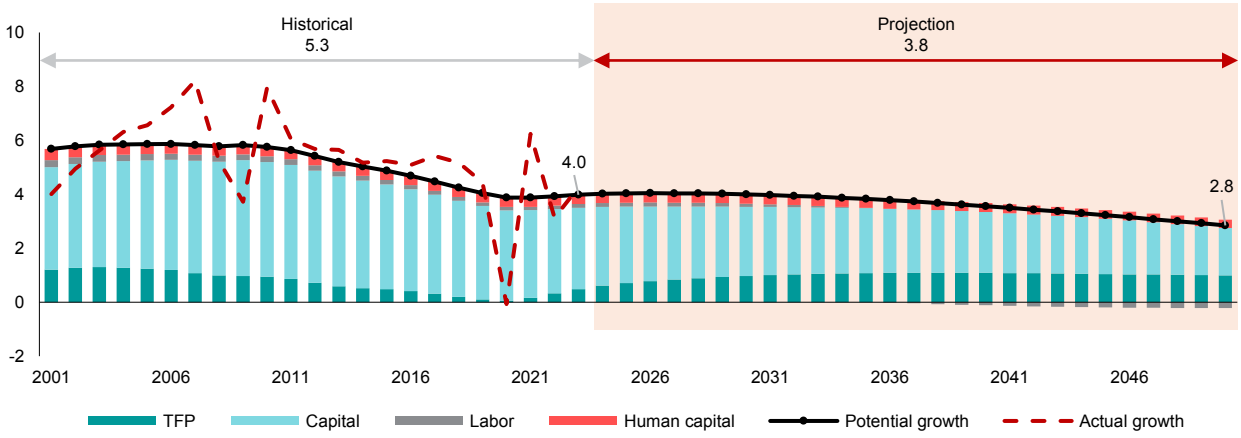
ASEAN-5's potential growth is projected to decline but remain above 3.0 percent in the next three decades (Figure 3.11). Notwithstanding the projected decline, Indonesia, Malaysia, and the Philippines are still anticipated to maintain potential growth above 3.5 percent through 2040. Indonesia's projected slower growth in the baseline scenario stems from weakening capital accumulation as well as lower contributions from labor and human capital (Online annex 2). In contrast, Malaysia and the Philippines are projected to maintain resilient capital accumulation, but face constraints from declining labor inputs and weak TFP growth. On the other hand, Thailand's potential growth could fall to about 2.4 percent by 2050—the lowest among the ASEAN-5 except Singapore—amid demographic pressures and the baseline expectation of continued weak investment rates. While ASEAN-5's growth outlook remains relatively resilient compared to Plus-3 peers, these baseline projections highlight that sustaining productivity growth is crucial for these economies to transition from upper-middle income to high-income status.

6/ Note, however, that despite China's impressive capital buildup, its capital stock per capita remains significantly below frontier economies, indicating considerable room for further capital-driven growth (Figure 3.16).

BCLMV economies as a whole, are also expected to maintain relatively high potential growth above 3.4 percent until 2050—but with limited productivity growth (Figure 3.12). While earlier development stages should allow for more substantial productivity gains, growth across the group remains heavily reliant on capital accumulation, with low TFP contributions that largely reflect historical patterns. Vietnam's long-term growth projections show a better balance between capital and TFP growth over the projection period (Online annex 2). However, under the baseline scenario and following historical trends, Cambodia and Lao PDR's growth in the next three decades will continue to be predominantly driven by capital accumulation, with productivity improvements materializing only gradually. Myanmar's outlook is particularly concerning, with growth heavily dependent on capital accumulation while productivity gains remain notably absent from its growth trajectory (Online annex 2).

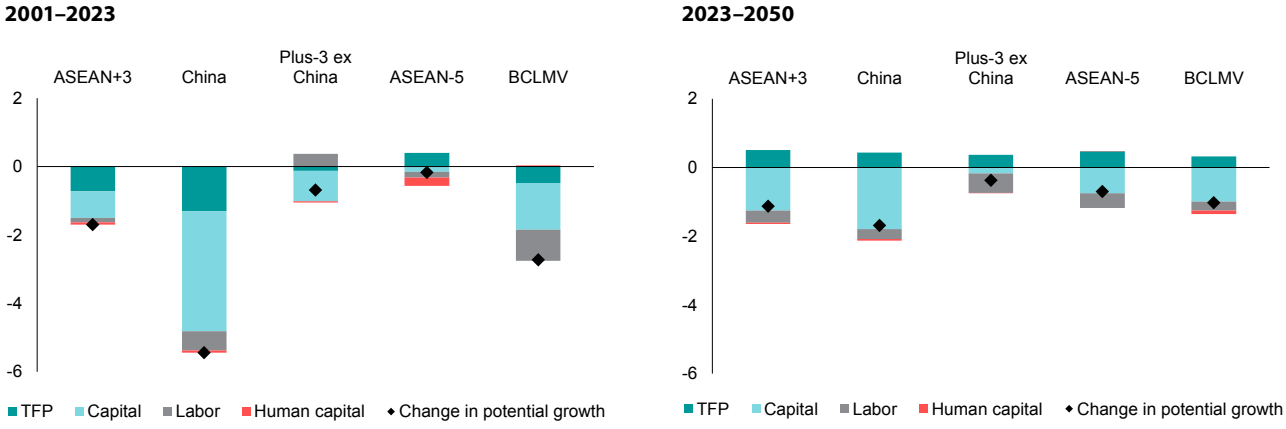
A scenario exercise is also conducted to see how downside risks could affect the ASEAN+3 region's baseline potential growth. The projected decline in potential growth under the baseline could be exacerbated by a variety of long-term risks confronting ASEAN+3 economies. These include geoeconomic fragmentation, and risks emanating from climate change, technological disruptions, and demographic pressures (Figure 1.35).[7] Two adverse scenarios are introduced to the baseline to see how ASEAN+3's potential growth trajectory could be affected if they materialize: one, intensified geoeconomic fragmentation hampering technological diffusion and productivity growth; and two, accelerated demographic aging leading to faster workforce decline.

Figure 3.8. ASEAN+3: Potential Growth Projections, by Factor Input
(Percent, year-on-year)



Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: TFP = total factor productivity. The aggregate growth and components are weighted by purchasing power parity-adjusted GDP. Data for Cambodia is up to 2022 and AMRO staff forecast is used for 2023.

Figure 3.9. ASEAN+3: Decomposition of Decline in Potential Growth
(Percentage points)

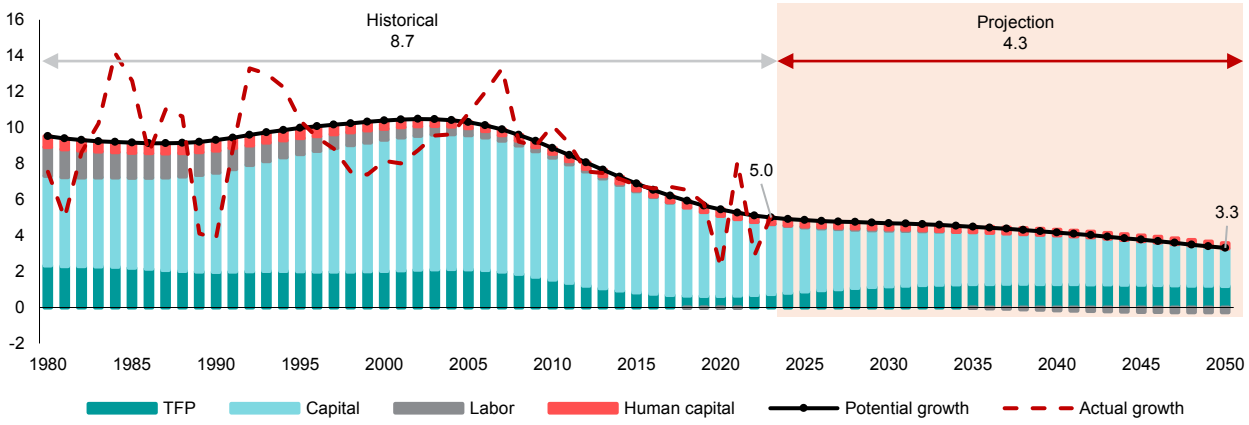


Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; Plus-3 ex China = Hong Kong, Japan, and Korea; TFP = total factor productivity. The decomposition is based on the simple difference in growth and contribution of components over the longest available estimation period between 2001 and 2023, per each group of economies.

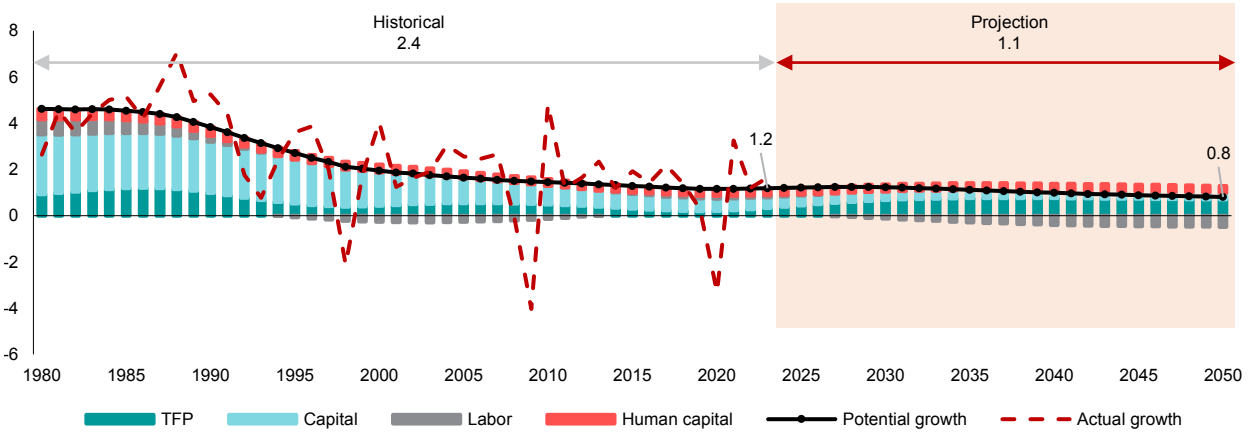
7/ Geoeconomic fragmentation refers to the increasing division of the global economy into distinct blocs, driven by heightened geopolitical tensions and a surge in inward-looking policies aimed at strengthening economic and national security.

Figure 3.10. Plus-3: Potential Growth Projections, by Factor Input
(Percent, year-on-year)

China

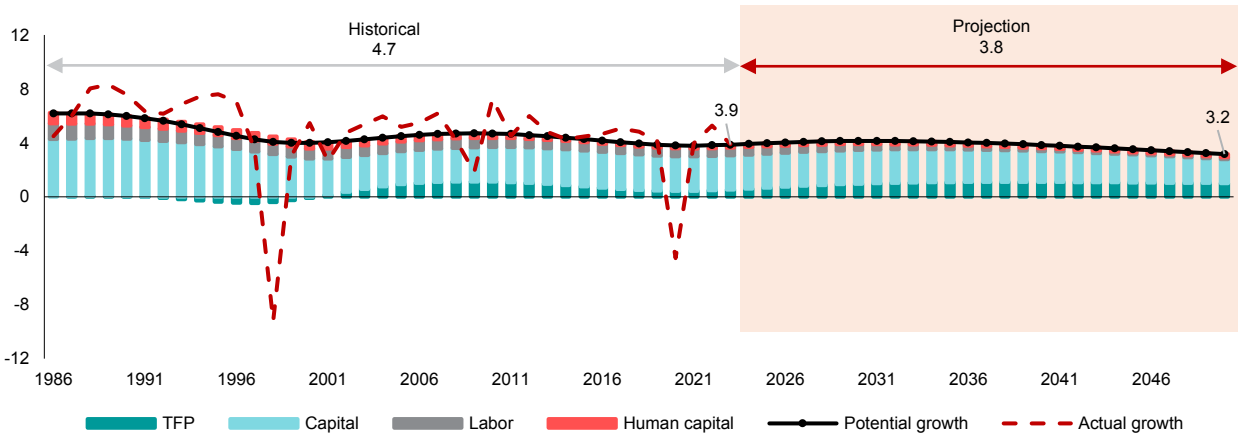


Plus-3 ex China



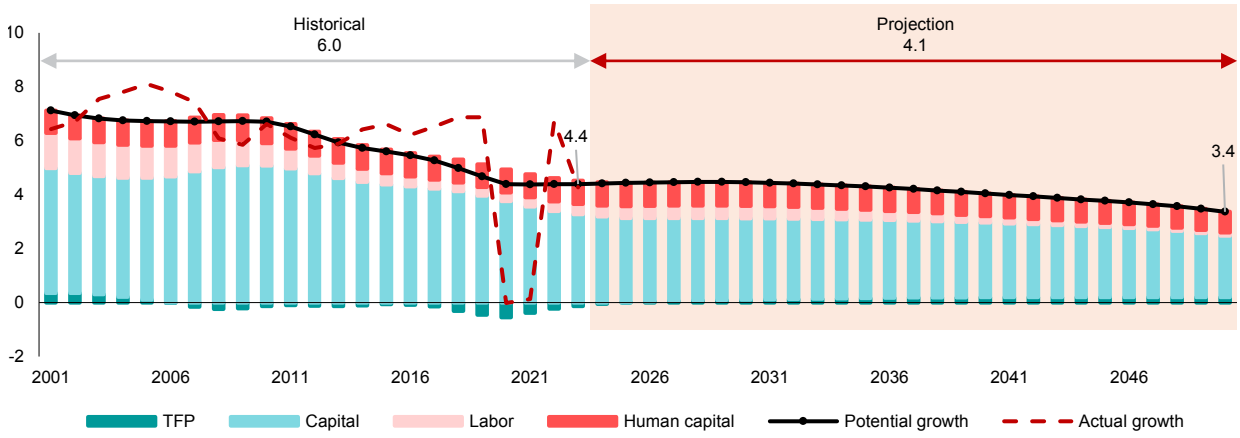
Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: Plus-3 ex China = Hong Kong, Japan, and Korea; TFP = total factor productivity. The aggregate growth and components are weighted by purchasing power parity-adjusted GDP.

Figure 3.11. ASEAN-5: Potential Growth Projections, by Factor Input
(Percent, year-on-year)



Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; TFP = total factor productivity. The aggregate growth and components are weighted by purchasing power parity-adjusted GDP.

Figure 3.12. BCLMV: Potential Growth Projections, by Factor Input
(Percent, year-on-year)



Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; TFP = total factor productivity. The aggregate growth and components are weighted by purchasing power parity-adjusted GDP. Data for Cambodia is up to 2022 and AMRO staff forecast is used for 2023.

The region's potential growth could drop from 2.8 percent to 2.3 percent by 2050 if geoeconomic fragmentation deepens—with ASEAN economies more negatively affected. Geoeconomic fragmentation would reduce the region's growth potential, given its various transmission channels, one of which is through diminished technology diffusion (Góes and Bekkers 2022). A division of the global economy along geopolitical lines would hinder the potential for global technology spillovers and international knowledge sharing, effectively reducing the pace of technological advancement for all economies worldwide (Aiyar and others 2023). In the projection framework, geoeconomic fragmentation is assumed to manifest as a negative shock to the convergence effect for ASEAN+3's long-term TFP growth.[8] In a scenario where deepening geoeconomic fragmentation removes all of the convergence effects for TFP, the ASEAN+3 region's annual growth over the projected horizon will be lower by 0.5 percentage point, on average, relative to the baseline (Figure 3.13). The cumulative impact is substantial, representing a loss of 15 percent of the region's projected output in 2050—larger than the estimated size of Japan's economy that year. The negative impact on ASEAN-5 and BCLMV's potential growth in 2050 would range from 0.5 to 0.8 percentage point, respectively (Figure 3.14). Limited technology diffusion would also limit economies' ability to tackle pressing growth challenges coming from climate change and aging while hindering their transition toward productivity-driven growth.

Similarly, ASEAN+3's potential growth would be reduced to 2.6 percent in 2050—from 2.8 percent in the baseline—should the working-age population decline even more rapidly. Aging is happening faster in the ASEAN+3 region than in many parts of the world; in fact, the region's working-age population will begin to shrink before the current decade ends. Ultimately, this decline will translate into lower labor inputs available for future production (AMRO 2024b). Using the United Nations World Population Prospects (2024) projections under a "low fertility" scenario to illustrate the impact of a more drastic fall in fertility rates across the region, ASEAN+3's average growth potential would be cut by 0.2 percentage point in 2050 (Figure 3.15).[9] The GDP loss in 2050 would be about 5.3 percent of the region's 2050 GDP. While the impact would vary across economies based on their demographic profiles and development stages, these results highlight the critical challenge of boosting productivity and human capital to counterbalance the declining size of the labor force (Table 3.1).[10]

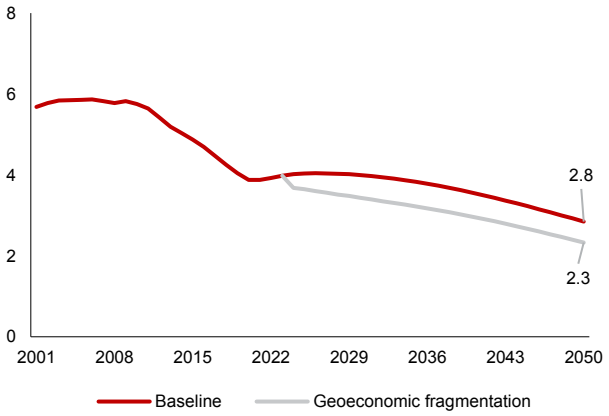
In sum, the growth slowdown experienced by the ASEAN+3 region in recent decades is a consequence of slower capital accumulation, coupled with lower TFP growth. AMRO staff analysis—using growth accounting to decompose historical growth into factor contributions and projecting these trends forward—suggests that strong economic growth requires a balanced interaction between factor accumulation and productivity. While underlying dynamics driving potential growth vary across economies, a key insight emerges that successful transitions to higher-income status took place where capital accumulation was accompanied by strong TFP growth and human capital development (Box 3.2). For many ASEAN+3 economies, however, wide gaps exist on these dimensions in relation to the frontier (Figure 3.16). These, in turn, are among the many factors that constrain room for further productivity growth across ASEAN+3 (Box 3.3). This slowdown in productivity across the region—examined especially from the perspective of structural change—is discussed in detail in the next section.

8/ Geoeconomic fragmentation negatively impacts total factor productivity growth by disrupting trade, hindering technology diffusion, destabilizing supply chains, and creating investment uncertainty—all of which reduce economic efficiency and innovation. To simulate its impact, convergence growth is cut from 0.5 percent to zero percent. Online annex 1 features the details on the convergence effect.

9/ In the low fertility scenario, total fertility is projected to remain 0.5 births below that in the medium scenario of the United Nations World Population Prospects (2024).

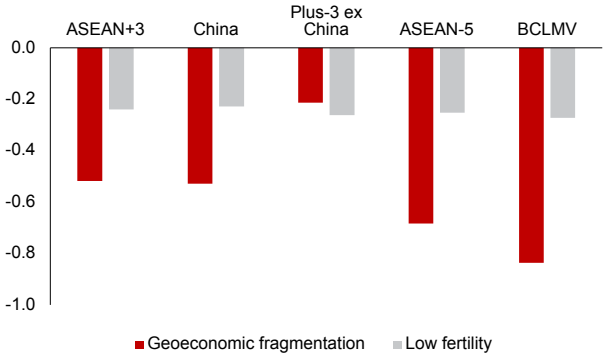
10/ ASEAN+3 economies are at different stages of demographic transition, depending on where their fertility rates and the working-age population shares are. Two-thirds of ASEAN+3 economies are already in the advanced to late stages of the transition (AMRO 2024b).

Figure 3.13. ASEAN+3: Potential Growth Under Geoeconomic Fragmentation Scenario
(Percent, year-on-year)



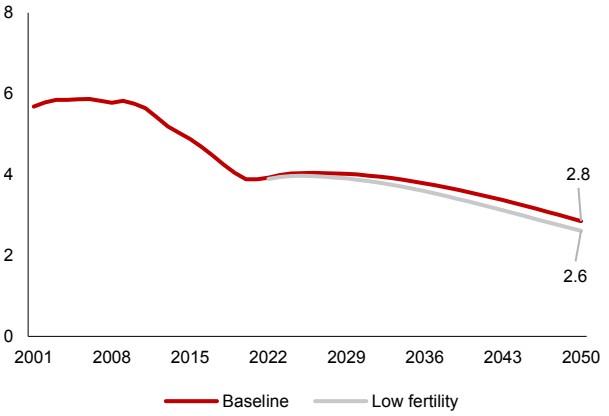
Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: This scenario assumes that there is no convergence effect for ASEAN+3's total factor productivity growth in the projection period.

Figure 3.14. ASEAN+3: Potential Growth Under Low Fertility Scenario
(Percentage point difference from the baseline)



Source: International Labour Organization; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; Plus-3 ex China = Hong Kong, Japan, and Korea. The aggregate decline is the weighted average of the declines in the projected growth of regional economies in 2050.

Figure 3.15. ASEAN+3: Potential Growth Under Low Fertility Scenario
(Percent, year-on-year)



Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: The population projection uses the low fertility scenario as in the United Nations World Population Prospects (2024). In the low fertility scenario, total fertility is projected to remain 0.5 births below the total fertility in the medium scenario.

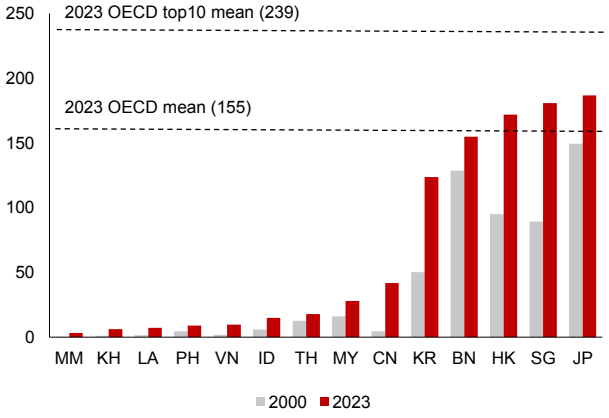
Table 3.1. ASEAN+3: Potential Growth Scenarios
(Percent, year-on-year)

Scenarios	2001–23	2024–30	2031–40	2041–50
	Actual	Projections		
Baseline	**5.3**	**4.0**	**3.8**	**3.2**
Scenario: Geoeconomic fragmentation				
TFP convergence effects fully eliminated due to barriers to technology diffusion	5.3	3.6	3.2	2.6
Scenario: Low fertility				
Accelerated population decline (Fertility rate at 0.5 births below United Nations median assumption)	5.3	3.9	3.6	2.9

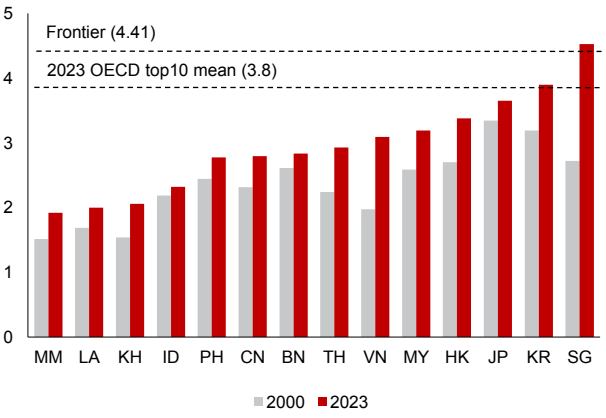
Source: International Labour Organization; International Monetary Fund; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: TFP = total factor productivity. The potential growth is the aggregate regional growth weighted by purchasing power parity-adjusted GDP, averaged over time.

Figure 3.16. ASEAN+3: Selected Physical and Human Capital Indicators
(Thousands; Index)

Capital stock per capita



Human capital



Source: National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; and AMRO staff calculations.
Note: BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. The frontier of the human capital index is set at 4.41, computed as 16 years of schooling with the assumed rate of return to education from Psacharopoulos (1994). The Organisation for Economic Co-operation and Development (OECD) mean excludes Japan and Korea and the OECD top10 mean represents the mean of top10 highest-performing OECD members.

Box 3.2:

Middle-Income Breakthroughs and the Critical Role of Productivity: The ASEAN+3 Experience

How some economies successfully navigate the transition between the various stages of development, while others struggle, has been explored in many empirical studies. This question becomes especially critical for middle-income economies since the growth model necessitates a fundamental transformation to transition well and successfully into an advanced stage of development (Felipe and others 2012; AMRO 2022; World Bank 2024c). The varied experience of ASEAN+3 economies offers particularly rich insights into why some economies can break through this critical threshold while others have remained in their middle-income status for a much longer time.[1]

The distinction between successful transitions and less successful ones can be gleaned from examining how economies rebalance their growth drivers as they develop. Analysis of the growth composition during middle-income phases—based on the World Bank's income classification—reveals marked differences between ASEAN+3 economies that have achieved high-income status and those that are still aspiring to do so.[2] In this context, "successful" economies transitioned from upper-middle-income to high-income status through sustained high growth. This includes Japan, Korea, Singapore, and Hong Kong, which transitioned from upper-middle to high-income status within six to eight years with 7–10 percent average growth during their transitions (Japan: 1961–67; Singapore: 1979–87; Korea: 1988–95; Hong Kong: 1970s-1977). "Aspiring" economies have reached the upper-middle-income threshold and have yet to transition to high-income economies. Malaysia (upper-middle-income since 1992), Thailand (since 2011), China (since 2010), Indonesia (since 2020, but reclassified to lower-middle-income status in 2021 owing to COVID-19, but regained upper-middle-income since 2023), and the Philippines (since 2020) exemplify this.

In ASEAN+3, "successful" and "aspiring" economies differ in their ability to generate total factor productivity (TFP) and human capital growth alongside capital accumulation. While strong capital accumulation has been common in both groups, the key differentiator lies in whether it is accompanied by commensurate productivity growth and human capital development. Successful transitions not only registered significantly higher TFP growth during their upper-middle-income phase but also higher contributions from human capital (Figure 3.2.1). They also maintained a much higher ratio of TFP to capital—with a ratio almost double that of aspiring cases—which could also indicate more balanced growth and more effective resource allocation. These suggest the necessity of policy measures to enhance productivity and facilitate swifter movement toward high-income status. One way this can be achieved is through structural reforms that facilitate the mobility of productive labor (Section III).

Successful transitions to high-income status in ASEAN+3 appear to follow a sequence: strong initial capital accumulation evolving toward generating sustained productivity gains. However, this does not imply a strict sequential order: productivity improvements have occurred alongside capital accumulation, with their relative contribution to growth increasing over time. The extent to which capital investment generates concurrent productivity gains is a key indicator of investment efficiency and resource allocation. In other words, economies need to shift from predominantly investment-driven growth toward productivity-led expansion, and importantly, this should begin before diminishing returns to capital accumulation become apparent.

Ultimately, future growth potential across all ASEAN+3 economies—regardless of their stage of development—will hinge on their ability to generate

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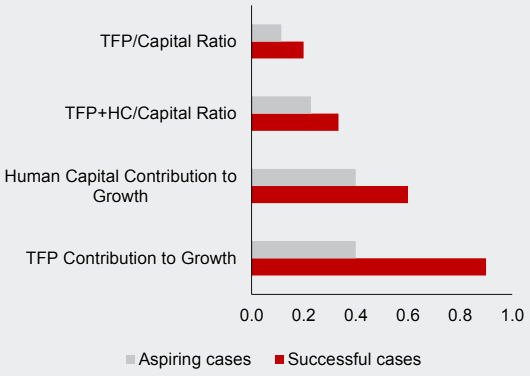
This box was written by Haobin Wang and Yuhong Wu.

1/ The middle-income trap refers to a situation where middle-income countries experience a slowdown in growth and struggle to transition to high-income status. This phenomenon often occurs when the factors that propelled initial growth, such as low-cost labor and capital accumulation, become less effective, and the economy fails to utilize new drivers of growth like innovation and more advanced technologies.

2/ According to the World Bank, upper-middle-income economies are those with a gross national income (GNI) per capita between USD 4,516 and USD 14,005; high-income economies are those with a GNI per capita above USD 14,005.

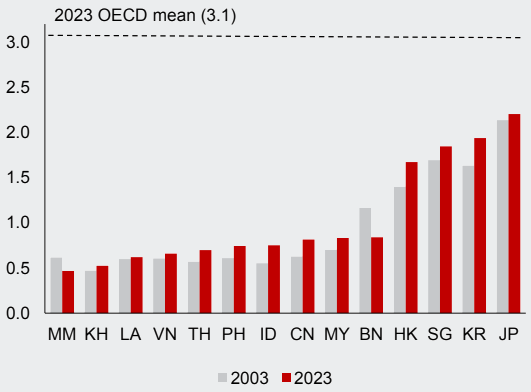
sustained productivity growth. The broad-based decline in capital contribution across subregional aggregates suggests that future growth will depend increasingly on productivity improvements (Figure 3.2.2). However, AMRO staff's long-term projections point to modest TFP contributions across most economies, with significant implications for overall economic growth in the next three decades. In addition, the modest human capital contributions suggested by the long-term growth projections imply that approaches to skills development and education across the region may not be keeping pace with future growth needs, particularly given the increasing importance of human capital for innovation and productivity growth in advanced stages of development.

Figure 3.2.1. Selected ASEAN+3: Growth Components and Factor Mix
(Percentage point contribution to total growth)



Source: International Labour Organization; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: HC = human capital; TFP = total factor productivity. Successful cases include Japan, Korea, and Singapore. Aspiring cases include China, Indonesia, Malaysia, the Philippines and Thailand. The contribution to growth and the component ratios are averaged over the period when economies transitioned from one income category to another.

Figure 3.2.2. ASEAN+3: Comparison of Productivity between 2003 and 2023
(TFP)



Source: International Labour Organization; National authorities via Haver Analytics; Penn World Table; United Nations World Population Prospects; World Bank; AMRO staff calculations.
Note: BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. OECD mean refers to the mean of the Organisation for Economic Co-operation and Development members excluding Japan and Korea.

Box 3.3:

The Global and Regional Decline in Productivity: A Brief Review

The global economy has experienced a broad-based slowdown in productivity growth since the 2007-09 global financial crisis (GFC), affecting about 70 percent of advanced economies and emerging market and developing economies (EMDEs) (World Bank 2020b). The decline has been substantial across all groups: advanced economies saw their annual total factor productivity (TFP) growth fall from 1.3 percent in the pre-GFC period to 0.2 percent after the pandemic, while the EMDEs experienced a drop from 2.5 percent to 0.7 percent over the same period (International Monetary Fund [IMF] 2024c).

Several key factors have contributed to this slowdown. The fundamental drivers that previously supported strong productivity growth have faltered since the GFC: working-age population growth has decelerated; human capital accumulation has stagnated; and the momentum in global value chain upgrading has weakened (World Bank 2020b). Another crucial factor has been the inefficient reallocation of resources both within and between sectors. The reallocation of labor toward higher-productivity sectors—which historically accounted for about two-fifths of overall productivity growth in EMDEs—has weakened significantly since the GFC (World Bank 2020b; IMF 2024c; Section III). Within sectors, the misallocation of capital and labor across firms has reduced TFP growth by 0.6 percentage point annually (IMF 2024c).

Various other explanations have been proposed for the productivity slowdown. Some view it as a transitional phase during the adoption of new digital technologies (Brynjolfsson and others 2021). Others emphasize structural factors: fading gains from information technology (Fernald 2015), declining business dynamism (Decker and others 2016), and credit constraints limiting technology adoption (Duval and others 2020). An alternative perspective links the broad-based slowdown to persistent demand weakness (Summers 2015).

The ASEAN+3 region has shown similar trends, with TFP growth declining by 1 percentage point from 2001 to 2023 (Section II). Most economies in Asia experienced lower average TFP growth in 2015–2022 compared to the previous decade. The slowdown was particularly pronounced in ASEAN-6 (Brunei, Indonesia, Malaysia, the Philippines, Singapore, and Thailand), which recorded zero TFP growth during 2015–2022 (Asian Productivity Organization 2024).

The underlying factors underpinning these trends are multifaceted, with both globally common and region- and economy-specific challenges having been identified. Region-specific challenges include a widening productivity gap between the many regional economies and the global frontier, especially in digital-intensive sectors like electronics (World Bank 2024b). The region's productivity challenge stems from both incentive and capacity constraints. The capability constraints manifest in both human capital and digital infrastructure gaps. While basic mobile broadband is widespread, advanced digital technology adoption remains limited due to uneven high-speed connectivity and insufficient skills. Over half of innovating firms in Indonesia, Malaysia, Myanmar, the Philippines, Thailand, and Vietnam cite a lack of managerial and leadership skills as a challenge when hiring new workers (World Bank 2021). In this thematic chapter of the ASEAN+3 Regional Economic Outlook, the region's declining productivity is explored within the broader context on structural change since the late 1990s.

This box was written by Yuhong Wu.

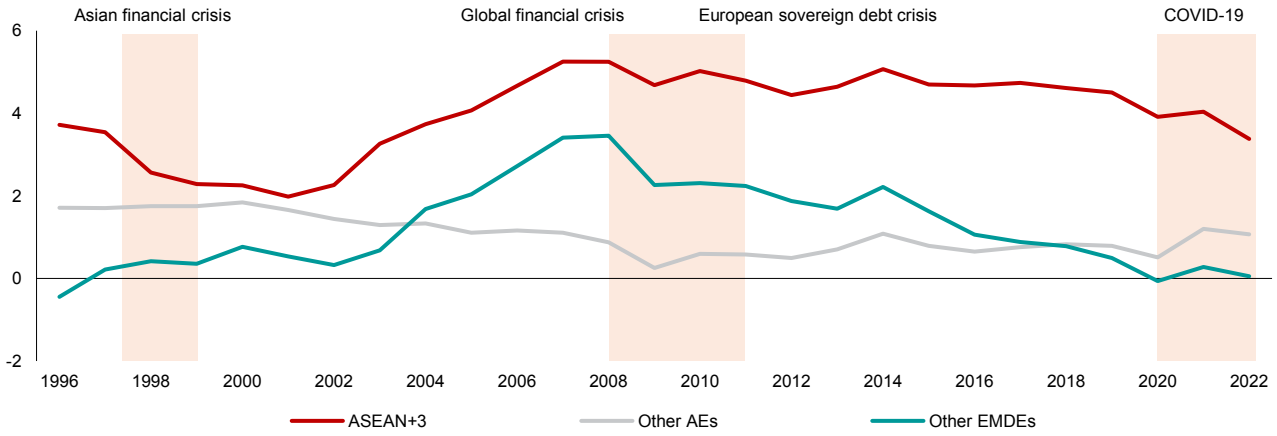
III. Productivity Growth and Structural Change in ASEAN+3

ASEAN+3's productivity growth, while remaining higher than the rest of the world, is slowing down. Over the past three decades, the region has consistently outperformed the rest of the world in terms of labor productivity growth (Figure 3.17). Between 2018 and 2022, productivity growth in ASEAN+3 grew at an annual average of 3.9 percent, at least four times faster than that of other advanced, emerging market, and developing economies. This was largely bolstered by robust investment activity and strong improvement in human capital (Mischke and others 2024; World Bank 2024b). However, this still represents a slowdown in productivity gains compared to the decade prior: from a peak of 5.2 percent in 2008, productivity growth in ASEAN+3 in the aftermath of the global financial crisis has gradually trended down to levels seen in the mid-1990s.

This productivity slowdown in ASEAN+3 was partly because of declining gains from structural change. Labor productivity gains in the region can be decomposed into various components that could shed further insight into the role of structural change in driving productivity trends (Figure 3.18). Over the last three decades, the ASEAN+3 region has expanded the intra-sector component, reflecting increasing productivity *within* a sector.[11] Structural change—which captures the shift of labor from low- to high-productivity sectors—also bolstered the region's rapid productivity growth. This experience sets the ASEAN+3 apart from regions like Latin America or sub-Saharan Africa, where structural change had been growth-reducing at some point (Pagés and others 2010; McMillan and Rodrik 2011; Diao and others 2017).[12] However, in the past decade, structural change has contributed two-thirds of its historical share, driving down productivity across various subgroups in the region (Figure 3.19). Nevertheless, there are a few differences across subgroups: Plus-3 economies saw diminished contributions across both intra-sector and structural change components, while the slowdown in ASEAN-5 economies was primarily because gains from structural change were weaker (Figure 3.20). The recovery of productivity in the BCLMV economies in the past decade was due to structural change, but gains remained subdued compared to the late 1990s and early 2000s.

In this context, the rest of this section systematically analyses ASEAN+3's decelerating productivity growth from the perspective of structural change. Since Arthur Lewis' seminal work on the dual-sector model for development economics, the process of structural change has been key to understanding the underlying dynamics of long-term economic growth for developing economies.[13] In particular, examining structural change in ASEAN+3—and its role in the productivity slowdown—requires analyzing economies' industrialization experience, because the

Figure 3.17. ASEAN+3 and Selected Economies: Labor Productivity Growth
(Percent, five-year moving average)



Source: International Labour Organization; United Nations Industrial Development Organization; United Nations Statistics Division; AMRO staff calculations.
Note: Labor productivity is the aggregated sectoral value added per employment and is a five-year moving average weighted by the value-added at constant price and employment size. "Other advanced economies (AEs)" and "Other emerging market and developing economies (EMDEs)" follow the International Monetary Fund's classification.

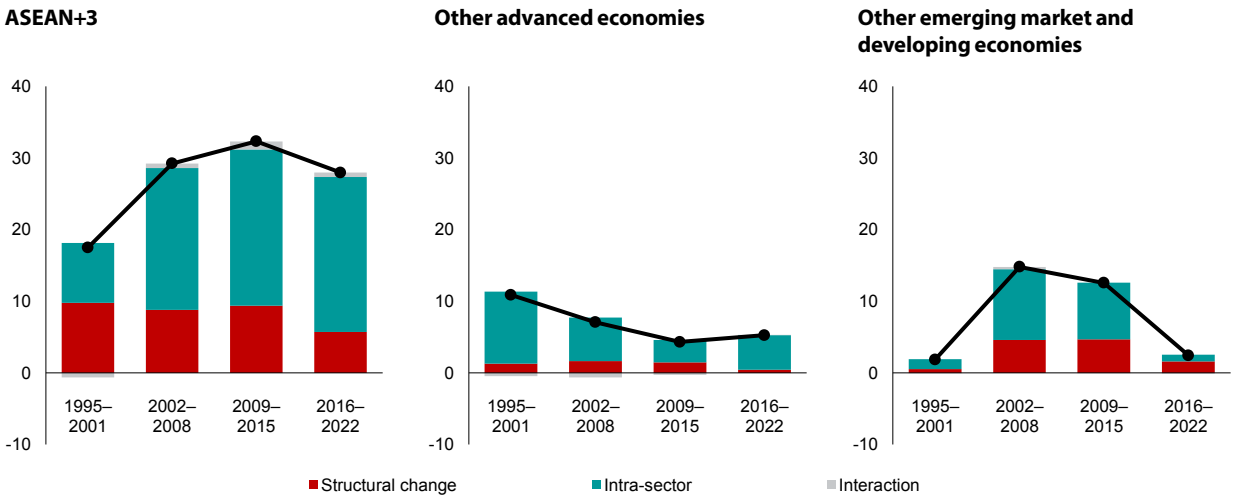
11/ Online annex 3 features the decomposition methodology.

12/ These studies found that while structural change had been growth-enhancing for Asian economies, this was the reverse for some economies in Latin America and sub-Saharan Africa. In particular, some economies underwent structural change that has reduced economic growth since 1990, and this is in part attributed to the movement of labor to less productive activity, including in informal sectors.

13/ This refers to Lewis' "dual economy model," the classic theoretical framework explaining how underemployed workers move from low-productivity, traditional sectors to high-productivity, capital-intensive modern sectors, with the productivity differential driving sufficiently large wage differences. Under this model, the modern sectors' employment increases because of growing labor demand originating from an increase in output. Since the modern-sector wages are higher than in traditional sectors, the modern sector experiences labor influx without increasing wages. Meanwhile, the decrease in employment results in wages increasing in traditional sectors. Once the wage level of both sectors equalize, the labor shift to the modern sector ends (Lewis 1954, 1979).

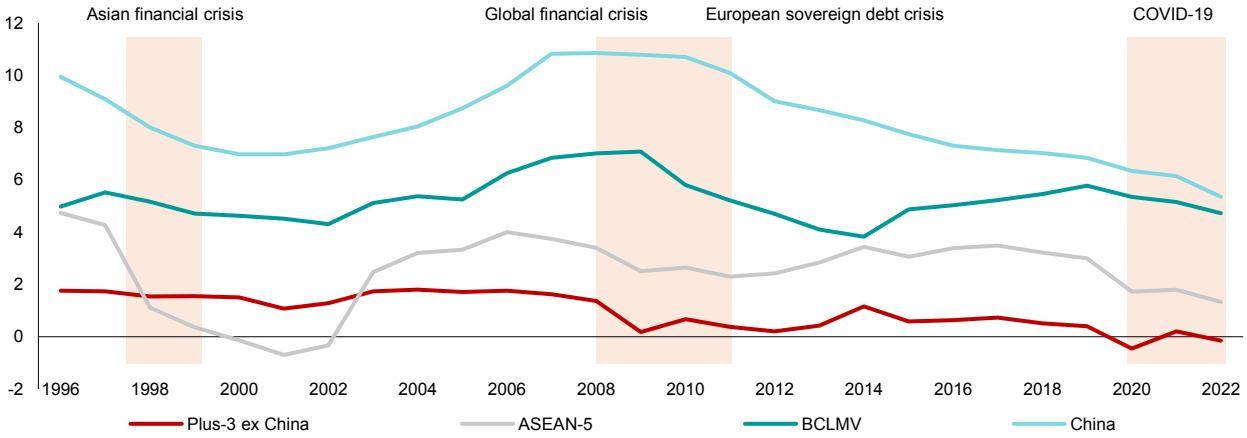
shift toward manufacturing activities from agriculture has historically underpinned successful growth models (Rodrik 2013; Herrendorf and others 2014). However, the experience of structural change, which conventionally saw industrialization followed by a shift to services, has become increasingly diverse (Sen 2023). For instance, some developing economies are reaching "peak" industrialization earlier and at lower income levels, than economies that industrialized earlier (Rodrik 2016; Atolia and others 2020).[14] This phenomenon is largely attributed to increased manufacturing competition owing to globalization, sectoral productivity gaps, and differences in technological advancement across sectors (Huneeus and Rogerson 2020; Sposi and others 2021; Fujiwara and Matsuyama 2024). Examining the evolution of structural change in ASEAN+3 since the 1990s—vis-à-vis global peers and those within the region—helps provide a better understanding of the ongoing decline in ASEAN+3's productivity growth.[15]

Figure 3.18. World: Decomposition of Labor Productivity Gains
(Percent, growth over seven years)



Source: International Labour Organization; United Nations Industrial Development Organization; United Nations Statistics Division; AMRO staff calculations.
Note: The figure decomposes the productivity growth over seven years. The structural change represents the labor shift to the more productive sector. The intra-sector component depicts productivity improvement within the sector. Interaction is positive when labor shifts to the sector where productivity is higher and growing. "Other advanced economies" and "Other emerging market and developing economies" follow the International Monetary Fund's classification. Online annex 3 features the details.

Figure 3.19. ASEAN+3: Labor Productivity Growth
(Percent, five-year moving average)

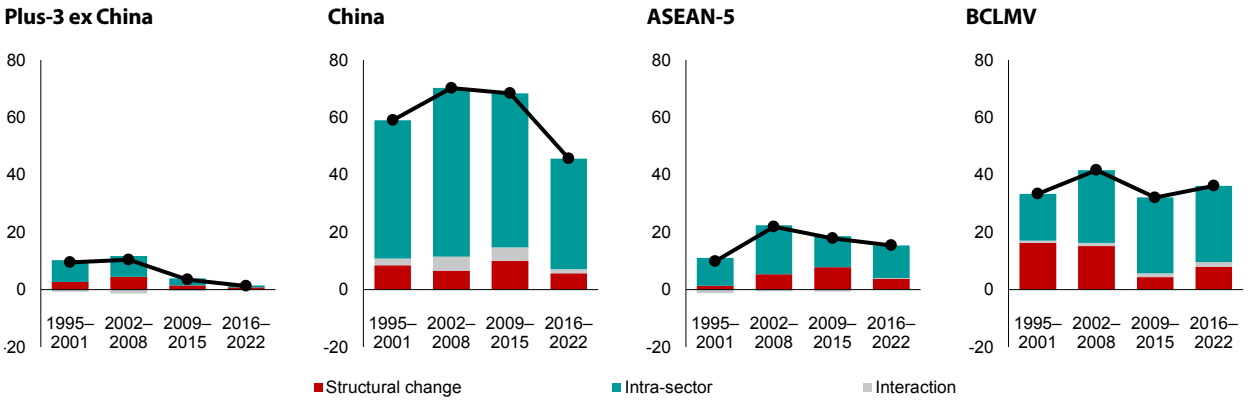


Source: International Labour Organization; United Nations Industrial Development Organization; United Nations Statistics Division; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; Plus-3 ex China = Hong Kong, Japan, and Korea. Labor productivity is the aggregated sectoral value added per employment and is a five-year moving average weighted by the value-added at constant price and employment size.

[14] Rodrik (2016) found that the peak of manufacturing employment and output shares has decreased from the 1960s, 1970s, 1980s, 1990s, and after the 2000s—suggesting an accelerated deindustrialization in recent periods. The study also revealed that since 1990, economies have seen their manufacturing employment and output shares peak at an income level that is only at about 40 percent of pre-1990 levels.

[15] The data used for the analysis covers relevant information for 178 economies from 1995 to 2022, sourced primarily from the United Nations Industrial Development Organization, United Nations Statistics Division, and International Labour Organization. This comprehensive data allows the section to study structural change patterns within and beyond ASEAN+3.

Figure 3.20. ASEAN+3: Decomposition of Labor Productivity Gains, by Subregion
(Percent, growth over seven years)



Source: International Labour Organization; United Nations Industrial Development Organization; United Nations Statistics Division; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; Plus-3 ex China = Hong Kong, Japan, and Korea. The figure decomposes the productivity growth over seven years. The structural change represents the labor shift to the more productive sector. The intra-sector component depicts productivity improvement within the sector. Interaction is positive when labor shifts to the sector where productivity is higher and growing. Online annex 3 features the details.

Analyzing Structural Change in ASEAN+3: The Frameworks

To facilitate analysis, ASEAN+3 economies can be categorized under three stages of structural change: early, middle, and late. Expanding on the methodology in Baymul and Sen (2020), these categories combine information across two components: each economy's (1) employment shares of agriculture, manufacturing, and services; and (2) sectoral value-added shares to total output (Online annex 4). These are compared across time to identify phases of structural change.[16] An economy is in the "early stage" when agriculture is the dominant economic activity; in the "middle stage" when economic activities are shifting away from agriculture to manufacturing; and eventually, in the "late stage" once services dominate. As of 2022, most of the region's economies are considered to be in the middle or late stages of structural change—highlighting the rapid transformation that the region has undergone since 1995 (Figure 3.21).[17] Conventionally, the higher the economies' income, the more advanced they are in structural change (Figure 3.22).[18] For the purpose of analysis, China is categorized separately: its unique economic characteristics, especially its massive size, differentiate it in many ways from the rest of the regional economies. As a continental size economy, China comprises many provinces that are very diverse in terms of levels of economic development and hence, hard to aggregate and categorize. For example, with its share of agriculture employment being higher than manufacturing, it would be identified as the middle stage in the framework used. However, the technological capabilities of China in many industries within manufacturing are considerably more advanced than most middle-stage peers in ASEAN+3 and are at the forefront of advanced economies (AMRO 2024b).[19] From this perspective, China can be more reasonably identified to be late-stage.

In addition, the process of industrialization can be categorized into five phases. As in Kim and Sumner (2019), an economy can be at (1) "primary industrialization," when employment shifts to the manufacturing sector; (2) "upgrading industrialization," when the manufacturing value-added share increases with more labor influx; (3) "advanced industrialization," when manufacturing become less labor-intensive; (4) "secular deindustrialization," when the economy shifts to other sectors beyond manufacturing; and lastly, (5) "stalled industrialization," when the share of

16/ Various studies have attempted to group economies to analyze the process of structural change. Chenery and Syrquin (1975) once classified economies by trade specialization and policy regime. However, given the evolving landscape of trade policies and goods, the most recent approaches exemplified by Baymul and Sen (2020) distinguish economies based on the sectoral composition of employment. In this approach, the "stage" of structural change generally correlated with income levels, with structurally developed economies being the wealthiest (Sen 2023). Online annex 4 features the detailed criteria of the framework.

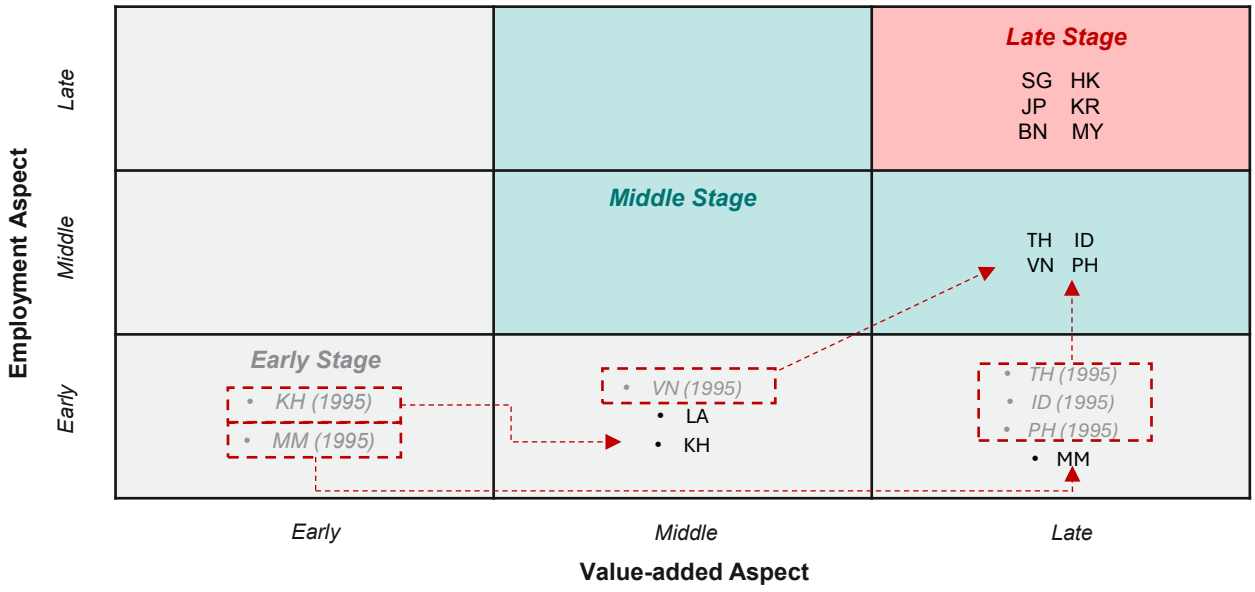
17/ While Brunei is a resource-rich economy and relies predominantly on its oil and gas industry rather than services, the same criteria were systematically applied across all economies for analytical consistency, which identifies Brunei as a late-stage economy. Box 3.1 provides a more specific discussion on Brunei's long-term growth experience and challenges. Online annex 4 features the comparison with other regions and the historical evolution in individual ASEAN+3 economies.

18/ However, as in Sen (2023), there could be a few caveats: for example, the income level in the top quartile of one stage could be higher than the bottom two quartiles of the proceeding stage. In the region, this is the case for Malaysia, which is categorized as a late-stage economy as of 2022, despite having a lower income level than some economies in the middle stage.

19/ For example, China is ranked 12th globally in terms of various innovation metrics, exceptional research credentials, and substantial contribution to patent applications, reflecting its ability to operate at the frontier of technological advancement.

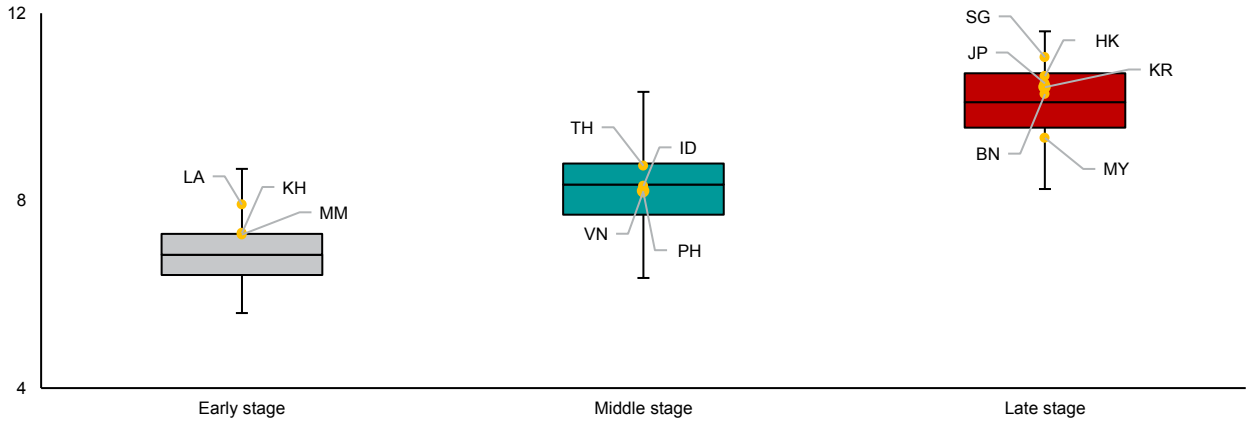
manufacturing in total employment or output are no longer increasing. Over the last three decades, ASEAN+3 has been upgrading its industrialization, maintaining positive growth in both manufacturing value-added and employment shares (Figure 3.23). This, in part, reflects ASEAN+3's strong comparative advantage in manufacturing that the region has built and established over the years (Rodrik 2016; Kruse and others 2023). However, some emerging market and developing economies also appeared to have been experiencing stalled industrialization. In contrast, many advanced economies have experienced secular deindustrialization with significant reductions in manufacturing's share of total employment and output.

Figure 3.21. ASEAN+3: Stage of Structural Change, 2022



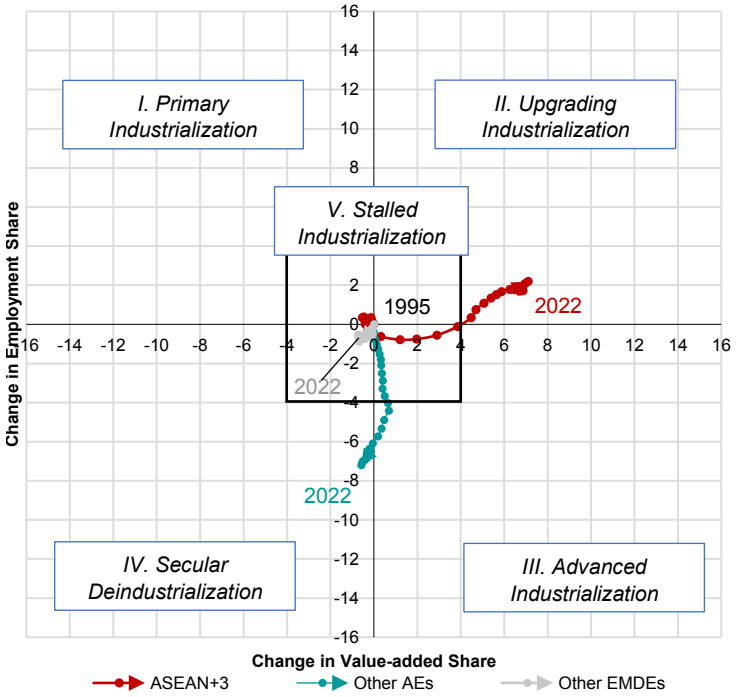
Source: International Labour Organization; United Nations Industrial Development Organization; United Nations Statistics Division; AMRO staff calculations.
Note: BN = Brunei; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. China is not listed for its unique economic characteristics. Economies without parenthesis have remained in the same stage since 1995. Online annex 4 features the details.

Figure 3.22. World: Income Level, by Stage of Structural Change, 2022
(Real GDP per capita, natural log)



Source: United Nations Statistics Division; AMRO staff calculations.
Note: Data covers 178 economies. The early stage includes 39 economies, the middle stage 70 economies and the late stage 69 economies. Online annex 4 features the details.

Figure 3.23. ASEAN+3 and Selected Economies: Phases of Industrialization, 1995–2022



Source: Kim and Sumner (2019); Alisjahbana and others (2022); International Labour Organization; United Nations Industrial Development Organization; United Nations Statistics Division; AMRO staff calculations.
Note: Value-added and employment shares are five-year moving averages weighted by the GDP at constant price and employment size. "Other advanced economies (AEs)" and "Other emerging market and developing economies (EMDEs)" follow the International Monetary Fund's classification. Online annex 5 features details.

Combining these two frameworks of structural change and stages of industrialization reveals three key patterns behind recent growth and productivity dynamics across ASEAN+3 economies: (1) some economies are experiencing stalled industrialization; (2) productivity gaps in ASEAN+3 economies relative to aspirational peers are wide, and continue to widen; and (3) there appears to be a lot of room for transformation by shifting to the services sector—but gains are constrained by low skill levels, which in turn dampen higher value-added generation. These are elaborated in the subsequent sections.

Industrialization Stalling in Some Economies

While deindustrialization has yet to be seen in ASEAN+3 as a whole, this masks the diversity of experience across economies. The overall trend in ASEAN+3's industrialization is heavily influenced by the weighting of China, which transitioned to "upgrading industrialization" in the early 2000s from "primary deindustrialization" in the late 1990s, following its accession to the World Trade Organization. Elsewhere in the region, industrialization patterns differ—highlighting diverse experiences with structural change. Middle-stage economies, for example, are experiencing stalled industrialization: the value-added share of manufacturing has declined since 2009, while the sector's share of employment gradually grew (Figure 3.24). This experience coincided with overall weaker manufacturing activities in many ASEAN economies since the global financial crisis, alongside slower expansion in global value chains and growth in major advanced economies (AMRO 2024b).[20] In contrast, those in the early stage consistently grew both manufacturing value-added and employment shares—partly facilitated by strong inflows of FDI over the years.[21] Economies in the late stage also saw an increased manufacturing value-added share between 1995 and 2022, which—if taken alongside the declining employment share of manufacturing—indicates enhanced manufacturing productivity.

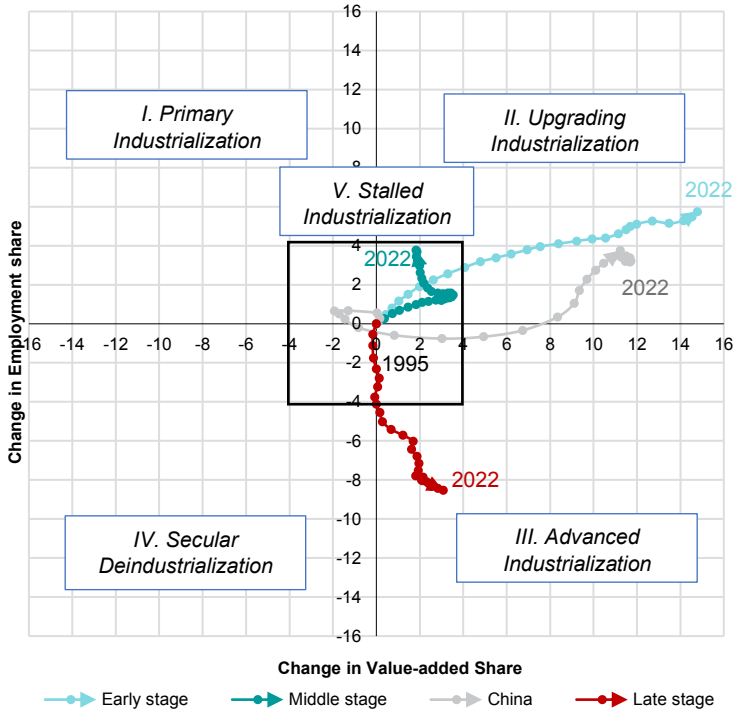
These different industrialization experiences are also consistent with the varying levels of measured economic complexity across ASEAN+3 economies. Economic complexity, in some ways, quantifies the knowledge within the economy to produce a diverse range of products, including ones that require sophisticated know-how (Hidalgo and Hausmann 2009). Complexity tends to increase as an economy advances through the different stages of

20/ Paragraph 22 explores some of the global factors underlying the slowdown in the manufacturing sector. Other studies also highlight elements such as the lack of homegrown multinational corporations, the overreliance on commodity sectors, constrained access to finance, and the lack of skilled workers as region-specific conditions. (Alcorta and Nixson 2011; Haraguchi 2009; Hsieh 2011; Tho 2013; Sen 2016; Kumagai 2019; Verico 2021; Lee 2022; Balaoing-Palkmans and Mendoza 2024; Madeira 2024).

21/ Online annex 5 features the industrialization patterns of individual ASEAN+3 economies.

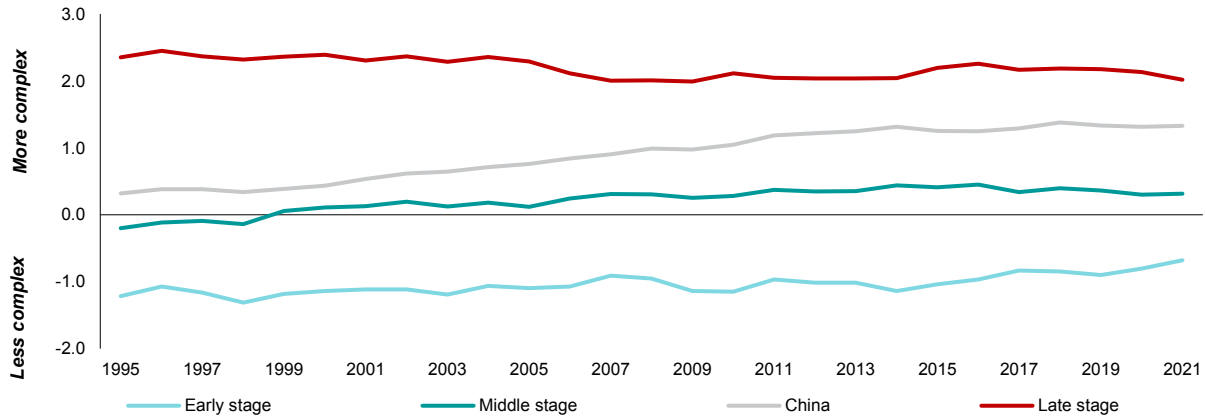
structural change: late-stage economies in the region exhibit higher complexity, which they have maintained in the last two decades (Figure 3.25). In middle-stage economies, where industrialization has stalled, complexity appears to have stagnated at a low to middle level. In contrast, early-stage economies and China—those that experienced growing industrialization—have improved their capacity to produce a more diverse array of products although the complexity of early-stage economies remains at a relatively low level. This suggests a virtuous cycle of industrialization enhancing production know-how, which further bolsters industrialization (Hausmann and Hidalgo 2010). Nevertheless, significant room exists to move toward higher-value products, especially for early-stage industrializing economies (Box 3.4).

Figure 3.24. ASEAN+3: Phases of Industrialization, 1995–2022



Source: Kim and Sumner (2019); Alisjahbana and others (2022); International Labour Organization; United Nations Industrial Development Organization; United Nations Statistics Division; AMRO staff calculations.
Note: Value-added and employment shares are five-year moving averages weighted by the GDP at constant price and employment size. See Figure 3.21 for the economies in each structural change stage. Online annex 5 features the details.

Figure 3.25. ASEAN+3: Economic Complexity, by Stage of Structural Change
(Index)

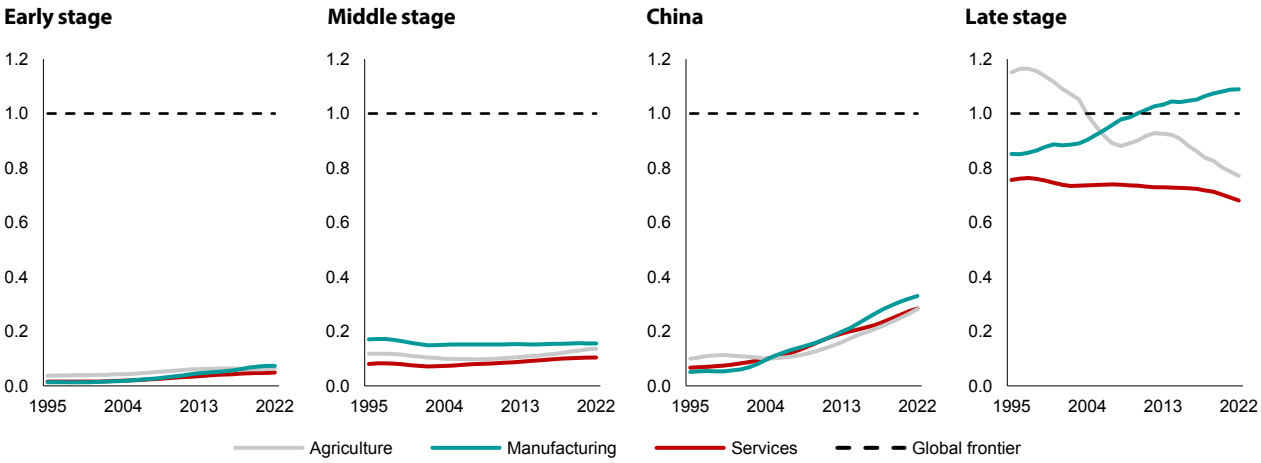


Source: The Growth Lab at Harvard University (2019); AMRO staff calculations.
Note: Weighted average of economic complexity index. See Figure 3.21 for the economies in each stage of structural change.

Wide Productivity Gaps Against the Frontier

The diverse pace of structural change across ASEAN+3 economies also reflects their long distance from the global productivity frontier. In the last three decades, China has made the most strides in narrowing the gap with frontier economies—proxied by selected OECD economies—and this also coincides with its progress of structural change. Yet, even China is only at about 30 percent of the distance from the global productivity frontier (Figure 3.26).[22] Similarly, early-stage economies have also gradually made some improvements—but have only reached a tenth of the frontier benchmark. Middle-stage economies, on the other hand, showed modest improvements in the productivity of their services and agriculture sectors, but that of the manufacturing sector has stagnated—which is consistent with the experience of stalled industrialization during this period (Figure 3.24). Late-stage economies have seen the productivity of their manufacturing outpace the frontier; however, the productivity of services and agriculture has continuously declined. This suggests that productivity improvements in these sectors have not been apace with advancements in frontier economies. To some extent, this widening gap is consistent with the falling gains from the intra-sector productivity growth (Figure 3.20).

Figure 3.26. ASEAN+3: Labor Productivity Distance to the Frontier, by Stage of Structural Change
(Index, distance to the frontier)



Source: International Labour Organization; United Nations Industrial Development Organization; United Nations Statistics Division; AMRO staff calculations.
Note: Labor productivity is measured as the sectoral value added per employment and is a five-year moving average weighted by the value-added at constant price and employment size. Global frontier refers to the weighted average of non-ASEAN+3 OECD members. See Figure 3.21 for the economies in each structural change stage. Online annex 6 features the details.

Services Development Still Lagging

Substantial room exists to shift toward the services sector to help enhance ASEAN+3's productivity. While manufacturing will retain a key role in helping drive ASEAN+3's structural change, the services sector is an equally pivotal source of economic growth and job creation. The sector currently employs approximately half of the region's workforce—from only 26.8 percent in the mid-1990s. In some ASEAN+3 economies, however, the share of services to total employment is still smaller than in "stage peers," defined as non-ASEAN+3 economies in the same stage of structural change (Figure 3.27). This potential for shifting workers to services becomes even bigger when compared with the "aspirational peers"—proxied by economies in the next stage of structural change. From the point of view of value-added, the share of services for ASEAN+3 is also smaller—and its catch-up with peers has been especially slow.[23] As of 2022, these gaps relative to aspirational peers range from as small as 7.5 percentage points (late-stage) to as wide as 27.0 percentage points (middle-stage) in employment shares, and as high as 20 percentage points for value-added, especially for middle-stage economies. Narrowing these distances—particularly in higher value-added services—can lift economy-wide productivity, especially as services become increasingly integrated across multiple sectors as an intermediate input (Nayyar and others 2021). Moreover, demand for services could expand as ASEAN+3 economies increase income levels (World Bank 2023b).

The wide gap in services value-added across ASEAN+3 against peers has come about because the shift in employment from other sectors has gone mostly to lower productivity services. Between 1995 and 2022, services' share of employment in the region increased by 65.2 percent, on

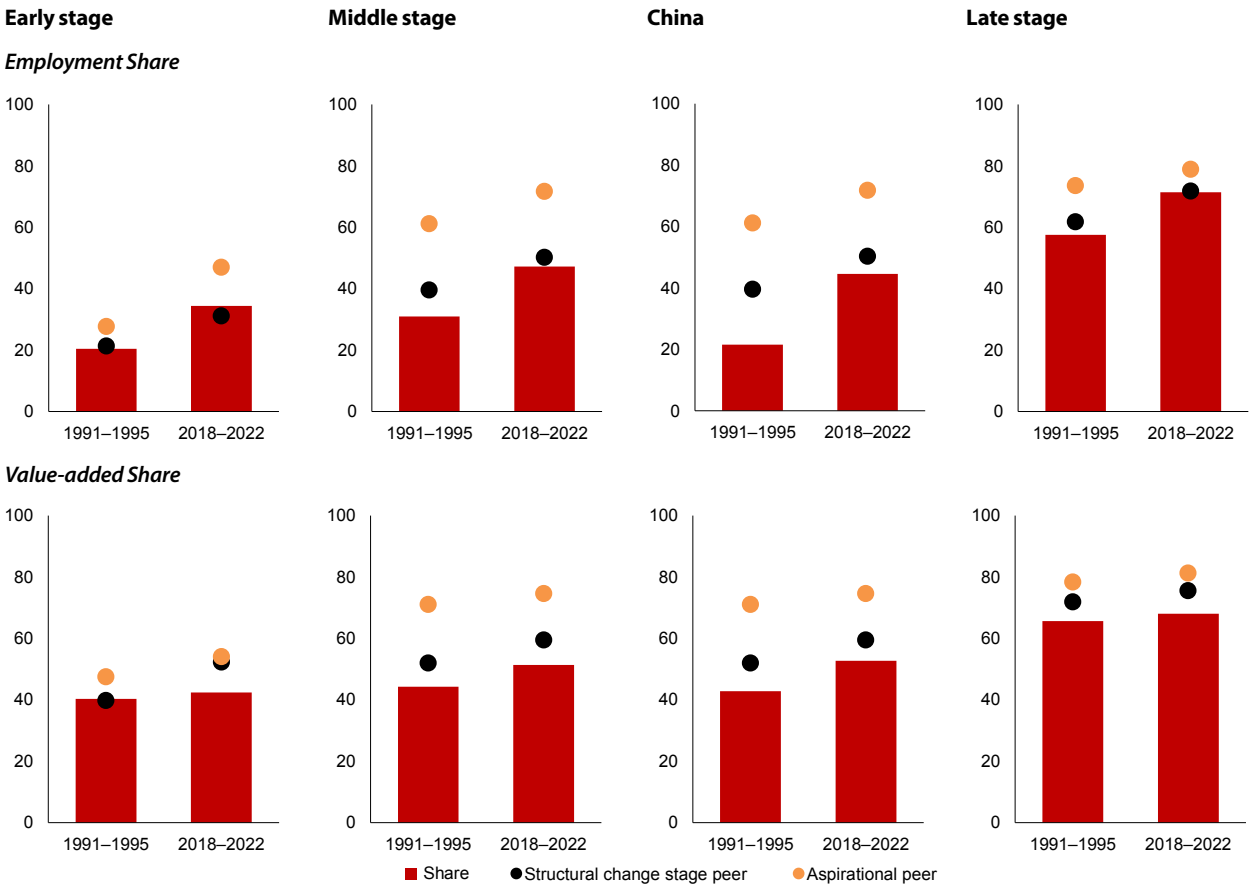
22/ Selected OECD economies refer to the 36 members, excluding ASEAN+3 economies (Japan and Korea). Online annex 6 features the full list of frontier economies and the distance to the frontiers of individual ASEAN+3 economies.

23/ Online annex 7 features the peer comparison of individual ASEAN+3 economies.

average—but its share to value-added has only increased by 12.3 percent. Despite the substantial labor shift to the services sector, most had gone to subsectors such as retail and transport—where the skill levels are relatively lower and labor-intensive than those demanded in industries such as professional and business services (Figure 3.28). About 75 percent of ASEAN+3's services sector employment remains in low- and medium-skill positions (Figure 3.29). This share has been relatively unchanged for decades, especially for economies in the initial stages of structural change.

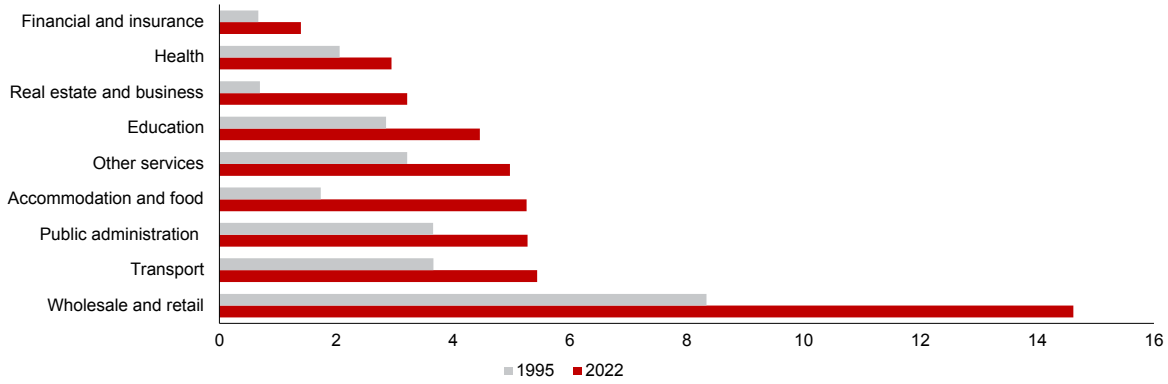
Particularly in early-stage economies, the proportion of low and medium-skilled service workers has even increased. Consequently, the value added by the services sector to the total economy did not grow as rapidly as the influx of labor, which in turn slowed productivity gains. Some late-stage economies in the region have been able to increase the proportion of highly-skilled service workers (Figure 3.30). Yet, this group still lags other advanced economies by about 10 percentage points as of 2022, suggesting room for further improvement.

Figure 3.27. ASEAN+3: Services Employment and Value-added Shares Relative to Peers
(Percent)



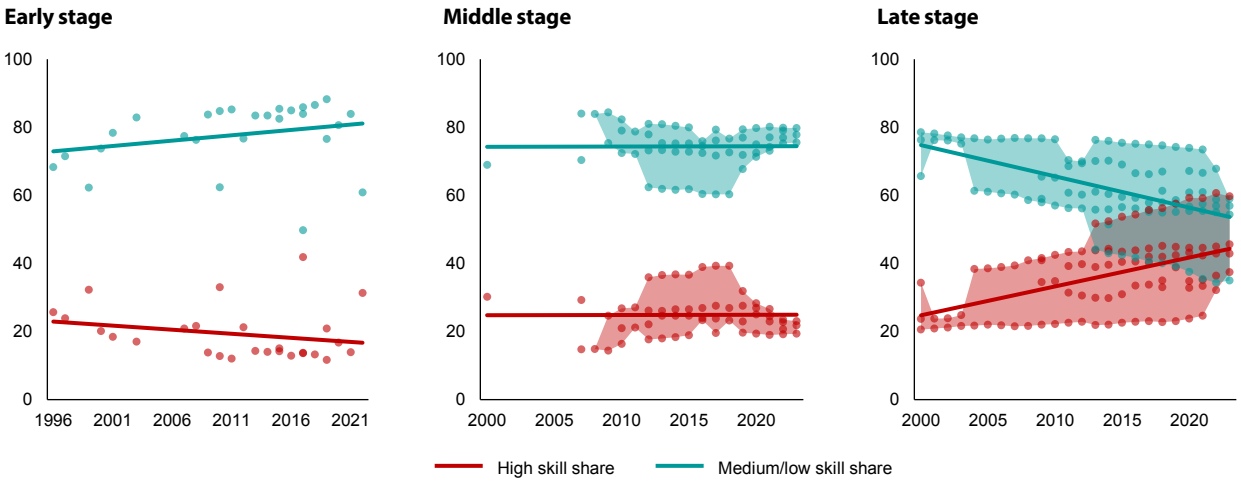
Source: International Labour Organization; United Nations Industrial Development Organization; United Nations Statistics Division; AMRO staff calculations.
Note: Employment and value-added shares are five-year moving averages weighted by employment size and GDP at constant price. Structural change peer refers to the weighted average of the economies (excluding those in ASEAN+3) in the same structural change stage. Aspirational peer is the weighted average of the economies (including those in ASEAN+3) in the next structural change stage. For the late stage, the United States is the aspirational peer. See Figure 3.21 for the economies in each structural change stage. Online annex 7 features the details.

Figure 3.28. ASEAN+3: Services Employment, by Sector
(Percent of total employment)



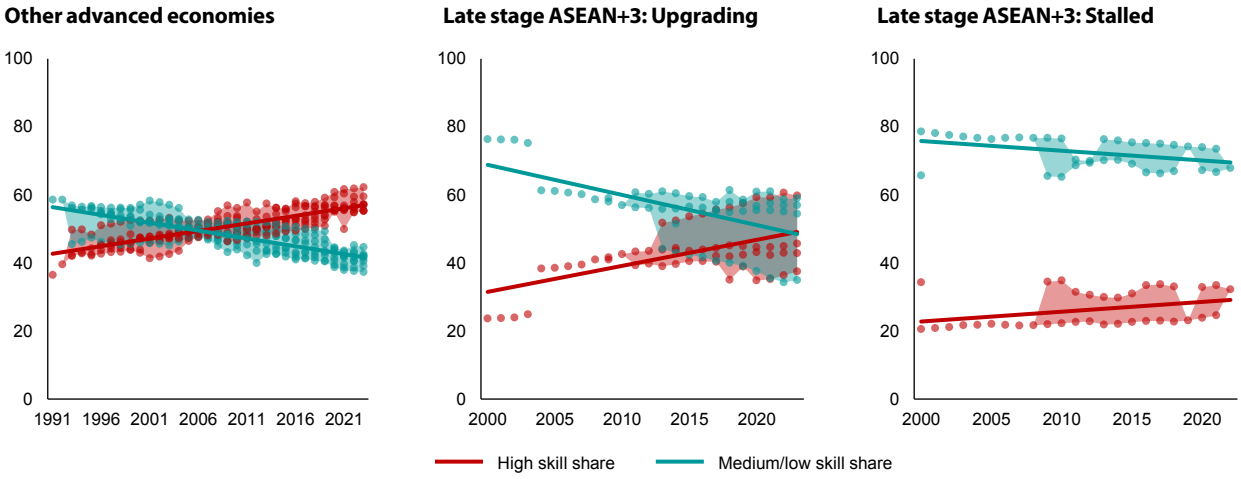
Source: International Labour Organization; AMRO staff calculations.
Note: Employment share is a five-year moving average, weighted by the employment size.

Figure 3.29. ASEAN+3: Services Sector Employment, by Skill Level
(Percent of total services employment)



Source: International Labour Organization; AMRO staff calculations.
Note: Early-stage economies include Cambodia, Lao PDR, and Myanmar; middle-stage includes Indonesia, the Philippines, Thailand, and Vietnam, while late-stage includes Brunei, Hong Kong, Japan, Korea, Malaysia, and Singapore following the classification in Figure 3.21.

Figure 3.30. Selected Economies: Services Sector Employment, by Skill Level
(Percent of total services employment)



Source: International Labour Organization; AMRO staff calculations.
Note: Advanced economies include Iceland, Israel, Netherlands, Norway, Sweden, Switzerland, the United Kingdom, and the United States. Late-stage ASEAN+3 economies are further divided into "upgrading" (Brunei, Hong Kong, Korea, and Singapore) and "stalled" economies (Japan and Malaysia), based on whether high-skill service employment shares are increasing relative to medium/low-skill shares.

In sum, the slowdown in ASEAN+3 productivity growth over the last three decades can be partly explained from the perspective of structural change that the region was going through. Except for Cambodia, Lao PDR, and Myanmar, the region's economies are now in the middle to late stages of structural change. Broadly, while ASEAN+3 continues to industrialize, the aggregate experience masks the diversity of trends within the region:

- ***Economies in the early stage of structural change.*** In these economies, employment shifted rapidly from agriculture to other sectors. In contrast to the global deindustrialization trend, the early-stage economies saw a continued increase in both the manufacturing value-added and employment shares. Concurrently, the capability to produce a broader set of products has expanded. Their distance to the productivity frontier has also narrowed. However, the economic structure remains less complex, with a significant productivity differential relative to the global frontier. The services sector exhibits lagging performance versus peers, with lower shares in value-added and a heavy concentration in low to medium-skilled occupations.

- ***Economies in the middle stage of structural change.*** In these economies, industrialization stalled particularly after the global financial crisis with the slowdown in the US and Europe, and the rebalancing of growth in the region towards domestic demand. The manufacturing sector's value-added and employment shares have plateaued, and improvements in economic complexity have stagnated. Concurrently, the group has shifted strongly toward the services

sector, reallocating employment from agriculture and modestly increasing the former's value-added share. However, the influx of employment has primarily been toward low- and medium-skilled services, leading to a relatively slow improvement in productivity. As such, the productivity of the services sector is currently only at about one-tenth of the frontier benchmark.

- ***China.*** Structural change has progressed along both the employment and value-added dimensions. Industrialization continued, and the economy rapidly increased in complexity, especially as it deepened its integration into global value chains. China's robust structural change has corresponded with its emergence as a global innovation and technological center. Over the past three decades, China has been narrowing its distance to the productivity frontier across all three sectors, although substantial room for convergence remains. In addition, the value-added share of the services sector continues to trail its peers.
- ***Economies in the late stage of structural change.*** In these economies, employment has shifted toward services from agriculture and manufacturing. Industrialization has also continued, with manufacturing increasing its value-added share as activities became less labor-intensive. Consequently, manufacturing productivity has improved to outpace the global frontier. However, the productivity gap of the services sector relative to the frontier has widened, in part owing to the higher share of low- and medium-skilled service workers—in contrast to the transition to high-skilled services observed in other advanced economies.

This heterogeneity carries important and different policy implications for different groups of economies, in order to reverse the observed slowdown in productivity and chart a higher growth trajectory for the ASEAN+3 region moving forward.

Box 3.4:

Export Competitiveness in Lao PDR

Despite having a geographical disadvantage, Lao PDR goods exports have grown significantly in the past decade. As the only landlocked economy in Southeast Asia, Lao PDR has no direct access to maritime trade, which carries 90 percent of global goods trade (Organisation for Economic Co-operation and Development 2022).[1] The economy faces challenges in expanding its trade network and deepening its integration into global value chains compared to other ASEAN+3 economies. In 2021, Lao PDR's export value was the lowest in ASEAN and represented a mere 0.03 percent of global goods trade. Still, it has made firm progress in strengthening its export performance: export values have tripled since 2010, growing by 12.8 percent on average annually, the second-fastest in ASEAN (Figure 3.4.1). This is also consistent with Lao PDR's continuous improvement in the economic complexity index, although its production capability has generally remained in the less complex zone (Figure 3.4.2).

Between 2010 and 2021, Lao PDR increased its export competitiveness, mostly in lower value-added products. In 2021, the economy had a comparative advantage in exporting 98 types of goods (out of 529 types of exported goods), increasing from 83 types in 2010, and it was most competitive in exporting (1) chemical wood pulp; (2) vegetable products; (3) natural rubber latex; (4) electricity; and (5) live bovine animals.[2] However, the number of competitive goods could fluctuate every year: for instance, other economies' export promotion or import substitution measures could make Lao PDR exports less attractive. In addition, Lao PDR's share of competitive goods in the total number of goods exported decreased as the economy continued to broaden the types of goods it exports (Figure 3.4.3).

Lao PDR is among the top competitive exporters of primary (and lower value-added) goods in ASEAN, including food and live animals; beverages and tobacco; crude materials; and minerals and fuels (Figure 3.4.4). However, the economy lags in exporting higher-value-added goods—like chemicals and machinery equipment—reflecting its nascent economic development stage. Lao PDR's negative score for economic complexity also implies limited capacity to produce products that require specialized knowledge (Figure 3.4.2).

Furthermore, the economy's export competitiveness has not diversified. For instance, among the 64 food and live animal products that Lao PDR exported in 2021, only 25 were deemed as competitive, while the majority of its exported food and live animal goods were not (Figure 3.4.5). Moreover, Lao PDR's overall competitiveness in the food and live animal product group is primarily supported by only the top three competitive food and live animal goods—vegetables, live bovine animals, and bananas—constituting 62.7 percent of the product group's total export value.

Lao PDR also remains dependent on a few trading partners, making its export performance highly susceptible to demand conditions in these economies. Despite expanding its trade network from 74 to 95 economies between 2010 and 2021, Lao PDR's export performance is heavily reliant on three markets—Thailand, China, and Vietnam—which collectively account for over 80 percent of its exports. This high concentration on three partners means that economic fluctuations and policy changes in these markets could substantially disrupt Lao PDR's export performance.

A well-thought-out export promotion strategy would help sustain and enhance Lao PDR's export growth momentum. While the Laotian government's trade facilitation measures under the 9th Five-Year National Socio-Economic Development Plan provide a foundation, a clear road map for enhancing export competitiveness remains crucial. One strategy could be to incrementally improve competitiveness, initially prioritizing products of lower-value-added sectors like food and live animals (which are closer to the competitive threshold), rather than immediately promoting products of higher-value-added sectors

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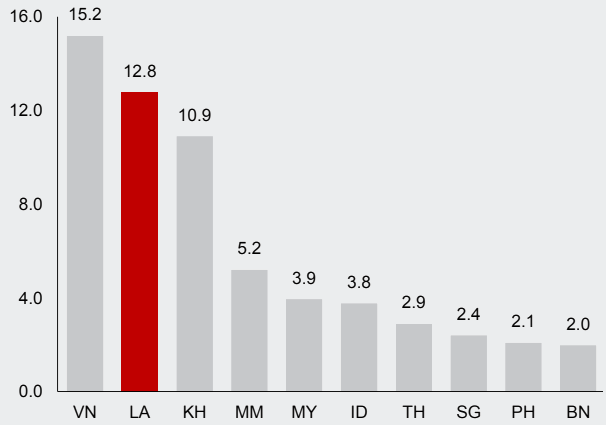
This box was written by Naoaki Inayoshi, based on Inayoshi (forthcoming).

1/ Maritime transport totals about 11 billion tons of cargo per year and is the main transport mode for global goods trade (World Bank 2020a).

2/ Competitiveness is measured using the revealed symmetric comparative advantage (RSCA) of goods that Lao PDR exports. It is measured at various product levels: from Standard International Classification 1 to 4 digits level. See Inayoshi (forthcoming) for the detailed methodology and assessments.

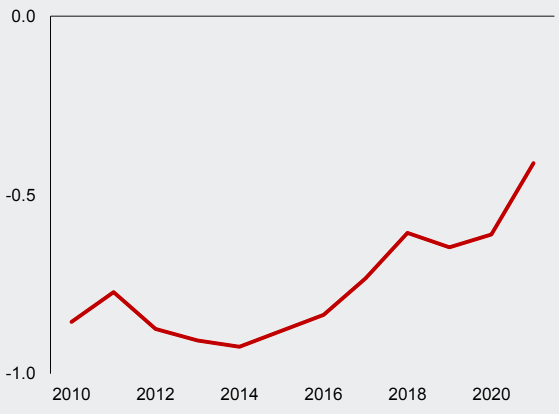
(like machinery equipment). This approach may involve facilitating knowledge sharing among businesses in similar industries and targeting products with characteristics similar to existing competitive exports. In parallel, the ecosystem for domestic industries needs to be improved to build expertise in higher-value-added products, which are currently significantly underperforming. Potential measures could include enhancing vocational training, developing critical infrastructure, and creating targeted support mechanisms. Given the varied competitiveness of Lao PDR's exported goods, a methodical, step-by-step approach with clear milestones is essential for the economy to navigate the rapidly evolving global goods market and gradually upgrade its export capabilities.

Figure 3.4.1. ASEAN: Growth of Goods Exports, 2010–2021
(Percent)



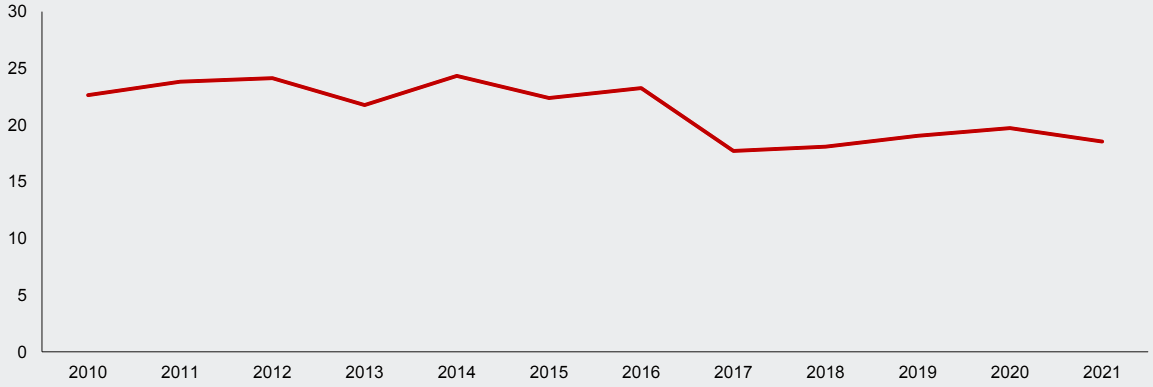
Source: United Nations Comtrade; AMRO staff calculations.
Note: BN = Brunei; ID = Indonesia; KH = Cambodia; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. Data use compounded annual growth rate.

Figure 3.4.2. Lao PDR: Economic Complexity
(Index)



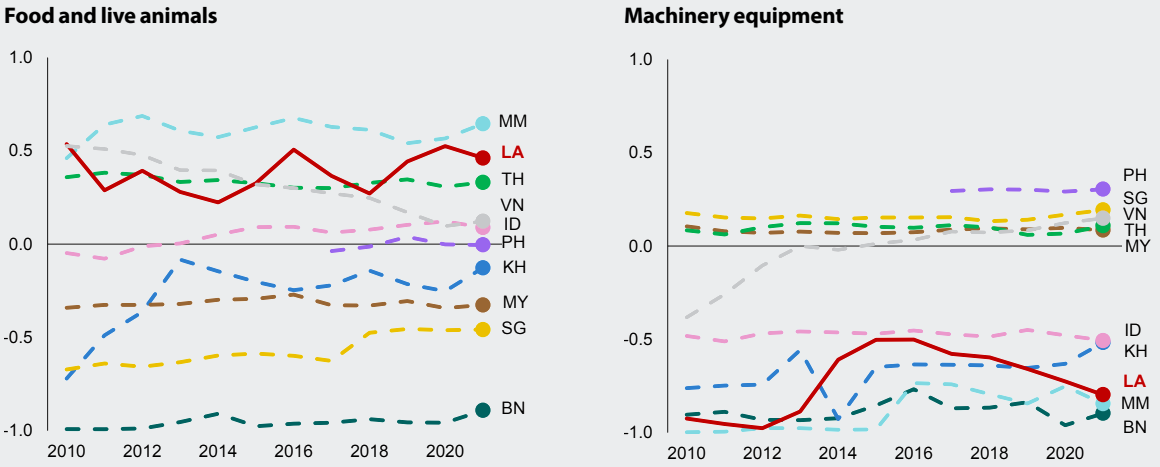
Source: The Growth Lab at Harvard University (2019).
Note: Economic complexity measures the level of know-how in an economy to produce a wide variety of goods including the sophisticated ones requiring specialized know-how (Hidalgo and Hausmann, 2009). An economy with a positive value is considered to be more complex while the negative value is less complex. The higher the value, the more complex the economy is.

Figure 3.4.3. Lao PDR: The Share of Competitive Goods in the Total Number of Goods Exported
(Percent)



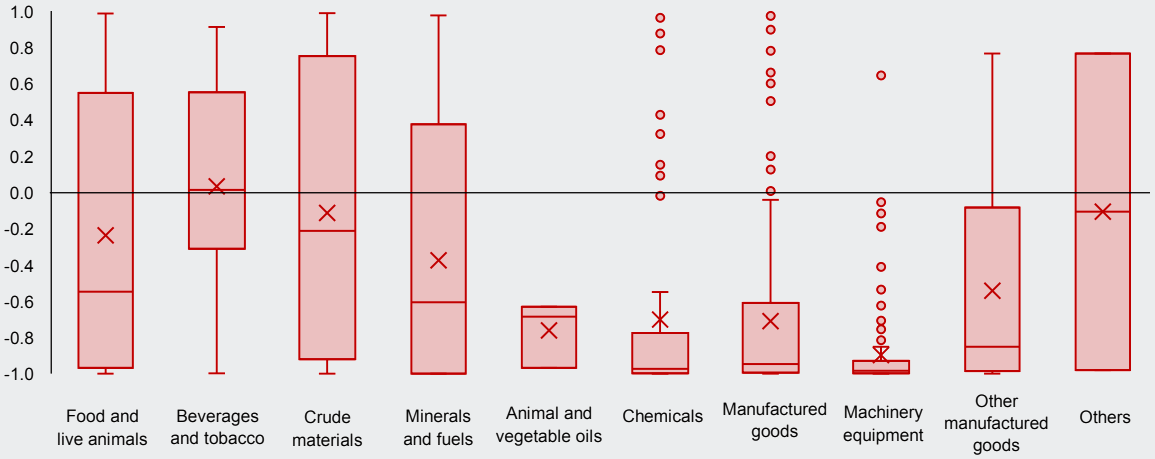
Source: United Nations Comtrade; AMRO staff calculations.
Note: Competitive goods are those with revealed symmetric comparative advantage above zero. See Inayoshi (forthcoming) for details.

Figure 3.4.4. ASEAN: Competitiveness of Selected Products
(Index)



Source: United Nations Comtrade; AMRO staff calculations.
Note: BN = Brunei; ID = Indonesia; KH = Cambodia; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. Competitiveness is measured using revealed symmetric comparative advantage. An economy is deemed competitive when the value is positive (i.e., between 0 and 1) and not competitive when the value is negative (i.e. between -1 and 0).

Figure 3.4.5. Lao PDR: Distribution of Competitiveness, by Export Group, 2021
(Index)



Source: United Nations Comtrade; AMRO staff calculations.
Note: Competitiveness is measured by computing the revealed symmetric comparative advantage (RSCA). A product is deemed competitive when the RSCA value is positive (i.e., between 0 and 1) and not competitive when the value is negative (i.e. between -1 and 0). The box and the line illustrate the distribution of each product's RSCA value in the same product group. Box shows the range of the central 50 percent of the RSCA values, with a central line indicating the median value. Lines extending from the box show the range of remaining RSCA values: the lower end is where the minimum RSCA value is, and the upper end is where the maximum RSCA value is. Dots beyond the line are the outliers. "X" denotes the average RSCA value within the product group.

IV. Policy Considerations and the Way Forward

The ASEAN+3 region is facing not only the enormous task of revitalizing economic growth—but also ensuring that its future pathway is dynamic and responsive to the challenges ahead. By the end of this decade, economic growth in the ASEAN+3 region is projected to outpace the rest of the world, eventually accounting for about two-fifths of global output, and equipped with solid macroeconomic fundamentals, strong institutions, and lessons from the past (Figure 3.1). Still, the reality is that all ASEAN+3 economies now must contend with decelerating long-term growth potential (Section II). As some economies are experiencing diminishing gains from structural change, this slowdown calls into question not only the region's ability to deal with looming risks but also its capacity to capture and leverage emerging opportunities (Section III). Unlocking higher growth pathways in a global environment fraught with uncertainties necessitates new ways of thinking about growth and development. Otherwise, many in ASEAN+3 will not be able to attain higher-income status, with far-reaching implications on socioeconomic stability, equality, and overall quality of life.

Reigniting growth and productivity gain is becoming one of the most pressing global concerns. This is true for both emerging and advanced economies. The current policy discussion tends to view this issue from the lens of industrial policy.[24] Yet, in the context of many emerging market economies—such as those in ASEAN+3—these policies have been deployed for objectives that are beyond the goal of industrialization, such as achieving a more resilient global value chain, redistributing economic activity, or facilitating technology diffusion. As such, these have also been described as productive development policies, innovation policies, or structural transformation policies (Juhasz and others 2023).[25] It is only quite recently that the global discussion on growth is once again being dominated by policies that focus explicitly on certain economic sectors, leading to what some call an industrial policy renaissance (Johnston 2023). Still, these pronouncements—mostly coming from the world's largest economies—again encompass a wide variety of economic and developmental objectives: from shoring up domestic competitiveness, responding to the climate transition, embracing digitalization, securing supply chain resilience, and achieving geopolitical imperatives.[26] Similar policy moves have also emerged in ASEAN+3 to ensure higher growth amid growing global uncertainty—such as Indonesia's "downstreaming" policy, and Japan and Malaysia's semiconductor sector revitalization plans, among others (Box 3.5).

24/ This is because industrial policy—by targeting certain sectors such as heavy industries and strategically-important manufacturing sectors—has allowed many economies to achieve economic transformation in the past.

25/ A discussion on industrial policy (IP) is way beyond the coverage of this section. Nevertheless, it would be useful to note that definitions of IP can be very narrow—"government action that encourages or directly subsidizes the expansion of certain economic sectors over others" —as in Hillman and Manak (2023), or very broad—"….policies that explicitly target the transformation of economic activity in pursuit of some public goal" as in Juhasz and others (2023). The rest of this section adopts the broad definition, especially given the experience of ASEAN+3 economies.

26/ In the last 10 years, notable structurally-transforming strategies include China's Made in China 2025, announced in 2015; the European Union's Green Deal Investment Plan and the Next Generation EU economic recovery package, announced in 2019 and 2020; and the United States, the CHIPS Act and the Inflation Reduction Act—both announced in 2022.

Box 3.5:

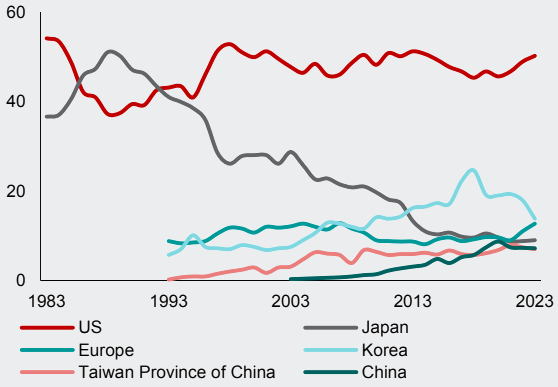
New Industrial Policy for Semiconductors: Insights from Japan and Malaysia

Recent geopolitical developments, particularly US-China trade and technology tensions, and the rapidly evolving semiconductor landscape have led to a major rethink of industrial policy globally. In response to these shifts, Japan and Malaysia—key semiconductor players in the ASEAN+3 region—have adopted new industrial policies to revitalize their respective sectors.

Japan was once a global leader in semiconductors, but its market share has fallen from 50 percent in the mid-1980s to less than 10 percent today (Figure 3.5.1). Japan has fallen about a decade behind technology leaders in Korea, Taiwan Province of China, and the United States. Factors contributing to Japan's declining share include trade frictions with the United States in the 1980s, rapid appreciation of the yen after the 1985 Plaza Accord, failure to invest in logic chips during the personal computer era (which limited their ability to compete in the increasingly important high-volume markets), and the inability of Japanese companies to adapt to a new fabless-foundry business model. On the other hand, Malaysia—with its semiconductor history spanning more than half a century—has an entrenched position in the latter stages of the semiconductor supply chain, particularly chip assembly, testing, and packaging. It holds 13 percent of the global market in these areas. However, this lower value-adding segment has neither improved manufacturing technology nor led to higher wages (Figure 3.5.2).

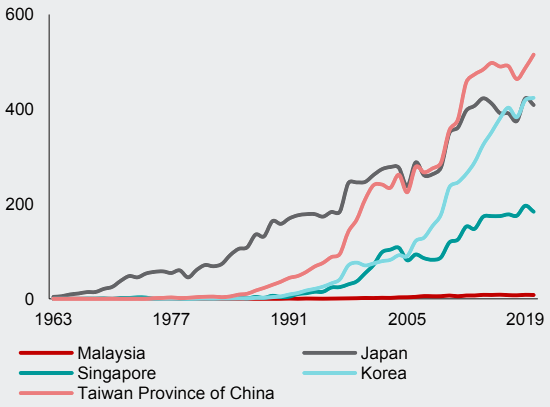
Thus, Japan sees the current juncture as the "last chance" to revive the international competitiveness of its semiconductor industry, while Malaysia hopes to seize this "once-in-a generation" opportunity to revitalize its industrialization, spur an economic take-off, and become a high-income nation.

Figure 3.5.1. Selected Economies: Share of Global Semiconductor Sales
(Percent)



Source: Semiconductor Industry Association; World Semiconductor Trade Statistics; AMRO staff calculations.
Note: The reported figures are based on the parent company's economy of origin.

Figure 3.5.2. United States: Patents Granted, by Economy of Origin
(Per million people)



Source: United States Patent and Trademark Office; World Bank; AMRO staff calculations.

Areas of Focus

Japan's semiconductor revitalization strategy consists of three steps: (1) strengthening domestic production capacity; (2) forming alliances with the United States on next-generation technology; and (3) developing game-changing future technology. As part of the first step, Japan Advanced Semiconductor Manufacturing (JASM)—a joint venture between TSMC, Sony, and Denso—has opened a new plant in Kumamoto to produce 12–28 nanometer (nm) logic chips. Construction of a second plant was set to start at the end of 2024, with the same partners, plus Toyota, focusing on 6–40nm chips. The second step involves Rapidus, a government-backed startup with a consortium of

This box was written by Wee Chian Koh.

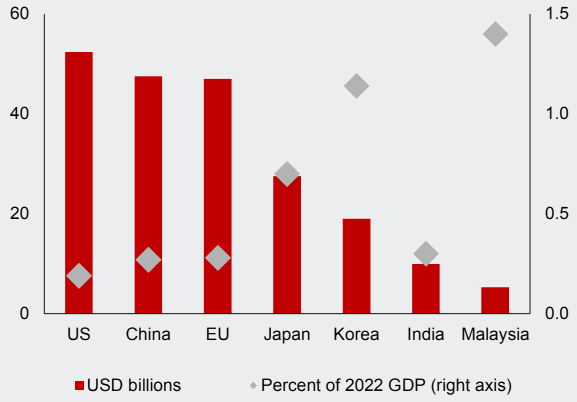
major Japanese corporations and banks. Rapidus is collaborating with IBM and IMEC—Europe's leading microelectronics research and development (R&D) center—to mass-produce 2nm chips by 2027. Also crucial to this step is the establishment of the Leading-Edge Semiconductor Technology Center (LSTC), which spearheads R&D while Rapidus handles production. In the third step, Japan aims to produce game-changing technology based on the convergence of photonics and electronics. These would benefit artificial intelligence data centers and 6G technologies that demand ultra-high-speed data transmission, low latency, and energy efficiency.

Malaysia's new semiconductor strategy—with its three phases—aims to reposition the country from an assembly and testing hub to one with higher value-added activities in chip design, fabrication, and advanced packaging. In the first phase, the focus of Malaysia's National Semiconductor Strategy (NSS) will be on expanding production capacity in trailing-edge chips (28nm chips or larger), particularly power chips, plus developing globally competitive local chip design companies. The second phase involves attracting more advanced chip manufacturers to Malaysia to allow local design firms to integrate into the ecosystem of these advanced fabs. The final phase envisions world-class Malaysian chip design, advanced packaging, and manufacturing equipment firms that can attract buyers of advanced chips—such as Apple, Huawei, and Lenovo—to set up advanced manufacturing facilities in Malaysia.

Support Measures

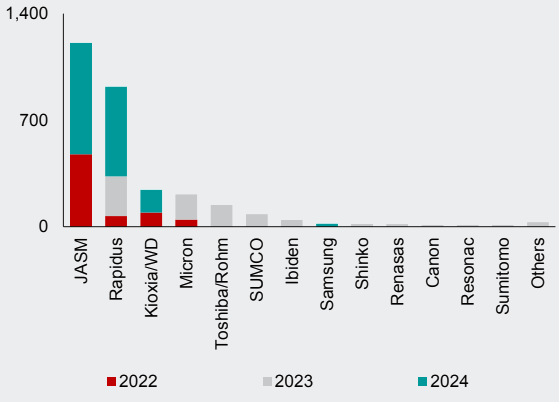
Fiscal support for the semiconductor industries in Japan and Malaysia outpaces those in other major economies in terms of GDP. The Japanese government earmarked JPY 3.9 trillion (USD 27 billion) from fiscal years 2021 to 2023 to support the industry, equivalent to 0.7 percent of GDP—larger than the corresponding size of support under the US CHIPS Act and the European Chips Act (Figure 3.5.3). Most of the allocation have gone to JASM and Rapidus (Figure 3.5.4). About two-fifths of the capital cost of JASM's Kumamoto semiconductor fabrication plant was subsidized—based on the condition that it will have a minimum of 10 years of domestic production and will prioritize domestic shipments at times of global shortage. For Rapidus, one-fifth of the cost to begin mass production will be borne by the government. In November 2024, the Japanese government announced a plan to provide an additional JPY 10 trillion (USD 65 billion) through fiscal year 2030, in the form of subsidies, investments through government-affiliated institutions, and debt guarantees for loans originating from private financial groups. Meanwhile, the Malaysian government has committed to allocate at least MYR 25 billion (USD 5.3 billion) in fiscal support to operationalize the NSS. Policy initiatives include providing capital grants, funding for training and R&D programs, and establishing semiconductor industrial parks. Two chip design parks will be operational by early 2025.

Figure 3.5.3 Selected Economies: Fiscal Support for the Semiconductor Sector
(Billions of US dollars; Percent of GDP)



Source: National authorities; various media articles; World Bank; AMRO staff calculations.
Note: Duration of fiscal support varies across economies.

Figure 3.5.4. Japan: Subsidies to Semiconductor Firms
(Billions of yen)



Source: Japan Ministry of Economy, Trade, and Industry; AMRO staff calculations.

Challenges

Both Japan and Malaysia face significant challenges, however, including competition from other semiconductor players, dependence on imported technology, and a shortage of engineers. While the potential economic gains from the new semiconductor revitalization plans may be substantial, they are far from guaranteed. Major competitors and new entrants (such as India and Vietnam) have similar ambitions to capture a larger share of the global semiconductor market. An endless global subsidy race can result in wasteful government resources if they fail to ignite technological breakthroughs. Japan and Malaysia do not have advanced chip fabrication capabilities. Instead, they rely on foreign-owned fabs to increase domestic production capacity. Japan's bet on Rapidus for advanced semiconductor manufacturing is also dependent on IBM's 2nm technology. Nonetheless, there are plans to produce indigenous technology, such as through LSTC in the case of Japan, and the MIMOS and CREST agencies in Malaysia.[1] In this regard, encouraging stronger tripartite collaboration among academia, government, and industry can help to bridge R&D and commercialization.

Another challenge is a severe shortage of engineers. Experienced Japanese semiconductor engineers have left for larger markets (such as China, Korea, and Taiwan Province of China), and most are already in their 50s. Student interest in science, technology, engineering, and mathematics fields has also waned. In Malaysia, social stigma against technical and vocational education and training, as well as high failure rates in mathematics among high school students add to talent woes. That said, measures are in place to foster talent development. In Japan, tripartite collaboration within each major region (Kyushu, Tohoku, Chugoku, Chubu, Hokkaido, and Kanto) to develop human resources for semiconductors is underway. Malaysia recently set up a chip design academy in Penang and upgraded a school in Selangor into an advanced semiconductor academy.

Breaking from the Past

In both economies, these new semiconductor policies mark a clear departure from past policies. Unlike previous attempts, Japan's latest semiconductor industrial policy leverages strong international technology alliances and provides massive subsidies to foreign firms.[2] This reflects policymakers' renewed sense of urgency to strengthen supply chain resilience and regain competitiveness. For Malaysia, the government did not have a national semiconductor strategy until 2024. Industry development has been largely led by the private sector, after the success of free trade zones in attracting foreign direct investment and incentivizing multinational corporations to set up assembly and testing facilities (as part of its export-oriented industrialization strategy in the 1970s).

If these new policies translate into concrete gains, both economies will be well-positioned to realize their ambitions for their respective semiconductor industries. US-China tensions have led to some investments switching to Southeast Asia, providing an opportunity for Malaysia to advance its semiconductor industry and reclaim its status as the 'Silicon Valley of the East'. Similarly, Japan is taking this opportunity to position itself as an indispensable node in the US-led chip alliance, hopeful to reclaim its past glory in semiconductors.

1/ MIMOS is an agency under the Ministry of Science, Technology, and Innovation set up as an applied R&D center in semiconductors and microelectronics. CREST is an agency of the Ministry of Investment, Trade, and Industry to develop the electronics ecosystem through collaborative R&D and talent development.

2/ Japan's longstanding practice in the postwar era emphasized independent technology development and a risk-averse attitude of disallowing foreign-owned semiconductor firms to operate in Japan.

The ASEAN+3 region's long experience with economic transformation can provide a compass for future development strategies. Several ASEAN+3 economies have demonstrated remarkable growth, especially since the middle of the 20th century, evident in the sustained rise in national incomes and broad improvements in living standards. Even with the Asian financial crisis and various shocks of the 1990s and 2000s, the region's economies are typically seen as among the best examples of sustained growth and poverty reduction—so much so that other regions have looked to ASEAN+3 for lessons. Over time, ASEAN+3 economies have implemented and experimented with a broad and diverse basket of growth strategies (Figure 3.31). Yet, despite common objectives, economies in the region chose different policy instruments, prioritized some over others, and followed various pathways that make the region's overall experience difficult to generalize (Hernandez 2005). Nevertheless, the pursuit of a "manufacturing-for-exports" strategy contributed significantly to the region's overall economic success (Foo and Khut 2019) (Figure 3.32). Several studies have attributed the region's rapid economic growth to its exports or "outward orientation," which helped increase TFP, and in some ways created a virtuous cycle between exports and TFP growth (World Bank 1993). ASEAN+3 economies, by accessing the global market, were able to boost export earnings that, in turn, facilitated access to more technologies and innovative ways of production.

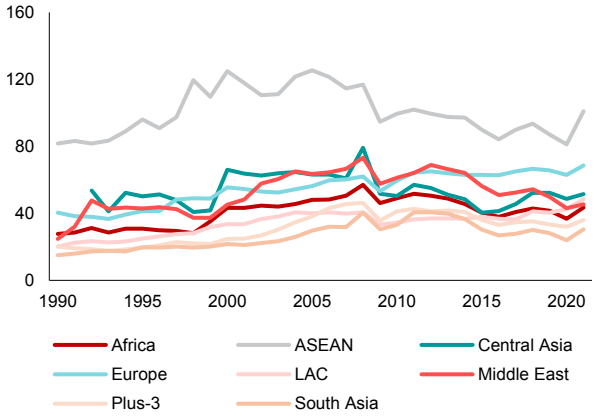
Experience in Plus-3 economies shows how critical state intervention has been in driving structural transformation. Japan and Korea—considered late-stage economies in terms of structural change—have often been cited as successful examples of the "developmental state"—a model of development where industrial policy is at the forefront of the policy agenda (Cheang 2022). Developmental states tend to be "state-heavy," where the role of the state is not limited to merely stepping in to correct market inefficiencies, such as when it comes to resource allocation or to prevent coordination failures. In this model, the state's role is more extensive in ensuring that economic activities contribute to increasing overall welfare, sustainability, and equitable development (Ambashi 2023).[27] This can be achieved, for example, through extensive use of state-owned enterprises and other forms of direct government intervention to deal with critical economic challenges. This could be seen in Japan's postwar promotion of heavy industries and protection of domestic companies, Korea's "Heavy Chemical Industry" drive to help rain in rising external imbalances, and China's establishment of special economic zones to attract FDI and promote export-oriented manufacturing industries and projects (Table 3.2).

In ASEAN, export-oriented manufacturing—powered primarily by FDI—is a key feature of the growth strategy. ASEAN's experience highlights two lessons: first, that protectionist policies are not necessary (and could even be detrimental) for structural transformation; and second, FDI can—in many ways—help enhance international competitiveness. Initially, most of the foreign capital that flowed into individual economies was directed into special export processing sites—part of a domestic "hosting" strategy—which allowed authorities to provide foreign investors with ways to reduce their costs (through more affordable utilities, tax deductions for certain expenses, and specific infrastructure, among others) as well as easier regulatory rules that are more conducive to investment, that would not have been available outside the zone (Montes 2018). The basket of instruments included tax deductions or exemptions, policies to reduce the

Figure 3.31. ASEAN+3: Broad Development Strategies

Source: AMRO staff compilation.
Note: FDI = foreign direct investment.

Figure 3.32. World: Trade Openness
(Percent of GDP)



Source: Asia Regional Integration Center, Asian Development Bank; AMRO staff.
Note: ASEAN = Association of Southeast Asian Nations; LAC = Latin America and Caribbean; Plus-3 = China, Hong Kong, Japan, and Korea.

27/ This contrasts with the view of mainstream neoclassical economists, which justifies the state's intervention to the extent that its goal is to correct inefficiencies and other market failures related to economies of scale, information asymmetry, and coordination failures, among others.

costs of imported raw materials and components, and allowing for wholly owned foreign subsidiaries, among others (Table 3.2). While several studies saw ASEAN's development strategy success as coming from a market-friendly and highly-open attitude, some attribute it more to highly favorable external conditions during that time—with Japanese companies looking for overseas production sites after the Plaza Accord—rather than because of proactive economic policymaking (Jomo 2001).

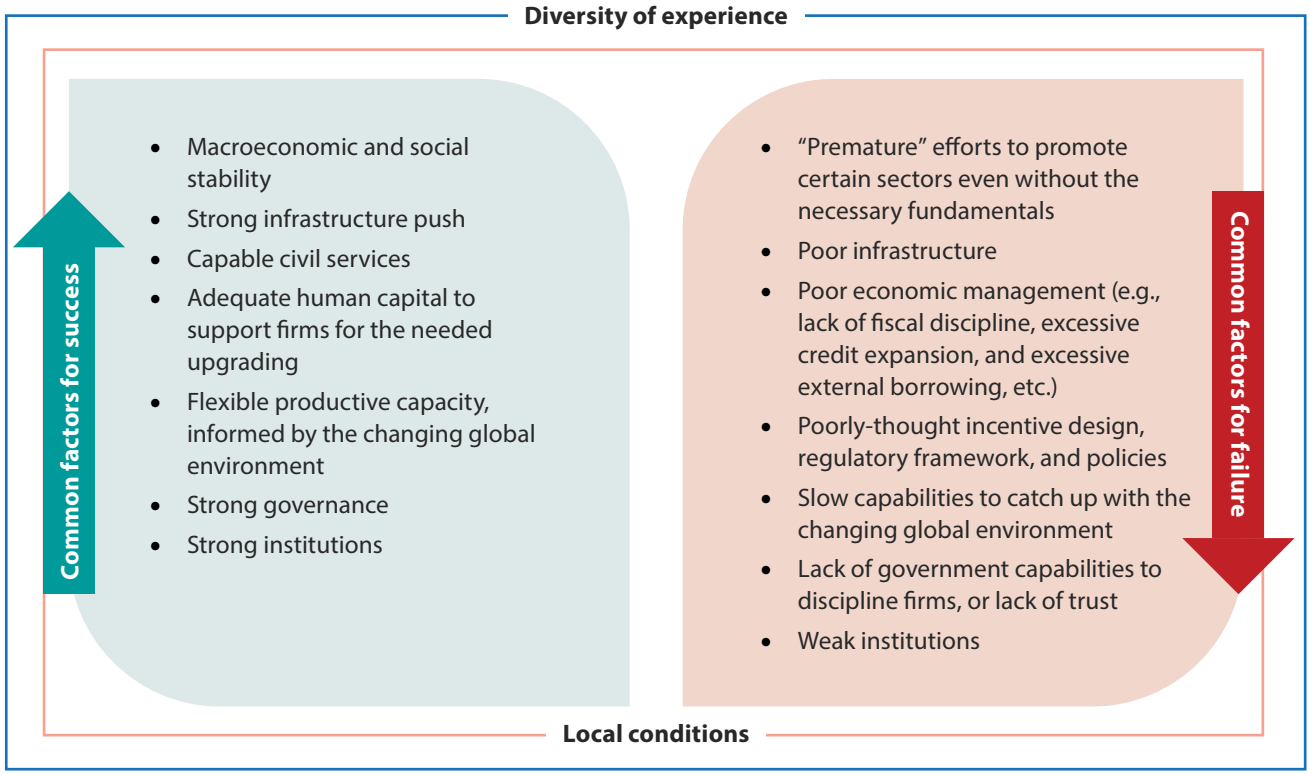
ASEAN+3's development path provides a trove of lessons—what worked, what did not, and why some strategies may not necessarily succeed in other parts of the world. There is a rich empirical literature that has explored the "replicability" of the East Asian experience. While some commonalities exist from a broad macroeconomic point of view, the instruments and policies employed in successful strategies varied widely. More importantly, the suite of tools was highly influenced by domestic conditions facing policymakers during that time. Notwithstanding this diversity and varied experience, there is broad consensus about what facilitated a successful structural transformation in East Asia: a combination of (1) favorable economic fundamentals, backed by (2) strong institutions and a governance architecture that was nimble and responsive to changing global landscape (Figure 3.33). Japan's success, for example, was supported by strong state capacity and the economy's ability to adapt to the shifting global geoeconomic environment (Haggard 2018; Wade 2018). Historical regional comparisons suggest that when either component fails, the entire growth strategy can fail. This is the case in Latin America, for example, or in Africa, where some economies also chose the route of export promotion but did not fare as well (Harrold and others 1996; Cardenas and others 2003). In the context of the Middle East, despite relatively stable macro fundamentals, the replicability of East Asia's growth strategy could be constrained by institutional factors and the relatively lower priority given to education (Noland and Pack 2005).

Table 3.2. ASEAN+3: Selected Features of Past Development Strategies

Economy	Key Features
Plus-3	• Japan and Korea initially promoted domestic heavy industries with high potential to drive growth—such as steel and automobiles—and also employed trade protection through higher import tariffs, price-support subsidies, and capital financing to support domestic firms (Kuchiki 2007). Policy attention eventually shifted to promoting high-tech and knowledge-intensive sectors (e.g., electronics and semiconductors). As their comparative advantage evolved toward more advanced value generation, support for research and development and subsidies for cutting-edge technology, among others, replaced traditional policy instruments (Hernandez 2005). • In China, policies to transform the economy came much later than Japan and Korea but, in some ways, these have also been informed by the success of Japan and Korea. For example, the establishment of special economic zones attracted foreign direct investment (FDI), fostered the building of industrial clusters, and facilitated technological and knowledge spillovers (Wang 2013; Zeng 2015). Other factors included the state-owned enterprise reforms and the "specific project financing" by the state-owned banks where the planning committee and central bank participated in discussions to help drive industrial development. At the same time, the economy also had to adapt to the evolving nature of globalization, where market competition and international competitiveness had a prominent influence in steering the direction of economic transformation—unlike in Japan and Korea during their earlier development strategies (Kuchiki 2007).
ASEAN-5	• Malaysia and Thailand employed a variety of preferential policies like tax incentives, easier access to credit, and more relaxed import guidelines to attract (Japanese, US, and European) multinational corporations looking to expand their production overseas for cost efficiency—mostly in manufacturing sectors like electronics, electrical machinery, and transport. Indonesia adopted import substitution policies and did not rely as much on preferential policies, but allowed for 100 percent ownership for foreign investors similar to Malaysia and Thailand in specific industries, which substantially eased market entry and attracted FDI. The Philippines, on the other hand, took a slightly different route by liberalizing imports to increase competition in the domestic market (Aldaba 2013). It also provided incentives to foreign investors and developed infrastructures to attract priority industries including business process outsourcing industry. Economies took deregulation measures in select, priority industries. Singapore also took a similar export promotion route initially, but—constrained by the size of the population and its geography—gradually lost its edge in labor-intensive manufacturing. Policy focus shifted to transforming toward services and high-tech sectors, where Singapore enjoyed a strong competitive advantage.
BCLMV	• Economies such as Lao PDR, Myanmar, and Cambodia also relied (and continue to rely) on export promotion. Besides leveraging their natural resource endowments, some also relied on their ability to provide (relatively) lower labor costs and offer multinational enterprises more flexible overseas production, especially for less-complex manufacturing products or those that did not require high value-addition from the host economy. Vietnam actively sought FDI, and continues to do so, in order to boost exports as a tool for growth and development. Policy choices such as privatization were key components of shoring up investment attraction, although their take on foreign investment was much more gradual and controlled than their bigger peers (Montes 1997).

Source: AMRO staff compilation.
Note: As for China, Kuchiki (2007) argues that China's reliance on foreign capital, for example, and the imperative for international competitiveness make it a "hybrid case" between the Japan/Korea models and the strategy pursued by ASEAN. As for the Philippines, both fiscal and non-fiscal incentives were provided to priority industries identified in its Strategic Investment Priority Plan, while the 19 investment promotion agencies also offered specialized services and additional incentives to attract and sustain investments. As for Singapore, similar to Japan and Korea, it is also seen as a successful model of the "developmental state," and sometimes as the best-case scenario of industrial policy (Cheang 2022). The economy utilized industrial policies to promote services industries that were attractive to FDI (e.g., medical, professional, and financial services), and the auxiliary, high-tech services sectors that supported them (e.g., information and communications, life sciences).

Figure 3.33. World: Development Strategies—A Comparison of Elements



Source: AMRO staff.

Future Growth Pathways for ASEAN+3: Five Policy Considerations

In the decades to come, achieving high growth rates for the ASEAN+3 region will no longer be enough: growth must also be high-quality, inclusive, and sustainable. Inclusivity ensures that economic gains are distributed more fairly and evenly across different segments of society (Box 3.6). Sustainability demands that meeting the needs of the current economy do not compromise future generations.[28] The ASEAN+3 region can also no longer ignore green and clean growth imperatives when thinking about new development pathways (Box 3.7). An ASEAN+3 region with high-quality growth is one that is more innovative, more balanced, and more sustainable. There is no one route to achieving this set of complex objectives, especially as they involve policy trade-offs in an era of limited fiscal space.

There is no "one-size fits all" approach for sustained high-quality growth. No generic formula exists for ASEAN+3 economies—especially those in the early stages of structural change—to simply copy. At the same time, relying too much on past tools or instruments may no longer be prudent, especially as the region's future trajectory is made even more opaque and complex by major secular shifts: population aging, climate change, rapid technological changes, global trade reconfiguration, and heightened geopolitical tensions (AMRO 2024b). Nevertheless, successful experiences of economies that were able to achieve high, sustained growth in the last five decades can be distilled into five common characteristics: (1) economic openness; (2) strong and stable macroeconomic fundamentals; (3) a future-oriented approach to policymaking; (4) well-functioning markets that provided the correct signals and incentives; and (5) capable, committed, and credible leadership (Commission on Growth and Development 2008). As structural transformation can take years to materialize, these distinctive characteristics make up the foundation that would allow growth-enhancing transformation to successfully take shape over time.

While a comprehensive set of policies and strategies for all 14 ASEAN+3 economies is beyond the scope of this chapter, there are five overarching themes that can help guide the region's policymakers in crafting new growth pathways for the future. These policy themes are grounded in the systematic analysis in sections II and III. The various factors behind the slowdown in ASEAN+3's potential growth along with the diverse pace of structural change across the region—as discussed in detail in sections II and III—mean that the policy mix will greatly differ across individual economies. Nevertheless, by reflecting on the region's current vulnerabilities and strengths, and how the future economic landscape could take shape, these five priority themes can help policymakers in their search for future growth solutions, while accounting for their economy's unique characteristics, lessons from the past, and new economic realities.

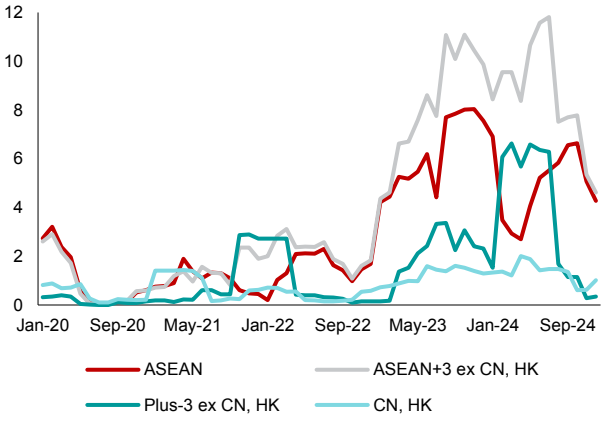
28/ This is first defined by the United Nations in its 1987 Brundtland Report.

1: Upgrading Manufacturing Capabilities

The manufacturing sector will remain key to ASEAN+3's future growth trajectory. Since the 1960s, the manufacturing sector has consistently seen a dwindling role in domestic job creation and economic activity in many economies globally (Rodrik 2016). In the case of ASEAN+3, rapid technological advances, protectionist policies and political pressure to "reshore" jobs back to advanced economies, and various macroeconomic shocks—especially in the past five years—also added to concerns about the role of manufacturing-for-exports as a future driver of growth (AMRO 2022). The stalled industrialization seen in middle-stage ASEAN+3 economies, for example, means that manufacturing is no longer benefiting output and employment as it once did (Figure 3.24). But, industrialization—especially one that is sustainable—will continue to be a powerful catalyst for global economic progress (United Nations Industrial Development Organization 2024). Manufacturing will stay as a critical force behind economic growth for many advanced and emerging market economies, offering solutions to key global challenges such as aging populations and climate change. The application of digital technology to manufacturing will enable economies to capture the benefits of automation to complement a shrinking labor force, while the production of low-emissions and cleaner-energy products will facilitate a successful global climate transition. These manufacturing-enabled solutions pave the way toward more robust and resilient growth, for the region and globally.

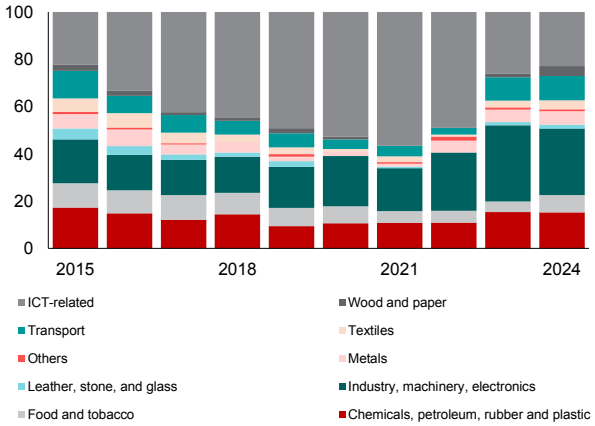
Manufacturing will still boost ASEAN+3's ability to accelerate catch-up. In an innovation-led global economy, new manufacturing sectors continue to emerge—such as the green transition, sustainable infrastructure, and the "silver economy" (AMRO 2024b).[29] ASEAN+3 economies—given diverse development levels, strong appetites for technology, and well-established manufacturing ecosystems—are well-placed to find multiple, feasible entry points to continue participating in these new and transformed global value chains. The continued influx of FDI to these new and emerging manufacturing sectors in the region attests to ASEAN+3's future as a key global manufacturing hub—including in advanced electronics, clean-energy vehicles, and new sustainable materials (Figures 3.34 and 3.35). This outcome is not necessarily guaranteed, however. The challenge to ASEAN+3 economies is to continuously retool their existing comparative advantage in manufacturing to adapt to the forces that are increasingly driving international trade and investment patterns (Figure 3.36).

Figure 3.34. ASEAN+3: Capital Expenditure of Announced FDI Projects
(Billions of US dollars)



Source: Orbis Crossborder; AMRO staff calculations.
Note: CN = China; HK = Hong Kong: FDI = foreign direct investment. Data as of December 2024, and refer to the six-month moving average of the capital expenditure of announced projects for each month. The figure includes projects that have been announced but not yet completed, and those that have already materialized and are now operational.

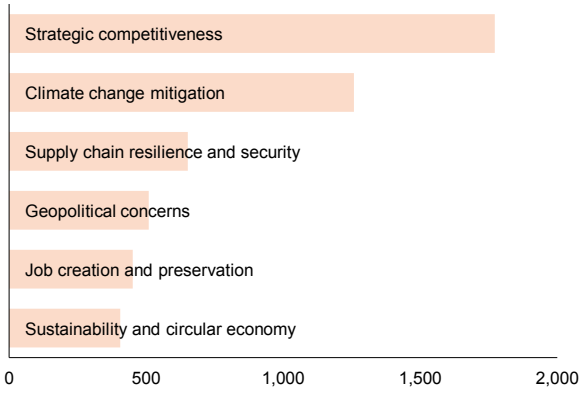
Figure 3.35 ASEAN: Manufacturing FDI Announcements, by Target Sector
(Percent of total announcements)



Source: Orbis Crossborder; AMRO staff calculations.
Note: FDI = foreign direct investment. Data as of November 2024. ICT-related includes manufacturing of communications equipment, IT hardware, and IT software. Leather, stone, and glass also include clay; metals include metal products.

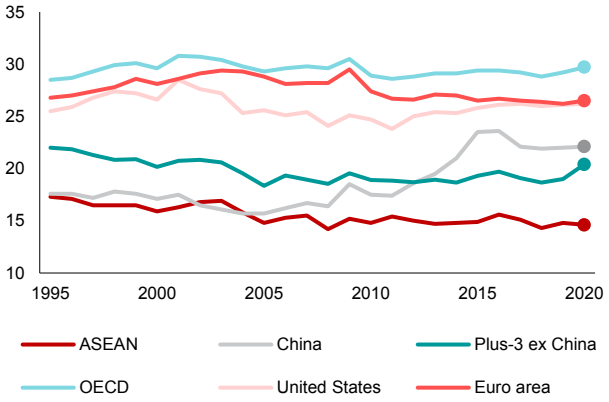
29/ The "silver economy" can be taken as the "sum of all economic activity that serve the needs of people aged 50 and over, including the products and services they purchase directly and the further economic activity this spending generates" (European Commission 2018). As such, it is not a single sector. The term is also used closely with the "silver market," a concept that emerged in Japan in the 1970s in relation to the age-inclusive provision of goods, services, and facilities.

Figure 3.36. World: Motives Driving Industry Policy Interventions, since 1 January 2023
(Times cited)



Source: New Industrial Policy Observatory, Global Trade Alert.
Note: Data as of 27 November 2024.

Figure 3.37. ASEAN+3 and Selected Economies: Services Content of Manufacturing Exports
(Percent of manufacturing export value)



Source: Trade in Value Added database, Organisation for Economic Co-operation and Development (OECD); AMRO staff calculations.
Note: Plus-3 ex China = Hong Kong, Japan, and Korea.

2: Prioritizing High Skills and Quality Services

Growing the services sector is a complementary pathway—and not a substitute—to manufacturing. The path to structural transformation is conventionally viewed as a sequential movement of workers from agriculture to manufacturing, then to services—a progression that is widely seen as favorable, in part owing to the successful experience of the US, Europe, and East Asian economies in the 1990s (Sen 2019). However, services should not be seen as a replacement for manufacturing: ASEAN+3's experience in the last three decades shows that the shift in labor to the services sector did not bring about higher productivity—but instead reduced overall productivity (Figure 3.26). In the current landscape, growing these two sectors can no longer be pursued as mutually exclusive development strategies but rather as complementary. Manufacturing and services activities are now increasingly intertwined, with services inputs accounting for about 30 to 35 percent of manufacturing goods traded globally (Figure 3.37). Growing "servicification", in turn, should also benefit the dynamism of ASEAN+3 manufacturing (AMRO 2018).[30] In general, the share of service inputs embedded in ASEAN+3 manufacturing exports remains relatively low in comparison to other parts of the world, reflecting how the region's overall productivity lags the frontier across both manufacturing and services (Section III).

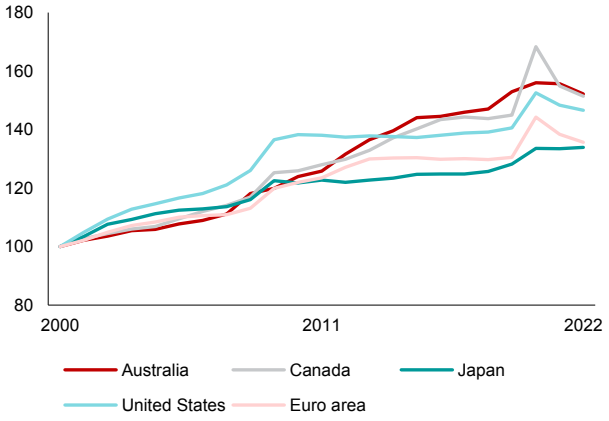
The shift to services needs to be pursued with an eye on high skills and high quality. Services will offer ASEAN+3 economies new options for job creation as the landscape of global manufacturing changes. Technological advances have increased the capital intensity of manufacturing while shortening production stages that would otherwise require human labor (Figure 3.38). This means that the manufacturing sector of the future is unlikely to generate as many jobs as it has in the past. Developing the services sector would help ASEAN+3 economies overcome this constraint, especially with the significant untapped potential in the region to grow services trade (Figure 3.39). Services-led development can unlock new employment opportunities for a bigger share of the ASEAN+3 workforce—including women and small and medium-sized enterprises—helping drive the region toward more inclusivity and sustainability (ADB 2013; United Nations Conference on Trade and Development [UNCTAD] 2024).[31] Yet, not all services are created equal. The challenge for ASEAN+3 economies is to ensure that services-led growth strategies are targeted toward high-skilled and high-value activities such as medical tourism, graphic design outsourcing, or film production. A good example is the business process outsourcing industry in the Philippines which has grown rapidly across the archipelago and created high-skilled jobs that have attracted local talents. This is especially true for middle-stage ASEAN+3 economies, where labor has been absorbed in services that exhibit lower productivity gains than manufacturing (Figure 3.29). Highly-knowledge-intensive services still form a smaller portion of service inputs to ASEAN+3 manufacturing exports—suggesting a large room for

30/ Servicification is defined here as the growing use of services as inputs by manufacturing firms. In exports, these will be the *indirect* services exports (as opposed to *direct* exports of services).

31/ Several studies show how services are typically greener and more inclusive than manufacturing. For example, Stolzenburg and Nano (2022) highlight that services global value chains tend to employ more women, including in leadership positions, and that services micro, small, and medium-sized enterprises (MSMEs) appear to face fewer barriers to export than manufacturing MSMEs. Services also require relatively more localized infrastructure investments, especially regarding digital connectivity, and are less dependent on large upfront foreign direct investment into factories and machinery than manufacturing—allowing more companies to participate in services value chains.

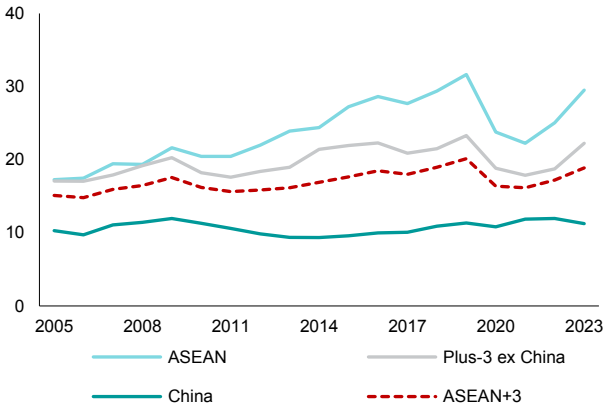
growth (Figure 3.40). Upgrading the service sector quality through technology is another key priority. For instance, the retail and wholesale industry, which has absorbed a significant portion of the region's workforce, could undergo substantial transformation through e-commerce adoption by eliminating market barriers and reducing information asymmetry (World Trade Organization 2013). Additionally, digital technologies could make traditionally location-bound services like education and healthcare increasingly tradable, creating new opportunities for business growth (World Bank and World Trade Organization 2023). Furthermore, new technology, such as artificial intelligence, could improve the productivity of low-skilled workers in various service industries (Baily and Kane 2024). This point is further elaborated in policy theme four.

Figure 3.38. Selected Economies: Capital Intensity
(2010 US dollars per hour)



Source: Bergeaud and others (2016).
Note: Capital intensity is defined as the total stock of capital divided by the total hours worked.

Figure 3.39. ASEAN+3: Total Services Trade
(Percent of ASEAN+3 total goods trade)



Source: United Nations Conference on Trade and Development; AMRO staff calculations.
Note: Plus-3 ex China = Hong Kong, Japan, and Korea. Data refers to imports and exports of services.

3: Closing Investment Gaps

The ASEAN+3 region continues to face investment gaps that must be narrowed to boost long-term, high-quality growth. While the contribution of capital accumulation to growth is forecast to gradually decline in the next three decades—shrinking by half in 2050 compared to current levels—it will still be the largest driver of growth across ASEAN+3 (Figure 3.8). Reigniting industrialization and enlarging the services sector will be contingent on economies' ability to mobilize both public and private investments toward sectors and activities that promote productivity and resilience. However, private investment activity across the region remains well-below what it was before the COVID-19 pandemic. In some economies, narrower fiscal space has constrained public investment too (Table 1.3).[32] Except for most late-stage ASEAN+3 economies, capital stock per capita across the region, including in China, is no more than a quarter of the OECD average—suggesting the need for more investment, especially in infrastructure (Figure 3.16). Mobilizing private investment—with the right enablers and incentives—would be instrumental not only in narrowing this gap; it would also help in funding about USD 1.9 trillion worth of infrastructure investments needed to address various needs in the next two decades, especially for middle-stage economies (Figures 3.41 and 3.42).[33] On top of this, the breadth and scope of investment required for ASEAN+3 to respond to ongoing major secular shifts continue to increase.

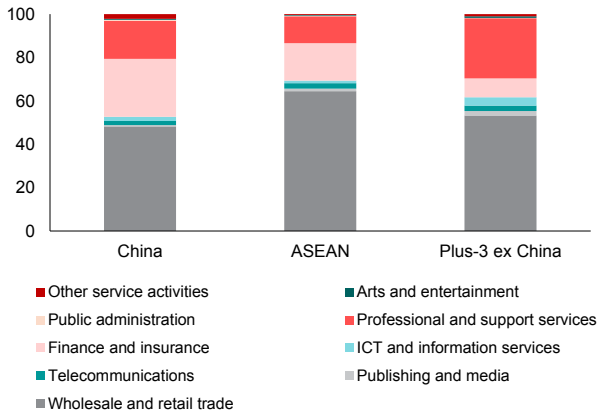
The gap is not only in physical infrastructure but also in human capital, especially in sectors and skills that are increasingly in demand globally. Investment can only be deployed efficiently by an increasingly skilled workforce—rather than merely accumulating physical assets—to generate productivity gains. Specific policy priorities will be informed by where an economy is in the stages of structural change. For example, reskilling and upskilling would be particularly relevant for middle-stage and late-stage ASEAN+3 economies, especially where demographic headwinds are constraining the size of the labor force. In addition, as technology transforms the nature of the job market, the demand for digital literacy

32/ However, even with limited fiscal space, development expenditure can be strategically prioritized for growth. For example, in the case of Malaysia, public investment is being directed towards high-impact infrastructure, digital transformation, and green initiatives, supported by targeted fiscal incentives to crowd in private sector participation. These investments are managed within a framework of fiscal discipline, with the Public Finance and Fiscal Responsibility Act 2023 (Act 850) enhancing governance mechanisms and ensuring capital efficiency.

33/ ASEAN+3's investment "gap" averages about USD 128 billion annually, at the very least (Global Infrastructure Hub 2018).

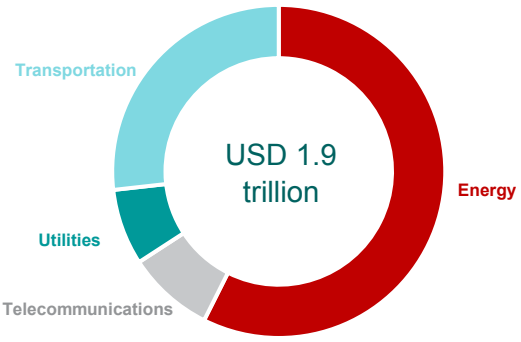
and proficiency will increase rapidly. However, many of the region's economies have marked deficiencies in highly-in-demand skills, especially those related to technology and data science (Figure 3.43). Closing this gap—with parallel investments in healthcare—will facilitate ASEAN+3 economies' ability to successfully transition to the next stage of structural change. Technology would be a crucial tool for investing better in ASEAN+3's human capital, helping remove some barriers to education access for some sectors of the economy and allowing for more inclusive job generation, especially as the region continues to age (AMRO 2024b).

Figure 3.40. ASEAN+3: Digital-Intensive Services Embodied in Manufacturing Exports, by Service Type
(Percent of total)



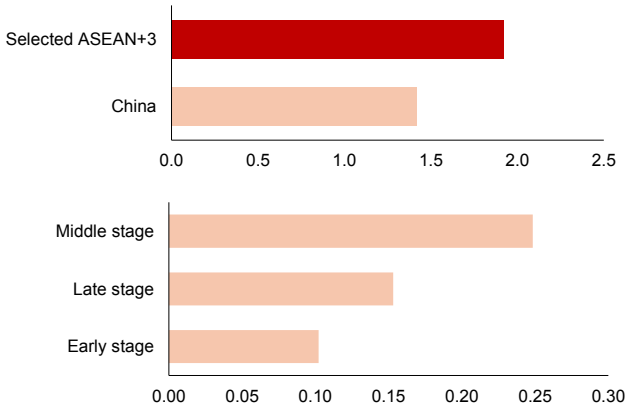
Source: Trade in Value Added (TiVA) database, Organisation for Economic Co-operation and Development (OECD); AMRO staff calculations.
Note: Plus-3 ex China = Hong Kong, Japan, and Korea. Data refers to domestically produced services (as opposed to foreign services embedded in domestic manufacturing). Service types included all those classified by the OECD as medium-high to high digital intensive-sectors.

Figure 3.41. ASEAN+3: Investment Requirements over 2025–40, by Sector
(Percent of total)



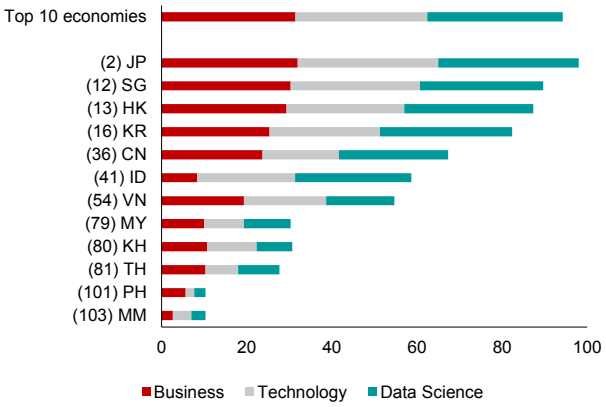
Source: G20 Global Infrastructure Outlook; AMRO staff calculations.
Note: Utilities mainly cover water. Transportation infrastructure covers ports, rail, roads, and airports.

Figure 3.42. Selected ASEAN+3: Investment Needs over 2025–40, by Stage of Structural Change
(Trillions of US dollars)



Source: Global Infrastructure Hub (2018); AMRO staff calculations.
Note: Selected ASEAN+3 includes Cambodia, China, Indonesia, Japan, Korea, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Early stage include Cambodia and Myanmar. Middle stage include Indonesia, the Philippines, Thailand, and Vietnam. Late stage invcludes Japan, Korea, Singapore, and Malaysia. Section III features a detailed discussion.

Figure 3.43. ASEAN+3: Global Skills Scores
(Index, 100 = highest)



Source: Coursera (2024); AMRO staff calculations.
Note: BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. The Coursera scores have been transformed such that the highest score for each domain is 33.33, and the total for all three domains is 100. The top 10 economies are Switzerland, Japan, Germany, Netherlands, France, Sweden, Spain, Austria, Denmark, and Belgium. Numbers in parenthesis represent rank out of 109 economies.

4: Boosting Innovation and Leveraging on Technology

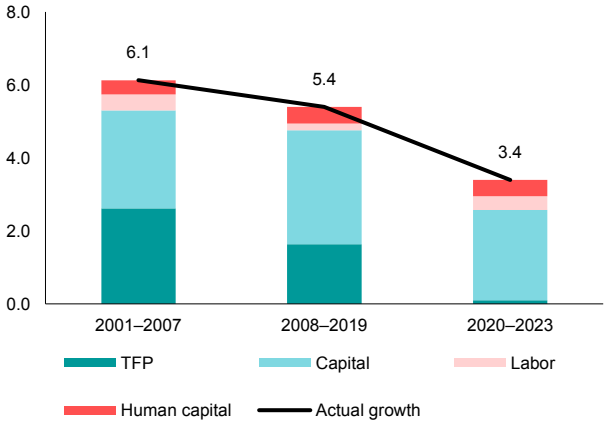
Prioritizing innovation and competition is key to improving resource allocation across sectors and protecting ASEAN+3's growth momentum against secular decline. The deceleration in TFP accounted for over half of global growth's slowdown since the mid-2000s, mainly owing to inefficient resource allocation across firms stemming from barriers including policies that prevented capital and labor from reaching the most productive companies (Li and Noureldin 2024). In ASEAN+3, about 80 percent of the fall in historical growth between 2001 and 2023 was because of weakness in TFP (Figure 3.44). The growth effect of structural reforms that direct resources toward the most productive firms and sectors—for example, by promoting market competition and

rewarding innovation—is substantial (IMF 2024c).[34] To create a more efficient economy, an environment that deploys targeted incentives, robust support to facilitate the flow of knowledge, easier access to financing and talent—especially for innovative firms—and puts in place mechanisms that do not excessively protect incumbents is instrumental (AMRO 2024b; World Bank 2024b). In some economies, competition and innovation could be made more dynamic by reassessing the use of strict public procurement rules, price controls, barriers to foreign trade and investment, and static competition rules or frameworks (Figure 3.45).[35, 36]

Fostering innovation can also lift productivity within sectors, narrowing the productivity gaps in middle- and late-stage ASEAN+3 economies. This will be especially critical for the late-stage group as, given the economic maturity in some economies, room for labor movement toward more productive sectors is already limited and the quality of human capital is already very high. In other words, the key source for future growth for some late-stage ASEAN+3 economies would primarily come from productivity improvements, including closing their distance to their more advanced peers, for example by adopting technologies or inventing new ones, especially those related to services (Figure 3.26). Innovative technologies can also drive productivity gains essential for addressing structural challenges in advanced economies, such as aging populations and demographic headwinds. Breakthroughs in life sciences can mitigate the impacts of aging by improving healthcare and workforce efficiency, while automation and "smart" supply chains enhance resilience against trade and logistics disruptions. In ASEAN+3, significant disparities in technological capabilities—both between and within economies—highlight the potential for innovation to lift productivity constraints and adapt to these pressures (AMRO 2024b).

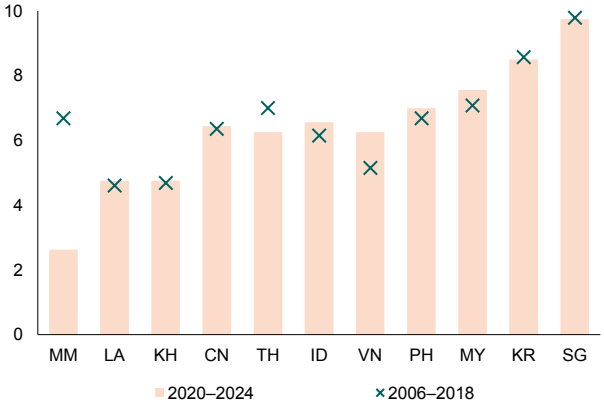
By leveraging advances in new technology, such as artificial intelligence, economies can fundamentally redefine structural transformation, creating pathways for simultaneous advancement and deeper integration across sectors. In agriculture, innovations like precision farming, automated crop monitoring, and resource optimization enhance yields and reduce waste, while in manufacturing, automation, predictive maintenance, and supply chain optimization support higher-value production while reducing labor. Digital platforms and other technological advancements have expanded the tradability of services, enabling cross-border delivery of healthcare, education, and financial services (World Bank 2024b; AMRO 2024b). These technologies can also drive structural transformation by altering economic interactions (Figure 3.46), such as enabling the servicification of manufacturing through activities like customization, after-sales support, and real-time analytics (United Nations Economic and Social Commission for Asia and the Pacific and UNCTAD 2019). Furthermore, technology-enabled digital services create new opportunities for ASEAN+3 economies to integrate into global trade networks, enhancing competitiveness and connectivity. However, rapid adoption also poses

Figure 3.44. ASEAN+3: Contribution of Components to GDP Growth
(Percentage points)



Source: AMRO staff calculations.
Note: TFP = total factor productivity. The actual growth and factor contributions are the simple average in the time period.

Figure 3.45. Selected ASEAN+3: Market-based Competition Scores
(10 = highest score)



Source: Bertelsmann Stifung's Transformation Index (BTI) (2024); AMRO staff calculations.
Note: CN = China; ID = Indonesia; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. The "Organization of Market and Competition" of the BTI assesses the clarity and stability of market-based competition rules across four areas: market organization, competition policy, foreign trade liberalization, and banking system.

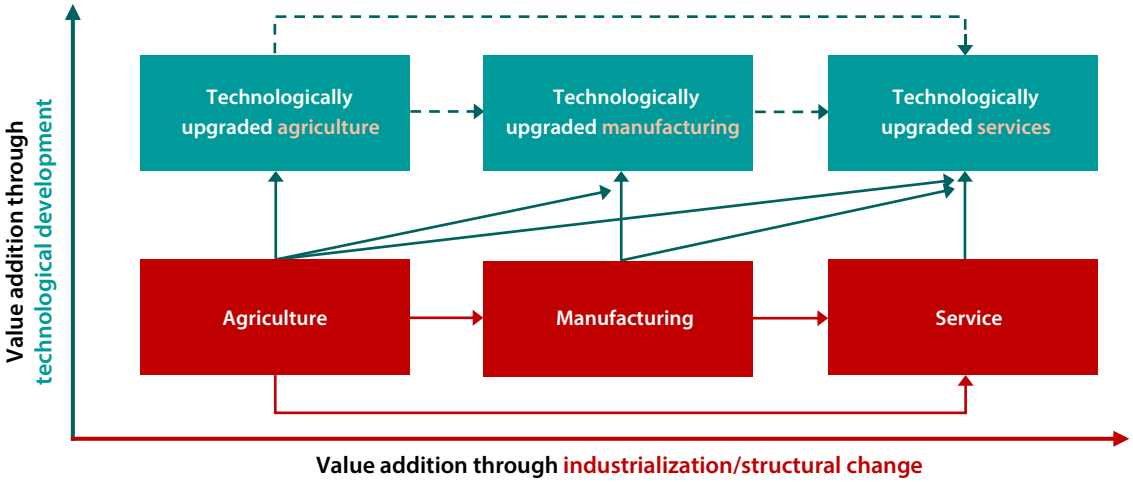
34/ One reason is that higher competition encourages innovation and rapid diffusion of technology, pressuring inefficient companies to exit, which in turn releases resources to more innovative firms (OECD 2024).

35/ OECD's product market regulation study—which covers four economies in the region: China, Indonesia, Japan, and Korea.

36/ For example, in the Philippines, the New Government Procurement Act was signed into law in July 2024 to modernize and enhance transparency in government procurement by mandating public disclosure of procurement data. The Implementing Rules and Regulations of the Republic Act No. 12009 was also published in February 2025 to ensure efficiency, accountability, and participatory governance in the use of public resources.

risks, including job displacement in automation-prone sectors and widening inequality, particularly in economies reliant on routine jobs like business process outsourcing, such as the Philippines (AMRO 2024b). To ensure inclusive growth, governments should invest in science, technology, engineering, and mathematics education and advanced digital skills, support small, and medium-sized enterprises in adopting new technologies, and implement ethical regulatory frameworks to promote transparency, accountability, and data privacy. Regional cooperation is essential to align shared values, shape global norms, and ensure the equitable distribution of technological benefits, particularly as advances in technologies such as artificial intelligence continue to reshape economic possibilities across economies and societies.

Figure 3.46. ASEAN+3: Potential Technology-Enhanced Development Pathways



Source: United Nations Conference on Trade and Development (2019); AMRO staff

5: Strengthening State Capacity

A strong capable state is a prerequisite for growth-enhancing structural transformation (Figure 3.47). State capacity broadly refers to the ability of the government to execute policy priorities effectively. This ranges from finding adequate solutions to implementing them; a task beyond just saying what they are (Linz 1978). Growing manufacturing and services, mobilizing investment, and driving innovation are key prescriptions for ASEAN+3 to advance toward high-quality growth—but these are irrelevant if the governments are not able to actualize them. As ASEAN+3 economies move to the next stage of growth and development become more complex, so in tandem should their state capabilities strengthen (Figure 3.48). The very idea of structural transformation rests on an assumption that the state has the capacity to design, formulate, and implement the necessary policies to achieve the transformation: for example, on the ability of policymakers to establish macroeconomic and social stability, or on fiscal authorities' ability to generate revenues that can be used to invest in productivity-enhancing infrastructure (Figure 3.33).

Successful development strategies do not only invest in infrastructure and people but also in administrative capacity (Juhasz and Lane 2024). Amid common challenges, the key determinant of success will be how economies are able to improve public administration to reach their goals: how effectively the state can coordinate *internally*, and how effectively it can engage *externally*—that is, with other parts of the economy. Effective within-government coordination reduces the risks of oversight and redundancies, especially as growth challenges increasingly span the mandates of multiple ministries and agencies. Externally, facilitating the flow of knowledge with and from the private sector, and enhancing public-private interaction allows for better discovery of policy solutions and objective evaluation as to whether policies are working as intended. A more iterative and collaborative partnership with the private sector and academia would enable rapid transfer of knowledge—such as over new technologies—and help policymakers gather information on the technical issues at play, allowing for a more dynamic and responsive state.[37]

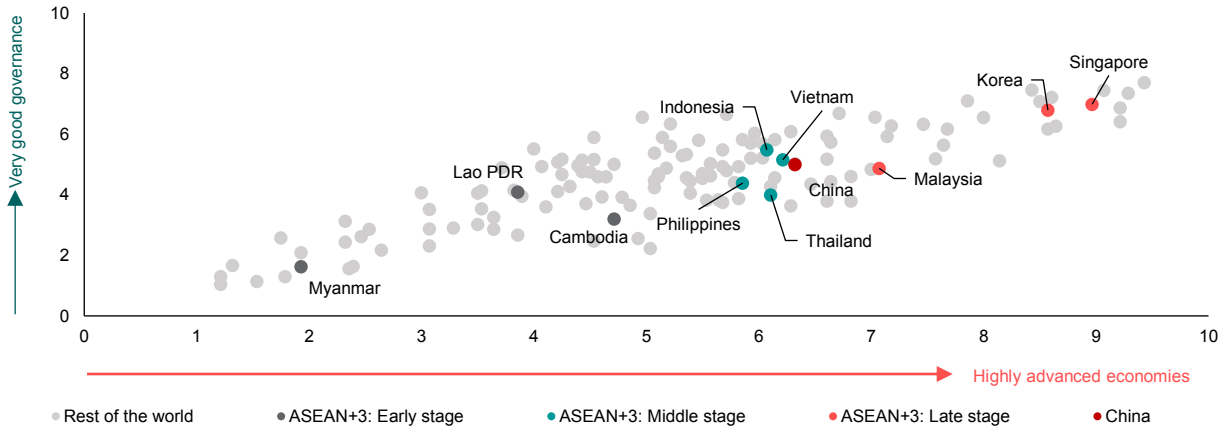
[37] This is what Evans (1995) calls "embedded autonomy," where he attributed the success of East Asia's growth experience to policymakers being able to combine autonomy from private interest groups with "embeddedness" in social ties. These links were essential to ensure that governments had access to information needed to design workable policies, adjust to changing circumstances, and prod firms along new, more efficient trajectories in the most effective way.

Scenario analysis suggests that ASEAN+3 can materially boost long-term growth relative to the baseline by implementing a variety of growth-enhancing policies. Among various policies, boosting TFP growth will be the most crucial to all economies—regardless of their stage in structural change. The rapid advancement of new technologies—particularly artificial intelligence and other frontier innovations—makes this goal more achievable by offering unprecedented opportunities to transform industries and boost productivity across sectors, as discussed in policy theme 4 on boosting innovation and leveraging on technology. Under a scenario where ASEAN+3 economies narrow their productivity gap to the frontier by 30 percent through the effective adoption of these technological advances, growth could improve by 1 percentage point annually, on average, from 2025 to 2050 (Figure 3.49). Across the region, ASEAN economies would benefit considerably from ramping up their infrastructure, while the Plus-3 economies will see relatively higher gains from shoring up human capital (relative to physical capital accumulation). In a scenario where the state can operate at its most efficient and effective, where policies are implemented successfully across all three policy dimensions, ASEAN+3 growth could be as much as 2.5 percentage points higher in the next 10 years relative to the baseline—equivalent to a growth boost of nearly 60 percent, if supportive policies are put in place.

These, and many other sustained high growth outcomes, will need to be supported by stronger multilateral cooperation. ASEAN+3 has leveraged economic openness and international cooperation to grow rapidly, create internationally competitive business sectors, and improve the living standards for more than half of the world's population. This receptiveness—to the extent that it enhances domestic productivity—should remain relevant in the coming decades. The pursuit of new global markets provides an opportunity for diversification and resilience. Continued commitment to rules-based trade will underpin higher resource efficiency across ASEAN+3, while openness should hasten technological diffusion which is critical to boosting overall productivity. ASEAN+3 economies should capitalize on regional and multilateral cooperation platforms to gain wider access to expertise and new technologies, learn from peers, build capacity, and discover innovative financing solutions. The massive investments required to promote high-quality growth—such as for improved logistics, climate resilience, and productive aging—can be much easier to attain through collective action than an individualistic approach.

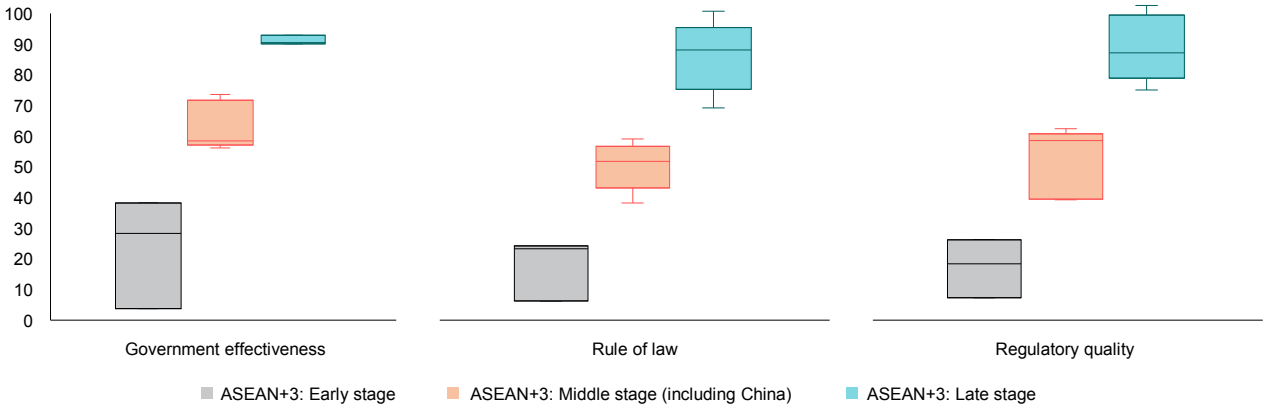
Low growth and productivity need not be the destiny of ASEAN+3 in the future. By continuing to leverage manufacturing capabilities to adapt to the rapidly evolving global landscape and developing the higher-skilled services sector, ASEAN+3 economies can be well on-track to achieving sustained, high-quality economic growth. These changes will materialize from a mix of policies that target investment gaps (especially infrastructure that enhances productivity and resilience), foster economic dynamism, and nurture innovation, backed by a strong, credible state mechanism to implement them. In addition, ASEAN+3 economies need to leverage regional cooperation: doing so expands their available options for sourcing the finance, technologies, and know-how necessary to undertake these transformative changes. With strong policy adjustments that reflect the lessons of the past and are tailored to new economic realities, ASEAN+3 should be able to secure its future not only as a center of economic gravity but also as a successful model for inclusive and sustainable growth that other regions can look up to.

Figure 3.47. World: Governance and Economic Growth
(Scores, 10 = highest score per dimension)



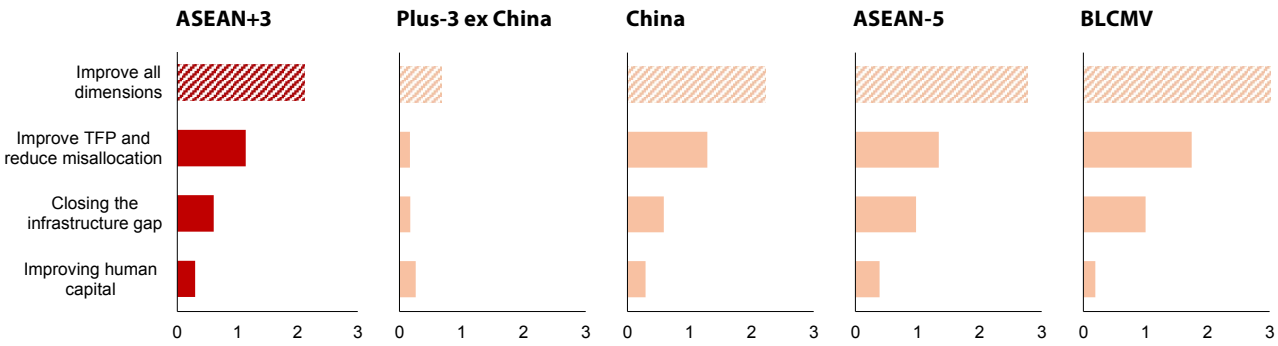
Source: Bertelsmann Stifung's Transformation Index (BTI) (2024); AMRO staff calculations.
Note: The vertical axis is the scores from the BTI's Governance Index, while the horizontal axis is the scores from the Economic Transformation Index. Data is not available for Brunei and Japan. ASEAN+3 economies are grouped by where they are in terms of structural change. Early stage economies include Cambodia, Lao PDR, and Myanmar. Middle stage economies include Indonesia, the Philippines, Thailand, and Vietnam. Late stage economies are Brunei, Hong Kong, Japan, Korea, Singapore, and Malaysia. Section III features a detailed discussion.

Figure 3.48. ASEAN+3: Selected Governance Indicators, by Stage of Structural Change
(Percentile rank, 0–100)



Source: Worldwide Governance Indicators (2023), World Bank; AMRO staff calculations.
Note: Government effectiveness "captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies;" Rule of law "captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence;" and Regulatory quality "captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development." ASEAN+3 economies are grouped by where they are in terms of structural change. Early-stage economies include Cambodia, Lao PDR, and Myanmar. Middle-stage economies include Indonesia, the Philippines, Thailand, and Vietnam. China is included in the middle-stage group for brevity. Late-stage economies are Brunei, Hong Kong, Japan, Korea, Singapore, and Malaysia. Section III features a detailed discussion.

Figure 3.49. ASEAN+3: Impact of Selected Policy Interventions on Annual Growth to 2050
(Percentage point increase relative to the baseline)



Source: AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; Plus-3 ex China = Hong Kong, Japan, and Korea. TFP = total factor productivity. Upside scenarios assume all regional economies converge to the respective Organisation for Economic Co-operation and Development members or the theoretical frontiers at the historical convergence rate achieved by the four leading ASEAN+3 economies (Hong Kong, Japan, Korea, and Singapore).

Box 3.6:

Gender-Inclusive Growth in Cambodia: Achievements and Challenges

Gender inclusion fuels economic growth and financial resilience through multiple channels (Figure 3.6.1). For example, higher female labor force participation has a positive and statistically significant effect on economic growth (Baerlocher and others 2021). One channel is through human capital accumulation: increased female labor participation is consistently associated with a reduced gender education gap, which can foster economic diversification in low-income and developing economies (Kazandjian and others 2019). Another channel is through improved resource allocation, which expands and diversifies the talent pool to include more women. This enables the generation and implementation of more innovative ideas, in turn boosting total factor productivity (TFP) growth (Cuberes and Teignier 2016; Ostry and others 2018). In addition, greater inclusion of women as users, providers, and regulators of financial services is associated with greater financial stability (Goyal and Sahay 2024). Perrin and Weill (2022), for example, show that women generally outperform men in terms of loan repayment, and a narrower gender gap in access to credit correlates with stronger financial stability. Sahay and Cihak (2018), on the other hand, find that a higher representation of women on the boards of banking supervision agencies is associated with greater bank stability.

Economic development, such as rapid industrialization, could also foster women's economic empowerment, with Cambodia being a notable example in ASEAN+3. Cambodia has been one of the fastest-growing economies in the region, averaging 7.6 percent growth from 2010–2019 (Figure 3.6.2). The influx of foreign direct investment (FDI) has bolstered manufacturing, especially the garment sector, which contributes over 70 percent of total exports.[1] The domestic garment sector employs more than one million workers—nearly 80 percent of whom are women (International Labour Organization [ILO] 2018). As FDI inflows help reduce gender inequality, for example as in Ouedraogo and Marlet (2018), Cambodia has also achieved significant gains in increasing its female labor force participation rate (Figure 3.6.3). The gender wage gap—or the ratio of female to male wages—also improved from 73.0 percent in 2009 to 82.0 percent in 2019, driven by progress in the manufacturing sector (Figure 3.6.4). These labor market achievements have also gone hand-in-hand with progress in education: as of 2022, a higher percentage of girls (67.5 percent) than boys (57.1 percent) in Cambodia complete lower secondary school. This difference between girls and boys is about three times larger than the East Asia and Pacific regional average (World Bank Gender Data 2024).

However, challenges remain for promoting gender equality in the post-pandemic era, and addressing them could further unlock Cambodia's economic potential. The agriculture and services sectors continue to show a wider gender wage gap, and a large share of the workforce remains in vulnerable informal employment (Figure 3.6.4). While the vulnerable employment ratio for women has declined, the gender gap has widened, reflecting slower progress for women (Figure 3.6.5).[2] This, in part, reflects the unequal impact of COVID-19 across genders (ILO 2021). Pandemic scarring reduced Cambodia's potential growth by an average of 1.95 percentage points during 2020–2022, with human capital stock and TFP contributing about 0.5 percentage point each (Tsang and others 2024). However, women were more affected than men by the pandemic, owing to their prevalence in the tourism sector and cultural norms where women are responsible for domestic care and household chores (Royal Government of Cambodia 2023). In the area of financial inclusion, men are more likely than women to have bank accounts, or to have made or received digital payments (World Bank 2024a). Addressing gender disparities is vital to mitigating these scarring effects and fostering higher and more inclusive economic growth in the economy.

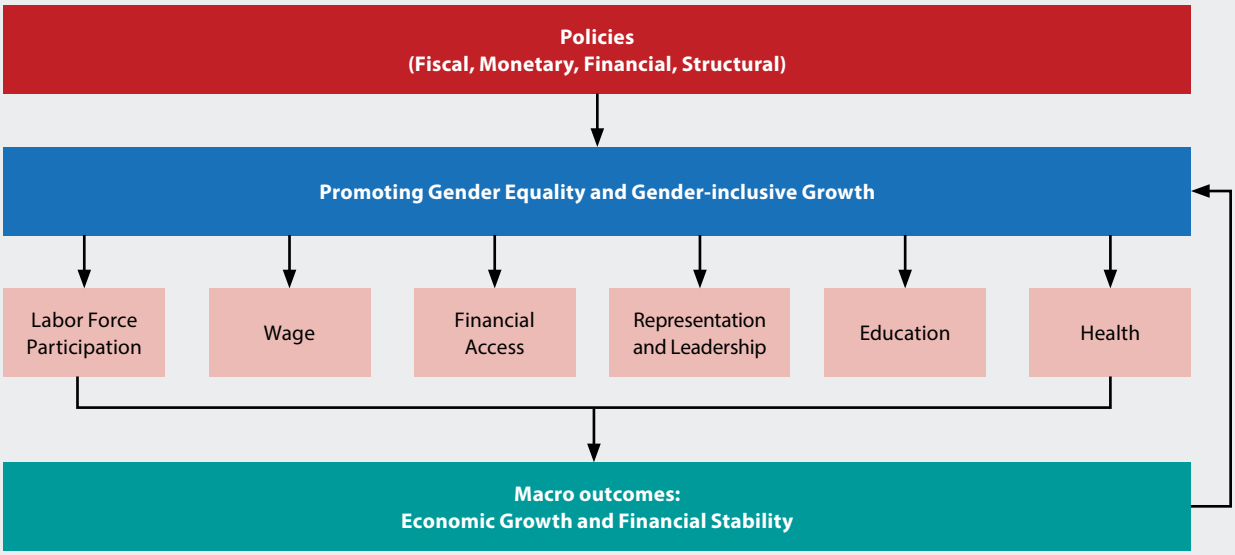
This box was written by Chunyu Yang.

1/ More formally, the garment, textile, and footwear sector.

2/ The vulnerable employment ratio is contributing family workers and own-account workers as a percentage of total employment.

The Cambodian government has taken commendable steps toward advancing gender equality, with continued efforts needed to ensure impactful outcomes. Currently, two national women's institutions—the Cambodian National Council for Women and the Ministry of Women's Affairs (MoWA)—have been leading efforts to promote and protect women's empowerment in Cambodia. In addition, all line ministries were tasked to develop Gender Mainstreaming Action Plans, or GMAPs, in their respective technical sectoral fields.[3] The government is also drafting the national policy on gender equality for the next decade, along with a road map to introduce gender budgeting.[4] The Cash Transfer Program for Pregnant Woman and Children—established in 2019—has provided social protection stipends totaling USD 10 million to over 170,000 pregnant women and children under the age of two since its inception (MoWA 2024). Moving forward, government efforts toward a tailored approach that incorporates gender in fiscal, monetary, financial, and structural policies should bring benefits to growth (International Monetary Fund 2024a). Support from development partners and international organizations, such as through surveillance and technical assistance, among others, can play a crucial role in identifying gender-related challenges and providing tailored policy advice to promote inclusive macroeconomic outcomes in Cambodia.

Figure 3.6.1. World: Gender Inclusion and Economic Outcomes

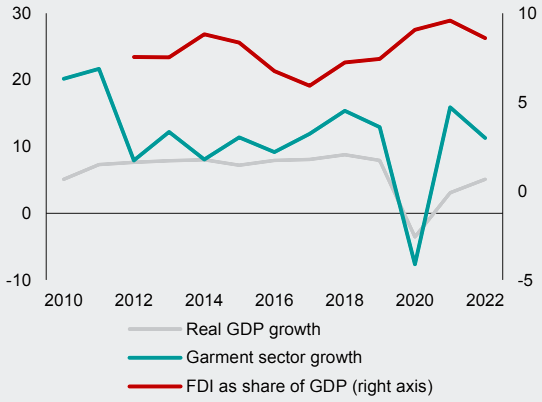


Source: Goyal and Sahay (2024); AMRO staff.

3/ Gender mainstreaming is the process of assessing the implications for women and men of any planned action, including legislation, policies, or programs, in all areas and levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring, and evaluation of policies and programs in all political, economic, and societal spheres so that women and men benefit equally. The ultimate goal is to achieve gender equality (United Nations Women 2022).

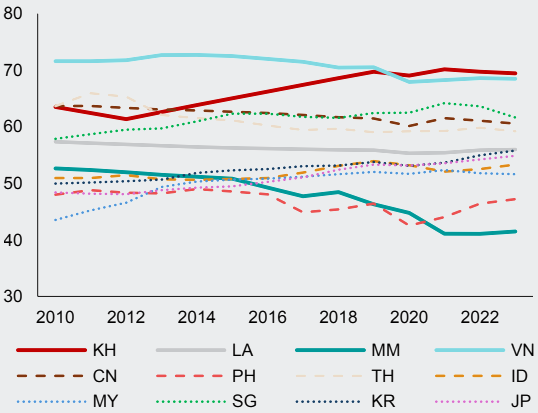
4/ Gender budgeting or gender-responsive budgeting is an approach that uses fiscal policy and public financial management to promote gender equality and women's and girls' development (ADB 2024).

Figure 3.6.2. Cambodia: GDP Growth, Garment Sector Growth, and FDI
(Percent year-on-year; Percent of GDP)



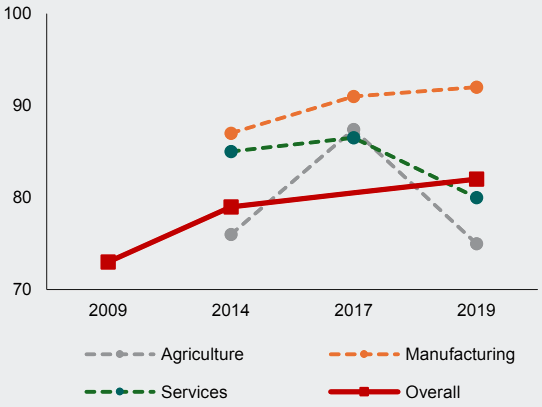
Source: National Institute of Statistics, Cambodia; National Bank of Cambodia; AMRO staff calculations.
Note: FDI = foreign direct investment.

Figure 3.6.3. Selected ASEAN+3: Female Labor Force Participation Rate
(Percent of female population aged 15 and above)



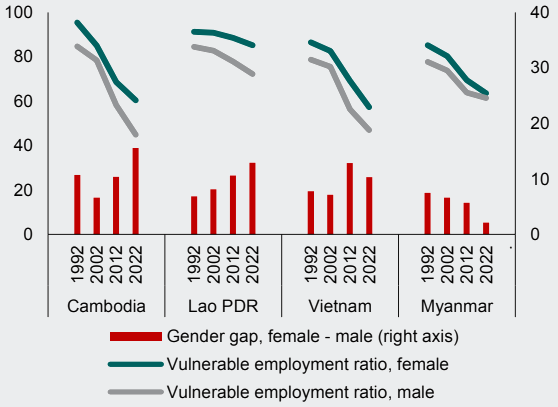
Source: International Labour Organization (ILO).
Note: CN = China; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = Philippines; SG = Singapore; TH = Thailand; VN = Vietnam.This is based on ILO estimation model. Data on the labor force used in the model are compiled by the ILO from labor force surveys, censuses, and establishment censuses and surveys.

Figure 3.6.4. Cambodia: Gender Wage Gap, by Sector
(Ratio of female to male wages, in percent)



Source: Cambodia Socio-Economic Survey Reports via United Nations Development Programme (2021) and Kokas and others (2024); AMRO staff calculations.

Figure 3.6.5. CLMV: Vulnerable Employment and Gender Difference
(Percent; Percentage points)



Source: ILO; AMRO staff calculations.
Note: This is based on ILO estimation model. Data are drawn from labor force surveys and household surveys, supplemented by official estimates and censuses for a small group of countries.

Box 3.7:

Moving Towards Cleaner and Greener Growth in ASEAN+3

Carbon emissions from the ASEAN+3 region, while still on the uptrend, have decelerated in recent years compared to the previous decade (Figure 3.7.1). This improvement reflects a combination of two factors: (1) easing emissions in the more carbon-intensive member economies—those in ASEAN and China, and (2) the continued fall in emissions in more advanced economies in the region, like Japan and Korea. This slower increase in emissions has been especially notable since the landmark Paris Agreement came into effect at the end of 2016 (United Nations Framework Convention on Climate Change [UNFCC] 2015). Through their submission of their nationally determined contributions—or NDCs—to the UNFCC, all ASEAN+3 economies have committed to taking specific actions and measures to help limit global warming to well below 2 degrees Celsius—preferably to 1.5 degrees—by 2050, which is the central goal of the Paris Agreement (AMRO 2023).[1]

ASEAN+3's commitment to climate action means that any future growth strategy will need to be aligned and consistent with a further lowering of carbon emissions. As in Kaya (1990), an economy's carbon emissions arise from four factors: (1) population growth; (2) income levels; (3) energy intensity of growth; and (4) the carbon intensity of energy. The first three components relate to an economy's demand for energy, while the last one is closely related to its choice of energy sources. Thus, if the ASEAN+3 region aims to experience robust growth in the future (translating to higher energy demand), the remaining lever to reduce overall carbon emissions—and meet their Paris Agreement commitments—is by reducing their respective carbon intensities.

In some ways, the more advanced economies in the region have achieved this balance of higher income growth and lower carbon emissions (Figure 3.7.2). Some are also in the late stage of structural change, where technological capabilities tend to be relatively high compared to other ASEAN+3 peers (Figure 3.21). The fall in average energy intensity (of GDP) in these economies suggests higher efficiency in producing energy that is needed to generate economic activity. There has also been a faster decline in the carbon intensity of their energy usage, showing an increasing reliance on cleaner energy sources. Japan and Korea, for example, are among the top economies in ASEAN+3 in terms of installed capacity for renewable energy, and are also in the top globally, in terms of operational nuclear capacity (AMRO 2023). These trends, in turn, have helped offset the strong influence of growing incomes and energy demand on overall emissions (Figure 3.7.2).

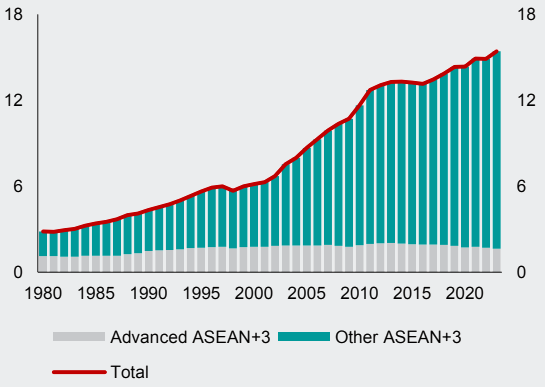
Elsewhere in ASEAN+3, resilient income growth has also pushed up overall emissions—but their average energy and carbon intensities have not fallen significantly. In fact, barring pandemic years, intensities have trended higher compared to the mid-2000s (Figure 3.7.3). Most of these economies are in the early to middle stages of structural change—and the challenge for domestic policymakers is to be able to advance into the next phase of economic transformation without relying as much on fossil fuels. For middle-stage economies that are experiencing stalled industrialization, in particular, this would mean seriously incorporating more energy-efficient and low-carbon technologies in efforts to revitalize their manufacturing industries. The rising use of renewables in ASEAN+3 is highly encouraging, but there is still significant room to scale up its usage to all sectors (Figure 3.7.4). Upgrading and greening power-generating technologies should also be developed in tandem with the promotion of clean energy sources, as well as exploring the use of cleaner forms of hydrogen—typically used by "hard-to-abate" sectors, many of which also happen to be key contributors to ASEAN+3 economic activity. Regulations can play a significant role in reducing energy and carbon intensities, through the introduction of more stringent energy performance and fuel-economy standards, or instruments like carbon taxes.

This box was written by Marthe M. Hinojales.

1/ This is compared to pre-industrial global average temperatures.

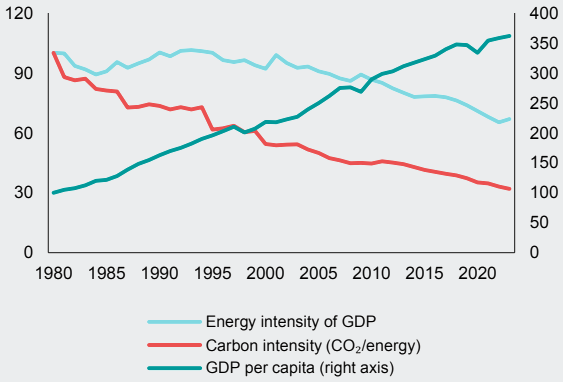
At the current juncture, however, many of the technologies required to lower these energy and carbon intensities are not yet widely available to many economies in the region. Some of these technologies are either still in the early stages of commercialization or carry prohibitive costs. The different trends between these two groups in the region highlights a huge opportunity and rationale for ASEAN+3 economies to collaborate, exchange knowledge and expertise, and learn from the experience of successful peers. Without these technologies—and supporting policies—in place, there can be a real risk of some ASEAN+3 economies needing to forfeit a portion of their future economic growth to meet their climate goals. With regional cooperation and coordination, this need not be the case; after all, given very strong regional ties, the ASEAN+3 region is only as strong as its weakest link.

Figure 3.7.1. ASEAN+3: Annual Carbon Dioxide Emissions
(Billions of tons)



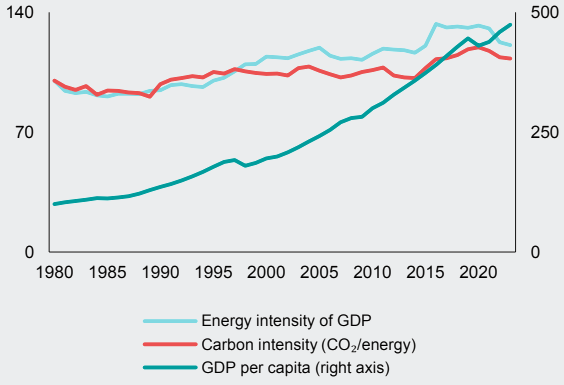
Source: Global Carbon Budget via Our World In Data; AMRO staff calculations.
Note: "Advanced ASEAN+3" includes Hong Kong, Japan, Korea, and Singapore. "Other ASEAN+3" includes the remaining ASEAN economies, plus China. The grouping follows the International Monetary Fund's classification.

Figure 3.7.2. Plus-3 ex China and Singapore: Selected Drivers of Carbon Dioxide Emissions
(100 = 1980)



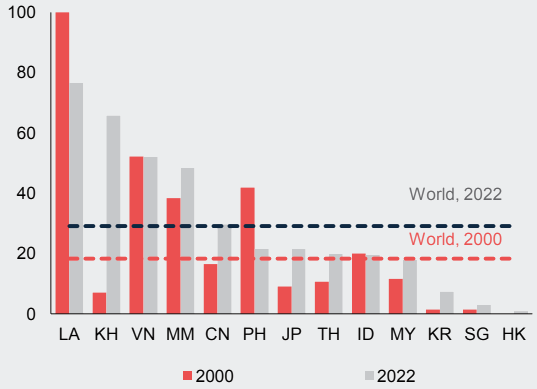
Source: Global Carbon Budget via Our World In Data; AMRO staff calculations.

Figure 3.7.3. Selected ASEAN and China: Selected Drivers of Carbon Dioxide Emissions
(100 = 1980)



Source: Global Carbon Budget via Our World In Data; AMRO staff calculations.
Note: Data for ASEAN excludes Singapore.

Figure 3.7.4. ASEAN+3: Renewable Electricity Generation
(Percent of total generation)



Source: International Renewable Energy Agency; AMRO staff calculation.
Note: CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; VN = Vietnam.

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