International Organization AMRO 10 Years

ASEAN+3 REGIONAL ECONOMIC OUTLOOK 2026

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Foreword

The global economy has been battered by large, unpredictable shocks. In 2025, sweeping US tariff measures pushed trade policy uncertainty to historic highs, marking the most significant global trade disruption in decades. Despite this, the ASEAN+3 region expanded by 4.3 percent – performing much better than projected immediately after the April tariff shock.

Why has the region outperformed forecasts? Cyclically, semiconductor exports and AI-related investments provided a strong offset. The region's policy buffers and capacity to respond flexibly to shocks also served it well. Structurally, the region has undergone a fundamental transformation compared to two decades ago, challenging the common characterization of the region as primarily a manufacturing location serving external demand.

On the supply side, regional production networks have evolved from a Japan-centered hub into a dense, interconnected architecture anchored by China. Trade is now concentrated in the intermediate and capital goods that underpin this integrated network.

On the demand side, ASEAN+3 now accounts for 28 percent of global final demand, surpassing the United States. The region is now more regionally focused and less dependent on extraregional markets than at any point in the last two decades. Twenty years ago, nearly a third of ASEAN+3 exports serving final demand went to the United States. By 2022, that share fell to 20 percent, while intraregional demand rose to nearly 30 percent. Increasingly, the region is producing for itself.

This transformation offers a buffer against external volatility but also means regional business cycles are more synchronized. Shocks within the region now propagate faster, making sound domestic management a matter of shared regional importance. Consequently, regional cooperation mechanisms – like policy dialogue, mutual surveillance, and the financial safety net – are more valuable than ever.

Fresh volatility arrived in 2026 with military conflicts in the Middle East. As ASEAN+3 sources over a third of its oil and gas from that region, the risks of higher energy bills and inflation are significant. However, the region entered this period from a position of strength – in its macroeconomic conditions, the policy space available to respond, and in how the structure of its economies has changed. We are now more energy-efficient, more diversified in power sources, and less oil-dependent in transport. Still, the job is not done, and the case for accelerating green transition is now considerably stronger. The 2026 oil shock reminds us that the energy transition is a macroeconomic resilience imperative, not just an environmental one.

In this highly uncertain environment, preserving policy flexibility is the central challenge. The range of plausible outcomes is wider than usual, and confidence in any single projection is lower. Key risks – severe energy disruptions, renewed trade tensions, and global financial market volatility – are plausible scenarios requiring careful contingency planning.

The nature of the shock and its persistence must determine the nature of the response. Getting the diagnosis right – in real time, under uncertainty – is what separates effective policy from costly mistakes.

Consider a supply shock, like a prolonged surge in global energy prices. For a region of energy importers, this creates a difficult trade-off between growth and inflation while triggering capital flow pressures and market volatility. The right response hinges on assessing the shock's persistence in real time. If the disruption seems temporary, policymakers should "look through" the price spike to avoid damaging growth. However, if inflation pressures broaden, decisive action is needed to anchor expectations. Fiscal policy should focus on targeted support for the vulnerable rather than broad subsidies that distort prices and erode fiscal space.

A demand shock, such as escalating trade tensions or a technology-led global slowdown, presents a different challenge: the case for accommodative policy is more straightforward. If the shock is temporary, policymakers can wait and assess, especially if policy space is judged to be limited. If it appears sustained, early action is vital to prevent a collapse in confidence and investment and a further erosion of policy space. Coordinated monetary easing and targeted fiscal support can then work together to stabilize the economy.

Beyond cyclical shocks, the region must sustain long-term resilience in a more regionally anchored landscape. Concentration risks have risen in some economies as they moved up value chains. To get the balance right, we must prioritize upgrading domestic capabilities, diversifying to reduce vulnerabilities, and ensuring inclusive participation. For ASEAN, those efforts would require deepening integration and moving beyond trade liberalization to promote denser intraregional investment.

Despite years of policy work, intra-ASEAN integration remains shallow. Intraregional trade and investment shares have slipped since 2010, with goods trade falling to 22.5 percent and services to 13.8 percent by 2024. Even as total FDI into ASEAN doubled, the intraregional share dropped to 14.1 percent. We need deeper ties to buffer against geopolitical fragmentation and trade uncertainty. Strengthening these internal connections isn't just about ASEAN; it bolsters the entire ASEAN+3 architecture. A denser regional network creates a more balanced, resilient production engine, helping the whole region thrive in a fragmented world.

This year's *AREO* addresses these themes. Chapter 1 assesses the macroeconomic outlook and the policy trade-offs ahead, with a special feature examining how central banks can navigate monetary policy when the nature and persistence of shocks are difficult to diagnose in real time. Chapter 2 traces the structural transformation of the region's economic linkages and its implications, with a special feature exploring pathways for deeper integration within the ASEAN community.

Through our continuous surveillance and analytical work, AMRO is committed to supporting the region's capacity to diagnose shocks, understand spillover dynamics, and calibrate policy responses. We hope this publication serves as a useful resource – for policymakers navigating difficult trade-offs, and for all who seek to understand the forces shaping the region's economic prospects.

Dong He
Chief Economist

Acknowledgments

This report provides AMRO staff's assessment of both the conjunctural and structural issues facing the ASEAN+3 region. It covers the short-term risks, vulnerabilities, and challenges facing member economies, as well as the policy options taken by or that are available to their authorities. It also presents staff's study on conjunctural and longer-term issues that are pertinent to sustained economic growth in the region. The report has been reviewed by the Executive Committee of the ASEAN+3.

The analysis in this report was coordinated by the Regional Surveillance Group led by Allen Ng; it also draws on the surveillance work of the AMRO country teams. The report was reviewed and approved by Chief Economist, Dong He. It has also benefited from the guidance of AMRO Director Yasuto Watanabe and other members of the Senior Management team.

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Finally, the views expressed in this report are those of AMRO staff and do not, in any way, implicate ASEAN+3 members.

Abbreviations

ADB	Asian Development Bank
ACE	ASEAN Centre for Energy
AFPR	ASEAN+3 Fiscal Policy Report
AFSR	ASEAN+3 Financial Stability Report
AI	Artificial Intelligence
AMRO	ASEAN+3 Macroeconomic Research Office
APG	ASEAN Power Grid
AREO	ASEAN+3 Regional Economic Outlook
ASEAN[1]	Association of Southeast Asian Nations
ASEAN+3[2]	ASEAN Plus China (including Hong Kong, China), Japan, and Korea
ASEAN-4	Indonesia, Malaysia, the Philippines, and Thailand
ASEAN-5	Indonesia, Malaysia, the Philippines, Thailand, and Singapore
ATP	Assembly, Test, and Packaging
BCLM	Brunei Darussalam, Cambodia, Lao PDR, and Myanmar
BCLMV	Brunei Darussalam, Cambodia, Lao PDR, Myanmar, and Vietnam
BCLV	Brunei Darussalam, Cambodia, Lao PDR, and Vietnam
BIS	Bank for International Settlements
BN	Brunei Darussalam[3]
BOT	Bank of Thailand
BSP	Bangko Sentral ng Pilipinas
CLM	Cambodia, Lao PDR, and Myanmar
CN	China
COVID-19	2019 Coronavirus Disease
CPI	Consumer Price Index
DRAM	Dynamic Random Access Memory
ECB	European Central Bank
ECI	Economic Complexity Index
EDA	Electronic Design Automation
ELB	Effective Lower Bound
EMS	Electronic Manufacturing Services
ETF	Exchange Traded Funds
EU	European Union
EV	Electric Vehicle
FDI	Foreign Direct Investment
FY	Fiscal Year
GDP	Gross Domestic Product
GEM	Global Economic Model
GFC	Global Financial Crisis
GFN	Gross Financing Needs
GVC	Global Value Chain
HBM	High Bandwidth Memory
HK	Hong Kong, China[4]
ID	Indonesia
IEEPA	International Emergency Economic Powers Act
IIP	International Investment Position
IMF	International Monetary Fund
ISIC	International Standard Industrial Classification
JP	Japan
KH	Cambodia
KR	Korea
LA, Lao PDR	Lao People's Democratic Republic
LNG	Liquefied Natural Gas
MM	Myanmar
MNC	Multinational Corporation
MY	Malaysia
ODI	Outward Direct Investment
OECD	Organisation for Economic Co-Operation and Development
OSAT	Outsourced Semiconductor Assembly and Testing
PH	The Philippines
Plus-3	China (including Hong Kong, China), Japan, Korea
PPI	Producer Price Index
R&D	Research and Development
SG	Singapore
SME	Small and Medium Enterprise
TH	Thailand
TVET	Technical and Vocational Education and Training
US	United States
USD	US Dollar
VN	Vietnam

1/ For clarity, all references to ASEAN in this report exclude Timor-Leste.
2/ For clarity, all references to ASEAN+3 in this report exclude Timor-Leste.
3/ For brevity, "Brunei Darussalam" is referred to as "Brunei" in the text.
4/ For brevity, "Hong Kong, China" is referred to as "Hong Kong" in the text.

Chapter 1.

Macroeconomic Prospects and Challenges

Kwai Tsing Container Terminals, Hong Kong

Highlights

- The global economy weathered a turbulent year in 2025, sustaining steady growth amid the most significant shift in trade policy in decades. Sweeping tariff measures announced by the United States (US) in April pushed trade policy uncertainty to historic highs, but tariff outcomes proved less severe than initially feared and their macroeconomic impact was more contained than expected. The US economy continued to expand at a solid pace, supported by firm domestic demand and investment related to artificial intelligence (AI). Euro area growth remained subdued amid structural manufacturing headwinds and soft external demand. Global inflation continued to moderate, with lower commodity prices and weaker demand easing price pressures outside the United States, even as tariff pass-through kept US disinflation on a slower path.

- For 2025, ASEAN+3 outperformed expectations, expanding by 4.3 percent – well above the 3.8 percent projected in the immediate aftermath of the April tariff announcements. Several factors underpinned this outperformance: robust AI-driven semiconductor demand sustained export momentum throughout the year; intraregional trade strengthened even as US-bound shipments softened; and timely policy support helped cushion domestic activity. Private consumption remained firm across most economies, anchored by favorable labor markets and low inflation, while investment strengthened notably in ASEAN amid continued foreign direct investment (FDI) inflows into advanced electronics, electric vehicles, and digital services. Headline inflation stayed low and stable at 0.9 percent – below the region's 2014-2019 long-run average – providing room for accommodative monetary policy. Rising international reserves reinforced the region's external buffers in a volatile year.

- Growth is projected to moderate to 4.0 percent in 2026 and 2027, mainly as higher US tariffs weigh on external demand. Domestic demand is expected to remain the key anchor, underpinned by continued investment activity, sustained FDI inflows, and resilient private consumption amid favorable labor market conditions. Technology-driven export demand should provide an important offset, with semiconductor and electronics shipments expected to remain firm on the back of ongoing AI-related investment, though at a more measured pace than in 2025. Headline inflation is projected to rise to 1.4 percent in 2026 and 1.5 percent in 2027, mainly reflecting higher global energy prices and subsidy rationalization in several economies.

- The balance of risks to the outlook is tilted to the downside, with uncertainty remaining elevated. Technology demand and trade policy shifts have evolved into sources of two-sided risk. Stronger-than-expected AI adoption and capital expenditure could lift growth above the baseline, while setbacks in the technology cycle or renewed tariff escalation could weigh materially on regional activity. Elevated global energy prices and the potential for a more sustained disruption to energy supply pose a further risk to growth while adding to inflationary pressures. Beyond these, financial market volatility and weaker-than-expected growth in major economies continue to pose downside risks to the region.

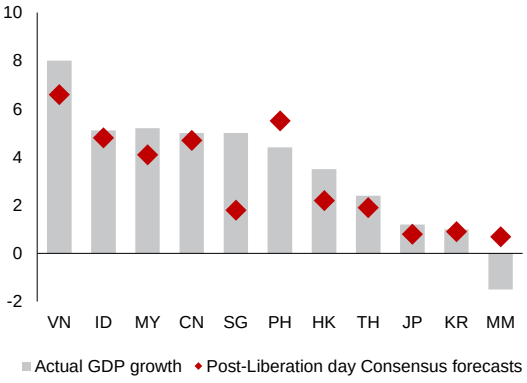
- Preserving policy flexibility is the central challenge for ASEAN+3 policymakers in the near term. The region enters 2026 from a position of relative strength – growth exceeded expectations in 2025, inflation remained low, and most economies retain meaningful fiscal and monetary space. The imperative to preserve that flexibility reflects the elevated uncertainty surrounding the outlook and the unusually wide range of plausible outcomes. A data-dependent and flexible approach, supported by clear communication and complementary fiscal and monetary policies, will be essential to sustaining growth momentum while keeping the capacity to respond to shocks intact.

Part I. Economic Developments in 2025: Better Than Expected Performance

The global economy weathered a turbulent year in 2025, sustaining steady growth amid the most significant shift in trade policy in decades. The sweeping tariff measures announced by the United States in April – including broad reciprocal tariffs on major trading partners – pushed trade policy uncertainty to historic highs and triggered sharp financial market volatility.[1] While tensions between China and the United States escalated before a partial truce later in the year, the broader trade policy landscape remained unsettled, with bilateral deals of uncertain durability. Yet, the impact proved more contained than initially feared: frontloading of shipments cushioned the initial blow, while investment driven by artificial intelligence (AI) provided a powerful offsetting force. The United States expanded by 2.2 percent, supported by robust AI-related capital expenditure and fiscal stimulus, though labor market softness emerged toward the end of the year. Euro area growth remained subdued at about 1.4 percent amid persistent structural headwinds in manufacturing. Global inflation continued to moderate, though unevenly: tariff imposition slowed the pace of disinflation even as the full pass-through to prices proved slower than expected in the United States, while inflation moderated more quickly elsewhere amid softer demand and lower commodity prices.

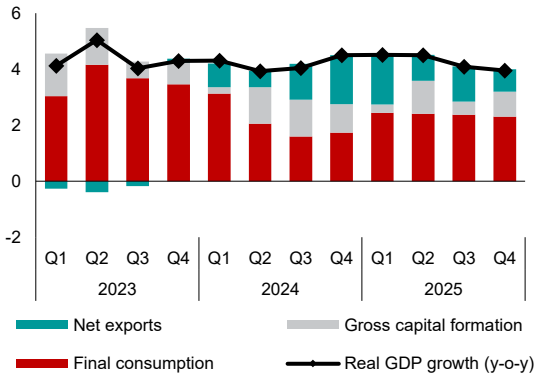
Amid significant trade policy disruptions, the ASEAN+3 region once again demonstrated its resilience, expanding by 4.3 percent. This exceeded the 3.8 percent projected in the immediate aftermath of the April tariff announcements (Figure 1.1). This outperformance reflected several favorable factors: tariff outcomes proved less severe than initially feared, robust AI-driven semiconductor demand sustained export momentum throughout the year, and continued strength in intraregional trade provided a partial buffer against external headwinds. Domestically, private consumption remained firm across most economies, anchored by favorable labor market conditions and low inflation, while investment activity strengthened notably in ASEAN amid continued FDI inflows into advanced electronics, electric vehicles, and digital services (Figure 1.2). Headline inflation stayed low and stable at 0.9 percent, below the region's long-run average, providing space for accommodative monetary stances.

Figure 1.1. Comparison Between Real GDP Growth and Post-Liberation Day Forecast
(Percent, year-on-year)



Source: National authorities; Consensus Economics.
Note: CN= China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; MM = Myanmar; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. Post-Liberation day Consensus forecasts refer to the median forecast across various professional forecasters surveyed by Consensus Economics in July 2025. Forecasts for Brunei, Cambodia, and Lao PDR are not available.

Figure 1.2. Breakdown of ASEAN+3 Real GDP Growth
(Percentage point, year-on-year)



Source: National authorities; AMRO staff calculations.
Note: Statistical discrepancies are not shown. Excludes Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam due to data unavailability.

The authors of this chapter are Kriti Andhare, Jun Ee Yohnsen Ang, Catharine Tjing Yiing Kho (lead), Allen Ng, Haobin Wang, and Yuhong Wu, under the supervision of Allen Ng, with contributions from Chiang Yong (Edmond) Choo, Suan Yong Foo, Byunghoon Nam, Wee Yang Ng, Wanwisa (May) Vorranikulkij, and Chunyu Yang, and input from AMRO country desk economists.

1/ The reciprocal tariffs were set out in Executive Order 14257, Regulating Imports with a Reciprocal Tariff to Rectify Trade Practices that Contribute to Large and Persistent Annual United States Goods Trade Deficits (April 2, 2025), under which the International Emergency Economic Powers Act was invoked, alongside the National Emergencies Act, to declare a national emergency related to large and persistent US goods trade deficits and impose additional import duties.

Trade Held Firm Despite Unprecedented Trade Policy Uncertainty

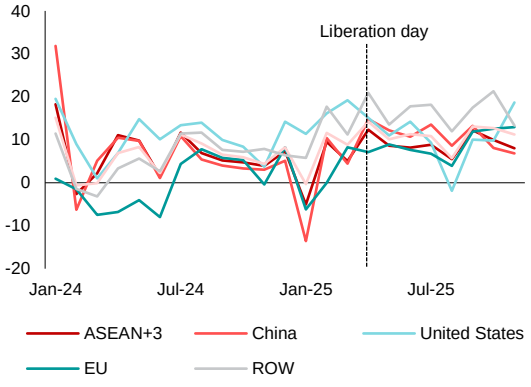
Despite the sharp increase in US tariffs in 2025 and ongoing trade policy uncertainty, the region's external trade remained robust, providing crucial support for growth. Exports were boosted early in the year by frontloading ahead of US tariff implementation (Figure 1.3). The tariff landscape evolved considerably through the year – from the sweeping tariff announcements on April 2, 2025, through rounds of bilateral negotiations, to the eventual rates that took effect (Box 1.1). Ultimately, tariff outcomes proved less severe than initially anticipated, and growth momentum was sustained into the second half of the year.

While higher US tariffs led to weaker export growth to the United States for the region, this was partly offset by continued strength in intraregional trade. Since Liberation Day on April 2, 2025, notwithstanding weaker exports growth to the United States, ASEAN+3's total trade expanded at a more rapid pace relative to the period before.[2] The softening in US-bound exports was driven by a sharp contraction in China's exports to the United States (Figure 1.4). However, China's exports to other markets, including ASEAN+3, strengthened in parallel. China's export growth to other ASEAN+3 economies roughly doubled to 13 percent post-Liberation Day, driven by a 17-percent export growth to ASEAN. This adjustment was not unidirectional: other ASEAN+3 economies' exports to China also expanded more rapidly, with growth doubling from 6 percent to 12 percent over the same period. Overall, intraregional trade strengthened despite the uncertain trade environment, rising by 10.6 percent post-Liberation Day.

Semiconductor exports remained particularly strong throughout the year, underpinned by robust AI-related demand globally. The surge in global investment for AI-related infrastructure, including data centers, cloud infrastructures and AI-enabling technologies, drove a broad-based expansion in semiconductor demand across regional supply chains (Figure 1.5). Korea led the increase, as continued strong expansion in semiconductor shipments since 2024 drove export growth to more than 20 percent in 2025 (Figure 1.6). The momentum extended to other regional economies involved in mature chip production, assembly, testing, and broader electronic goods manufacturing. China's green transition also lifted exports, with exports of electric vehicles and lithium-ion batteries rising by 30.7 percent from the previous year.

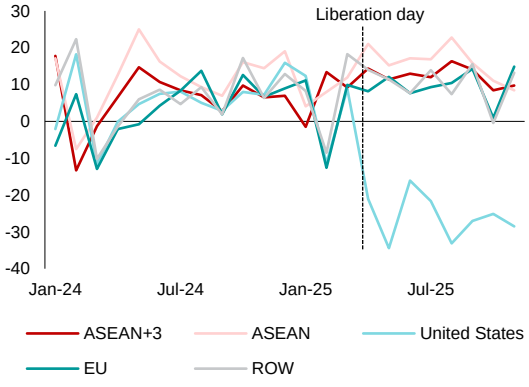
Services exports grew at a more moderate pace than goods, with tourism recovery uneven across the region. Tourist arrivals broadly surpassed pre-pandemic levels in early 2025, and the Plus-3 economies sustained positive momentum through most of the year (Figure 1.7). However, several ASEAN economies experienced temporary disruptions from natural disasters and security-related concerns, which weighed on arrivals midyear. By the end of the year, tourism activity had begun to normalize as these temporary factors dissipated. Beyond tourism, exports of other services continued to expand, with industrial and financial services recording solid growth (Figure 1.8).

Figure 1.3. ASEAN+3 (excl. China) Monthly Goods Exports to Selected Economies
(Percent, year-on-year)



Source: S&P Global Trade Atlas; AMRO staff calculations.
Note: EU = EU-27. Excludes Cambodia, Lao PDR, and Myanmar due to data unavailability.

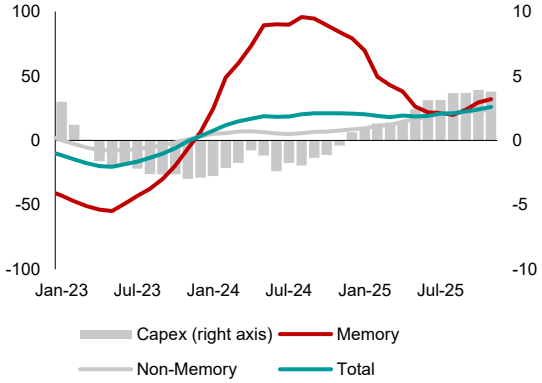
Figure 1.4. China Monthly Goods Exports to Selected Economies
(Percent, year-on-year)



Source: S&P Global Trade Atlas; AMRO staff calculations.
Note: EU = EU-27. Excludes Cambodia, Lao PDR, and Myanmar due to data unavailability.

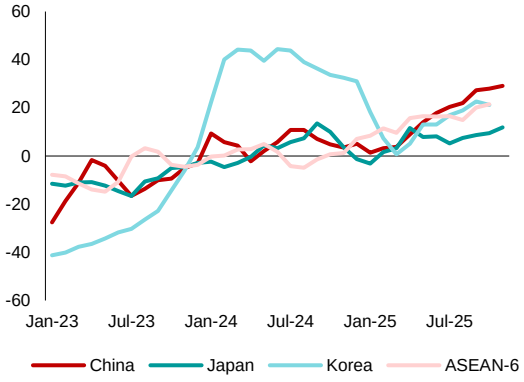
[2] Post–Liberation Day refers to April–December 2025 (latest available data), while pre–Liberation Day covers January 2024–March 2025. The figures cited here correspond to average monthly year-on-year growth rates.

Figure 1.5. Global Semiconductor Cycle and Capital Expenditure
(Percent, year-on-year, six-month moving average)



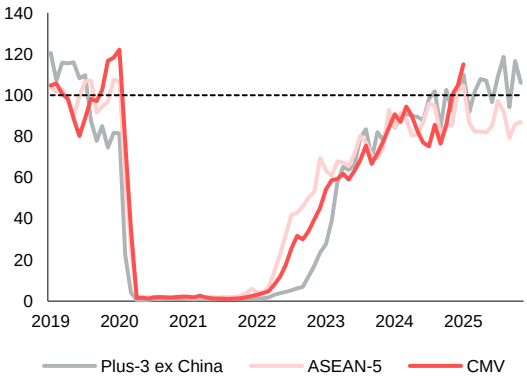
Source: World Semiconductor Trade Statistics; AMRO staff calculations.
Note: The semiconductor cycle is measured as six-month moving average of the monthly semiconductor sales data.

Figure 1.6. ASEAN+3 Semiconductor Export Growth
(Percent, year-on-year, three-month moving average)



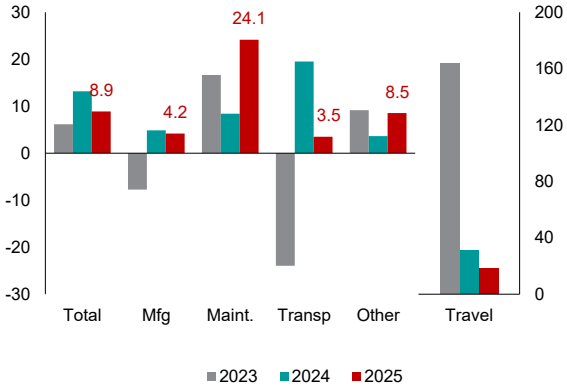
Source: S&P Global Trade Atlas; AMRO staff calculations.
Note: ASEAN-6 = Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. Data show semiconductor exports under HS Chapters 8541 and 8542.

Figure 1.7. ASEAN+3 Tourist Arrivals
(Index, 2019 = 100)



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: Plus-3 ex China = Hong Kong, Japan, and Korea; ASEAN-5 = Indonesia, Malaysia, Philippines, Singapore and Thailand; CMV = Cambodia and Vietnam. Excludes Brunei, Lao PDR, and Myanmar due to data unavailability.

Figure 1.8. Growth in Exports of Services for ASEAN+3, by Category
(Percent, year-on-year)



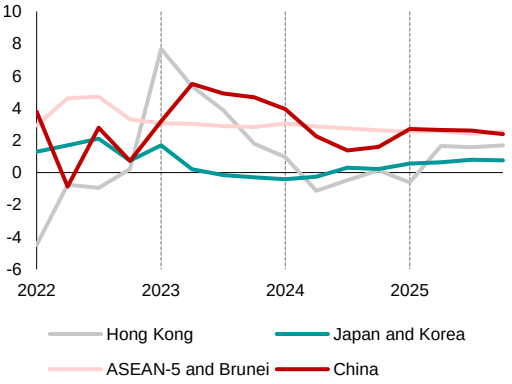
Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: Mfg = manufacturing; Maint. = maintenance and repair; Transp = transport. Data refers to an average of annual growth rates. 2025 data is up to Q3 2025. Excludes Brunei, Lao PDR, and Myanmar due to data unavailability.

Domestic Demand Anchored Growth

Domestic demand, particularly private consumption, continued to anchor growth. Household spending held up across most ASEAN+3 economies, supported by favorable labor market conditions and low and stable inflation (Figure 1.9). After subdued growth in 2024, private consumption in China improved modestly, buoyed by policy support and gradually recovering consumer sentiment. Unemployment declined and labor force participation remained strong in most economies, except in Hong Kong, where external uncertainties weighed on hiring, and in the Philippines, where weather disruptions affected labor market activity (Figure 1.10).

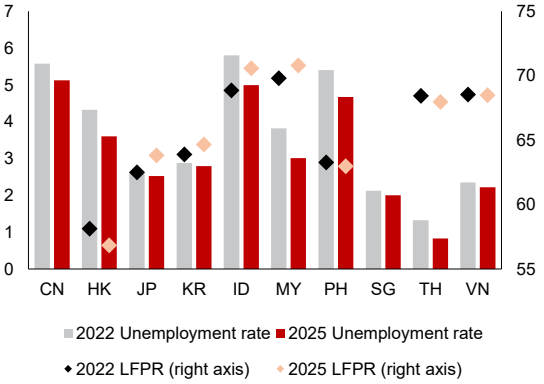
Investment activity bolstered domestic demand further, though with some unevenness across the region. Investment in ASEAN was particularly robust, driven by continued strong FDI inflows – both the realization of past commitments and new investments – into sectors such as advanced electronics, electric vehicles, and digital services. (Figures 1.11 and 1.12; More on FDI in the region features in Box 1.2). In China, overall investment was slightly softer, with spending in clean energy and advanced manufacturing partly offsetting the prolonged property sector adjustment. Investment was relatively muted in Japan and Korea, reflecting weak housing activity in Japan and continued correction in the construction sector in Korea.

Figure 1.9. Contribution of Private Consumption to GDP Growth for ASEAN+3
(Percentage point contribution)



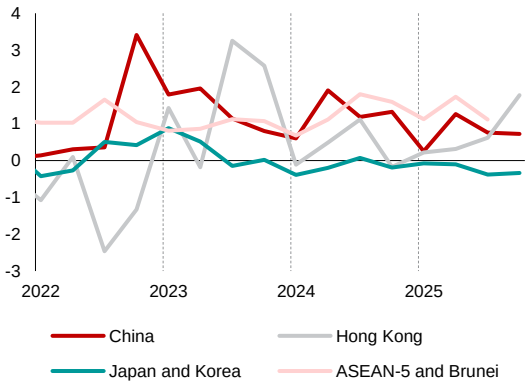
Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Data are unavailable for Cambodia, Lao PDR, Myanmar, and Vietnam. Data for Brunei are up to Q3 2025. Data for China refers to final consumption.

Figure 1.10. Unemployment Rates and Labor Force Participation for ASEAN+3
(Percent of working-age population, seasonally adjusted; percent, seasonally adjusted)



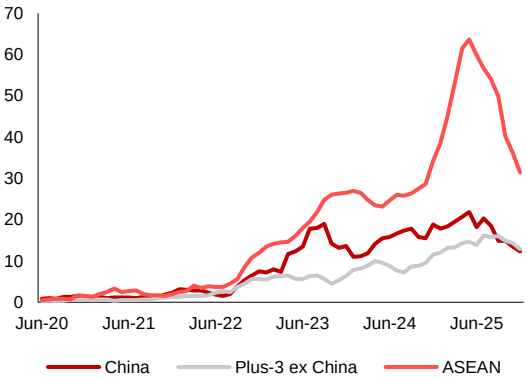
Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: LFPR = Labor force participation rate; CN= China; HK = Hong Kong; JP = Japan; KR = Korea; ID = Indonesia; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. Unemployment rate and labor force participation rate data are up to Q4 2025.

Figure 1.11. Contribution of Gross Fixed Capital Formation to GDP Growth for ASEAN+3
(Percentage point contribution)



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Data are unavailable for Cambodia, Lao PDR, Myanmar, and Vietnam.

Figure 1.12. Inward Investment Announcements by Subregion
(Number of projects)



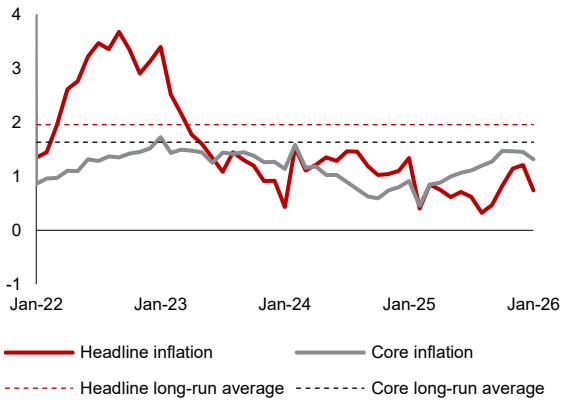
Source: Orbis Cross border; AMRO staff calculations.
Note: Plus-3 ex China = Hong Kong, Japan, and Korea. Data refers to the six-month moving average number of announced projects for each month.

Inflation Remained Low and Stable

Headline inflation remained low and stable, staying below the region's long-run average. Most regional economies entered 2025 with inflation near their targets or long-term averages, and inflation remained broadly within that range, supported primarily by lower global commodity prices (Figure 1.13). Oil price spikes during heightened Middle East tensions were short-lived and did not lead to sustained fuel inflation (Figure 1.14). Food prices, including rice, remained contained because supply conditions improved and harvests in key producing economies were favorable. Services inflation rose in some economies, reflecting tight labor markets and steady wage growth.

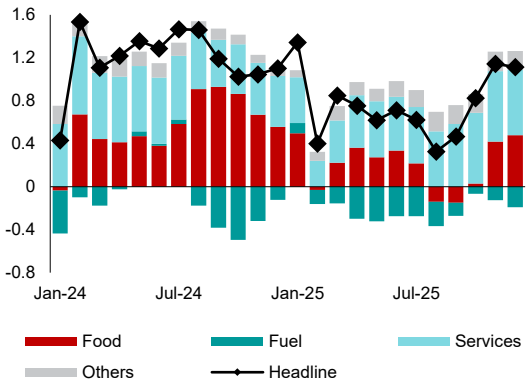
Core inflation edged up but remained close to the long-term average. While price dynamics varied across the region, the stability of core inflation underscored well-anchored expectations, with limited second-round effects from wage growth. In most economies, steady core inflation reflected the balance of firm domestic demand against contained import prices. China and Thailand were exceptions, where both headline and core inflation remained subdued amid weaker domestic demand conditions. Thailand also faced sector-specific price changes, which dampened overall price pressures.

Figure 1.13. ASEAN+3 Headline and Core Inflation
(Percent year-on-year)



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: Regional aggregates are GDP weighted on a PPP-adjusted basis. Core inflation data excludes Brunei and Myanmar due to data unavailability. Long-term average refers to the simple average of 2014–2019.

Figure 1.14. ASEAN+3 Headline Inflation by Components
(Percentage point, year-on-year)



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: Regional aggregates are GDP weighted on a PPP-adjusted basis.

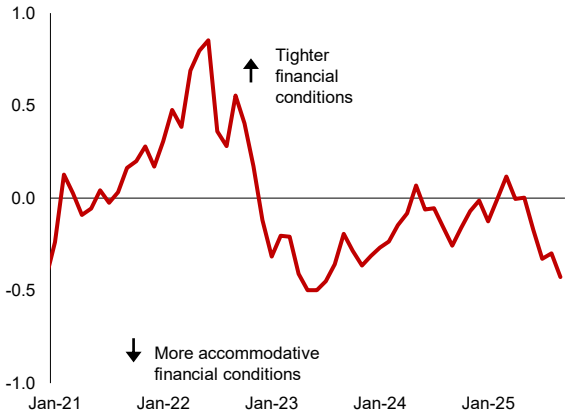
Financial Conditions Eased After April Volatility

Financial conditions tightened sharply following the Liberation Day tariff announcement in April before gradually easing for the rest of the year (Figure 1.15). The initial shock triggered a repricing of risk across global markets, pushing up volatility and term premiums, and raising financing costs. However, conditions eased through the second half as tariff outcomes proved less severe than initially anticipated and trade tensions partially deescalated, alongside better-than-expected growth performance and accommodative monetary policy across much of the region (Figure 1.16).

Regional financial markets reflected these shifting conditions. Equity markets posted solid gains for the year, supported by strong momentum in AI-related sectors (Box 1.3). Bond markets saw some volatility, with long-term yields rising in economies that announced expanded fiscal stimulus, though yields generally stabilized as the year progressed (Figure 1.17). Regional currencies appreciated broadly against the US dollar, which depreciated amid market reassessment of US policy uncertainty and fiscal pressures (Figure 1.18). The ringgit, the baht, and Singapore dollar saw particularly notable gains. Toward the end of the year, however, currency movements diverged: ASEAN-5 currencies remained on an appreciating trend, while economy-specific factors led to depreciation of the won and yen against the US dollar.

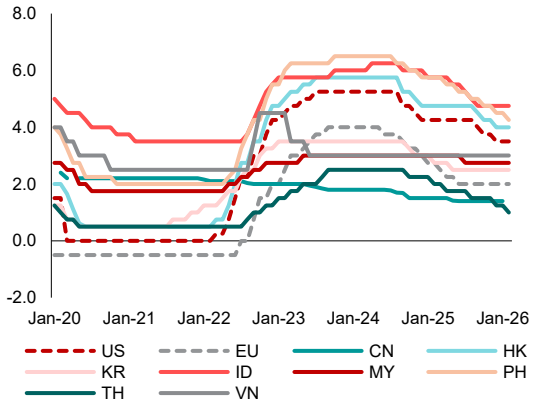
Credit growth expanded further across most ASEAN+3 economies. Bank lending to the nonfinancial private sector grew at a faster pace than in 2024 for most regional economies, in line with robust private sector activity (Figure 1.19). However, credit growth in China and Thailand moderated in line with slower domestic economic activities. Despite volatility earlier in the year, the regional financial system remained sound overall, with banks maintaining adequate capital and liquidity buffers while credit risks stayed contained. (See the *ASEAN+3 Financial Stability Report 2025* for more detailed discussions on financial sector developments).

Figure 1.15. Financial Conditions Index for ASEAN+3
(Normalized scores)



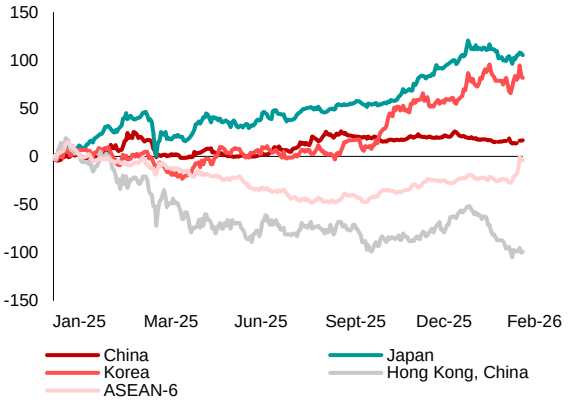
Source: National authorities via CEIC and Haver Analytics; AMRO staff estimates.
Note: AMRO's financial conditions index is based on indicators covering the banking system, foreign exchange market, bond and equity markets. Data covers China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, and Thailand.

Figure 1.16. Policy Interest Rates
(Percent)



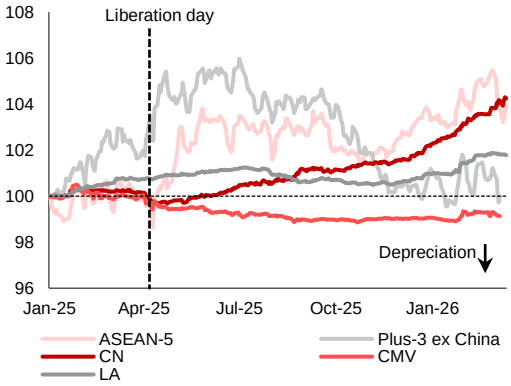
Source: National authorities via Haver Analytics.
Note: Policy rates refer to 7-day reverse repo rate (China, CN); BI Rate (Indonesia, ID); base rate (Hong Kong, HK; Korea, KR); overnight policy rate (Malaysia, MY); target reverse repurchase rate (the Philippines, PH); one-day repurchase rate (Thailand, TH); refinancing rate (Vietnam, VN); federal funds rate (upper range) (United States, US).

Figure 1.17. 10-year Government Bond Yields
(Basis point change from January 1, 2025)



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: ASEAN-6 (average) is the simple mean of changes for Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

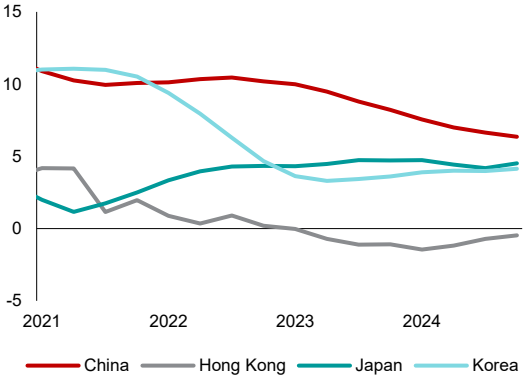
Figure 1.18. Exchange Rates Against the US Dollar
(Index, January 1, 2025 = 100)



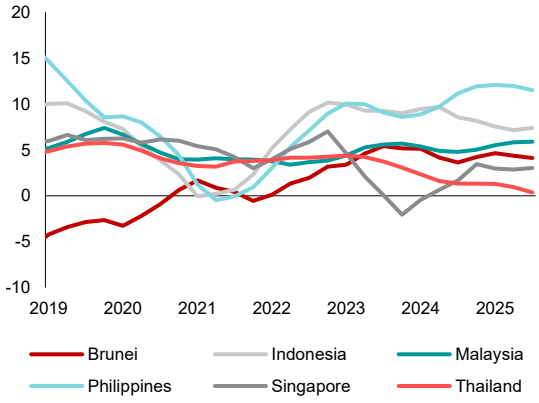
Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; CMV = Cambodia, Myanmar, and Vietnam; CN = China; LA = Lao PDR; Plus-3 ex China = Hong Kong, Japan, and Korea. Regional aggregates are calculated using simple average.

Figure 1.19. Growth in Credit to Private Nonfinancial Sector
(Percent, year-on-year, four-quarter moving average)

Plus-3



Selected ASEAN



Source: National authorities and International Monetary Fund via Haver Analytics; AMRO staff calculations.
Note: The private nonfinancial sector includes nonfinancial firms and households. Data refer to: claims on nonfinancial institutions and other resident sectors by depository corporations other than the central bank (China); loans and advances by authorized institutions to nonfinancial sectors (Hong Kong); loans to corporations and households by domestic banks (Japan); claims on nonfinancial corporations and households by depository corporations other than the central bank (Korea); claims on the private sector by commercial and rural banks (Indonesia); loans by the banking system (Malaysia); claims on private sector by depository corporations other than the central bank (the Philippines); the sum of household liabilities and credit to nonfinancial corporations (Singapore); and claims on private nonfinancial corporations and other resident sectors by depository corporations other than the central bank (Thailand). Credit growth is calculated based on local currency terms. Remaining economies are omitted due to data unavailability.

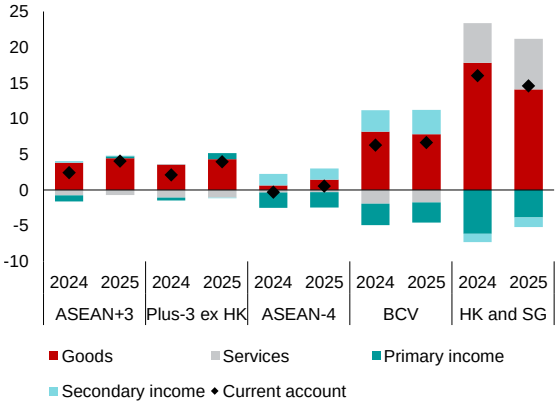
Stronger External Position Provided a Crucial Buffer

ASEAN+3's current account surplus widened in 2025, partly reflecting the region's robust export performance. The region's current account balance increased from 2.4 percent of GDP in 2024 to 4.0 percent in 2025, reflecting strong goods exports and narrowing services deficit (Figure 1.20). Plus-3 economies maintained primary income surpluses reflecting favorable returns on overseas investments. ASEAN-4 economies registered broadly neutral current account balances, as primary income deficits from profit repatriation by foreign investors offset modest goods surpluses.

Capital flows to the region were mixed, with resilient FDI offset by portfolio outflows. ASEAN+3 attracted USD 341.5 billion in FDI inflows in the first three quarters of 2025, an increase of 23.9 percent over the same period in 2024 (Figure 1.21). FDI to ASEAN was particularly strong, driven by firms diversifying supply chains and the region's competitive positioning in electronics manufacturing, electric vehicle production, and digital services (Box 1.2). Nonresident portfolio flows registered net outflows for the year. This was driven largely by sizable nonresident debt outflows from China, which more than offset portfolio inflows elsewhere in the region. Portfolio flows stabilized toward the end of the year as trade tension partially deescalated and growth outcomes proved more resilient than initially expected (Figure 1.22).

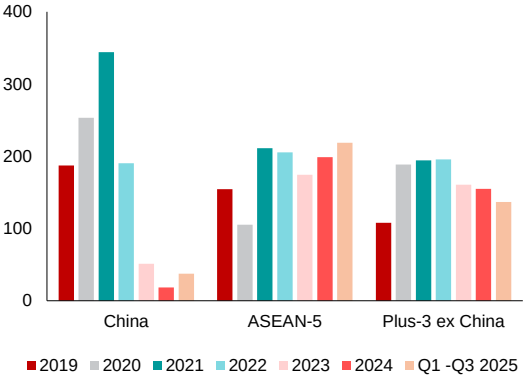
International reserves rose further, reinforcing the region's external buffers. Aggregate net international reserves in the region increased from USD 6.2 trillion in January 2025 to USD 6.5 trillion by October 2025 – accounting for almost 40 percent of global reserves (Figure 1.23). Most regional economies maintained reserves well above standard adequacy thresholds, providing policy space to manage potential capital flow reversals, excessive exchange rate volatility, and external funding pressures.

Figure 1.20. ASEAN+3 Current Account Balance
(Percent of GDP)



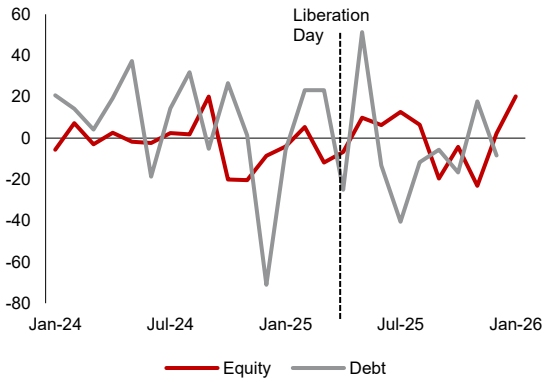
Source: National authorities and International Monetary Fund via Haver Analytics; AMRO staff calculations.
Note: ASEAN-4 = Indonesia, Malaysia, the Philippines, and Thailand, BCV = Brunei, Cambodia, and Vietnam, Plus-3 ex HK = China, Japan, and Korea, HK and SG = Hong Kong, and Singapore. Data is GDP-weighted regional aggregates, data are up to Q3 2025. Excludes Lao PDR and Myanmar due to data unavailability.

Figure 1.21. Foreign Direct Investment by Subregional Grouping
(Billions of US dollars)



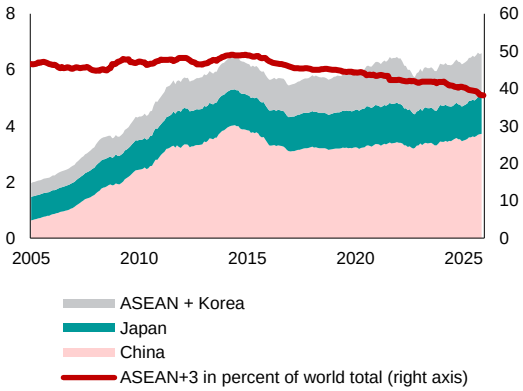
Source: International Financial Statistics database, IMF, ; Department of Statistics, Malaysia; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; Plus-3 ex China = Hong Kong, Japan, and Korea. Data refers to the direct investment liabilities item in the balance of payments. Data up to Q3 for 2025, except Indonesia, Korea, Singapore and Malaysia (Q4 2025). Excludes Brunei, Lao PDR, and Myanmar due to data unavailability.

Figure 1.22. Aggregate Net Nonresident Portfolio Flows for ASEAN+3
(Billions of US dollars)



Source: Institute of International Finance via Haver Analytics; AMRO staff calculations.
Note: Data refer to flows for China, Korea, Indonesia, Malaysia, the Philippines, and Thailand. Data for debt flows are up to October 2025. Data may differ from official balance of payments statistics due to several factors, including differences in data sources, timing of recording (settlement-based versus trade-based), and scope of transactions included (e.g., reinvested earnings, offshore trading).

Figure 1.23. ASEAN+3 Net International Reserves
(Trillions of US dollars; percent of total)



Source: IMF via Haver Analytics; AMRO staff calculations.
Note: Data exclude Hong Kong, Brunei, Myanmar, and Lao PDR due to data unavailability.

Part II. Outlook for ASEAN+3: Sustained Growth Amid Elevated Uncertainty

Baseline Growth and Inflation Outlook

After a year of persistent uncertainties, global growth is expected to continue at a moderate pace in 2026–27, with higher inflation amid heightened geopolitical tensions. The growth outlook for the United States remains stable, underpinned by sustained investment in technology-driven sectors, resilient household consumption, the implementation of tax reductions, and accommodative financial conditions. Within the euro area, economic activity is anticipated to be moderate yet steady, as planned increases in public expenditures help mitigate the impact of ongoing structural challenges and continued pressures arising from elevated energy costs. Global commodity prices are expected to be higher and more volatile in the near term, reflecting heightened geopolitical uncertainty in major energy-producing regions. Agricultural commodity prices are expected to remain broadly stable amid ample supply, though they could face spillovers from higher energy and transportation costs.

In this context, AMRO staff projects ASEAN+3 growth to be more moderate at 4.0 percent in 2026 and 2027 (Table 1.1). The slower expansion primarily reflects softer external demand as the implementation of higher global and sectoral tariffs by the United States takes effect. The broad-based tariffs are expected to dampen US demand, exerting a direct drag on the region's exports and, indirectly, through slower global trade. Global trade is also expected to expand more slowly in 2026 following tariff-induced frontloading in 2025, while businesses' adaptation to tariffs and ongoing supply chain reconfiguration amid continued policy uncertainty are likely to weigh on trade efficiency and increase production costs. Technology-driven investment provides an important offset, with export demand for semiconductors and electronics expected to remain firm, supported by ongoing AI-related and data center investment, though at a more measured pace than in 2025 (Figure 1.24). Domestic demand is expected to remain the anchor of growth, with investment momentum continuing into 2026 and healthy labor market conditions underpinning private consumption (Figure 1.25).

- ***Plus-3.*** Growth is projected to moderate from 4.2 percent in 2025 to 3.8 percent in 2026 and 2027. In China, growth is expected to be weighed down by softer external demand and subdued domestic demand amid ongoing structural rebalancing and a prolonged property-sector adjustment. Japan is also projected to expand more slowly on weaker external demand. In contrast, Korea's growth is expected to be supported by robust AI-led semiconductor demand and additional fiscal stimulus.

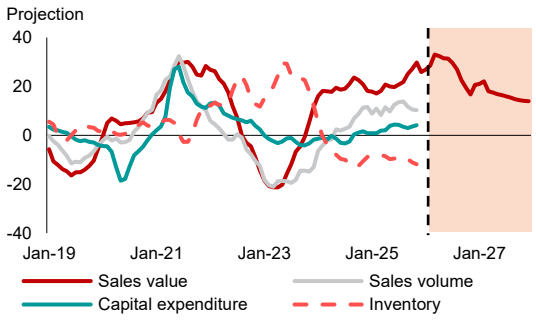
- ***ASEAN.*** Growth is expected to moderate slightly to 4.6 percent in 2026, before picking up to 4.8 percent in 2027. In 2026, tariff effects are expected to materialize and dampen external activity, while domestic demand is also expected to remain soft in a few economies, notably Thailand and the Philippines. These headwinds should be partly offset by firm domestic demand elsewhere in ASEAN, supported by robust investment and resilient private consumption. In 2027, most ASEAN economies are expected to trend toward their potential growth rates.

Table 1.1. ASEAN+3: AMRO Staff Growth and Inflation Estimates and Forecasts, 2026–27
(Percent, year-on-year)

Economies	GDP Growth			Inflation		
	2025e	2026f	2027f	2025e	2026f	2027f
ASEAN+3	**4.3**	**4.0**	**4.0**	**0.9**	**1.4**	**1.5**
Plus-3	**4.2**	**3.8**	**3.8**	**0.6**	**1.0**	**1.2**
China	5.0	4.5	4.5	0.0	0.6	0.9
Hong Kong	3.5	2.8	2.7	1.4	1.9	1.6
Japan	1.2	0.7	0.8	3.2	2.4	2.2
Korea	1.0	1.9	1.9	2.1	2.3	2.2
ASEAN	**4.9**	**4.6**	**4.8**	**2.3**	**3.1**	**2.9**
Brunei	0.7	1.9	1.8	–0.3	0.9	0.8
Cambodia	5.2	4.9	5.2	2.5	2.9	2.5
Indonesia	5.1	5.0	5.1	1.9	2.8	2.9
Lao PDR	4.8	4.6	4.5	7.7	7.8	7.1
Malaysia	5.2	4.6	4.7	1.4	2.0	2.0
Myanmar	–1.5	2.5	2.5	28.0	24.0	16.0
Philippines	4.4	5.3	5.8	1.7	3.9	3.6
Singapore	5.0	3.4	3.1	0.9	1.8	1.8
Thailand	2.4	1.7	2.2	–0.1	1.1	1.0
Vietnam	8.0	7.4	7.1	3.3	3.8	3.4

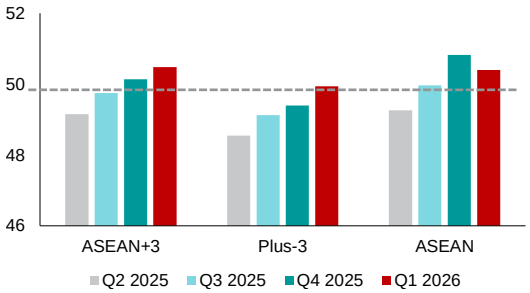
Source: National authorities via CEIC and Haver Analytics; AMRO staff estimates and forecasts.
Note: e = estimates; f = forecast. Myanmar's growth and inflation numbers are based on its fiscal year, which runs from April 1 to March 31. Inflation estimates and forecasts refer to the yearly average; regional aggregates for growth and inflation are estimated using the weighted average of 2025 GDP on purchasing power parity basis.

Figure 1.24. World: Semiconductor Sales Forecast
(Percent, year-on-year, three-month moving average)



Source: World Semiconductor Trade Statistics (WSTS); AMRO staff estimates.
Note: Monthly sales are projected using exponential smoothing and benchmarked to match the 2025 and 2026 annual sales forecast from WSTS. Inventory is proxied by the average semiconductor inventory in Korea and Taiwan Province of China and electronic materials inventory in the United States.

Figure 1.25. ASEAN+3 Purchasing Managers' Index Employment Indicator
(Index)



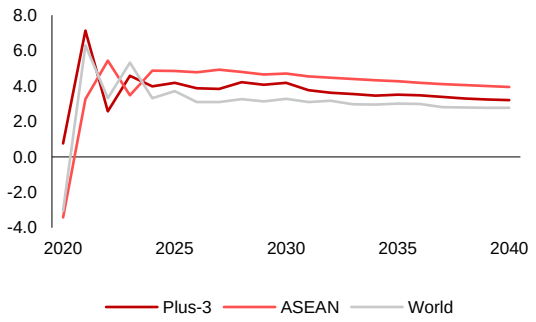
Source: S&P Global via Haver Analytics; AMRO staff calculations.
Note: Data refers to the 3-month average manufacturing employment PMI for each quarter. A reading above 50 indicates an expansion in new orders, while a reading below 50 indicates a contraction. Regional aggregates are GDP-weighted. Excludes Brunei, Cambodia and Lao PDR due to data availability.

Domestic demand across the region is expected to remain the key anchor to growth, underpinned by continued investment activity and resilient private consumption. The region is expected to continue attracting FDI, given its critical role in a wide range of supply chains and its expanding ecosystem in advanced manufacturing and the digital economy, while the implementation of previously committed investments should sustain investment momentum. Private consumption is expected to be supported by steady employment growth and continued wage gains. Policy support deployed in 2025 is also likely to generate continued spillovers, bolstering household spending and private investment activity.

Headline inflation is projected to rise to 1.4 percent in 2026 and 1.5 percent in 2027, from 0.9 percent in 2025. The uptick primarily reflects higher global energy prices and subsidy rationalization and adjustments to administered prices in several economies. Global energy prices are assumed to be higher than in 2025, reflecting elevated geopolitical uncertainty, though prices are expected to gradually ease in the second half of 2026. The trajectory of commodity prices remains a key source of uncertainty around the inflation outlook, with the potential for a more sustained increase in energy costs representing an upside risk to inflation (Box 1.6). Demand-driven pressures are expected to remain muted, with most economies operating close to potential output.

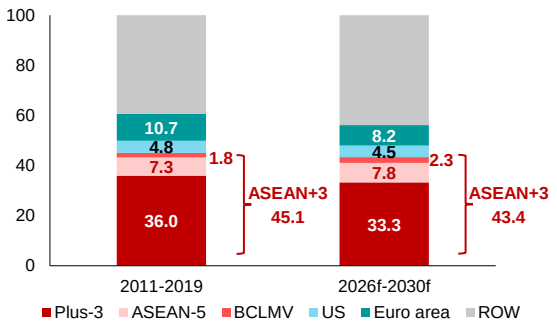
Despite the more moderate expansion in the near term, ASEAN+3 remains a key driver of global growth in the medium term. The region is forecast to expand by an average of 4.2 percent in 2026–2030, outpacing global growth of 3.2 percent (Figure 1.26). The medium-term outlook is underpinned by solid macroeconomic fundamentals and continued growth in domestic demand, supported by deeper intraregional trade linkages and a rising share of regional final demand that would help buffer the region against anticipated weaker extraregional demand. ASEAN+3 is on track to contribute about 43 percent of global growth, slightly below its pre-pandemic 45 percent average as potential growth in more developed regional economies moderates and external demand becomes less supportive (Figure 1.27).

Figure 1.26. Global Real GDP Growth on PPP Basis
(Percent, year-on-year)



Source: National authorities via Haver Analytics; Oxford Economics; AMRO staff calculations.
Note: Plus-3 = China, Hong Kong, Japan, and Korea. Real GDP is forecast in local currency and converted to purchasing power parity (PPP) basis.

Figure 1.27. Contribution to Global Real GDP Growth on PPP Basis
(Percent share)



Source: National authorities via Haver Analytics; Oxford Economics; IMF *World Economic Outlook* January Update 2026; AMRO staff calculations.
Note: f = forecast. ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; 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) basis.

Risk to Outlook: Tilted to the Downside with Uncertainty Remaining Elevated

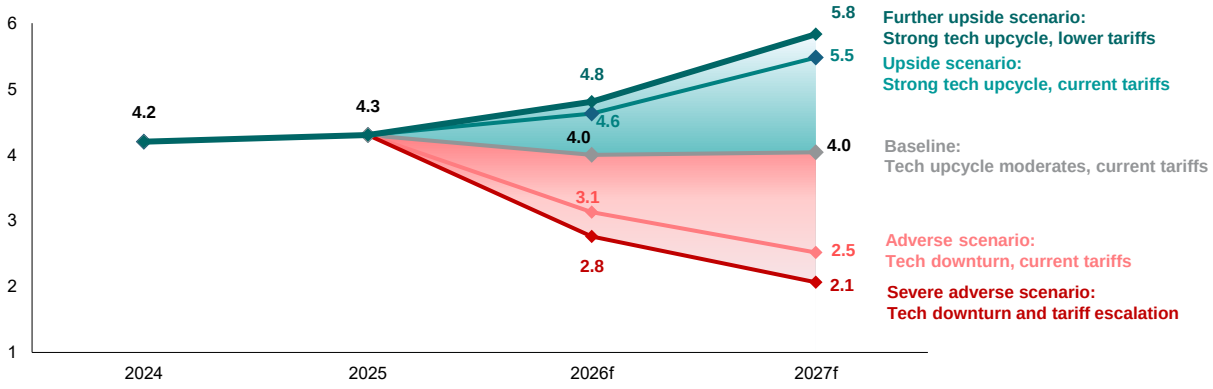
Overall, the balance of risks to the outlook is tilted to the downside, with uncertainty remaining elevated. The experience of 2025 – in which growth exceeded post-Liberation Day expectations despite the most significant trade policy disruption in decades – is a reminder that the global environment remains subject to rapid and unpredictable shifts. With global trade policy, technological demand, and geopolitical developments remaining difficult to anticipate with high certainty, the range of plausible outcomes around the baseline is wider than usual, and confidence in any single projection is correspondingly lower. Looking ahead, several key factors could materially influence the region's growth trajectory in either direction, while several other developments continue to pose downside risks that warrant close monitoring.

The trajectory of AI-related investment and the semiconductor cycle presents two-sided risks, hinging on the expected usefulness and realization of AI benefits. The current boom in AI-related capital expenditure is driven primarily by expectations of future returns, supported by ongoing buildout of data centers and AI-enabling infrastructure across major economies. In the baseline, this trend is assumed to remain. The upside risk is that early signs of AI-driven productivity gains begin to materialize across a wider set of sectors and economies, validating current expectations and inducing a broadening of adoption beyond the technology sector itself – triggering a self-reinforcing dynamic that pushes investment and demand for semiconductors and electronics above what the baseline assumes, with clear benefits for the region's exporters and FDI recipients. On the downside, if AI benefits prove slower to materialize or narrower in scope than expected, a pullback in capital expenditure could follow, weighing on the region through weaker semiconductor and electronics export demand, softer investment inflows, and confidence effects. Disappointed expectations would also likely trigger a correction in technology equity valuations, tightening financial conditions and amplifying the real-economy impact.

Trade policy developments have also evolved into a source of two-sided risk. Although the rapid US tariff escalations and reversals seen in 2025 have subsided following a series of bilateral agreements, the landscape remains fluid. The February 20 US Supreme Court ruling striking down the reciprocal tariffs further heightened uncertainty, with the US administration responding swiftly with replacement measures while the status of existing bilateral deals remains unclear. Important implementation details are still opaque, and additional tariffs or nontariff measures – potentially affecting sectors such as semiconductors and pharmaceuticals – cannot be ruled out. Renewed disruptions could impair regional supply chains and weigh on growth, with the effects amplified for economies that are more export-dependent or deeply embedded in production networks serving the US market (Box 1.4). Conversely, the replacement measures for the reciprocal tariffs are temporary by design, and should they lapse in the context of a more durable and predictable trade policy environment – supported by improved US-China relations or broader multilateral efforts – confidence could recover, trade flows strengthen, and the region's growth prospects improve.

AMRO's scenario analysis illustrates the range of plausible outcomes depending on how AI benefits evolve and how trade policy develops (Figure 1.28). Under the upside scenario, early evidence of AI-driven productivity gains validates and reinforces current investment expectations of continued, albeit more moderate expansion. AI adoption broadens meaningfully across sectors and lifts technology-led investment growth by around 5 percent above the baseline – pushing ASEAN+3 growth to 4.7 percent in 2026 and 5.5 percent in 2027. Should such a scenario occur alongside an improvement in global trade policy developments, ASEAN+3 growth could be lifted further to 4.9 percent in 2026 and 5.8 percent in 2027. Under an adverse technology scenario, AI benefits prove more limited or slower to materialize than markets currently anticipate, triggering a pullback in capital expenditure and a correction in technology equity valuations. The resulting combination of weaker export demand, tighter financial conditions, and broader confidence effects could slow regional growth to 3.2 percent in 2026 and 2.5 percent in 2027. Should such a technology downturn coincide with an intensification of trade tensions – with reciprocal tariffs rising toward bilaterally negotiated levels – the effect would be compounded further, slowing growth to 2.8 percent in 2026 and 2.1 percent in 2027, a level not seen since the subdued post-pandemic recovery of 2022 (See Box 1.5 for further information on the scenario analysis, including details on assumptions for each scenario).

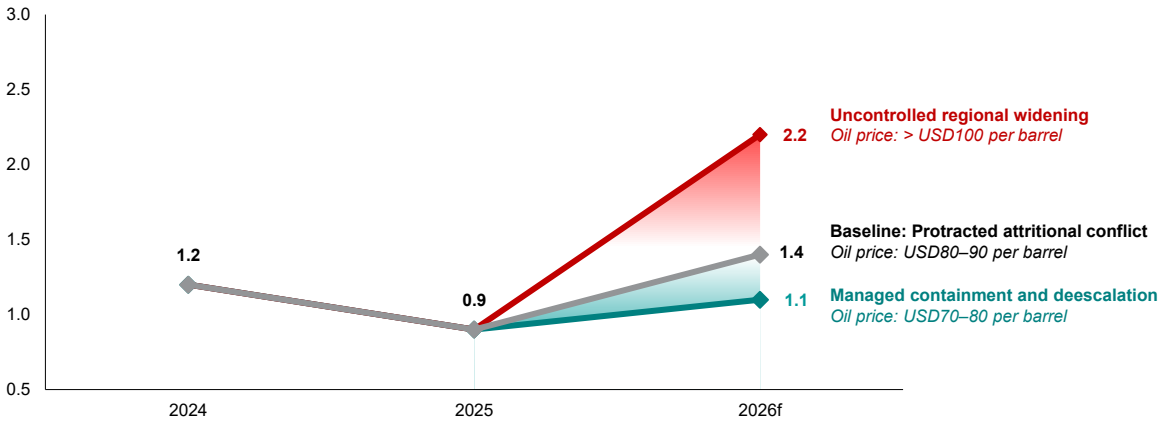
Figure 1.28. ASEAN+3 Growth Projections Under Different Scenarios
(Percent, year-on-year)



Source: Oxford Economics Model, AMRO staff calculations.
Note: Regional aggregates are weighted using 2025 GDP on PPP basis. Brunei, Cambodia, Lao PDR, and Myanmar are excluded due to data unavailability. See Box 1.5 for more details on scenario assumptions.

A more prolonged increase in global energy prices poses a risk to both growth and inflation across the region. The baseline projection incorporates higher energy prices than in 2025 reflecting geopolitical developments in the Middle East that began in late February 2026. Oil prices are expected to remain high, at above USD 90 per barrel for multiple months following the escalation of the conflict. Prices are then projected to moderate toward USD 75–85 per barrel as tensions ease and supply conditions stabilize in the second half of 2026. The possibility of a more sustained and severe disruption to global energy supply cannot be ruled out (Figure 1.29). AMRO's scenario analysis suggests that under a protracted disruption in the Middle East, Brent crude could average above USD100 per barrel for the remainder of 2026, leading to ASEAN+3 headline inflation being higher by 0.8 percentage points, while growth is lower by 0.3 percentage points relative to the baseline (Box 1.6). Beyond energy, fertilizer-related disruptions to agricultural supply could also push food prices higher, adding to headline inflation.

Figure 1.29. ASEAN+3 Inflation Projections Under Different Scenarios
(Percent, year-on-year)



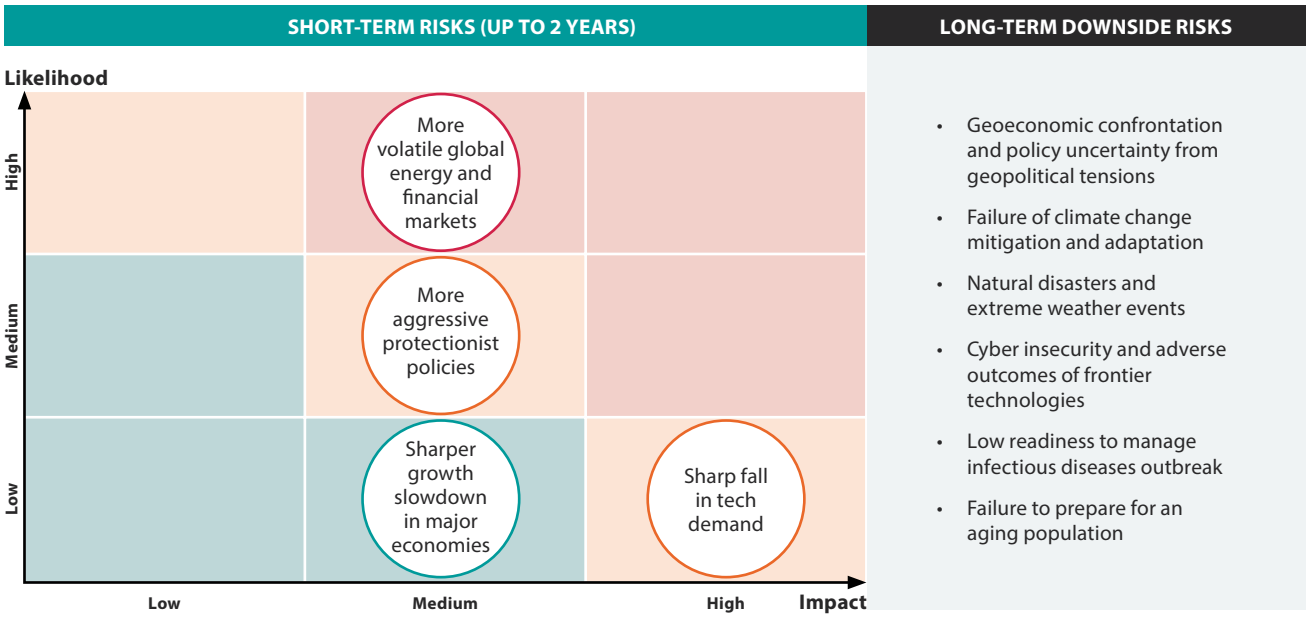
Source: Oxford Economics Model, AMRO staff calculations.
Note: Oil price refers to Brent crude oil price for March–December 2026. Regional aggregates are weighted using 2025 GDP on PPP basis. Brunei, Cambodia, Lao PDR, and Myanmar are excluded due to data unavailability. See Box 1.6 for more details on scenario assumptions.

Beyond the risk factors assessed above, several other developments continue to pose downside risks to the baseline outlook. Developments in global financial markets, and the growth trajectories in major economies each have the potential to weigh on the region's near-term prospects – particularly if they materialize in combination with one another or alongside the headwinds already discussed (Figure 1.30).

- Heightened volatility in global financial markets poses a downside risk to the region. Elevated equity valuations and tight credit spreads leave markets sensitive to shifts in risk sentiment. The direction of US Federal Reserve policy, in particular, remains a source of uncertainty – unexpected tightening or hawkish signals, especially amid leadership change at the Federal Reserve, could trigger capital outflows, put pressure on regional exchange rates, and increase borrowing costs. More broadly, geopolitical tensions, divergent monetary stances across major economies, and questions over the durability of AI-driven investment flows raise the likelihood of asset price corrections. Heightened volatility could expose underlying vulnerabilities and weigh on macroeconomic stability across the region.

- Slower-than-expected growth in major economies would weigh on the region through trade, investment, and tourism channels. In the United States, the combination of policy uncertainty, emerging signs of labor market softening, elevated tariffs, and higher inflation may dampen private demand, with spillovers to the region through weaker import demand. In Europe, growth remains constrained by structural weaknesses in key industrial sectors and vulnerability to higher energy and shipping costs stemming from geopolitical tensions. More moderate growth in China – whether from a prolonged property-sector adjustment or intensified external headwinds – represents an important risk given its role as the region's largest trading partner and a major source of final demand.

Figure 1.30. Regional Downside Risks, April 2026



Source: AMRO staff.

Part III. Policy Considerations: Preserving Policy Flexibility Amid Uncertainty

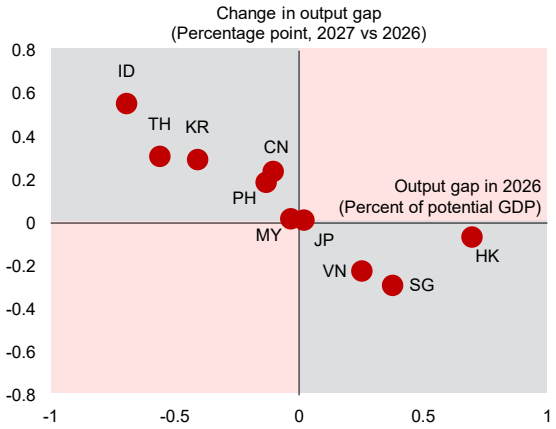
Preserving policy flexibility is the central challenge for policymakers in the ASEAN+3 region in 2026. The region enters the year from a position of relative strength – growth in 2025 exceeded expectations, inflation remained well-contained, and external buffers strengthened – and most economies retain meaningful fiscal and monetary space to respond to shocks (Figure 1.31). The imperative to preserve that flexibility reflects the unusually wide range of plausible outcomes around the baseline. The full impact of the US tariffs has yet to unfold, technology-driven shifts in global demand could move in either direction, and global financial conditions remain subject to rapid repricing. The potential for a sustained rise in global energy prices adds a further dimension to this challenge, as it could create a growth-inflation trade-off that would complicate policy calibration across the region. Under the baseline, output gaps across the region are projected to narrow from both directions, reducing the case of a strong policy lean in either direction (Figure 1.32). In this environment, a careful and data-dependent approach – maintaining the capacity to respond decisively should conditions deteriorate – will be essential, tailored to the specific conditions and vulnerabilities of each economy.

Figure 1.31. AMRO Staff Assessment of Policy Space in 2026

		Monetary Policy Space		
		Limited	**Moderate**	**Ample**
Fiscal Policy Space	**Limited**	LA	JP, MM	
	Moderate	KR, KH, ID, TH	CN, MY, PH, VN	
	Ample	HK, BN	SG	

Source: AMRO staff.
Note: Policy space for each economy is based on AMRO's latest country assessment, guided by AMRO's Fiscal Policy Space Assessment (AMRO 2025b) and Monetary Policy Space Assessment (Poonpatpibul and others 2020).

Figure 1.32. Output Gap in 2026 and Change in Output Gap in 2027
(Percent of potential GDP; percentage point change)



Source: Consensus Economics, National authorities via Haver Analytics; AMRO staff calculations.
Note: Output gap is actual minus potential output over potential output, with potential output estimated using a two-sided HP filter on quarterly GDP (2010–2030). GDP projections (2025–2030) from AMRO staff and Consensus Economics are disaggregated using the Denton method.

Fiscal Policy

Fiscal developments in FY2025 reflected active fiscal policy, characterized primarily by spending expansion. The fiscal balance deteriorated in half of member economies and improved in the other half (Figure 1.33). Expenditure increased in all economies while revenue performance was generally strong in most economies. Tax revenue rose across all major categories, reflecting broad-based and resilient economic growth, while non-tax revenue increased substantially in Myanmar, driven by dividends from state-owned enterprises, and Vietnam, driven by land-related receipts. Capital expenditure continued to rise in support of national development objectives, but increases in primary current expenditure exceeded those of capital spending in many economies, reflecting continued efforts to support economic recovery, strengthen social welfare systems, and protect vulnerable groups. Several economies introduced or expanded transfers and vouchers to mitigate cost-of-living pressures, boost domestic consumption, and support low-income groups, while Japan and Korea increased spending through supplementary budgets, and Indonesia accommodated additional support through budget reallocation.

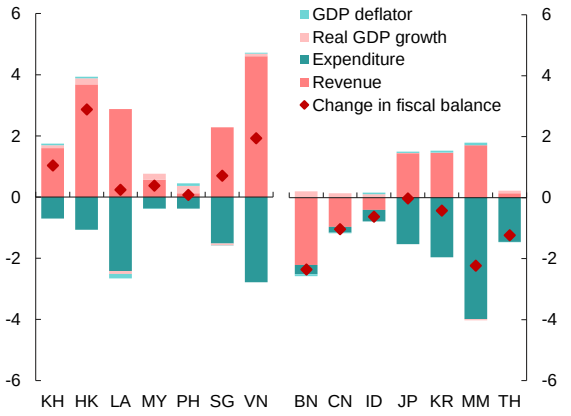
A key fiscal vulnerability for the region is the high and rising level of public debt. In many economies, the debt-to-GDP ratio now stands significantly above pre-pandemic levels (Box 1.7). This, combined with the rise in global interest rates in recent years, has led to a notable increase in debt servicing costs, which in turn is limiting the fiscal space available for other priorities, including infrastructure, education, and health. Rebuilding fiscal buffers to create room for future policy responses and to safeguard long-term fiscal sustainability is therefore an important policy consideration for many economies in the region. In addition, vulnerabilities may also depend on debt composition – including maturity structure, currency composition, and investor base – which can increase exposure to exchange rate and refinancing risks, underscoring the importance of continuing to improve the debt profile.

Looking ahead, fiscal policy faces the challenge of supporting growth while safeguarding sustainability in an environment of constrained fiscal capacity. According to the latest budgets, fiscal stance in FY2026 appears expansionary or broadly neutral in most member economies (Table 1.2), reflecting continued proactive fiscal policy. The current period of relatively robust growth provides a window of opportunity to continue the process of fiscal consolidation where conditions permit. For economies where the recovery is firmly entrenched and the output gap is closing, a more decisive fiscal adjustment would be appropriate. Where the recovery is more fragile, a more gradual and growth-friendly approach would be warranted. In both cases, strengthening fiscal management frameworks is essential to support fiscal sustainability, including establishing credible fiscal anchors to guide medium- to long-term fiscal aggregates, alongside improving allocative and implementation efficiency to deliver pro-growth and redistributive measures within available resources.

In parallel, measures on the revenue side should focus on broadening the tax base and improving tax administration, and on the expenditure side on enhancing allocative and technical spending efficiency. Should energy prices

remain elevated for a sustained period, temporary and targeted fiscal measures – such as subsidies to vulnerable households or adjustments to fuel excise arrangements – may be warranted in economies where pass-through is significant. Maintaining the flexibility to provide such support, while preserving the broader direction of consolidation, remains an important consideration (see *ASEAN+3 Fiscal Policy Report 2026* for further discussion).

Figure 1.33 Contribution to the Change in Fiscal Balance, FY2025[3]
(Percent of GDP)



Source: National authorities via CEIC and Haver Analytics; AMRO staff estimates.
Note: A positive (negative) change in the fiscal balance implies the fiscal balance in FY2025 improved (deteriorated) over the fiscal balance in FY2024. A positive contribution of revenue implies the revenue in FY2025 was better than the revenue in FY2024, while a negative contribution of expenditure implies the expenditure in FY2025 was higher than the expenditure in FY2024.

Table 1.2 ASEAN+3: Fiscal Stance, FY2025–2026

		2026		
		Expansionary	Neutral	Contractionary
2025	Expansionary		CN, ID	MM, TH
	Neutral	JP	KR, MY, PH	
	Contractionary	BN, KH, LA, SG, VN		HK

Source: National authorities; AMRO staff compilation.
Note: Fiscal stance is assessed primarily by fiscal impulse – measured by changes in structural primary balance estimated by AMRO – and secondarily by changes in primary expenditure as a percentage of GDP, except for Brunei Darussalam, where the change in expenditure growth is used instead due to volatile macroeconomic and fiscal indicators driven by oil and gas sector.

Monetary Policy

A broad easing trend took hold across the ASEAN+3 region in 2025 as inflation continued to moderate and growth headwinds intensified. With price pressures subsiding from post-pandemic peaks, central banks across the region found room to shift their focus toward supporting growth amid a challenging external environment. Several central banks, including those in Indonesia, Malaysia, the Philippines, and Thailand, lowered policy rate to bolster domestic demand and cushion their economies against trade-related headwinds. In China, the central bank maintained a supportive monetary stance throughout the year, utilizing a range of policy tools including interest rate and reserve requirement ratio cuts to ensure ample liquidity and support the real economy.

This easing trend was not universal, however. The Bank of Japan moved in the opposite direction, raising its policy rate as it continued its gradual exit from decades of ultra-loose monetary policy, with inflation showing signs of sustainably reaching its target. The Bank of Korea also diverged from the regional easing trend later in the year, holding its policy rate steady after initial cuts, as concerns over financial stability – particularly in the housing market – and currency pressures mainly stemming from imbalances in foreign exchange market supply and demand prompted a pause in its easing cycle.

Looking ahead, the monetary policy environment remains complex, with the combination of external headwinds, geopolitical uncertainty, and the potential for supply-driven price pressures sharpening the trade-offs that central banks face. The rate cuts implemented in 2025 were effective in cushioning growth against external headwinds, and most central banks across the region retain room to respond further should conditions warrant. However, the near-term outlook involves weaker external demand alongside the possibility of higher energy-driven inflation – a combination that, should it materialize, would call for careful judgement about the nature of the inflationary pressure. A supply-driven price shock that

[3] Contribution to the change in fiscal balance is calculated, based on the following decomposition:

$$fb_t - fb_{t-1} = \underbrace{\Delta r_t}_{\text{contribution of revenue change}} - \underbrace{\Delta e_t}_{\text{contribution of expenditure change}} - \underbrace{\frac{fb_{t-1}}{(1+g_t)(1+\pi_t)} g_t}_{\text{contribution of real GDP growth}} - \underbrace{\frac{(1+g_t)\, fb_{t-1}}{(1+g_t)(1+\pi_t)} \pi_t}_{\text{contribution of GDP deflator inflation}}$$

where $\Delta r_t = \frac{R_t - R_{t-1}}{P_t Y_t}$, $\Delta e_t = \frac{E_t - E_{t-1}}{P_t Y_t}$,

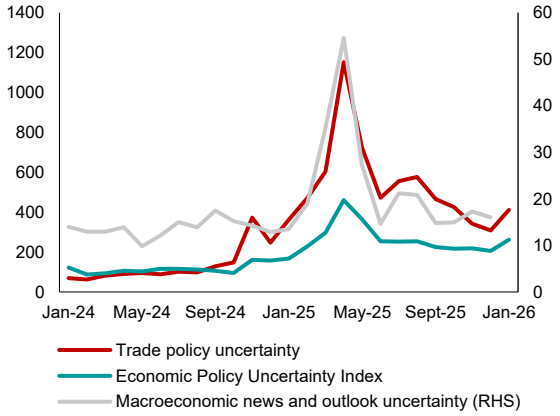
and fb=fiscal balance as a percentage of GDP, R=revenue, E=expenditure, P=GDP deflator, Y=real GDP, g=real GDP growth, π=GDP deflator inflation.

remains confined to energy and related components would call for a different policy response than one where price pressures become broad-based. The global monetary and financial environment adds a further layer of complexity – the direction of Federal Reserve policy remains uncertain and continues to shape global financial conditions, contributing to possible market volatility and putting pressure on regional currencies (Figure 1.34). The potential for volatile capital flows underscores the importance of judicious use of the full range of policy tools, including exchange rate flexibility and macroprudential measures, to manage external volatility.

In this environment, flexibility and data-dependence are key considerations for the region's central banks. The appropriate direction of policy will vary across economies, reflecting differences in growth momentum, inflation dynamics, and financial stability conditions. Where output gaps remain negative and inflation is contained, there may be scope for further easing to support activity. Where inflationary pressures are firming or financial stability risks are building, a more measured approach would be warranted. Should growth and inflation surprise on the upside – particularly if such tendencies become entrenched – a readiness to shift toward a tightening bias would be appropriate. In economies where weakening external demand coincides with rising headline inflation driven by energy costs, the key diagnostic question is whether price pressures are remaining confined to the energy component or beginning to feed through into core inflation and wage expectations – a distinction that should guide the timing and direction of any policy response. In all cases, clear and consistent communication can play an important role in guiding market expectations and maintaining policy credibility, while effective policy calibration depends on a strong understanding of the nature, persistence, and spillover potential of the shocks affecting each economy – placing a premium on continued investment in surveillance capacity and analytical frameworks (see *Special Feature: Decision-Making in the Dark – ASEAN+3 Monetary Policy in a High-Uncertainty Environment for further discussion*).

Taken together, the policy challenge for ASEAN+3 in 2026 is to navigate a period of elevated uncertainty while keeping the capacity to respond to shocks intact. The region's strong 2025 performance, low inflation starting point, and robust external buffers provide a solid foundation from which to manage the headwinds ahead. With the range of plausible outcomes remaining wide – and the near-term environment complicated by the combination of trade policy uncertainty, evolving technology-driven demand and energy market volatility – preserving policy flexibility will be key to sustaining growth momentum and containing inflationary pressure. An aligned approach, in which fiscal and monetary policies complement each other and are supported by strong surveillance and clear communication, will serve the region well as conditions continue to evolve.

Figure 1.34. Policy Uncertainties in the United States
(Index)



Source: Baker, Bloom, and Davis (2016); Caldara and others (2020).
Note: The economic policy uncertainty index combines newspaper coverage, tax code expiration provisions, and forecaster disagreement. The macroeconomic news and outlook uncertainty, and trade policy uncertainty indices are news-based measures.

Table 1.3. ASEAN+3: Monetary Policy Stance

		2026		
		Accommodative	Neutral	Tight
2025	Accommodative	CN, HK, ID, KH, JP, MM	BN, SG	VN
	Neutral	TH	KR, MY	
	Tight	LA	PH	

Source: National authorities via Haver Analytics; AMRO staff compilation.
Note: The 2026 monetary policy stance refers to the monetary policy stance as of AREO 2026 or the respective economy's Annual Consultation Report, whichever is later. For Brunei and Hong Kong, which have a currency board arrangement, the current monetary stance refers to current monetary condition.

Special Feature: Decision-Making in the Dark–ASEAN+3 Monetary Policy in a High-Uncertainty Environment

"If everyone is saying... that the only certainty is uncertainty,
it is not difficult to imagine that decision-making is becoming increasingly difficult..."

Haruhiko Kuroda, Former Governor of the Bank of Japan (2017)

Uncertainty has always been part of monetary policymaking, but what has changed in recent years is its character and intensity. Central banks have long had to act on incomplete information, imperfect models, and evolving data. The global economy, however, has been buffeted by a succession of large and unfamiliar shocks: a pandemic that simultaneously disrupted supply and demand, geopolitical realignments reshaping trade and investment flows, and rapid technological shifts with macroeconomic effects that remain difficult to gauge. These developments have not only clouded the near-term outlook but also created unprecedented uncertainty about inflation dynamics, the nature of shocks, and the appropriate policy response.

In this context, this special feature offers a simple framework for thinking about the different types of uncertainty that monetary policymakers face. It distinguishes among structural uncertainty (about how the economy works), disturbance uncertainty (about the shocks hitting it), and radical uncertainty (about futures that resist probabilistic treatment). The aim is not to provide a rigid taxonomy, but rather to sharpen the diagnostic questions that arise when policy must be set under unclear conditions: whether to respond to a given shock, when to act, and how forcefully to move. The final section considers how this way of thinking applies to ASEAN+3 economies, where overlapping uncertainties and the diversity of institutional settings make these questions particularly salient.

Distinguishing Types of Uncertainty

A useful starting point for thinking about uncertainty in monetary policy is to distinguish between three broad categories: structural, disturbance, and radical uncertainty. Structural uncertainty concerns how the economy works – the strength of transmission channels, the slope of the Phillips curve, the level of the neutral rate. Disturbance uncertainty concerns shocks that hit the economy – their nature, size, and persistence. Radical uncertainty concerns situations where the relevant states of the world cannot be specified nor meaningful probabilities assigned to them. Recent years have illustrated all three: the pandemic and shifts in global trade patterns renewed uncertainty around structural concepts like the neutral rate; overlapping demand swings, supply disruptions, and tariff shocks obscured the nature and persistence of disturbances; and extreme events – from the pandemic to geopolitical conflicts – revealed the limits of prediction and the reality of "unknown unknowns". This framework is not intended as a rigid taxonomy, but as a lens for diagnosing the dominant source of uncertainty in a given situation and considering how it might shape the policy response.

Structural Uncertainty

Structural uncertainty encompasses doubts about the fundamental workings of the economy. How sensitive is inflation to unemployment? What is the economy's natural rate of interest? How quickly does monetary policy transmit to the real economy? Within this broad category, it is helpful to distinguish three related elements. Model uncertainty questions whether the economic framework is correct at all: – it could be that the relationship between inflation and unemployment has fundamentally changed, or financial frictions now dominate traditional channels. Parameter uncertainty concerns the true values of coefficients within a given framework, it may be accepted that the Phillips curve relates inflation to slack, but remain unsure how steep that relationship is. State and data uncertainty adds measurement challenges: preliminary statistics are often revised substantially, key variables like potential output cannot be directly observed and must be estimated with considerable error, and real-time assessments frequently differ from what can be learned in hindsight.

The authors of this special feature are Allen Ng, Haobin Wang (lead), and Yuhong Wu. This special feature draws heavily on discussion and analysis in Wang and Ng (2026).

Different dimensions of structural uncertainty point toward different policy approaches. When the uncertainty is primarily about effect magnitudes – "I know raising rates will slow the economy, but by how much?" – the classic Brainard principle suggests responding more cautiously to avoid overshooting.[4] However, when the uncertainty is about whether key relationships have shifted or whether inflation will persist, the greater danger may lie in losing the expectation anchor, and policy may need to lean more decisively. To deal with broader model uncertainty, central banks have increasingly relied on approaches that reduce dependence on any single framework – for example, the US Federal Reserve's emphasis on robust policy rules that do not rely heavily on unobservable variables (Williams 2025), or the European Central Bank's multimodel cross-checking (ECB 2021). Many central banks in the region, including the Bank of Thailand and the Monetary Authority of Singapore, similarly use multiple models and indicator-based strategies to navigate model uncertainty (Enzler and others 2005; Amatyakul and others 2021).

Disturbance Uncertainty

Disturbance uncertainty focuses on the shocks themselves: their nature, size, likely persistence, and interactions. This category proved central during the 2021–2023 inflation episode, when central banks worldwide struggled to determine whether price pressures represented transitory supply disruptions that policy could safely "look through" or persistent disturbances requiring a forceful response. The distinction matters: supply shocks create trade-offs between inflation and output stabilization, while demand shocks generally do not; temporary shocks may warrant patience, while persistent shocks call for action. Policy choices therefore hinge on judging persistence and the balance of risks. Transitory shocks accompanied by well-anchored expectations can often be looked through, but suspected persistence – whether through drifting expectations or demand weakness that feeds on itself – makes delay more costly. Research suggests that high inflation tends to be self-reinforcing once expectations begin to de-anchor or wage- and price-setting behavior adjusts (Bems and others 2018; BIS 2022),[5] while prolonged weakness in demand can tip the economy toward a deflationary trap. Both aspects argue for early action when risks are clearly skewed.

The challenge is that real-time shock identification is notoriously difficult. COVID-19 illustrated this starkly: the pandemic struck simultaneously as a supply shock (factory shutdowns, fractured supply chains) and a demand shock (collapsing spending and investment), with the dominant force shifting over time. Misdiagnosis proved costly. The core task is to distinguish demand from supply shocks and transitory from persistent ones – an endeavor that requires robust monitoring, high-frequency indicators, and systematic cross-checks across data sources and models.

Radical Uncertainty

Radical uncertainty represents situations that reflect fundamental limits of knowledge – not merely unknown outcomes with calculable probabilities, but true unknowability. Frank Knight drew this distinction a century ago (Knight 1921): risk involves known probabilities over unknown outcomes; radical uncertainty means that information needed to form those probabilities is not available. COVID-19 exemplified this vividly. In the first quarter of 2020, central banks could not provide conventional forecasts because no historical precedent existed for a simultaneous, policy-induced shutdown of economic activity. How does one forecast when the entire framework assumes the economy is operating, not deliberately shuttered? Similarly, climate transition, major geopolitical realignments, and transformative technologies like artificial intelligence involve "unknown unknowns" that resist standard probabilistic treatment.

Under radical uncertainty, traditional optimization gives way to risk-management approaches.[6] Scenario analysis

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4/ William Brainard (1967) formalized this intuition in what became known as the "Brainard conservatism principle"—when policymakers face multiplicative uncertainty about the strength of the transmission mechanism, they should attenuate their response. The logic is straightforward: if uncertain whether turning the steering wheel 10 degrees will turn the car 5 or 15 degrees, turn it less to avoid overshooting. However, substantial subsequent research has shown this principle frequently reverses. Söderström (2002) demonstrates that when uncertainty concerns inflation persistence rather than transmission strength, optimal policy becomes more aggressive to prevent expectations de-anchoring. Orphanides and Williams (2007) show similar reversals when central bank credibility is imperfect.

5/ The mechanism works through shifting attention and expectation formation. When inflation is low and stable, agents exhibit "rational inattention"—they don't spend cognitive resources closely monitoring prices (Reis 2006). But when price pressures broaden, inflation moves out of the zone of "rational inattention", within which it has little impact on behavior, into that of sharp focus, in which it starts to influence behavior more substantially. Economies could shift into a high-inflation regime where expectation de-anchoring and wage-price feedback become more likely (BIS 2022). When long-term inflation is poorly anchored, shocks tend to have a significant and persistent effect on consumer price inflation (Bems and others 2018).

6/ In his influential speech on monetary policy under uncertainty at the Jackson Hole Symposium, Greenspan (2004) argues that under uncertainty, policymakers should manage risks rather than optimize around a single forecast, by considering the distribution of possible outcomes and the robustness of alternative policy choices, at times taking preemptive "insurance" actions against low-probability but severe tail risks.

becomes a central tool – building multiple plausible narratives without false precision – supported by robust-control methods and "least-regrets" thinking. For example, the Bank of Thailand conducted alternative scenarios and stress tests to prepare for worst-case outcomes during the pandemic (BoT 2021). Communication must also adapt: credibility comes not from projecting false confidence but from acknowledging uncertainty while clearly explaining how policy would respond across different scenarios. Bangko Sentral ng Pilipinas, for instance, regularly publishes inflation scenarios to communicate risks and the range of possible outcomes (BSP 2025).

Table 1.4 A Three-Category Framework for Monetary Policy Under Uncertainty

Category	What it concerns	Key questions	Policy approach	Practical tools
Structural Uncertainty	How the economy works and where we are	• What are the true parameter values? • Is our model still valid? • What is the current state given measurement error?	**Reduce the uncertainty** Use multiple models; rely more on observables; cross-check across approaches; employ robust simple rules	• Multimodel analysis • Real-time data monitoring • Forecast evaluation • Sensitivity analysis • Observable-based rules
Disturbance Uncertainty	The shocks hitting the economy and their evolution	• Supply or demand shock? • How large? • Transitory or persistent? • How will it evolve?	**State-contingent response** Look through if transitory and expectations anchored; act forcefully if persistent; pre-empt when de-anchoring risk high	• High-frequency indicators • Shock decomposition • Persistence diagnostics • Expectations surveys • Sectoral intelligence
Radical Uncertainty	Fundamental unknowability	• What are the possible states of the world? • Can we assign probabilities? • What don't we know that we don't know?	**Risk management** Use scenarios without false precision; prepare for worst-case; "least regrets" analysis; preserve policy flexibility	• Scenario narratives • Robust control • Stress testing • War-gaming exercises • Clear mandate communication

Source: AMRO staff.

Policy Trade-Offs Under Uncertainty

The framework outlined above is diagnostic, but its practical value lies in how it informs recurring dilemmas of decision-making in monetary policy. Three policy choices arise repeatedly: whether to respond to a shock or look through it; when to act – immediately or after waiting for more information; and how forcefully to move. These are not new questions, but the heightened uncertainty of recent years has made them more difficult to answer with confidence. Each type of uncertainty – structural, disturbance, and radical – bears on these choices in different ways, and the balance often shifts depending on which uncertainty dominates at a given moment. The subsections that follow examine each trade-off in turn, while Table 1.5 summarizes how the three types of uncertainty map onto the three policy dilemmas.

Looking Through Versus Responding to Shocks

Perhaps the most consequential choice is whether to respond to a shock at all. This question is especially acute for supply shocks, which create trade-offs between inflation and output stabilization that demand shocks typically do not. Standard theory suggests that when shocks are clearly transitory and expectations remain well anchored, policymakers can afford to look through the initial price impact rather than tighten and sacrifice output unnecessarily (Clarida and others 1999).

The difficulty is that the conditions for looking through are hard to verify in real time and the costs of getting it wrong are asymmetric. For example, policymakers cannot afford to wait until de-anchoring appears in the data; by then, it is typically too late to prevent the kind of self-reinforcing dynamics that make inflation persistent. The 2021–2023 inflation episode illustrated the danger: most central banks initially characterized price pressures as transitory, a judgment that proved costly once persistence became undeniable (Aguilar and others 2024). De-anchored expectations are far more costly to reverse than a modest policy overshoot, which tilts the balance toward responding when the persistence of a shock is genuinely uncertain.

Acting Early Versus Preserving Policy Space

Once policymakers judge that a shock warrants a response, the next question is when to act. The traditional argument favors moving early: monetary policy works with long lags, and delay can prove costly if it allows inflation to embed or pushes the economy toward the effective lower bound (ELB) where policy traction weakens.[7] For many emerging markets, there is an additional consideration – the need to adjust ahead of US Federal Reserve tightening cycles to avoid sudden stops or capital-flow volatility (BIS 2022).

Yet the experience of recent years has shifted the discussion. With shocks arriving from multiple directions and the outlook changing rapidly, many policymakers now place greater weight on preserving policy space rather than exhausting it prematurely. Real-options logic offers a way to think about this: when decisions are costly to reverse and uncertainty resolves over time, there can be value in waiting for clearer information (Dixit and Pindyck 1994). The case for patience is strongest when transmission is uncertain, shock persistence is unclear, or new data arrives quickly enough to inform near-term decisions.

How this dilemma resolves depends, again, on diagnosis. Structural parameter uncertainty – where the policymaker is unsure how strongly the economy will respond – tends to favor preserving flexibility. Persistent disturbance uncertainty with expectations risk tilts toward earlier action. And radical uncertainty with asymmetric tail risks often calls for an insurance approach: acting to avoid worst-case outcomes even when the baseline case might counsel patience.

Gradualism Versus Frontloading

The final choice concerns pace: whether to move gradually or to frontload the policy response. Gradualism has long been the default, and for good reasons. It allows policymakers to learn from each step, helps maintain stability in long-term rates, and minimizes financial market disruption (Bernanke 2004). But gradualism carries its own risks, particularly when shocks are persistent. Gradual moves can leave policy "behind the curve", allowing inflation to embed in expectations and ultimately requiring a sharper correction later. Research on the Brainard principle – that uncertainty about transmission strength should make policy more cautious – shows that the logic reverses when the uncertainty concerns inflation persistence: underestimating persistence is costlier than overestimating it, making more aggressive policy optimal (Söderström 2002; Tetlow 2018).

In practice, most central banks operate with a form of state-contingent gradualism: gradualism as the default, but a willingness to front-load when facing clear asymmetric risks, evidence of persistence, expectation drift, or proximity to policy constraints. The US Federal Reserve's rapid 2001–2003 easing amid growing deflationary pressure and concerns about approaching the effective lower bound, compared with its more measured 2004–2006 tightening amid strengthening growth and inflation, illustrates the approach.

Which Uncertainty Matters When

All three types of uncertainty bear on policy, but their practical relevance differs across the policy cycle. Structural uncertainty about the neutral rate, transmission strength, or the slope of the Phillips curve, is largely addressed by improving measurement, refining models, and strengthening the analytical framework before shocks arrive. Radical uncertainty calls for contingency planning and scenario analysis that sit alongside the policy framework rather than within day-to-day decisions.

Disturbance uncertainty, by contrast, is what policymakers must resolve in real time once a shock materializes. The diagnostic questions – is this demand or supply driven, transitory or persistent? – directly determine whether, when, and how forcefully to respond. Box S1 examines this dimension more formally, drawing on Wang and Ng (2026) to show how uncertainty about the nature and persistence of shocks shapes optimal policy under high uncertainty.

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[7] The ELB constraint fundamentally changes optimal policy by creating a deflationary bias even when not currently constrained. European Central Bank research quantifies the tail risk induced by the ELB could cause inflation to undershoot the target by as much as 45 basis points at the economy's risky steady state (Hills, Nakata, and Schmidt 2016). When the probability of hitting the ELB is positive, frontloading easing when approaching the bound becomes optimal because waiting may eliminate future policy space entirely.

Table 1.5. Policy Trade-Offs Under Different Types of Uncertainty

Trade-off	Under Structural Uncertainty	Under Disturbance Uncertainty	Under Radical Uncertainty
Look Through vs Respond	→ **Context-dependent:** Depends on measurement precision of underlying inflation; cross-check multiple indicators	→ **Respond if persistent:** Cannot look through persistent shocks even if supply-driven; expectation drift too costly	→ **Respond when anchor at risk:** Risk management favors response over accommodation when fundamental uncertainty about persistence
Act Early vs Wait	→ **Preserve flexibility:** Value of waiting to learn about parameters and transmission; gradualism allows assessment	→ **Act if persistent:** If shock shows persistence or expectations drift, option value of waiting collapses; transitory shocks allow patience	→ **Insurance approach:** Act to avoid worst outcomes (ELB, de-anchoring); cannot optimize so minimize regret
Gradualism vs Frontload	→ **Gradualism:** Learning-by-doing valuable when unsure about transmission strength; assess effects at each step	→ **Frontload if persistent:** Gradual response risks "behind curve" with persistent shocks; Brainard principle reverses	→ **Frontload if tail risk:** When facing catastrophic outcomes (deflation spiral, hyperinflation), frontload insurance action

Source: AMRO staff.

Policy Implications for ASEAN+3 Economies

For ASEAN+3 central banks, the framework developed above speaks directly to challenges that have become increasingly familiar in recent years. The region's experience during the 2021–2023 inflation episode illustrated how all three types of uncertainty can operate simultaneously: disturbance uncertainty about whether price pressures were supply- or demand-driven and how long they would persist; structural uncertainty about whether pandemic-era disruptions had altered transmission channels or shifted underlying inflation dynamics; and, at least initially, radical uncertainty about how economies would respond to unprecedented policy interventions and supply-chain dislocations. Compared with other major regions, ASEAN+3 inflation proved more moderate and short-lived – an outcome that reflected both structural features (including high trade openness, competitive retail sectors, and relatively low service-sector wage pressures) and timely policy responses that combined monetary tightening with fiscal cushioning and supply-side management (AMRO 2025a). Yet even with this favorable outcome, the episode underscored how difficult real-time diagnosis can be when shocks overlap and evolve.

The macroeconomic diagnostic challenges are, if anything, likely to intensify. A confluence of structural forces is now reshaping the region – demographic aging, trade reconfiguration amid geoeconomic fragmentation, and rapid technological change – with each acting as a slow-moving supply shock whose effects on potential growth, inflation dynamics, and policy transmission are difficult to gauge in real time (AMRO 2024). Meanwhile, the region's high trade openness means that external disturbances – whether from abrupt shifts in trade policy, swings in commodity prices, or changes in global demand – transmit quickly and through multiple channels. For smaller, highly open economies, the shocks that matter most may not originate domestically at all, yet central banks must still judge their persistence and calibrate the appropriate response. And because monetary policy frameworks differ across the region, the same external shock can pose quite different diagnostic questions across different policy settings.

What this implies for macroeconomic surveillance is straightforward in principle but demanding in practice. The framework's value lies in sharpening the diagnostic questions: Demand or supply? Transitory or persistent? How strong is transmission? But answering them requires granular, high-frequency monitoring; systematic cross-checks across data sources and models; and the capacity to update assessments as new information arrives. During the post-pandemic inflation episode, several regional central banks complemented conventional forecasting with alternative scenarios, sectoral intelligence, and real-time indicators of expectations and price-setting behavior – approaches that allowed them to adjust course as the balance of shocks shifted from supply to demand and as persistence became clearer. Embedding this kind of diagnostic discipline more broadly, and ensuring that analytical capacity keeps pace with the complexity of shocks the region faces, is among the more practical implications of the framework developed here.

Box S1:

When to Act – The Option Value of Waiting in Monetary Policy

Uncertainty about the nature and persistence of shocks is among the most pressing challenges for monetary policymakers. When a shock hits, should central banks act immediately to stabilize the economy, or wait until the picture clarifies to avoid costly policy mistakes? The tension is real: acting too early on a misdiagnosed shock risks destabilizing the economy, but waiting too long can allow inflation to embed or output losses to deepen. This box draws on Wang and Ng (2026) to examine these questions more formally. Using a stylized New Keynesian framework that embeds into the central bank's optimization problem the option value of waiting, the analysis yields a set of threshold rules and practical insights for navigating disturbance uncertainty.

The analysis is based on a stylized two-period model in which uncertainty and the option value of waiting is embedded into the central bank's optimization problem. The core idea is that under high uncertainty, waiting has value. The policymaker observes the first-period shock but remains uncertain about future shocks. It may act immediately – with its policy action influencing the next period – or delay action to obtain clearer information.

The essential result from the model is a threshold rule: when uncertainty is elevated, the option value of waiting rises, warranting a more cautious approach. However, if the economy is hit by a shock that is sufficiently large or persistent, early action rather than delay becomes optimal. Extensions building on this threshold rule yield four key insights.

Insight 1: Uncertainty alters the optimal timing of policy and justifies a cautious approach. When the nature and persistence of shocks are unclear, the risk of policy miscalibration increases. Even a single additional period of data can materially improve the diagnosis of whether inflation pressures stem from demand strength or supply constraints. In such environments, waiting is not passive but an optimal strategy that preserves flexibility and reduces the likelihood of costly mistakes. This dynamic helps explain why many regional authorities have favored patience and stronger data dependence in recent months.

Insight 2: Persistent shocks reduce the value of waiting and warrant earlier action. When disturbances are likely to last, the cost of inaction rises as expected future deviations in inflation and output widen. The threshold for waiting therefore falls. A persistent negative demand shock calls for earlier easing to prevent a deeper slowdown, while a persistent supply shock may require earlier tightening to avoid embedding inflation pressures. Greater clarity regarding persistence thus shifts the balance away from caution and toward prompt, pre-emptive response.

Figure 1.35. Model-Implied Optimal Responses to Different Types of Shocks

	Transitory	Persistent
Negative Demand Shock	**Wait and See** Risk of overreaction	**Front-load Easing** Avoids cumulative loss
Negative Supply Shock	**Wait and See** Risk of over-tightening, inflation self corrects	**Gradual Tightening** Need to balance policy trade-offs

Source: AMRO staff.

This box was written by Haobin Wang and Yuhong Wu.

Insight 3: Effective-lower-bound (ELB) risk shifts optimal policy toward front-loaded easing. When interest rates are already low and downside risks dominate, the probability of reaching the ELB reduces future policy space. Waiting becomes more costly because the central bank may later be unable to ease as needed. These considerations also underscore the importance of monetary-fiscal coordination at the ELB: when monetary policy space is limited, credible and well-targeted fiscal support can help stabilize demand, reduce the burden on monetary policy, and lower the probability of being trapped at the ELB in the first place.

Insight 4: State-contingent communication is more credible and flexible under high uncertainty. Rigid forward guidance can be counterproductive when conditions change unexpectedly, forcing a policy reversal and risking credibility loss. By contrast, state-contingent communication – explaining how policy would respond under different scenarios – preserves both clarity and flexibility. This approach aligns with the framework's emphasis on updating decisions as information improves, helping maintain credibility when the outlook is uncertain and the distribution of shocks is wide.

Taken together, these results point toward a nuanced view of caution under uncertainty. Waiting is not passivity – it is an optimal strategy when the nature of a shock remains unclear and the risk of policy miscalibration is high. But caution has limits. When shocks are clearly persistent, when expectations show signs of drifting, or when the effective lower bound constrains future action, the option value of waiting diminishes and the case for early, decisive response strengthens. The framework also underscores the value of state-contingent communication: rather than offering precise forecasts or rigid forward guidance, central banks can maintain credibility by explaining how policy would respond across a range of scenarios This approach is particularly suited to an environment where the distribution of shocks is wide and the outlook uncertain.

Sharpening diagnosis is only part of the challenge. Acting effectively on those judgments requires institutional settings that give central banks the credibility and flexibility to make difficult choices. When expectations are well anchored, policymakers have room to look through temporary disturbances, move gradually as the picture clarifies, or preserve policy space for larger shocks – flexibility that erodes quickly once credibility weakens. Credibility, in turn, rests on a track record of delivering on mandates, on frameworks that markets and the public understand and trust, and on institutional independence that allow policy to be guided by evolving assessments of economic conditions rather than shorter-term considerations. In an environment where uncertainty is elevated and the appropriate response is often unclear, maintaining this credibility is not incidental to good policy – it is what makes good policy possible.

It is also worth recognizing that monetary policy, however well-calibrated, cannot address every dimension of macroeconomic adjustment. This is particularly true when shocks usually carry supply-side, distributional, or financial-stability dimensions. Fiscal policy can cushion demand without stoking inflation; macroprudential tools can lean against financial imbalances that might otherwise constrain monetary space; foreign exchange intervention and capital flow management measures can help absorb external shocks in highly open economies; and structural policies can ease supply bottlenecks and improve transmission over time. The goal is not rigid coordination, but complementarity – ensuring that the broader policy toolkit supports the task of anchoring prices and stabilizing the economy, rather than leaving monetary policy to compensate for gaps elsewhere.

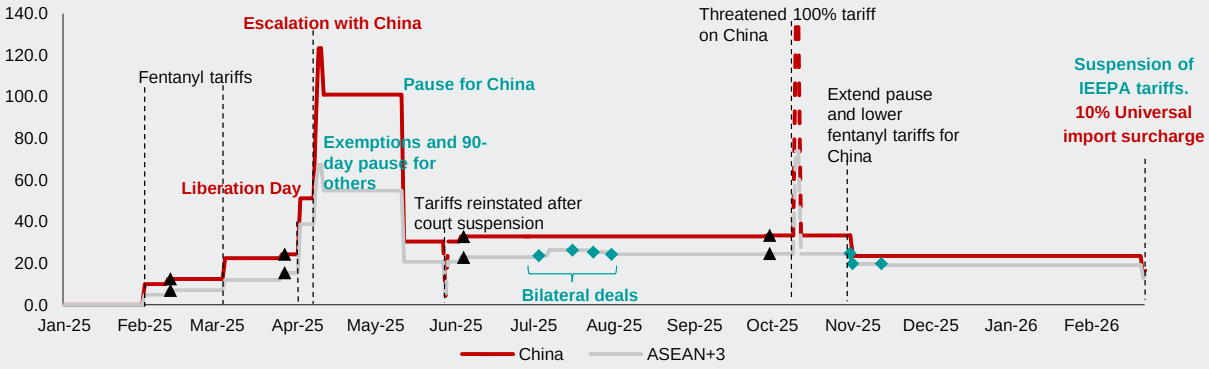
Uncertainty is not a problem to be solved, but a condition to be navigated. The framework developed in this special feature distinguishes structural, disturbance, and radical uncertainty but will not eliminate the difficulty of real-time policymaking. However, it can help clarify the kind of problem a central bank is facing and which considerations should weigh most heavily in response. In a region where shocks are frequent, overlapping, and often externally driven, that kind of diagnostic discipline – supported by credible institutions and a coherent policy mix – offers a sound basis for navigating the uncertainties ahead.

Box 1.1:

US Tariff Developments: A Key Source of Global Trade Uncertainty

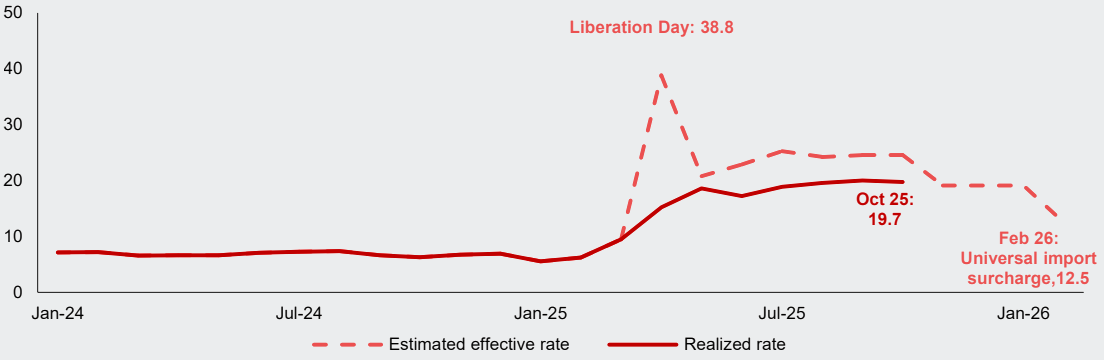
The shock: On April 2, 2025, the United States announced sweeping tariff measures on all trading partners under the International Emergency Economic Powers Act (IEEPA), citing national security and economic emergency concerns. Ranging from 10 to 50 percent, the Liberation Day tariffs pushed US tariff levels to their highest since before World War II. ASEAN+3 economies faced the highest rates globally, with aggregate tariff exposure approaching 40 percent (Figure 1.1.1). But deescalation came almost immediately. A 90-day pause starting April 10 reduced reciprocal rates to 10 percent for most economies and broad exemptions were granted, leaving realized rates lower than headline levels. Before the pause expired, many ASEAN+3 economies had negotiated trade deals with lower reciprocal tariffs around 15–20 percent. (Figure 1.1.2).

Figure 1.1.1. Announced US Tariff Rates on China and ASEAN+3 Since 2025
(Percent)



Source: Newsflows, the White House; S&P Global Trade Atlas; AMRO staff calculations.
Note: ▲ = sectoral tariffs, ◆ = trade deals. Tariffs changes are marked based on announcement dates. The regional aggregate is the trade-weighted average of individual economies' weighted tariff based on their total exports to the US in 2024. Weighted tariffs are the sum of sectoral tariffs announced on respective dates and weighted reciprocal tariffs or universal import surcharge accounting for exemptions.

Figure 1.1.2. ASEAN+3 Actual and Estimated Tariff Rates
(Percent)



Sources: S&P Global Trade Analytics, USITC; AMRO staff calculations.
Note: Realized tariff rates are calculated as duties collected divided by customs value, based on data from US customs. Estimated effective rate is calculated as the weighted average regional aggregate of the reciprocal rate for individual economies or the universal import surcharge in February 2026, accounting for exemptions and sectoral tariffs.

This box was written by Yuhong Wu.

A new disruption: A Supreme Court ruling in February 2026 invalidating IEEPA-based tariffs has created renewed uncertainty. The Court held that the administration lacked authority to impose the reciprocal and fentanyl-related tariffs, casting doubt on the bilateral deals negotiated under that framework. In response, Trump imposed a universal import surcharge under Section 122 of the Trade Act of 1974, set at 10 percent, which expires after 150 days absent Congressional extension. The administration also launched new Section 301 investigations into excess industrial capacity and the use of forced labor, which affected ten of the ASEAN+3 economies. Meanwhile, Section 232 tariffs on national security grounds remain in force.

The remaining uncertainties: The broader tariff outlook remains unsettled across three dimensions. First, on legal durability: the 2025 bilateral agreements might not hold, and the import surcharge expires around July 2026, leaving the post-July tariff framework uncertain. Second, several important sectors, including pharmaceuticals, semiconductors, and processed critical minerals, remain under Section 232 investigations. Third, on implementation ambiguity: the proposed 40 percent tariff on transshipment goods lacks clear enforcement details, posing particular risks for economies deeply embedded in regional supply chains. While less severe than at the height of the April shock, current tariff conditions continue to be a key source of global trade uncertainty.

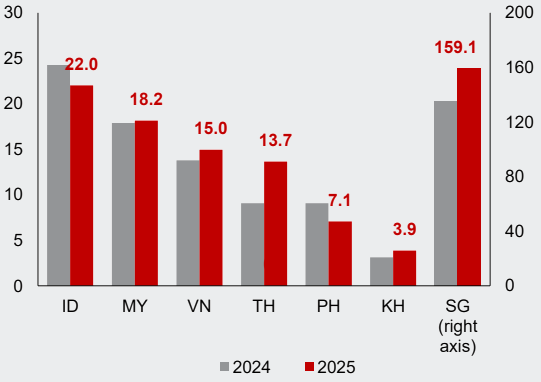
Box 1.2:

Overview of ASEAN's Foreign Direct Investment in 2025

ASEAN attracted strong foreign direct investment (FDI) inflows in 2025, despite heightened global uncertainty (Figure 1.2.1). The investment sources were broad-based, and new commitments were increasingly concentrated in supply-chain-intensive and technology-oriented activities, including advanced electronics, electric vehicles (EVs), and digital infrastructure (Figure 1.2.2).

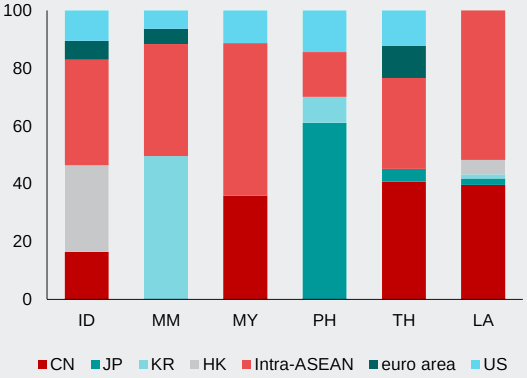
FDI related to electronics and data infrastructure was a key driver for the trend, supported by surging global demand for AI-related products and services. Semiconductor projects spanning advanced packaging, materials, and manufacturing equipment, rose sharply in Malaysia and Vietnam, reflecting continued relocation and expansion of higher-value manufacturing activities into ASEAN. On account of these trends, foreign investment approvals surged 47.5 percent in the first three quarters of 2025 in Malaysia, while Vietnam continued to record the highest FDI inflows among ASEAN economies. Complementing chips investments, data centre and cloud infrastructure also attracted sharp inflows. In 2025, Thailand attracted USD 23.1 billion in data centre investment, as global technology firms expanded AI-ready infrastructure to meet rising computational demand.

Figure 1.2.1 Selected ASEAN: FDI Inflows by Recipient Economy
(Billions of US dollars)



Source: International Monetary Fund via Haver Analytics; Bangko Sentral ng Pilipinas; Department of Statistics, Malaysia; AMRO staff calculations.
Note: ID = Indonesia; KH = Cambodia; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. Data show Balance of Payment (BPM6) direct investment liabilities. Data up to Q3 2025 for Vietnam, Thailand, and Cambodia. Data for the Philippines up to November 2025.

Figure 1.2.2 Selected ASEAN: Inwards FDI by Top 5 Source Economies
(Percent share)



Source: Bank Indonesia; Bank of the Lao PDR; Bangko Sentral ng Pilipinas; Myanmar Ministry of Investment and Foreign Economic Relations; Malaysian Investment Development Authority; Thailand Board of Investment; AMRO staff calculations.
Note: CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; TH = Thailand; US = United States. Figures for Thailand and Malaysia reflect official investment approvals granted through Q3 2025.

EV-related FDI remained strong in 2025, reflecting sustained investment in manufacturing capacity and upstream supply chains. In Thailand and Indonesia, investment focused on vehicle assembly alongside battery and component production. Indonesia leveraged its comparative advantage in nickel supply, which accounts for 66 percent of global production to anchor battery material supply chains (US Geological Survey 2026). EV investments also extended to Vietnam and other economies, supporting a regionwide expansion of EV capacity that is increasingly integrated across the value chain.

FDI inflows also strengthened across other ASEAN economies. FDI approvals in Cambodia rose 45 percent in 2025, mainly comprising manufacturing investment as export-oriented production expanded. The Philippines similarly recorded steady inflows in energy, manufacturing, and information and communication, reflecting sustained investor interest in power generation and digital infrastructure. The sectoral composition of FDI in 2025 points to a continued shift toward capacity-expanding and productivity-enhancing investment.

This box was written by Kriti Andhare and Yuhong Wu.

Intra-ASEAN+3 investment played an increasingly important role in driving FDI into ASEAN. Plus-3 economies accounted for a rising share of new investment commitments, providing key sources of capital in electronics, infrastructure, and manufacturing-related activities. These trends highlight ASEAN's deepening integration into regional and global value chains.[1] Taken together, FDI developments in 2025 point to a supportive investment outlook into 2026, with inflows increasingly aligned with supply-chain resilience, technological upgrading, and longer-term growth.

[1/] Investment figures are sourced from Council for the Development of Cambodia (2026), Malaysian Investment Development Authority (2025), and Thailand Board of Investment (2026). For a more detailed discussion on structural trends in FDI, refer to Chapter 2.

Box 1.3:

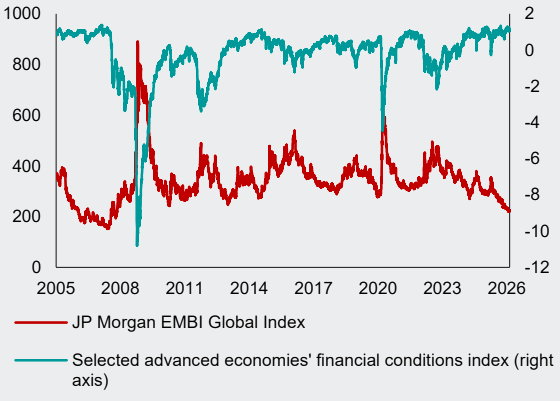
Key Developments in ASEAN+3 Financial Markets

Since the release of 2025 *ASEAN+3 Financial Stability Report* (AFSR) in October, global and regional financial markets have remained broadly stable until the escalation of Middle East tensions at end-February 2026. Financial conditions remained relatively accommodative through early March, reflecting easy monetary policy stance and strong equity performance, which was partly driven by solid corporate earnings, AI-related sector and the semiconductor upcycle. Furthermore, emerging market credit spreads narrowed to their lowest levels since 2007, underscoring robust risk appetite and compressed risk premia (Figure 1.3.1). That said, there were sporadic concerns around higher fiscal spending in some major developed economies, which led to some rise in bond yields and weaker currencies. However, since February, market stress rose significantly as oil prices surged. Global equities weakened on risk aversion, US dollar strengthened on safe-haven demand, and bond yields rose as markets priced in higher inflation.

The foreign exchange landscape has shifted from dollar weakness from late-2025 to February 2026, to a return of its safe-haven appeal since the Middle East crisis escalated in end-February 2026. The US dollar weakness prior to February 2026 was driven by concerns over US fiscal sustainability and Fed's independence. Consequently, the Asia Dollar Index rose 2.8 percent from its November 2025 trough before declining sharply at the onset of February's Middle East conflict as risk-off sentiment supported the US dollar.

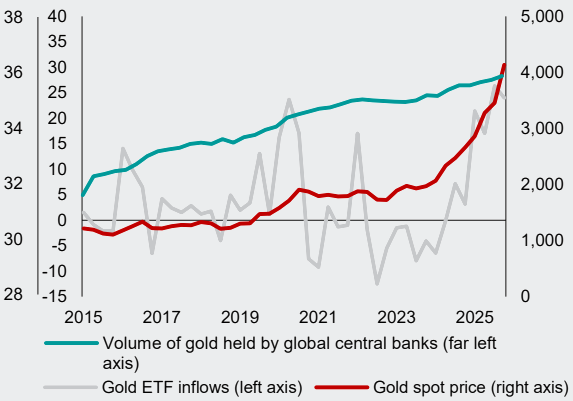
Amid rising geopolitical risks and the weaker US dollar trend before the Middle East conflict, precious metals rallied due to rising safe haven demand, pushing prices to record highs. In 2025, gold rose nearly 65 percent and silver more than 148 percent – their strongest annual gains since 1979 (Figure 1.3.2). Price for silver rose above USD 110 per ounce before retreating and plateaued around USD 80. Gold reached a peak of USD 5,585 per ounce in January 2026, supported by central bank reserve accumulation and strong exchange-traded fund (ETF) inflows as investors looked to hedge against global uncertainties, fiscal concerns, and dollar weakness. After a sharp late-January correction on valuation concerns, gold rose to around USD 5,000 as demand and geopolitical tensions resumed. Going forward, central banks are likely to continue expanding gold holdings as a hedge against geopolitical and financial risks, while ETF inflows – especially in the US, China, and India – remain firm (World Gold Council 2025, Tang 2026).

Figure 1.3.1. Advanced Economies Financial Conditions and Emerging Markets Sovereign Spreads
(Index for both axes)



Source: JP Morgan; Bloomberg Finance L.P.
Note: The selected advanced economies' financial conditions index is calculated by taking the simple average of the indices of the US, euro area, and the UK. Higher values of the index indicate easier financial conditions. Higher values of the EMBI Global index indicate higher sovereign bond spreads. Data as of March 6, 2026.

Figure 1.3.2. Gold Price, ETF Inflows and Volume Held by Global Central Banks
(Thousands of tonnes; billions of US dollar; US dollar per ounce)



Source: World Gold Council.
Note: Data for gold volume as at Q3 2025, while that for gold price and ETF flows as at Q4 2025.

This box was written by Chiang Yong (Edmond) Choo.

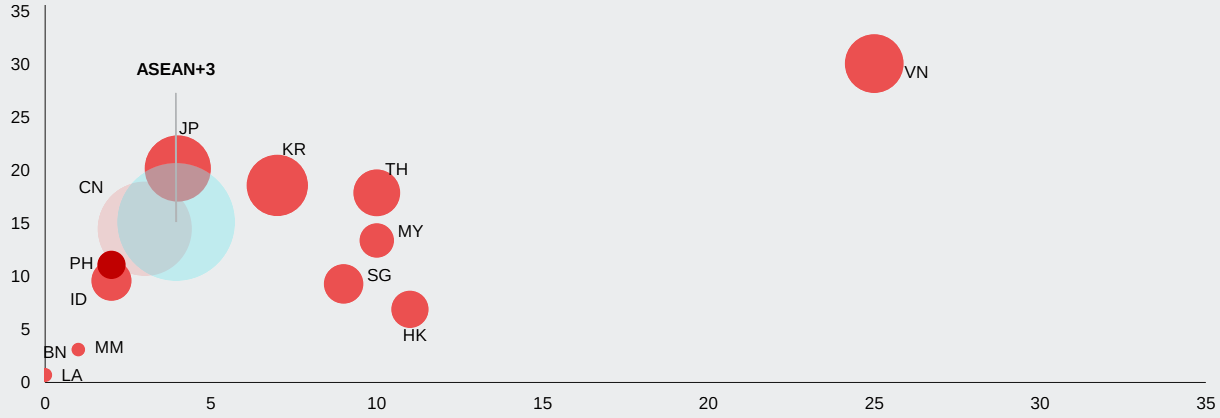
Box 1.4:

Resilience Amid Tariffs: Cambodia and Vietnam's Export Performance Under US Trade Measures[1]

US tariff announcement on April 2 placed Vietnam and Cambodia under the spotlight, given their higher tariff rates compared to other ASEAN economies and the fact that both economies are highly open, export oriented and significantly exposed to the US market, making them especially vulnerable to the tariff hike (Figure 1.4.1).

Nevertheless, following trade negotiations with the US and reflecting sector-specific exemptions, the weighted average tariff rates were significantly lowered from their initial levels – from 49 percent to 19.6 percent for Cambodia and from 46 percent to 18.4 percent for Vietnam – bringing them broadly in line with regional peers.

Figure 1.4.1. Direct Export Exposure to the US
(Percent of total exports, percent of GDP)



Source: S&P Connect Global Trade Analytics; National authorities via Haver Analytics.
Note: Data are as of 2024. Bubble size reflects exports to the US. The y-axis shows exports to US as a share of total exports, while the x-axis shows exports to the US as a share of GDP.

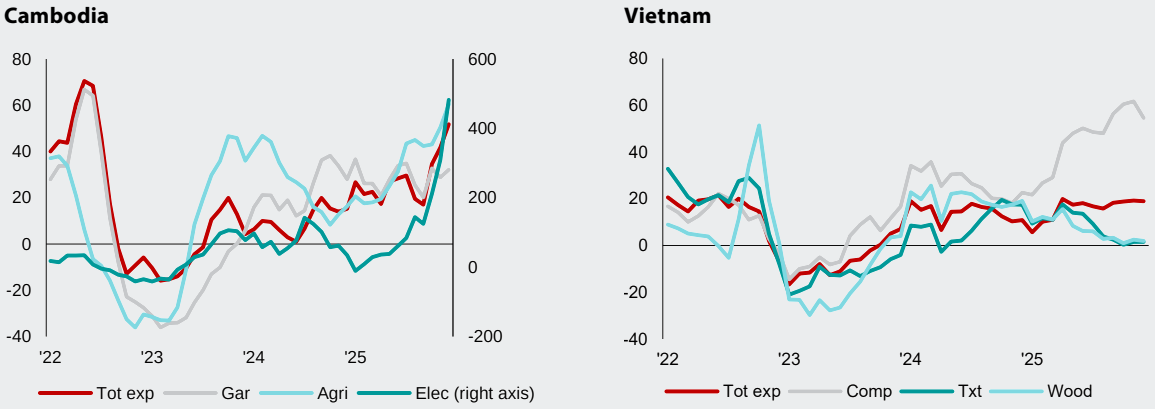
Despite the high US tariffs, Cambodia's and Vietnam's export and overall economic performance remained robust in 2025, largely driven by frontloaded orders and supply-chain cost sharing of tariff burdens. Export to the US remained robust, rising by around 28 percent for both economies in 2025. However, export performance diverged after the tariffs took effect in August 2025 and the frontloading effect dissipated (Figure 1.4.2). In Vietnam, exports of textiles, garments, and wooden furniture – products subject to the new tariffs – moderated, while electronics exports, which were exempt from tariffs and further boosted by strong AI-related demand, continued to surge.

Similarly, Cambodia's garment exports continued to grow at double-digit rates, albeit more slowly than before, while exports of electrical and vehicle parts have gained further momentum. To preserve market share, Cambodian and Vietnamese suppliers, together with US distributors, have absorbed a significant portion of the additional tariff costs. Both countries continue to receive orders from the US and continue to attract foreign direct investment, as the new tariff rates applied to them are broadly comparable to those imposed on regional peers. Combined with their relatively low labor costs, this has preserved their competitiveness.

This box was written by Wanwisa Vorranikulkij and Chunyu Yang.

[1/] This study was prepared based on the reciprocal tariffs announced on April 2, 2025, and subsequent adjustments, prior to the US Supreme Court ruling on February 20, 2026.

Figure 1.4.2. Exports to the US
(Percent, year-on-year, 3 month-moving average)



Source: National Statistic Office of Vietnam; National Institute of Statistics, Cambodia; AMRO staff calculations.
Note: Agri = Agriculture products; Comp = Computer and electronics; Elec = Electrical and vehicle parts; Gar = Garment products; Tot exp = Total exports; Wood = Wood and furniture

Looking ahead, although the US Supreme Court has ruled against the implementation of reciprocal tariffs, the export outlook for both countries continues to face headwinds and uncertainty stemming from the potential introduction of other US trade measures. The tariff episode underscores the risks associated with heavy reliance on traditional trading partners, particularly for small, open, and export-oriented economies. Deepening engagement within ASEAN and expanding into new markets would help enhance resilience. At the same time, strengthening local firm capabilities and labor skills to move up the global value chain, boosting domestic demand, reducing exposure to tariff-sensitive sectors, and diversifying export products remain critical priorities.

Box 1.5:

Scenario Analysis: Alternative Projections for ASEAN+3

The outlook for ASEAN+3, and the global economy, remains sensitive to two major sources of uncertainty: (i) the durability of the technology upcycle and (ii) the direction of trade protectionism by the United States (US). To assess the potential macroeconomic impacts, AMRO staff used the Oxford Economics' Global Economics Model (GEM) to run simulations on four scenarios – Further upside, Upside, Adverse, and Severe adverse – each with different assumptions on the strength of the tech cycle and the extent of trade disruptions (Table 1.5.1).[1] The scenarios are described below, and the simulation results are shown in Table 1.5.2.

Baseline: Incorporates the tariffs in place as of end-February 2026, under which ASEAN+3 economies face an effective tariff rate of 12.5 percent. No material escalation beyond measures already in place is assumed. The global tech upcycle is expected to continue, albeit at a more moderate pace, supported by AI-related investment and resilient demand for electronic products. Growth in the US economy is expected to be sustained for both 2026 and 2027.

Upside scenario: Assumes global AI-led investment accelerates, driven by early signs of AI-driven productivity gains materializing across a wider set of sectors and economies, resulting in stronger semiconductor demand and higher tech-related capital expenditure, such as investment in data centers and semiconductor manufacturing. Global private sector investment is assumed to continue to expand at the robust sequential pace observed in 2025, supported by improved corporate earnings and easier financial conditions. Tariff developments as per the baseline. In this scenario, with higher investment and stronger external demand for electronics and intermediate inputs, economic growth in ASEAN+3 will be lifted to 4.6 percent in 2026 and 5.5 percent in 2027, with growth in ASEAN outpacing the Plus-3 subregion (Figure 1.5.1).

Further upside scenario: Assumes the upside scenario occurs alongside an improvement in global trade policy development. Effective US tariff rates are lowered by an average of 5 percent as a result under the assumption that the Section 122 tariffs lapses. Sectoral tariffs are assumed to remain in place. In this scenario, ASEAN+3 growth could be slightly higher at 4.8 percent in 2026 and 5.8 percent in 2027, a more marginal uplift as global trade remains subdued and tariff levels stay above pre-Liberation Day rates.

Adverse scenario: Assumes AI benefits materialize at a slower pace and across a narrower scope, leading to a pullback in capital expenditure globally. Investment growth momentum globally is assumed to slow to the rates seen during the previous tech-cycle downturn in 2022. The weaker expectations would also trigger corrections in financial markets, amplifying the real-economy impact. Tariff developments as per the baseline. In this scenario, ASEAN+3 growth will be lower at 3.1 percent in 2026 and 2.5 percent in 2027 mainly as electronics exports weaken and investment – particularly AI-related spending on data centers – slows.

Severe adverse scenario: Assumes the adverse scenario occurs alongside an intensification of global trade tensions. Effective US tariffs are assumed to increase by 10 percentage points, bringing rates close to the levels prior to the removal of the Liberation Day tariffs. The already-weak external demand and investment activity under adverse scenario would be exacerbated by deterioration in investor and consumer sentiments and further disruption to global trade flows. ASEAN+3 could be significantly impacted under this scenario, with growth slowing to 2.8 percent in 2026 and 2.1 percent in 2027.

This box was written by Catharine Tjing Yiing Kho, and Jun Ee Yohnsen Ang.

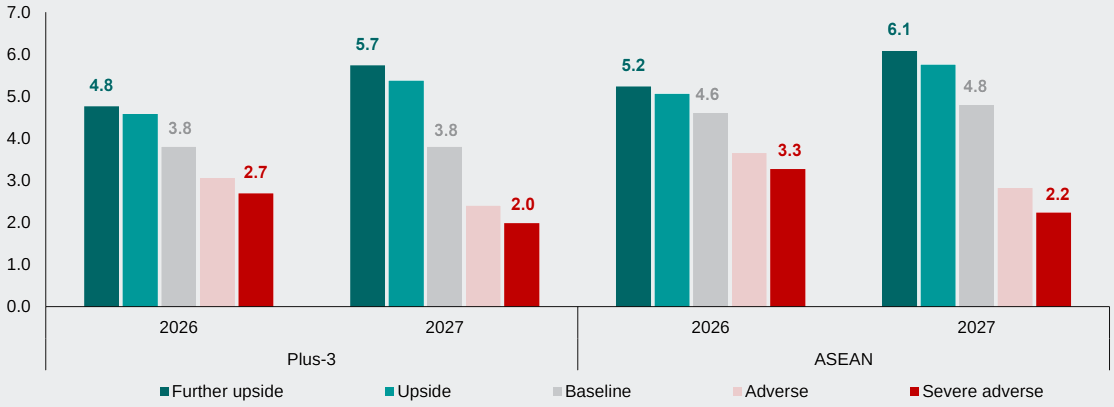
1/ Simulations are run using Oxford Economics' Global Economic Model (GEM), a multi-country macroeconometric model which covers 80 economies interlinked through trade, prices, exchange rates, and interest rates. GEM is an error-correction model that estimates how quickly a dependent variable returns to its equilibrium state after a shock to its independent variable, thus capturing both the short- and long-term effects, with integrated cross-country linkages transmitting shocks across economies in a consistent manner. In the short run, it features "Keynesian" dynamics – sticky factor prices and demand-driven output – while in the long run, prices adjust fully and outcomes are pinned down by supply-side fundamentals (productivity, labor, and capital). For this exercise, only the short-term estimates are produced and discussed.

Table 1.5.1. ASEAN+3 Growth Scenario Assumptions

Scenarios	Investment growth momentum	Effective US import tariffs
Baseline	More moderate than 2025	Current levels
Further upside	Similar to 2025, i.e. 10 percent higher quarter-on-quarter growth than baseline	5 percentage points lower than baseline
Upside		Current levels
Adverse	Similar momentum as the previous downcycle in 2022, i.e. 5 percent lower quarter-on-quarter growth than baseline	Current levels
Severe adverse		10 percentage points higher than baseline

Source: AMRO staff
Note: For the investment growth assumptions, as an illustration, for the US, the baseline quarterly investment growth is estimated at 1.3 percent. For the upside scenarios, the quarterly growth is assumed to be 10 percent higher (i.e. 1.4 percent quarterly growth). For the adverse scenarios, it is 5 percent lower (i.e. 1.2 percent quarterly growth).

Figure 1.5.1. ASEAN+3 Growth Projections Under Different Scenarios
(Percent year-on-year)



Source: Oxford Economics Global Economics Model; AMRO staff calculations.
Note: Regional aggregates are weighted using 2025 GDP on PPP basis. Brunei Darussalam, Cambodia, Lao PDR, and Myanmar are excluded due to data unavailability.

Table 1.5.2. ASEAN+3: Impact on Real GDP Under Various Scenarios
(Percent deviation from baseline, 2026)

Scenarios	ASEAN+3	Plus-3	ASEAN
Baseline Technology upcycle continues, but at a more modest growth than 2025. Current tariff environment is maintained.	-	-	-
Further upside Early signs of AI benefits spur stronger investment momentum and technology upcycle. Tariff environment is more favorable.	+0.8	+0.9	+0.5
Upside Early signs of AI benefits spur stronger investment momentum and technology upcycle. Current tariff environment is maintained.	+0.6	+0.7	+0.4
Adverse Slower or more limited materialization of AI benefits leads to pullback in investments and weigh on the tech upcycle, triggering disorderly tech equity corrections. Current tariff environment is maintained.	–0.9	–0.8	–1.0
Severe Adverse Slower or more limited materialization of AI benefits lead to pullback in investments and weigh on the tech upcycle, triggering disorderly tech equity corrections. Escalation of trade tensions exacerbates growth slowdown.	–1.2	–1.2	–1.4

Source: Oxford Economics Model, AMRO staff calculations.
Note: Regional aggregates are weighted using 2025 GDP on PPP basis. Brunei Darussalam, Cambodia, Lao PDR, and Myanmar are excluded due to data unavailability.

Box 1.6:

Scenario Analysis: Possible Impact of the Middle East Conflict on the ASEAN+3 Outlook

On February 28, 2026, the United States and Israel launched a joint military operation against Iran, marking the most significant escalation of the Middle East conflict in decades. Iran occupies a uniquely consequential position in global energy markets – both as a major oil producer and as the gatekeeper of the Strait of Hormuz, through which approximately 20 percent of global oil supply and a similar share of global LNG trade flow. For ASEAN+3, the exposure is material: over 35 percent of the region's crude oil is sourced from Middle Eastern partners transiting the strait.

Amid rapidly evolving conditions, in addition to the baseline, AMRO staff have developed two additional scenarios to assess the potential trajectory of the conflict and its macroeconomic implications for the region. The scenarios are structured around the intensity and scope of Iranian retaliation, the degree of disruption to maritime transit through the Strait of Hormuz, and the duration of the conflict. They are not mutually exclusive – the conflict could transition from one scenario to another as conditions evolve. Oil price assumptions are expressed in terms of Brent crude and informed by historical precedents and recent market developments. The scenarios are summarized in Table 1.6.1.

Table 1.6.1. Middle East Conflict Scenario Assumptions

Scenario	Description	Oil Price for March–December 2026 (Brent, USD/bbl)	Strait of Hormuz
Managed containment and deescalation	Both sides cap escalation; gradual de-escalation with no formal ceasefire, but strike tempo drops and maritime disruption eases.	70–80	Disruption eases within 8 weeks; insurance costs remain elevated; cautious resumption of commercial traffic.
Baseline: Protracted attritional conflict	Multi-month US-Israel air campaign; steady Iranian missile/drone/proxy retaliation; calibrated maritime coercion.	80–90	Partial disruption; de facto closure for most commercial traffic in 1H 2026; selective tanker incidents; elevated insurance costs.
Uncontrolled regional widening	Conflict broadens: Gulf energy infrastructure struck; sustained tanker targeting; escalation of conflict in neighboring Gulf countries.	100+	Sustained effective disruption; mining risk; direct tanker targeting at scale; OPEC+ spare capacity locked behind the chokepoint.

Source: AMRO staff assessment based on open-source reporting and expert analysis.
Note: Oil price ranges are average Brent crude (USD per barrel) from March–December 2026. Scenarios are not mutually exclusive; the conflict may transition between scenarios as conditions evolve.

The escalation has material implications for ASEAN+3 economies, transmitted primarily through higher energy prices. The impact across the region would be uneven, reflecting differences in energy import dependence, reliance on Middle East supply routes, and overall energy mix. Plus-3 economies face higher exposure as major importers of both crude oil and LNG transiting the Strait of Hormuz, although sizeable strategic petroleum reserves and some diversification in supply channels could help cushion part of the shock. For ASEAN net energy importers, higher global prices would pass through more directly to fuel and transport costs. By contrast, the region's energy exporters could see some offsetting gains from higher commodity revenues, though these would be tempered if the conflict also disrupts broader trade flows and weighs on external demand. AMRO staff used the

This box was written by Catharine Tjing Yiing Kho, Jun Ee Yohnsen Ang and Yuhong Wu.

Oxford Economics' Global Economics Model (GEM) to simulate the impact of these scenarios[1]:

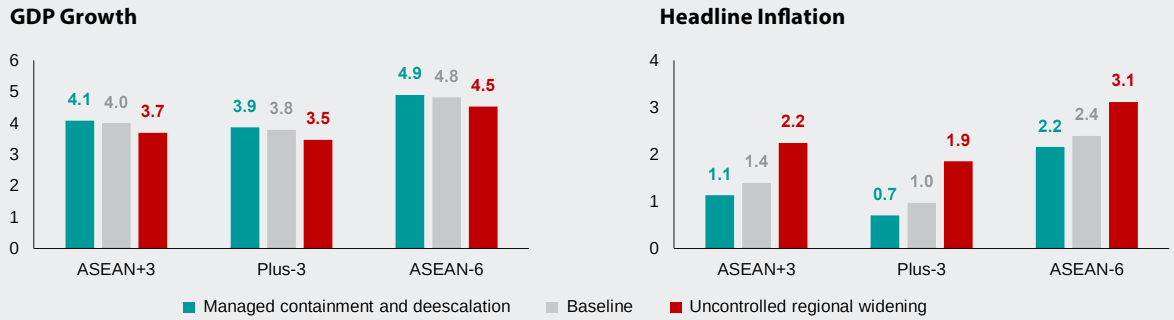
- ***Baseline:*** Protracted attritional conflict. Conflicts are expected to remain heightened amid mutual retaliation, with disruptions persisting for several months. Movement through the straits of Hormuz remains impaired, as elevated security threats lead to intermittent passage and partial closures, tightening effective global oil supply. Oil prices are assumed to remain above USD 90 per barrel in the four months following the onset of the conflict before moderating to USD 75–85 per barrel in the second half of 2026 as tensions gradually ease. The oil price trajectory under this scenario is consistent with latest price of oil futures contracts[2]. Under this scenario, ASEAN+3 growth and inflation in 2026 are forecast to be 4.0 percent and 1.4 percent, respectively.

- ***Uncontrolled regional widening.*** In this scenario, the conflict results in impairment of Gulf energy infrastructure, severely disrupting oil and gas production. Shipping disruption also intensifies, triggering a prolonged closure of the Strait of Hormuz. This leads to significant supply losses in oil and gas markets. Oil prices to sustain above USD 100 per barrel for the remainder of 2026, alongside tighter financial conditions and a material slowdown in economic activity globally. In this scenario, ASEAN+3 inflation is expected to rise above 2 percent in 2026, its highest level since 2022, while growth is expected to slow to 3.7 percent, also the weakest since 2022 (Figure 1.6.1).

- ***Managed containment and deescalation:*** In this scenario, the conflict remains contained, with relatively quick deescalation, as parties involved in the conflict assessed their objectives to have been achieved. Oil and gas transit through the Strait of Hormuz normalizes after two months from the start of the conflict. Oil prices to stay above USD 90 per barrel for two months before easing to average USD 70–80 per barrel for the remainder of the year as markets priced in reduced risk. In this scenario, ASEAN+3 inflation is expected to be lower at 1.1 percent, with growth to be slightly higher at 4.1 percent.

It is important to note that the region is structurally better placed to absorb an energy shock than in earlier episodes, supported by improved energy efficiency, a more diversified energy mix – with renewables now accounting for about one-third of installed power capacity in ASEAN and over half in China – and sizable strategic petroleum reserves among Plus-3 economies. Growing electric vehicle adoption across the region is also reducing the economy-wide exposure to oil price increases, particularly through lower dependence on fossil fuels in the transport sector. Nonetheless, the ongoing conflict poses the most significant risk to the region's energy security since 2022. Unlike previous disruptions, it directly threatens the maritime chokepoint through which the majority of ASEAN+3's energy imports flow, and the ultimate impact on the region will depend on which of the above scenarios – or combination thereof – materializes.

Figure 1.6.1. ASEAN+3 Growth and Inflation Projections for 2026 Under Different Scenarios
(Percent, year-on-year)



Source: Oxford Economics Global Economics Model; AMRO staff calculations.
Note: Regional aggregates are weighted using 2025 GDP on PPP basis. Brunei Darussalam, Cambodia, Lao PDR, and Myanmar are excluded due to data unavailability.

1/ Simulations are run using Oxford Economics' Global Economic Model (GEM), a multi-country macroeconometric model which covers 80 economies interlinked through trade, prices, exchange rates, and interest rates. GEM is an error-correction model that estimates how quickly a dependent variable returns to its equilibrium state after a shock to its independent variable, thus capturing both the short- and long-term effects, with integrated cross-country linkages transmitting shocks across economies in a consistent manner. In the short run, it features "Keynesian" dynamics – sticky factor prices and demand-driven output – while in the long run, prices adjust fully and outcomes are pinned down by supply-side fundamentals (productivity, labor, and capital). For this exercise, only the short-term estimates are produced and discussed.

2/ As of 16 March 2026.

Box 1.7:

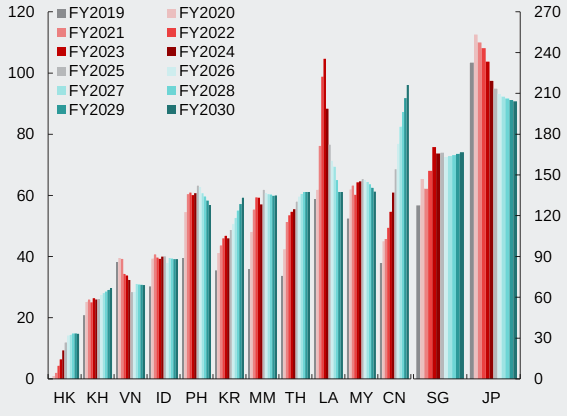
Government Debt and Financing Needs in ASEAN+3 Economies

Government debt in ASEAN+3 remains higher than pre-pandemic levels, with gradual stabilization expected over the medium term (Figure 1.7.1). With the exceptions of Japan, Lao PDR and Vietnam – where debt ratios continued to decline – the debt-to-GDP ratio increased in most member economies in FY2025 after showing signs of stabilization in previous years. In several other economies, the debt ratio continued its upward trend, with particularly large increases observed in China, followed by Myanmar, Korea, the Philippines, and Thailand.

Primary deficits and higher effective interest rates were the main drivers of rising debt ratios, outweighing the downward contribution from real growth and inflation (Figure 1.7.2). In China, additional borrowings under government fund budgets and the hidden debt-swap program introduced to bring local governments' off-budget liabilities onto the budget further contributed to the rise in public debt. In Singapore, bond issuance for non-spending purposes, such as developing the domestic debt market and providing individuals with long-term savings instruments, continued to add to the headline debt stock. Meanwhile, currency depreciation in Myanmar inflated the nominal value of foreign-currency-denominated debt, although these effects were partially offset by high inflation.

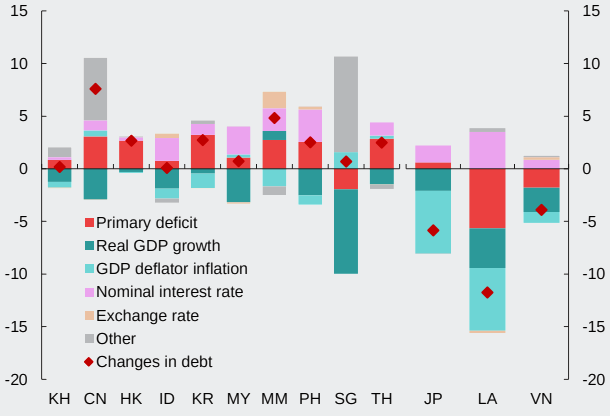
Over the medium term, government debt-to-GDP ratios are projected to gradually stabilize or decline in most ASEAN+3 economies, reflecting gradual fiscal consolidation and progress toward debt stabilization. Notable exceptions are China and Korea, where debt ratios are expected to continue rising at a pace similar to that observed over the past five years, driven by persistently high primary deficits and, in China's case, the continuation of the hidden debt-swap program (the initiative to replace off-balance-sheet local government debt) through 2028.

Figure 1.7.1. Government Debt, FY2019–2030
(Percent of GDP)



Source: National authorities via CEIC and Haver Analytics; AMRO staff estimates.
Note: Government debt in Lao PDR includes the suspended interest payments. Brunei is not shown as it has virtually no government debt. Government debt-to-GDP ratio projections over FY2025–2030 are based on AMRO staff.

Figure 1.7.2. Contribution to the Change in Debt-to-GDP Ratio in FY2025[1]
(Percent of GDP)



Source: National authorities via CEIC and Haver Analytics; AMRO staff estimates.
Note: Brunei is not shown as it has virtually no government debt.

This box was written by Byunghoon Nam.

1/ Decomposition:

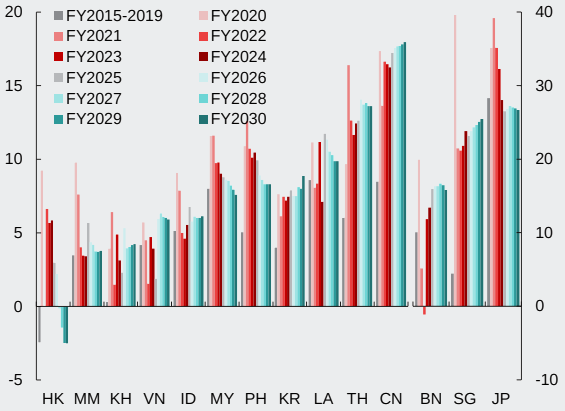
$$d_t - d_{(t-1)} = \underbrace{\left[\frac{i^w_t}{(1+g_t)(1+\pi_t)}\right] d_{t-1}}_{\text{contribution of nominal interest rate}} - \underbrace{\left[\frac{\pi_t(1+g_t)}{(1+g_t)(1+\pi_t)}\right] d_{t-1}}_{\text{contribution of GDP deflator inflation}} - \underbrace{\left[\frac{g_t}{(1+g_t)(1+\pi_t)}\right] d_{t-1}}_{\text{contribution of real GDP growth}} + \underbrace{\left[\frac{\varepsilon_t a_{t-1}(1+i^f_t)}{(1+g_t)(1+\pi_t)}\right] d_{t-1}}_{\text{contribution of exchange rate}} - \underbrace{pb_t}_{\text{contribution of primary deficit}} + \underbrace{o_t}_{\text{contribution of other flows}}$$

where d=debt-to-GDP ratio, pb=primary balance, o=other flows, i^w=effective interest rate of total debt, i^f=effective interest rate of external debt, g=real GDP growth, π=GDP deflator inflation, ε=exchange rate against USD, and a=share of external debt.

Gross financing needs (GFN) also remains elevated, reflecting the heightened debt service burden associated with accumulated debt (Figure 1.7.3). The GFN ratio increased in seven member economies in FY2025, driven mainly by larger primary deficits in Brunei, Myanmar, and Thailand, and by rising amortization requirements in Lao PDR and Indonesia (Figure 1.7.4). In particular, amortization needs in Lao PDR surged, reflecting the maturity of a substantial amount of bonds issued in the Thai market and the country's increased reliance on short-term borrowing in FY2024. In contrast, the GFN ratio declined in seven economies in FY2025, supported by narrower primary deficits in Hong Kong, Japan, and Malaysia, and by stronger economic growth, enhancing debt-servicing capacity. Looking ahead, despite a stabilizing or declining government debt-to-GDP ratio, increased principal repayments on maturing debt across various tenors are expected to keep GFNs elevated over the medium term in most member economies. The interest burden is also projected to remain high, reflecting the effect of accumulated debt stock, despite the gradual stabilization of sovereign yields.

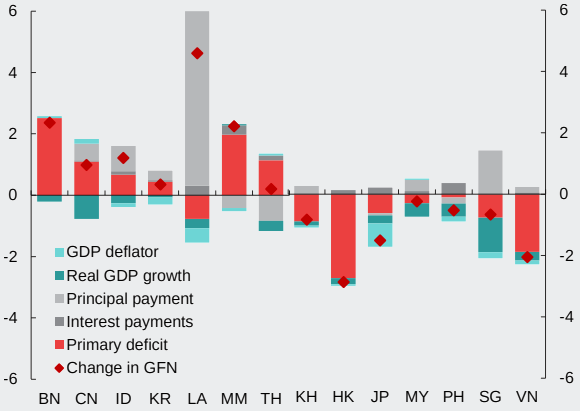
Given the rising fiscal debt burden and the challenging operating environment, establishing credible fiscal anchor – supported by clear, consistently applied rules that are simple, flexible, and enforceable – is crucial for long-term fiscal sustainability. Strategic resource allocation under medium-term fiscal framework should align with national priorities, emphasizing inclusive growth and investments in infrastructure, education, and climate resilience, while remaining adaptable to economic shocks such as population aging and climate change. Effective fiscal management also depends on improving spending efficiency, expanding the tax base through digitalization, and rigorously managing tax expenditures, supported by robust risk management practices and transparent oversight of contingent liabilities, state-owned enterprises, and social insurance systems to safeguard fiscal health against emerging risks (See the *ASEAN+3 Fiscal Policy Report 2025* for more detailed discussions on fiscal policy management).

Figure 1.7.3. Gross Financing Needs, FY2015–2030
(Percent of GDP)



Source: National authorities via CEIC and Haver Analytics; AMRO staff estimates.
Note: Debt service in Lao PDR is based on its original amount, including debt restructuring under negotiation. Amortization in the Philippines includes the redemption by the bond sinking fund. Amortization in Singapore includes the redemption of publicly-held Singapore government securities and Treasury bills. For Brunei Darussalam, GFN is equivalent to fiscal deficit given its virtually zero government debt. GFN-to-GDP ratio projections over FY2025–2030 are based on AMRO staff.

Figure 1.7.4. Contribution to the Change in GFN-to-GDP Ratio in FY2025[2]
(Percent of GDP)



Source: National authorities via CEIC and Haver Analytics; AMRO staff estimates.
Note: Debt service in Lao PDR is based on its original amount, including debt restructuring under negotiation. Amortization in the Philippines includes redemptions by the bond sinking fund. Amortization in Singapore includes the redemption of publicly-held Singapore government securities and Treasury bills. For Brunei Darussalam, debt to finance fiscal needs has not been issued.

2/ Decomposition:

$$gfn_t - gfn_{t-1} = \underbrace{\Delta pd_t}_{\text{contribution of primary deficit}} + \underbrace{\Delta ip_t}_{\text{contribution of interest payment}} + \underbrace{\Delta pp_t}_{\text{contribution of principal payment}} - \underbrace{\frac{gfn_{t-1}}{(1+g_t)(1+\pi_t)}\, g_t}_{\text{contribution of real GDP growth}} - \underbrace{\frac{(1+g_t)gfn_{t-1}}{(1+g_t)(1+\pi_t)}\, \pi_t}_{\text{contribution of GDP deflator inflation}}$$

where $\Delta pd_t = \frac{PD_t - PD_{t-1}}{P_t Y_t}$, $\Delta ip_t = \frac{IP_t - IP_{t-1}}{P_t Y_t}$, $\Delta pp_t = \frac{PP_t - PP_{t-1}}{P_t Y_t}$, and *gfn*=gross financing needs as a percentage of GDP, *PD*=primary deficit, *IP*=interest payment, *PP*=principal payment, *P*=GDP deflator, *Y*=real GDP, *g*=real GDP growth, π=GDP deflator inflation.

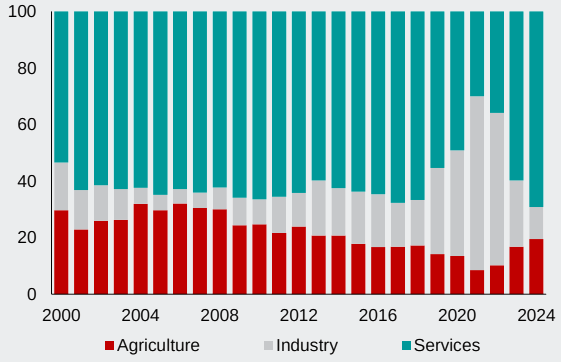
Box 1.8:

Timor–Leste: A Brief Account on ASEAN Newest Member State

Timor-Leste became the eleventh member of ASEAN on October 26, 2025, marking a significant milestone for the region. Timor-Leste is a fully-dollarized lower-middle income economy that is dependent on oil and gas. In terms of sectoral breakdown, services account for more than 60 percent of the economy, driven mainly by tourism (Figure 1.8.1). Industry constitutes about a quarter of GDP, and is mainly oil and gas-related, with some small-scale manufacturing of basic products such as soap, handicrafts, and textiles. The remainder is agriculture, with coffee production being a key activity. Timor-Leste's non-oil GDP growth averaged 3.2 percent between 2001–2004, helping to cushion the contraction in the oil and gas sector (Figure 1.8.2). Timor-Leste's population is 1.4 million, with per capita GDP of USD 1,547 as of 2024.

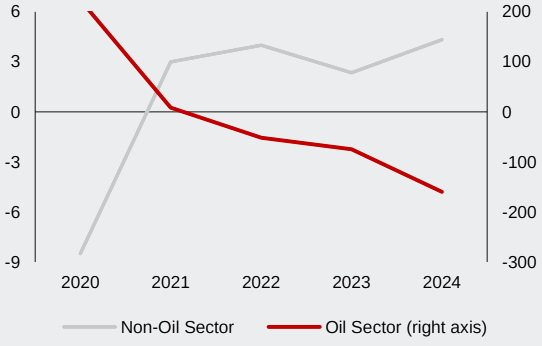
The external sector reflects the dominance of the oil and gas sector. Oil and gas constitute about 70 percent of the country's exports, while key non-oil exports include coffee, fish, and some basic manufactured goods. (Figure 1.8.3). Thailand is by far the top export destination, followed by Indonesia. (Figure 1.8.4). Timor-Leste imports much more than it exports, and relies heavily on imports of food, daily-use items, machinery, and construction materials. Imports are mainly sourced from Indonesia and China. Timor-Leste also imports construction services, transport and maintenance services, and government and business services. Given the narrow base of the country's economy, Timor-Leste has been running a large and widening trade and current account deficits (Figure 1.8.5).

Figure 1.8.1. GDP Sectoral Composition
(Percent of GDP)



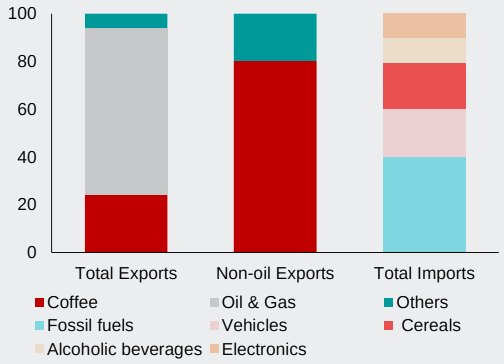
Source: The World Bank; Haver Analytics; AMRO staff calculations.

Figure 1.8.2. Real GDP Growth
(Percent, year-on-year)



Source: National Institute of Statistics; Haver Analytics; AMRO staff calculations.
Note: The growth rate of the oil sector is not applicable for 2019 because petroleum activities were reclassified as a resident industry only from September 2019 onwards following the entry into force of the New Maritime Boundary Treaty.

Figure 1.8.3. External Trade by Products
(Percent share, 2024)



Source: National Institute of Statistics; Haver Analytics; AMRO staff calculations.
Note: The top five import products made up 51.8 percent of total imports.

Figure 1.8.4. External Trade by Economy
(Percent share, 2024)

Source: National Institute of Statistics; Haver Analytics; AMRO staff calculations.
Note: The top five economies made up 91.3 percent of exports and 73.7 percent of imports.

This box was written by Suan Yong Foo, with inputs from Wee Yang Ng.

Timor-Leste's labor force is small and young, and most jobs are informal. The labor force participation is less than half of the country's population, and the unemployment rate is slightly above 1 percent (Figure 1.8.6). About three-quarters of employed persons are working in informal jobs. There has been persistently high youth unemployment, significant gender disparities, and heavy reliance on the oil and gas sector. A sizable segment of the workforce is in the informal and agriculture sectors.

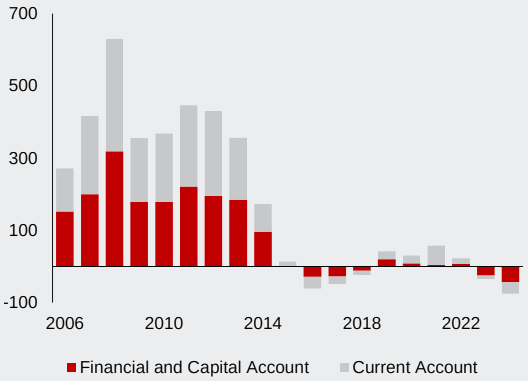
Timor-Leste's accession to ASEAN in 2025 creates rich opportunities for rapid integration with the ASEAN+3 region from a low base.

- The ASEAN population, close to 700 million and its GDP of about USD 4 trillion provides a large market for a wide range of increasingly high-quality exports of goods and services from Timor-Leste.
- There are already several investment projects led by or linked to ASEAN countries and Australia. Australia's Woodside Energy has signed a cooperation agreement with the Ministry of Petroleum and Mineral Resources of Timor-Leste to mature a concept for a Timor-Leste-based liquefied natural gas project to tap on the Greater Sunrise fields' gas resources.
- Alongside this, a few ASEAN countries have shown keen interest in investing in Timor-Leste. Key examples include: Malaysia and Singapore in real estate; Indonesia in sustainable infrastructure; and Thailand in agriculture, fishery, infrastructure, and tourism.
- There are opportunities for other ASEAN countries to invest in technology and the digital economy in Timor-Leste. The Timor Digital 2032 plan aims to boost digitalization for enhancing government service delivery and public participation, supporting inclusive economic development and expanding access to information.
- People movement into Timor-Leste could increase rapidly from a low base, generating sizeable benefits. There are more than 3,000 foreign nationals in Timor-Leste. If Timor-Leste welcomes more foreign talents into the country to lead the development and diversification, building of infrastructure, and even the improvement of some public services, the foreign population could expand rapidly, and generate large socioeconomic benefits.

Over time, Timor-Leste could contribute to the region's further economic development and integration, including by sharing its oil and gas know-how; developing as an increasingly strong manufacturing and logistics partner; being a tourism hub; adding to the human capital pool of the region; and becoming a valuable member of key regionwide partnerships and financial safety net arrangements.

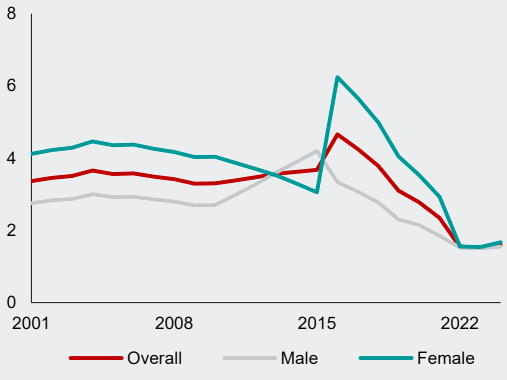
As Timor-Leste is currently not a member of AMRO, it falls outside AMRO's formal surveillance mandate. It is not included in the ASEAN+3 regional economic assessment in this report.

Figure 1.8.5. Balance of Payments
(Percent of GDP)



Source: IMF; National Institute of Statistics; AMRO staff calculations.

Figure 1.8.6. Unemployment Rate: Overall and Selected Demographic Groups
(Percent of total labor force)



Source: ILO; CEIC; AMRO staff calculations.
Note: The unemployment rates presented here are from the ILOEST database which imputed data for countries with missing data using a series of econometric models.

Appendix: Selected Key Macroeconomic and Financial Indicators

	2024	2025e	2026f	2027f
Brunei Darussalam				
Real GDP growth (percent, year-on-year)	4.1	0.7	1.9	1.8
Headline inflation (period average, percent, year-on-year)	–0.4	–0.3	0.9	0.8
Current account balance (percent of GDP)	14.6	14.9	21.4	17.4
Government fiscal balance (percent of GDP)	–13.4	–15.8	–11.4	–11.8
Cambodia				
Real GDP growth (percent, year-on-year)	6.0	5.2	4.9	5.2
Headline inflation (period average, percent, year-on-year)	0.8	2.5	2.9	2.5
Current account balance (percent of GDP)	0.5	–3.6	–5.4	–6.2
Government fiscal balance (percent of GDP)	–2.1	–1.1	–2.6	–2.6
China				
Real GDP growth (percent, year-on-year)	5.0	5.0	4.5	4.5
Headline inflation (period average, percent, year-on-year)	0.2	0.0	0.6	0.9
Current account balance (percent of GDP)	2.2	3.7	3.2	3.4
Government fiscal balance (percent of GDP)	–3.0	–4.0	–4.0	–4.0
Hong Kong, China				
Real GDP growth (percent, year-on-year)	2.6	3.5	2.8	2.7
Headline inflation (period average, percent, year-on-year)	1.7	1.4	1.9	1.6
Current account balance (percent of GDP)	13.1	12.3	12.3	12.4
Government fiscal balance (percent of GDP)	–5.9	–3.0	–2.2	–2.0
Indonesia				
Real GDP growth (percent, year-on-year)	5.0	5.1	5.0	5.1
Headline inflation (period average, percent, year-on-year)	2.3	1.9	2.8	2.9
Current account balance (percent of GDP)	–0.6	–0.1	–1.6	–2.1
Government fiscal balance (percent of GDP)	–2.3	–2.9	–2.7	–2.6
Japan				
Real GDP growth (percent, year-on-year)	–0.2	1.2	0.7	0.8
Headline inflation (period average, percent, year-on-year)	2.7	3.2	2.4	2.2
Current account balance (percent of GDP)	4.5	4.8	4.5	4.6
Government fiscal balance (percent of GDP)	–1.4	–1.4	–2.3	–2.4
Korea				
Real GDP growth (percent, year-on-year)	2.0	1.0	1.9	1.9
Headline inflation (period average, percent, year-on-year)	2.3	2.1	2.3	2.2
Current account balance (percent of GDP)	5.3	5.8	5.8	6.0
Government fiscal balance (percent of GDP)	–4.1	–4.3	–4.0	–4.2

Appendix: Selected Key Macroeconomic and Financial Indicators

	2024	2025e	2026f	2027f
Lao PDR				
Real GDP growth (percent, year-on-year)	4.3	4.8	4.6	4.5
Headline inflation (period average, percent, year-on-year)	23.1	7.7	7.8	7.1
Current account balance (percent of GDP)	3.5	11.9	6.4	7.0
Government fiscal balance (percent of GDP)	1.9	2.2	0.3	–0.3
Malaysia				
Real GDP growth (percent, year-on-year)	5.1	5.2	4.6	4.7
Headline inflation (period average, percent, year-on-year)	1.8	1.4	2.0	2.0
Current account balance (percent of GDP)	1.4	1.6	1.7	1.7
Government fiscal balance (percent of GDP)	–4.1	–3.7	–3.5	–3.3
Myanmar				
Real GDP growth (percent, year-on-year)	2.9	–1.5	2.5	2.5
Headline inflation (period average, percent, year-on-year)	29.6	28.0	24.0	16.0
Current account balance (percent of GDP)	3.3	3.5	3.1	–
Government fiscal balance (percent of GDP)	–2.7	–4.9	–3.5	–
Philippines				
Real GDP growth (percent, year-on-year)	5.7	4.4	5.3	5.8
Headline inflation (period average, percent, year-on-year)	3.2	1.7	3.9	3.6
Current account balance (percent of GDP)	–4.0	–3.3	–2.8	–2.7
Government fiscal balance (percent of GDP)	–5.7	–5.6	–5.4	–5.0
Singapore				
Real GDP growth (percent, year-on-year)	5.3	5.0	3.4	3.1
Headline inflation (period average, percent, year-on-year)	2.4	0.9	1.8	1.8
Current account balance (percent of GDP)	17.2	16.7	19.2	19.3
Government fiscal balance (percent of GDP)	1.2	1.9	1.1	0.8
Thailand				
Real GDP growth (percent, year-on-year)	2.9	2.4	1.7	2.2
Headline inflation (period average, percent, year-on-year)	0.4	–0.1	1.1	1.0
Current account balance (percent of GDP)	2.2	3.1	0.8	2.0
Government fiscal balance (percent of GDP)	–4.0	–4.7	–4.4	–4.1
Vietnam				
Real GDP growth (percent, year-on-year)	7.0	8.0	7.4	7.1
Headline inflation (period average, percent, year-on-year)	3.6	3.3	3.8	3.4
Current account balance (percent of GDP)	6.6	6.7	5.7	5.5
Government fiscal balance (percent of GDP)	–1.0	0.9	–3.5	–3.9

Source: National authorities via CEIC and Haver Analytics; AMRO staff estimates.
Note: e = estimates; f = forecasts. Numbers in red are AMRO staff estimates and forecasts. Data refer to calendar year; except for government fiscal balances, and Myanmar, which refer to fiscal year between April 1 and March 31. Data for 2025 refer to AMRO staff estimates, for data releases that are not yet available. Government fiscal balance refers to balance of the central and local governments for Cambodia; excludes bond issuance for Hong Kong; general government for Japan; AMRO's own estimates for Singapore; and central government for all other economies.

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Chapter 2.

A More Regionally Anchored ASEAN+3: The Transformation of Economic Linkages

Johor-Singapore Causeway, Malaysia and Singapore

Highlights

- The global environment surrounding ASEAN+3 has shifted markedly. Tariff measures, broader geoeconomic reconfiguration, and heightened policy uncertainty have raised pressing questions about the region's near-term resilience, the nature of its deepening intraregional trade, and its longer-term positioning. This chapter provides the structural perspective essential for assessing these questions – mapping how the region's economic linkages have transformed over the past two decades, examining what this means for business cycle dynamics and macroeconomic management, and considering how economies can position themselves for long-term resilience and growth.

- ASEAN+3's economic linkages have undergone a fundamental transformation compared to two decades ago, challenging the common characterization of the region as primarily a manufacturing location serving external demand. From the supply side, regional production networks have evolved from a Japan-centered hub into a denser, more interconnected architecture anchored by China, with trade concentrated in the intermediate and capital goods that underpin an integrated production network. From the demand side, the reorientation has been equally profound. ASEAN+3 has emerged as a major source of global final demand – collectively larger than the United States – with intraregional demand now substantially more important than two decades ago. The interdependence is comprehensive: China for the region, the region for China, and increasingly among ASEAN, Plus-3, and China collectively.

- This structural transformation means the region is better positioned to weather current trade disruptions than earlier configurations would have allowed. The region's demand base is now more regionally anchored and less dependent on extraregional markets. Its supply-side integration reflects substantive production linkages embedded in a complex, cohesive regional value chain network, rather than re-routing arrangements with limited domestic value addition. This does not imply immunity to external headwinds, but it does suggest a degree of resilience that the conventional characterization would not predict.

- Deeper linkages have brought ASEAN+3 business cycles closer together, with regional factors now explaining as much cyclical variation as global factors. This greater regional anchoring has provided some buffering against external demand shocks. At the same time, regional spillovers would be larger today should shocks occur – making sound domestic macroeconomic management a matter of regional, not just domestic, concern. Regional dialogue and surveillance become increasingly valuable for anticipating shared vulnerabilities. Preparedness for global shocks remains essential: global factors continue to be an important influence on the region's cyclical dynamics.

- Beyond cyclical considerations, how can economies sustain long-term resilience and growth within these transformed linkages? For many economies, gains from moving up value chains have been accompanied by rising concentration risks – framing the central policy challenge of capturing integration's benefits while managing its vulnerabilities. Three priorities emerge: upgrading domestic capabilities toward higher value-added activities; diversification to reduce concentration vulnerabilities; and inclusive participation so that integration gains are broadly shared. For ASEAN specifically, structural constraints mean that further deepening integration requires strategies beyond trade liberalization – including promoting denser intraregional investment linkages.

- The landscape shaping ASEAN+3's integration will continue to evolve. Geoeconomic tensions may reinforce regional orientation; demographic shifts and economic rebalancing are tilting demand toward regional sources; digital technologies and the green transition are creating new integration frontiers. Navigating this environment requires building adaptive capacity. Regional cooperation will be particularly valuable: as economies become more sensitive to developments in their neighbors, the case for policy dialogue and collective action strengthens. ASEAN+3 has demonstrated this capacity before – most notably through the financial cooperation architecture built after the Asian financial crisis. The region's growth over the past two decades was built on openness, integration, and cooperation; sustaining that trajectory in a more uncertain world will require deepening all three.

Introduction

The global environment surrounding ASEAN+3 has shifted markedly, with implications for a region whose growth has been built on openness and integration. The tariff measures introduced by the United States in 2025 represent a significant disruption to the trade architecture that had supported the region's expansion. But the challenges extend beyond tariffs. Broader and intensifying geoeconomic reconfiguration has prompted reassessments of supply chain configurations and cross-border investment strategies, while heightened policy uncertainty has raised questions about the durability of trade relationships that had developed over the preceding two decades. Accompanying these developments are concerns about the nature of the region's economic linkages – whether the deepening of intraregional trade reflects genuine structural integration or more transitory adjustments to external pressures, including trade re-routing or supply chain shifts in response to existing trade measures, and what this means for the region's vulnerability to further disruptions. These questions have become pressing for policymakers seeking to assess both near-term resilience and longer-term positioning.

The region's response to these geoeconomic shifts and challenges cannot be fully understood without recognizing that ASEAN+3's economic linkages have transformed fundamentally over the past two decades. The common framing positions ASEAN+3 primarily as a manufacturing hub serving external demand, with continued prosperity dependent on advanced economy markets outside the region. Yet this characterization captures only part of today's reality – and an increasingly outdated part. The region's trade, production, and investment relationships have evolved in ways that create a more regionally anchored economy than two decades ago, with implications for how external pressures transmit through the region, how economies move together, and how they should position for resilience and growth. Understanding these structural shifts is essential: without this longer-term perspective, assessments of the current situation risk being incomplete, and policy responses risk being misaligned with the region's actual circumstances. This chapter provides that structural foundation, examining how linkages have transformed and what this means for both conjunctural macroeconomic management and longer-term development.

The chapter proceeds in three parts, each addressing a distinct but interrelated question. The analysis moves from mapping the structural transformation to examining its implications for business cycle dynamics and macroeconomic management, to considering how economies can position themselves for long-term resilience and growth within these transformed linkages.

- Part I maps how ASEAN+3's economic linkages have transformed over the past two decades – tracing the reconfiguration of regional supply chains, the growing importance of intraregional final demand, and the investment flows that have reinforced these patterns. This provides the structural context for understanding the region's current interdependence.

- Part II assesses whether these deeper linkages have brought business cycles closer together, and what this means for macroeconomic management. The analysis examines the factors driving regional synchronisation and the magnitudes of cross-economy spillovers. Understanding these dynamics is directly relevant to assessing the region's resilience to current external pressures and informing policy frameworks for an increasingly interconnected region.

- Part III turns to longer-term positioning: how can economies sustain growth and resilience amid an uncertain and potentially more fragmented global environment? The discussion examines how regional economies can continue capturing integration's benefits while managing the vulnerabilities – including concentration risks – that have accompanied deeper embedding in regional production networks. Three policy priorities emerge: upgrading domestic capabilities, promoting supply chain diversification, and ensuring inclusive participation.

A concluding discussion draws these threads together, situating the findings within the evolving landscape that will shape ASEAN+3's integration in the years ahead.

The authors of this chapter are Kriti Andhare, Yohnsen Ang, Naoaki Inayoshi (lead), and Yuhong Wu, under the supervision of Allen Ng, with contributions from Yuventus Effendi, Laura Britt Fermo, Chenxu Fu, Xianguo (Jerry) Huang, and Wee Chian Koh.

Part I. Changing Patterns of ASEAN+3 Economic Linkages

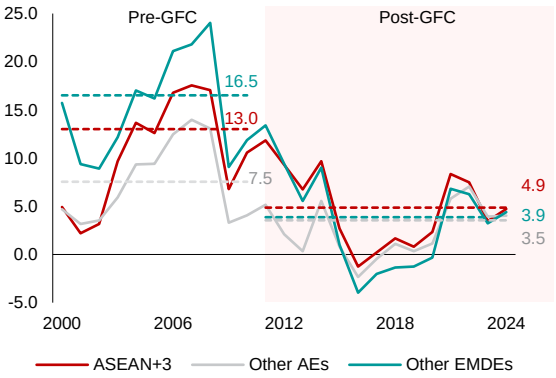
Understanding how ASEAN+3's economic linkages have evolved is essential for assessing the region's current position and vulnerabilities. This part provides an overview of the region's position within the global trade landscape and traces three interrelated shifts over the past two decades: the reconfiguration of supply chains within the region, the growing importance of intraregional final demand, and the investment flows that have reinforced these patterns. The evidence reveals a region that has become more tightly integrated through deepening regional production networks – with trade concentrated in intermediate and capital goods that support regional manufacturing – while also developing a more substantial intraregional demand base. These structural shifts distinguish ASEAN+3's current economic architecture from both two decades ago and from characterizations that emphasize the region primarily as an export platform serving external markets.

ASEAN+3 in the Global Trade Landscape

ASEAN+3 has been among the fastest-growing trade regions over the past two decades, demonstrating notable resilience across successive global cycles. During the rapid expansion of the 2000s, the region's trade grew at an average annual rate of 13.0 percent between 2000 and 2008, outpacing advanced economies' 7.5 percent, though trailing other emerging markets and developing economies' 16.5 percent (Figure 2.1). The global financial crisis in 2009 marked an inflection point, as trade growth decelerated worldwide amid weakened demand and slower cross-border supply chain expansion.[1] Regional trade growth moderated accordingly – to 4.9 percent annually between 2010 and 2024 – but ASEAN+3 continued to outpace most other regions.

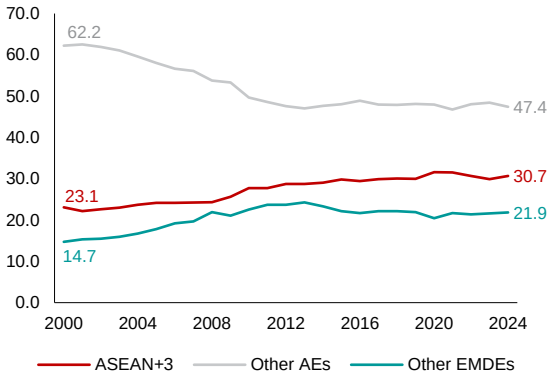
This sustained expansion enabled ASEAN+3 to raise its share of world trade, measured as exports plus imports, from 23.1 percent in 2000 to 30.7 percent in 2024 (Figure 2.2). The region's share of world exports rose from 23.2 percent to 34.4 percent, and its share of world imports also increased from 23.0 percent to 26.0 percent (Figure 2.3). Within the region, China accounted for the largest contribution, with its global share of exports and imports increasing from 3.9 percent and 5.2 percent to 16.4 percent and 8.5 percent between 2000 and 2024. The BCLMV economies – particularly Vietnam – also recorded substantial gains, reflecting deeper integration into global value chains (GVC). By contrast, the share of other major economies in world trade contracted, while the rest of the world increased its share of global imports, reflecting slower growth and the geographic rebalancing of global production. The combined global share of the United States and European Union (EU) exports declined by 9.6 percentage points, while the decline for imports was 12.7 percentage points.

Figure 2.1. Annual Trade Growth by Selected Economies
(Percent, year-on-year, five-year moving average)



Source: United Nations Comtrade; AMRO staff calculations.
Note: GFC = global financial crisis. "Other advanced economies (AEs)" and "Other emerging and developing economies (EMDEs)" follow the International Monetary Fund's classification. The colored data labels represent each region's annual trade growth rate during the respective time periods.

Figure 2.2. Share of Global Trade by Selected Economies
(Percent of gross global trade)

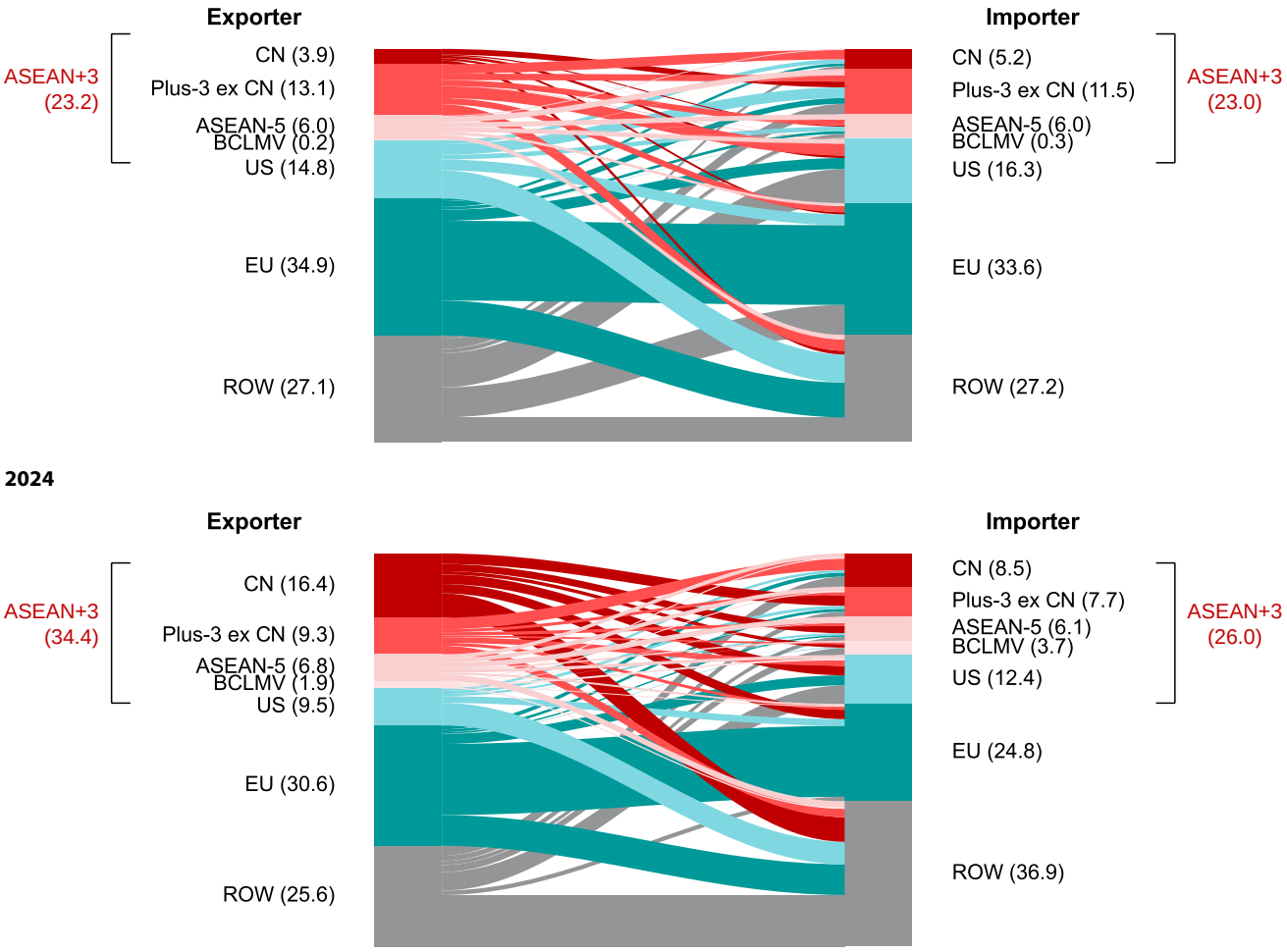


Source: United Nations Comtrade; AMRO staff calculations.
Note: "Other advanced economies (AEs)" and "Other emerging and developing economies (EMDEs)" follow the International Monetary Fund's classification. The colored data labels represent the region's share of global trade, measured as exports plus imports.

[1] This slowdown in global trade after the global financial crisis has been variously discussed in the literature. For instance, Baldwin (2009) explained that a sudden, severe, and globally synchronized drop in demand – especially for durable and non-durable goods – whose effects were amplified by supply-chain linkages, compositional differences between trade and GDP, and synchronicity across economies led to the "Great Trade Collapse". A slower expansion of international vertical specialization during this period was also raised by Constantinescu and others (2015) as another reason.

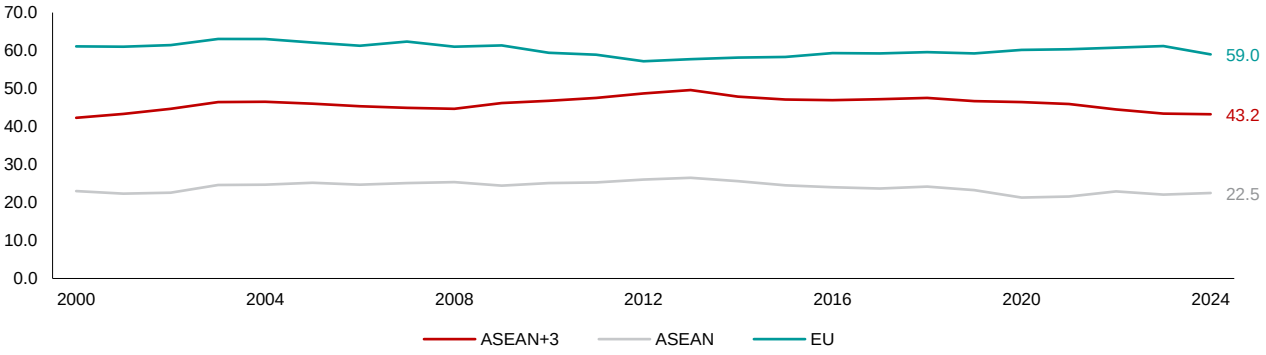
ASEAN+3's expansion in global market share occurred alongside a broadly stable intraregional trade share. Intra-ASEAN+3 trade remained around 40 percent of total goods exports throughout the period (Figure 2.4). This share is slightly below the EU's intraregional trade intensity. Within the region, ASEAN's intraregional trade accounted for 22.5 percent of its total goods exports, with the Plus-3 economies – particularly China – as ASEAN's primary trading partners. Yet this aggregate stability masks significant shifts in the region's underlying economic interlinkages – both in the configuration of supply chain networks and in the sources of final demand for regional exports. The following subsections trace these shifts, revealing a region whose integration patterns have evolved substantially from earlier configurations.

Figure 2.3. Global Trade Flows in 2000 and 2024
(Percent of gross global exports; Percent of gross global imports)



Source: United Nations Comtrade; AMRO staff calculations.
Note: CN = China; EU = EU-27 member economies; ROW = Rest of the world; US = United States; ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; Plus-3 ex CN = Hong Kong, Japan, and Korea. The values represent each region's or economy's share of global exports or imports, and the width of each flow reflects the corresponding trade share size. Percent share totals may not sum to 100 due to rounding.

Figure 2.4. Intraregional Goods Export Share in Selected Economies
(Percent of gross goods export)



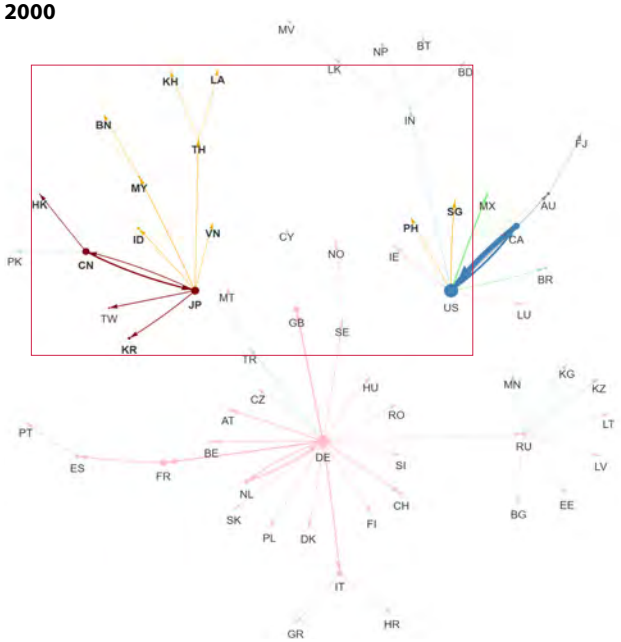
Source: United Nations Comtrade; AMRO staff calculations.
Note: EU = EU-27 member economies. Intraregional goods share is defined as the share of a region's goods exports that flows to economies within the same region, out of its total goods exports to the world. The colored data labels represent the region's intraregional gross goods export, as a share of total gross goods exports.

Supply Chain Linkages: Reconfiguration Around China

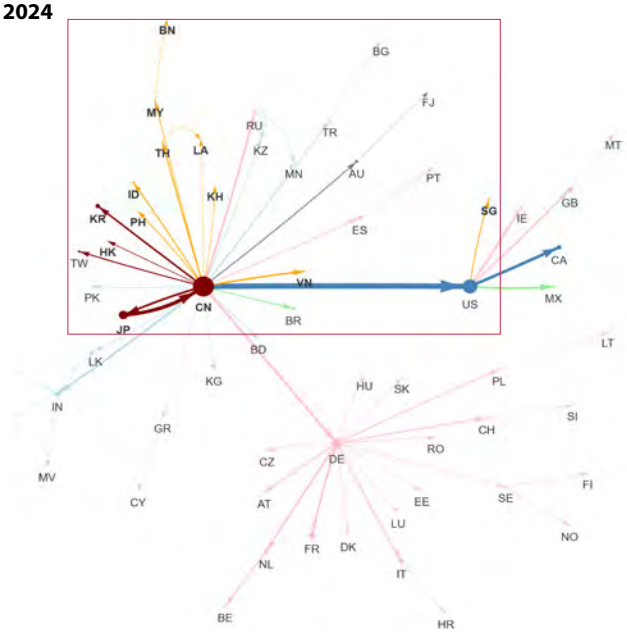
The configuration of supply chains within ASEAN+3 has transformed substantially since 2000, with China's emergence as the region's primary hub. The global supply network is structured around three major regional clusters – Asia, the Americas, and the EU – each anchored by a dominant hub economy that is the primary gateway for intraregional trade and connections to other clusters (Figure 2.5). While the configurations in the Americas and the EU clusters remained relatively stable since 2000, centered on the United States and Germany as regional hubs, the Asian cluster underwent a significant transformation. Japan served as the primary regional supply hub in 2000 for Asia; by 2024, China had taken on this role, supported by its expanding manufacturing capacity, logistics infrastructure, and central position in intermediate goods trade.[2] Importantly, this transformation extended beyond Asia, with economies such as Brazil redirecting linkages toward Chinese supply networks. The three clusters are now more interconnected, with China serving as a connecting node between the Americas and the EU.

Figure 2.5. Global Supply Hubs of Value Added in Goods and Services

2000



2024



Source: Asian Development Bank Multiregional Input-Output Table; AMRO staff calculations.
Note: Only linkages that represent the largest value-added imports or more than 25 percent of the total value-added imports of the recipients are shown. The size of the bubble represents the share of an economy's value-added imports in the world's total value-added imports. The thickness of the linkage represents the share of value-added flow between each trading partner in the world's total value-added flow. Economies are labeled based on International Organization for Standardization 2 (ISO-2) codes. See Online annex 1 for a detailed explanation of the definition and methodology used in this network analysis.

2/ Box 2.1 examines the factors that positioned Japan as the region's hub before the 2000s.

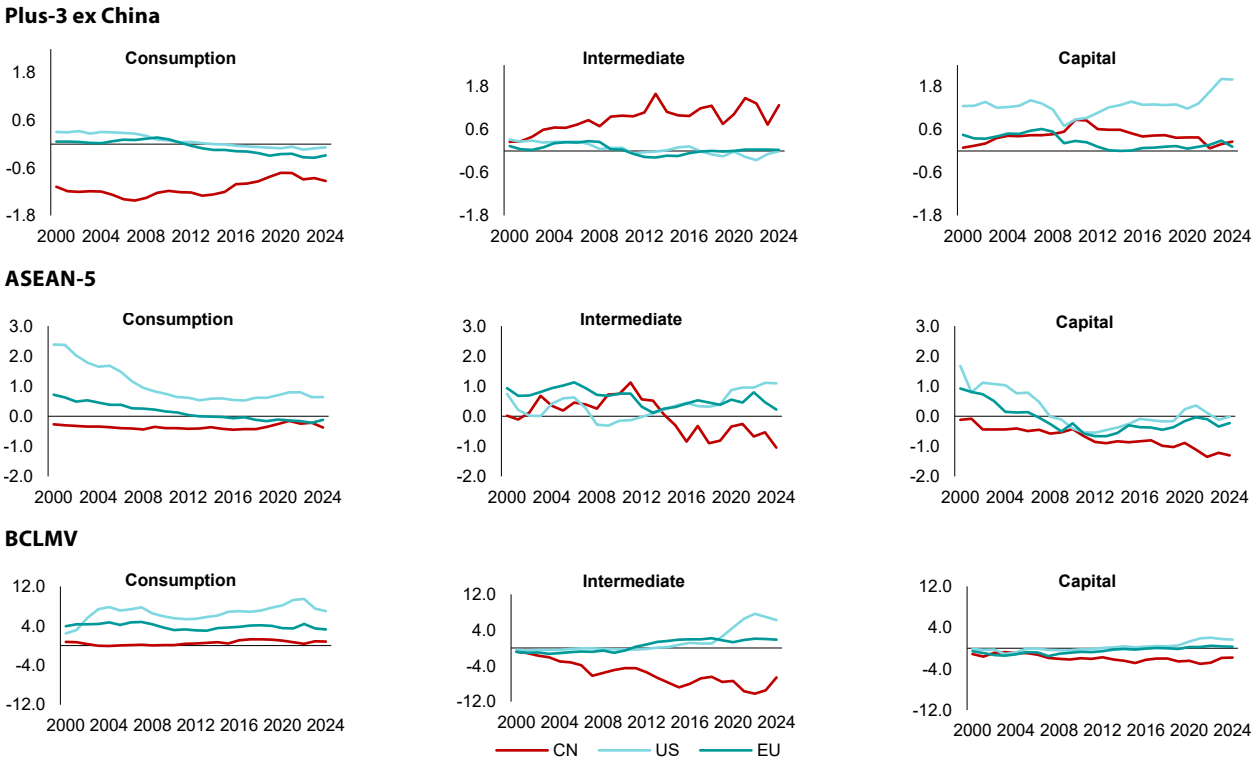
China's role as a supply hub is evident in its position as a major goods supplier to regional economies, particularly in intermediate and capital goods to ASEAN. Plus-3 economies excluding China continue to be a net exporter of intermediate and capital goods, while importing consumption goods from China (Figure 2.6, top panel). ASEAN economies exhibit distinct patterns across the subregion. ASEAN-5 economies primarily imported intermediate and capital goods from China, with this trend accelerating after 2010 as their manufacturing sectors expanded and integrated more deeply into regional supply chains (Figure 2.6, middle panel). BCLMV economies display a different pattern, with Vietnam dominating intermediate and capital goods imports as it emerged as a major assembly hub, while BCLM economies mainly imported intermediate goods from China (Figure 2.6, bottom panel). This composition – concentrated in inputs that support regional manufacturing rather than finished goods for re-export – reflects deepening production integration across the region.

Evolution of supply chains in specific sectors, particularly in electronics, including electrical goods, and textiles, demonstrates clearly the emergence of China as a global and regional supply hub. The electronics sector illustrates this transformation most clearly (Figure 2.7, top panel).

In 2000, the global electronics supply chain operated through multiple regional hubs, with ASEAN+3 economies maintaining diverse supplier relationships, primarily with Japan and the United States. By 2024, China had consolidated its position as the dominant global electronics supplier, creating a hub-and-spoke model linking virtually all economies to Chinese production networks. The textiles sector underwent a parallel evolution, transitioning from a fragmented structure in 2000 to one anchored in China by 2024 (Figure 2.7, bottom panel).

These supply linkages reflect interdependence rather than unidirectional dependence on China. Regional economies strengthened their imports from China from 2000 to 2024 (Figure 2.8, left panel). Yet, they are also critical suppliers to China, particularly in electronics intermediate goods. The share of electronics intermediate goods in regional exports to China rose from 11.4 percent in 2000 to 33.7 percent in 2024, representing 43.7 percent of China's total electronics intermediate goods imports (Figure 2.8, right panel).[3] Japan and Korea provide high-precision components and capital equipment, while ASEAN economies contribute through assembly activities (International Monetary Fund [IMF] 2016; Asian Development Bank [ADB] 2025). Regional economies thus play an integral role in China's manufacturing within the broader supply chain network.

Figure 2.6. Trade Balance of ASEAN+3 with Selected Economies by Types of Goods
(Percent of GDP)



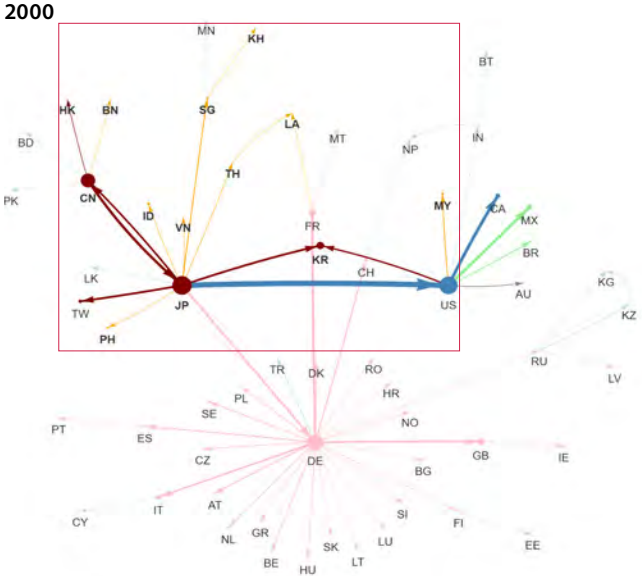
Source: United Nations Comtrade; AMRO staff calculations.
Note: CN = China; EU = EU-27 member economies; US = United States; ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; Plus-3 ex China = Hong Kong, Japan, and Korea. The trade balance is defined as gross exports minus gross imports.

3/ The share of electronics intermediate goods in regional exports to China has declined slightly since 2023, partly due to China's delayed post-COVID economic recovery (Mark 2024).

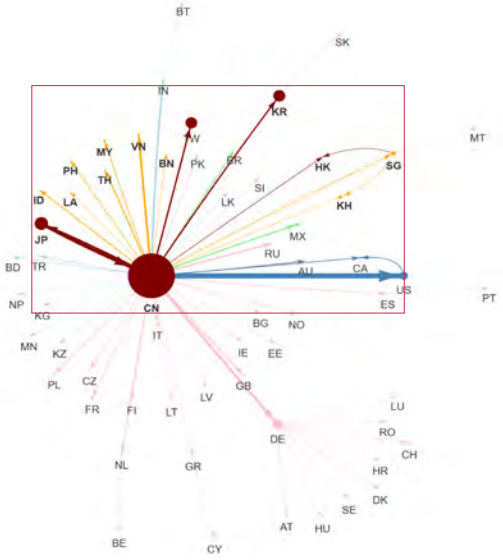
Figure 2.7. Global Supply Hubs of Value-Added by Key Industries

Electronics Sector

2000

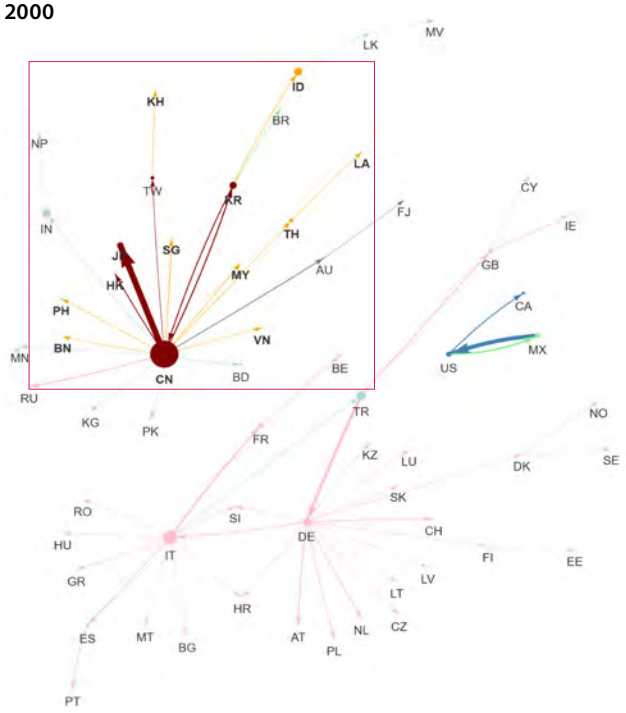


2024

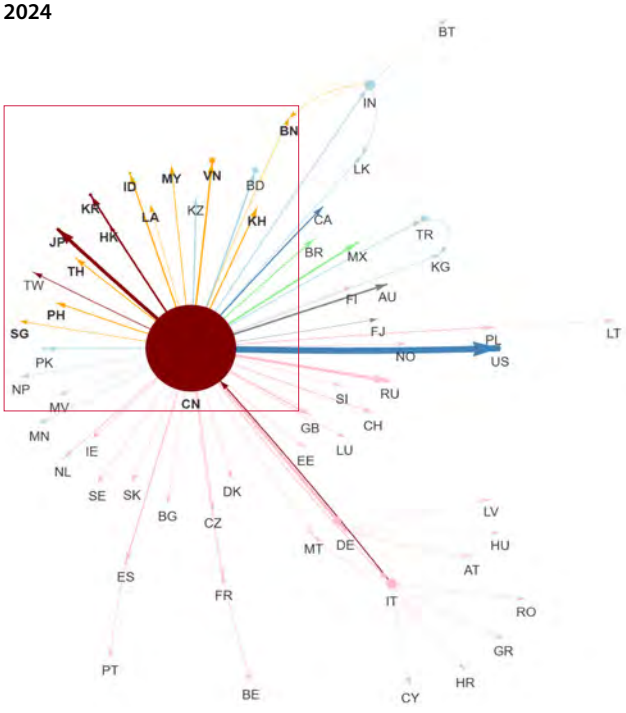


Textile Sector

2000



2024

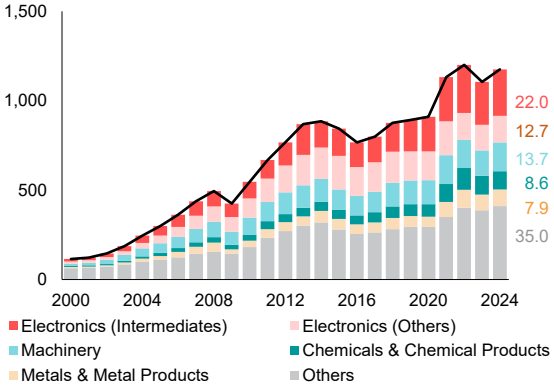


Source: Asian Development Bank Multiregional Input-Output Table; AMRO staff calculations.
Note: Only linkages that represent the largest value-added import or more than 25 percent of the total value-added import of the recipients are shown. The size of the bubble represents the share of an economy's value-added imports in the world's total value-added imports. The thickness of the linkage represents the share of value-added flow between each trading partner in the world's total value-added flow. Economies are labeled based on International Organization for Standardization 2 (ISO-2) codes. See Online annex 1 for a detailed explanation of the definition and methodology used in this network analysis.

The evolving supply relationships are reflected in rising GVC participation across most ASEAN+3 economies, particularly through backward linkages. While lower than the EU's 53.2 percent, aggregate ASEAN+3 GVC participation increased from 38.4 percent to 41.4 percent of gross exports between 2000 and 2024, driven primarily by ASEAN-5 and the BCLV economies (Brunei, Cambodia, Lao PDR, and Vietnam), which increased from 46.8 percent to 51.4 percent and 36.9 percent to 62.8 percent (Figure 2.9, left panel). Backward linkages – representing foreign inputs in exports – increased during this period. Even economies experiencing reduced relative GVC participation as a share of gross exports saw increases in absolute terms. Importantly, regional economies' GVC participation has become increasingly intraregional. Nearly half of the region's value chain activities occur within ASEAN+3, with the intraregional GVC participation share rising from 38.4 percent in 2000 to 45.4 percent in 2024 (Figure 2.9, right panel). Nevertheless, ASEAN+3 remained open and connected to the rest of the world, with substantial linkages to US and EU markets – differentiating the region's structure from the EU, where value chain activities are predominantly intraregional.

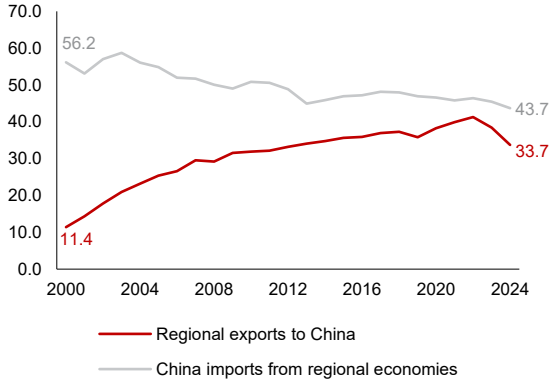
Figure 2.8. Sectoral Trade Relations between China and Other ASEAN+3 Economies

Gross Imports of Other ASEAN+3 Economies from China by Sector
(USD billions; Percent share)



Source: United Nations Comtrade; AMRO staff calculations.
Note: The colored data labels represent, on a sectoral basis, other ASEAN+3 economies' gross imports from China, as a share of total gross imports from China. Sectors are defined at the Harmonized System (HS) 2 level, mapped into the Asian Development Bank's Multiregional Input-Output Table sector classifications, and renamed for simplification. Electronics = CEOE; Machinery = OMQ; Chemicals & Chemical Products = CHPH; Metals & Metal Products = BMMP. Electronics intermediate goods are identified via the Broad Economic Categories classification, mapped at the HS6 level. See Online annex 6 for a definition of each sector. Percent share totals may not sum to 100 due to rounding.

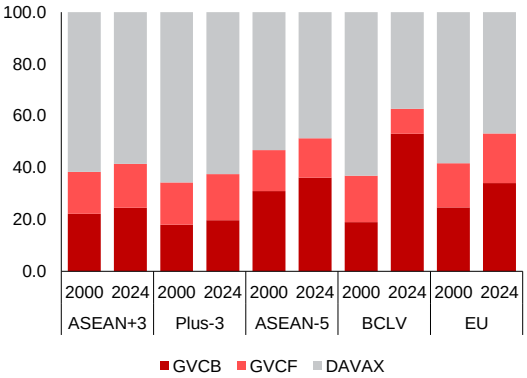
Share of Electronics Intermediate Goods Exports and Imports
(Percent of gross exports; Percent of gross imports)



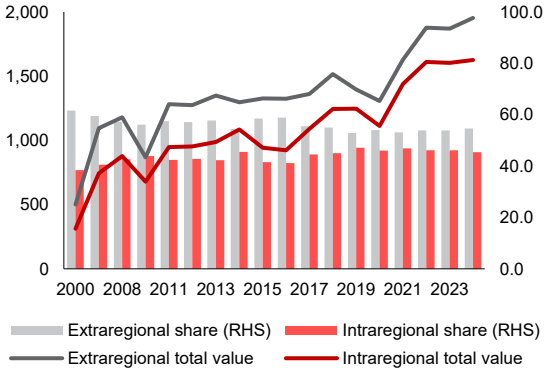
Source: United Nations Comtrade; AMRO staff calculations.
Note: Electronics intermediate goods are identified via the Broad Economic Categories classification, mapped at the Harmonized System (HS) 6 level. The maroon line shows the share of ASEAN+3 economies excluding China's electronics intermediate exports destined for China, while the gray line shows the share of China's electronics intermediate imports sourced from other ASEAN+3 economies.

Figure 2.9. GVC Activities of ASEAN+3 and Selected Economies

GVC Participation
(Percent of gross exports)



Intraregional and Extraregional GVC Activities
(USD billions in 2010 prices; Percent of GVC activities)



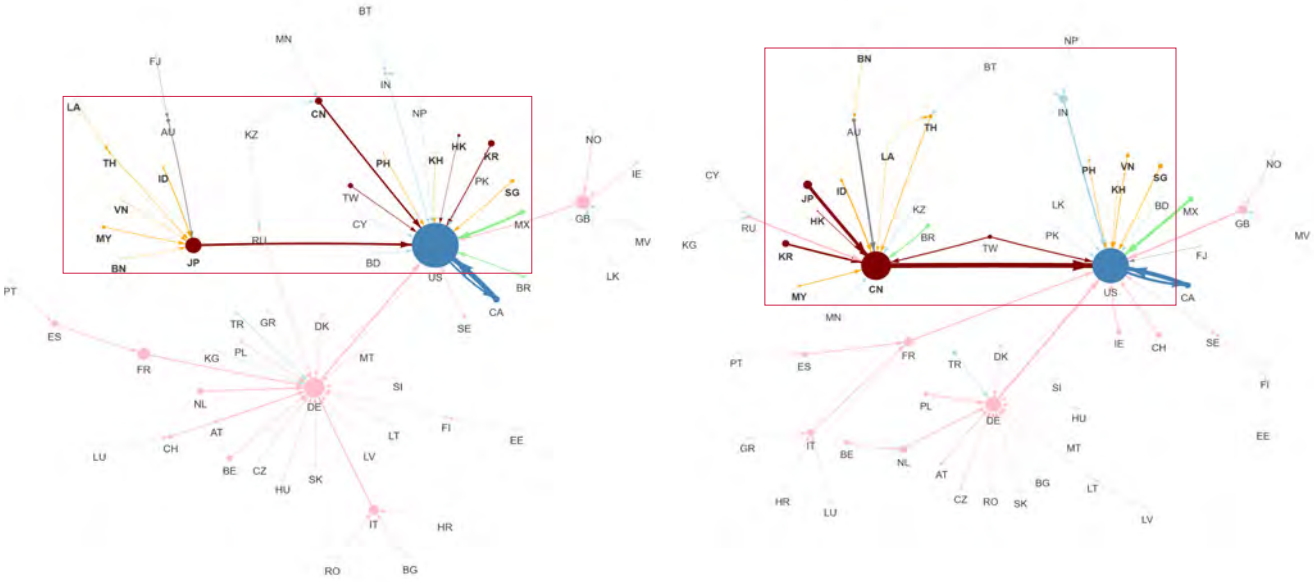
Source: Asian Development Bank Multiregional Input-Output Table; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLV = Brunei, Cambodia, Lao PDR, and Vietnam; EU = EU-27 member economies; Plus-3 = China, Hong Kong, Japan, and Korea. Regional aggregates exclude Myanmar due to data unavailability. DAVAX = direct value-added exports that only cross borders once; GVC = global value chain; GVCB = backward GVC participation; GVCF = forward GVC participation. See Online annex 2 for a detailed conceptual framework, measurement methodology, and ASEAN+3 economy-level trends.

Final Demand Linkages: Reorientation Toward the Region

The deepening supply-side integration has been accompanied by an equally significant shift on the demand side, with ASEAN+3 emerging as a major source of global demand. The region is often characterized primarily as a supplier of manufactured goods to global markets. While this remains true, it captures only part of the picture. Over the past two decades, ASEAN+3 has also become one of the world's most important demand sources alongside the United States (Figure 2.10). This transformation is driven largely by China's emergence as a major consumer within the region and globally. Within ASEAN+3, China has become the dominant demand hub: its share in other regional economies' gross exports rose from 10.8 percent in 2000 to 21.1 percent in 2024, making it the largest export partner for several ASEAN+3 economies (Figure 2.11). China's expanding role as a consumer has, in turn, elevated the region's collective importance in global demand, thereby deepening trade linkages across the region and reducing dependence on any single economy.

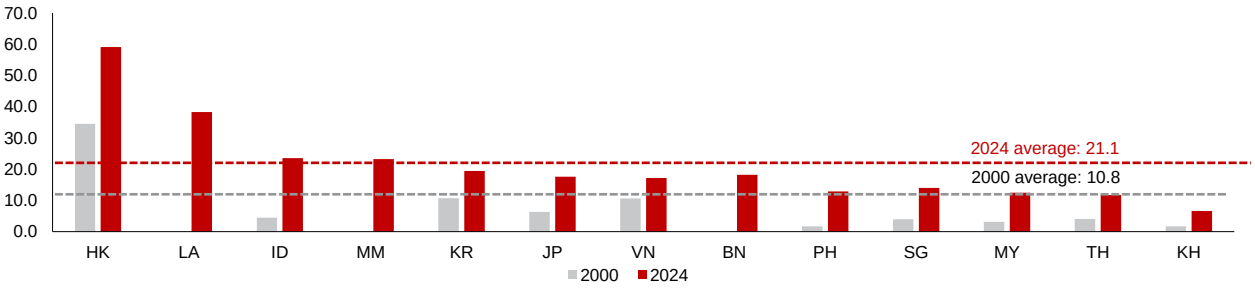
Figure 2.10. Global Demand Hubs of Value Added in Goods and Services

2000 **2024**



Source: Asian Development Bank Multiregional Input-Output Table; AMRO staff calculations.
Note: Only linkages that represent the largest value-added exports or more than 25 percent of the total value-added exports of the exporters are shown. The size of the bubble represents the share of an economy's value-added exports in the world's total value-added exports. The thickness of the linkage represents the share of value-added flow between each trading partner in the world's total value-added flow. Economies are labeled based on International Organization for Standardization 2 (ISO-2) codes. See Online annex 1 for a detailed explanation of the definition and methodology used in this network analysis.

Figure 2.11. Share of Gross Exports to China for Other ASEAN+3 Economies in 2000 and 2024
(Percent of gross exports)



Source: United Nations Comtrade; 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. Regional economies are ordered from left to right by each economy's 2024 gross export share to China, in descending order. 2000 shares for LA, MM, and BN were not plotted due to data unavailability. The 2024 data points for LA and VN reflect 2023 values, which are the most recent available.

Analysis of final demand destinations – which traces where exports ultimately serve consumption rather than intermediate use – illustrates this dual transformation. At the global level, ASEAN+3 accounted for 27.9 percent of total global final demand in 2022, surpassing the United States at 26.1 percent. This reflects both China's rise as a major end-market globally and in the region.[4] Within ASEAN+3 excluding China, demand patterns shifted substantially. In 2000, the United States was the largest source of final demand, accounting for 31.4 percent of the region's domestic value-added exports, while intraregional demand accounted for 28.1 percent (Figure 2.12, left panel). The US share declined steadily through the early 2010s before stabilizing at 19.2 percent in 2022, while the intra-ASEAN+3 share increased to 39.2 percent. The composition of intraregional final demand shifted markedly: China's share rose from 25.6 percent in 2000 to 49.4 percent in 2022, while Japan's share declined over time (Figure 2.12, right panel). All regional economies increased domestic value-added exports to meet China's final demand, with Singapore and Vietnam recording the largest gains of 5.0 and 5.6 percentage points, respectively.[5]

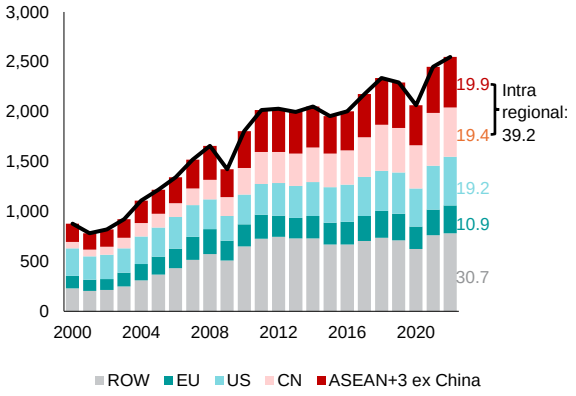
[4/] Box 2.2 examines China's growing role as an end-market and explains why conventional trade statistics tend to understate this dimension.

[5/] See Online annex 3 for the economy-level trend of the exports for foreign final demand for each ASEAN+3 economies.

The composition of regional exports serving Chinese final demand has evolved alongside China's changing consumption and industrial patterns. In 2000, other regional economies primarily exported agricultural products and wholesale and retail trade. By 2022, while wholesale and retail trade remained a key sector, the composition shifted from agricultural to electronics goods, which together accounted for 35.6 percent of domestic value-added exports serving Chinese final demand.[6] This shift reflects both rising Chinese household incomes and the growing sophistication of Chinese domestic consumption. The pattern varies across subregions: electronics exports to China are consistent across all subregions, while wholesale and retail trade came primarily from Plus-3 and ASEAN-5, with ASEAN-5 economies also concentrated on mining and quarrying exports, and BCLMV on agricultural, hunting, forestry, and fishing goods (Figure 2.13).[7]

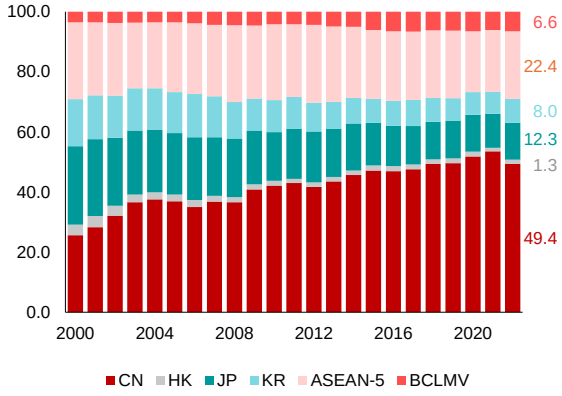
Figure 2.12. Exports of ASEAN+3 (excl. China) for Foreign Final Demand

By Selected Economies
(USD billions; Percent share)



Source: Organisation for Economic Co-operation and Development Trade in Value-Added Database; AMRO staff calculations.
Note: CN = China; EU = EU-27 member economies; US = United States; ROW = Rest of the world. The colored data labels represent ASEAN+3 excluding China's aggregated domestic value-added embodied in each partner economy's final demand as a share of ASEAN+3 excluding China's total domestic value-added in foreign final demand. Percent share totals may not sum to 100 due to rounding.

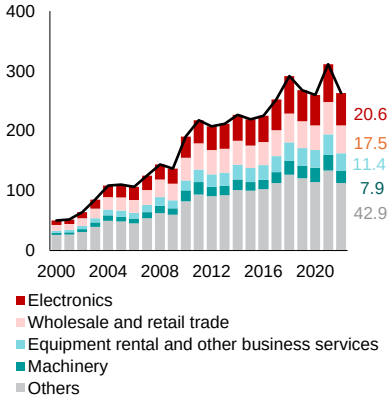
Intraregional Destination Breakdown
(Percent share)



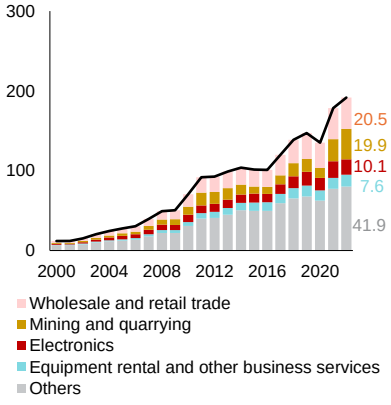
Source: Organisation for Economic Co-operation and Development Trade in Value-Added Database; AMRO staff calculations.
Note: CN = China; HK = Hong Kong; JP = Japan; KR = Korea; ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam. The colored data labels represent each intraregional partner's share of the total intraregional final demand for value-added from ASEAN+3 economies excluding China. Percent share totals may not sum to 100 due to rounding.

Figure 2.13. Sectoral Exports of ASEAN+3 (excl. China) for Final Demand in China
(USD billions; Percent share)

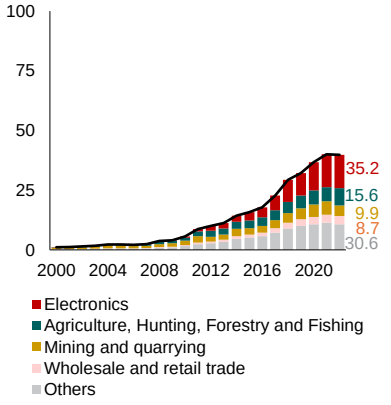
Plus-3 ex China



ASEAN-5



BCLMV



Source: Organisation for Economic Co-operation and Development (OECD) Trade in Value-Added Database; 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 colored data labels represent, on a sectoral basis, China's domestic value-added embodied in each partner region's final demand, as a share of China's total domestic value-added embodied in partner region economies' foreign final demand. Sectors are defined by OECD sectoral classification, mapped into the Asian Development Bank's (ADB) Multiregional Input-Output Table sector classifications, with some renamed for simplification. For example, the mapping into ADB's sectors is as follows: Agriculture, hunting, forestry, and fishing = AGF; Electronics = CEOE; Mining and quarrying = MIN; Machinery = OMQ; Wholesale and retail trade = WXV and RXV. See Online annex 6 for a definition of each sector. Percent share totals may not sum to 100 due to rounding.

6/ The electronics goods include semiconductors and components (e.g., integrated circuits), computers and peripherals, telecommunications equipment, and consumer electronics (e.g., smartphones). Wholesale and retail trade covers distribution services and trade margins from wholesaling/retailing goods. One such example is economy A's wholesalers distributing smartphones to economy B, earning the trade and logistical margins (e.g., wholesale mark-ups, warehousing, and inventory handling) on the cross-border sale. See Online annex 6 for a further description of the sectors referenced in this chapter.

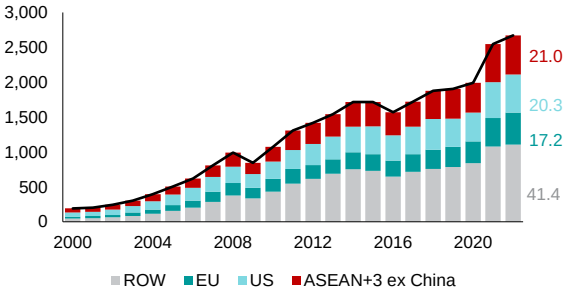
7/ Mining and quarrying products include crude oil and natural gas, coal, metallic ores, and quarry products like stone. Products in the agricultural, hunting, forestry, and fishing sector include crop and livestock production, forestry and logging, and aquaculture products. See Online annex 6 for a further description of the sectors referenced in this chapter.

The interdependence runs in both directions: other ASEAN+3 economies constitute the most important source of final demand for Chinese exports too. This mutual reliance distinguishes the current regional linkages from earlier configurations where demand flowed primarily outward, especially to the United States. By 2022, ASEAN+3 economies excluding China, accounted for 21.0 percent of China's domestic value-added exports serving foreign final demand – the largest regional share globally, exceeding even the United States and EU, underscoring the region's substantial role as a market for Chinese goods and services (Figure 2.14, left panel). Subregional demand patterns also evolved: while Plus-3 economies remained important consumers of Chinese exports, ASEAN-5 and BCLMV gained increasing importance as their incomes rose, and consumer markets expanded (Figure 2.14, right panel). Collectively, ASEAN accounts for 9.3 percent of China's domestic value-added exports serving foreign final demand – larger than any individual economy except the United States.[8] The types of goods and services the region primarily consumed from China were wholesale and retail trade and chemicals and chemical products, which include pharmaceuticals, as well as electronics (Figure 2.15).

The reorientation toward intraregional demand represents a key structural shift in the region's economic linkages. Two decades ago, ASEAN+3 economies relied heavily on extraregional markets – particularly the United States – as the primary destination for exports serving final consumption. Today, intraregional demand has become more important, with China's rise as a consumption center driving much of this shift. This does not imply that extraregional demand has become unimportant. The United States and EU together still accounted for a substantial share of the region's final demand market in 2022, and for China specifically, the United States and EU comprised 19.5 percent and 17.7 percent of its domestic value-added exports serving final demand (Figures 2.12 and 2.14, left panel). However, the balance has shifted: ASEAN+3's demand base is now more regionally anchored than at any point in the past two decades.

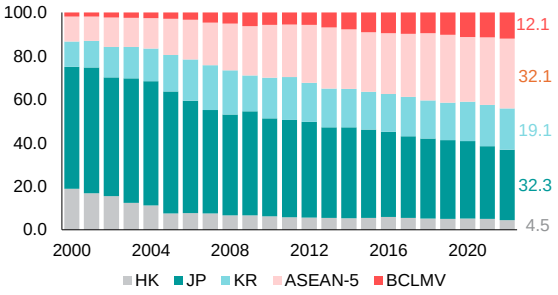
Figure 2.14. Exports of China for Foreign Final Demand

By Selected Economies
(USD billions; Percent share)



Source: Organisation for Economic Co-operation and Development Trade in Value-Added Database; AMRO staff calculations.
Note: CN = China; EU = EU-27 member economies; US = United States; ROW = Rest of the world. The colored data labels represent China's domestic value-added embodied in each partner economy's final demand as a share of China's total domestic value-added in foreign final demand. Percent share totals may not sum to 100 due to rounding.

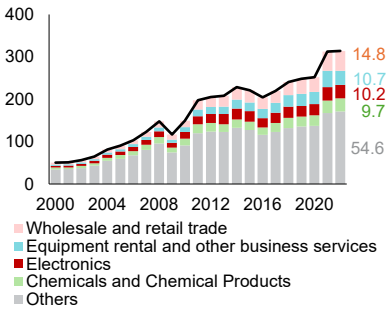
Intraregional Destination Breakdown
(Percent share)



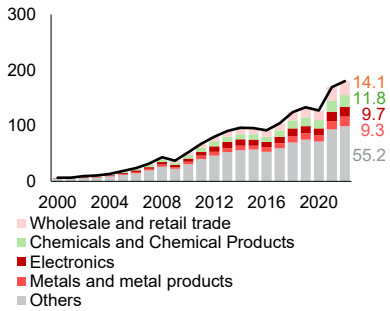
Source: Organisation for Economic Co-operation and Development Trade in Value-Added Database; AMRO staff calculations.
Note: HK = Hong Kong; JP = Japan; KR = Korea; ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam. The colored data labels represent each intraregional partner's share of the total intraregional final demand for value-added from ASEAN+3 economies excluding China. Percent share totals may not sum to 100 due to rounding.

Figure 2.15. Sectoral Exports of China for Final Demand in Other ASEAN+3 Economies
(USD billions; Percent share)

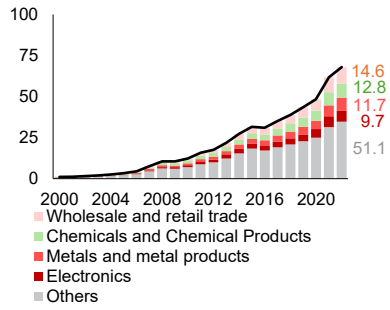
Plus-3 ex China



ASEAN-5



BCLMV



Source: Organisation for Economic Co-operation and Development (OECD) Trade in Value-Added Database; 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 colored data labels represent, on a sectoral basis, China's domestic value-added embodied in each partner region's final demand, as a share of China's total domestic value-added embodied in partner region economies' foreign final demand. Sectors are defined by OECD sectoral classification, mapped into the Asian Development Bank's (ADB) Multiregional Input-Output Table sector classifications, with some renamed for simplification. For example, the mapping into ADB's sectors is as follows: Chemicals and Chemical Products = CHPH; Electronics = CEOE; Metals and Metal Products = BMMP; Wholesale and retail trade = WXV and RXV. See Online annex 6 for a definition of each sector. Percent share totals may not sum to 100 due to rounding.

8/ Within ASEAN+3 excluding China, Japan accounts for 6.8 percent of China's domestic value-added exports serving foreign final demand, and Korea 4.0 percent. Outside the region and the United States, the largest individual economies are Germany (5.0 percent), the United Kingdom (3.6 percent), and India (3.4 percent).

Investment Linkage: Reinforcing Trade and Production Networks

ASEAN+3 has emerged as a major destination for foreign direct investment (FDI), reflecting and reinforcing the region's growing integration into global trade and production networks. In 2024, ASEAN+3 accounted for 22.5 percent of global FDI inflow stocks by destination, underscoring its attractiveness to international investors (Figure 2.16, left panel). Alongside extraregional FDI, the share of intraregional FDI stock has also risen gradually over the past two decades, from 48.7 percent in 2009 to 49.2 percent in 2024 – mirroring the deepening of regional trade and supply chain linkages (Figure 2.16, right panel).

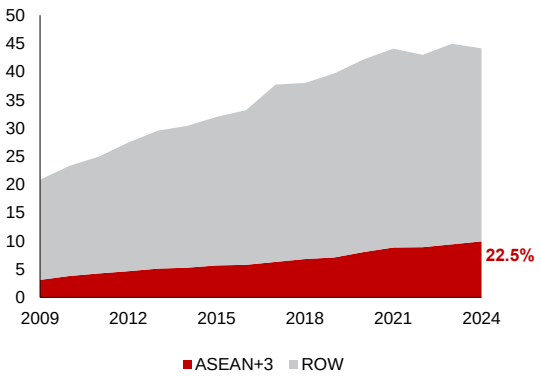
The gradual increase in intraregional FDI share has been accompanied by notable compositional shifts – particularly within ASEAN. While the intraregional FDI stock in ASEAN-5 remained stable at around 30 percent, Japan was the dominant source of intraregional FDI for ASEAN-5 in the early 2000s and Singapore was a conduit for third-country investors (Figure 2.17, top panel).[9] This configuration has since evolved. China's share of ASEAN-5 inward FDI increased from 9.0 percent in 2009 to 12.7 percent by 2024, with investment concentrated in manufacturing, wholesale and retail trade, and real estate (Figure 2.17, bottom panel).[10] Within ASEAN-5, Singapore remains the largest recipient of Chinese FDI, though its share declined from 70.1 percent in 2016 to 63.6 percent in 2024. Meanwhile, Indonesia and Thailand have gained the most, with their respective shares rising from 12.5 percent to 15.8 percent and 11.6 percent to 14.4 percent over the same period. For BCLMV, the shift has been more pronounced: intraregional FDI stock rose from 66.0 percent to 81.8 percent of the total between 2009 and 2024, with China's share increasing from 8.0 percent to 26.0 percent (Figure 2.17, middle panel). In particular, Vietnam emerged as the primary destination, consistent with its expanding role in regional supply chains.

Within ASEAN, the ASEAN-5 economies have also received increased FDI from the US, particularly in financial services. The US share in ASEAN-5 inward FDI stock increased by 9.9 percentage points between 2009 and 2024, from 11.1 percent to 21.0 percent (Figure 2.17, top panel). Singapore received the most US FDI, accounting for 88.7 percent of the total US FDI inflow stock in ASEAN-5, increasing from 66.0 percent in 2009. Most of this US FDI was in financial services (Figure 2.17, bottom panel). The coexistence of rising Chinese and US investment underscores ASEAN's position as a destination for capital from multiple sources – a pattern that parallels the region's diversified trade relationships with both intraregional and extraregional partners.

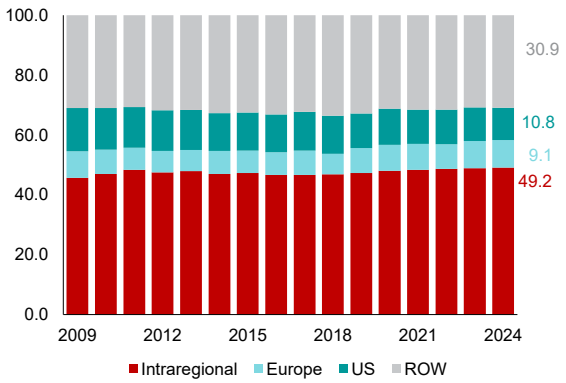
Overall, ASEAN+3's economic linkages have transformed substantially over the past two decades, creating a more regionally anchored economy than earlier configurations. Two features characterize this transformation. First, supply-side integration deepened through production networks concentrated in intermediate and capital goods – reflecting genuine regional value-chain integration rather than the mere re-routing of goods without substantive value addition. Second, demand-side integration strengthened as intraregional final demand grew in importance, creating mutual interdependence: the region has become a critical market for its largest economies, just as those economies have become critical suppliers to regional production. FDI flows reinforced these linkages, with rising intraregional FDI complementing trade and production relationships. Extraregional connections remained substantial – the United States and EU continued to account for significant shares of regional final demand, and US investment in ASEAN rose alongside regional investment. But the balance has shifted: ASEAN+3's economic center of gravity is now more regionally oriented than at any point in the past two decades.

Figure 2.16. Global and ASEAN+3 FDI Inflow Patterns

Global FDI Inflow Stock
(USD trillions)



ASEAN+3 FDI Inflow Stock by Sources
(Percent share)



Source: International Monetary Fund Coordinated Direct Investment Survey; AMRO staff calculations.
Note: ROW = Rest of the world; US = United States; FDI = Foreign direct investment. The colored data labels represent the percent share of total FDI inflow stock to ASEAN+3 from selected partner economies. Percent share totals may not sum to 100 due to rounding.

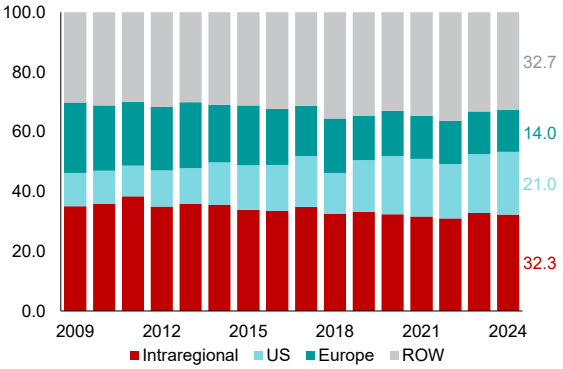
[9] See Online annex 3 for the economy-level trend of the FDI inflow stock by sources for each ASEAN+3 economies.

[10] Box 2.3 examines China's growing role as a source of investment capital for the ASEAN+3.

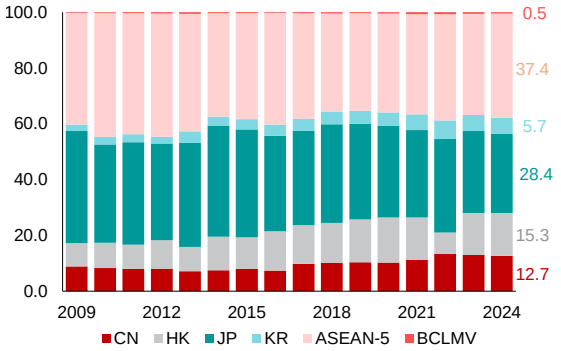
Figure 2.17. ASEAN FDI Inflow Pattern by Sources and Sectors

ASEAN-5

FDI Inflow Stock by Sources
(Percent share)

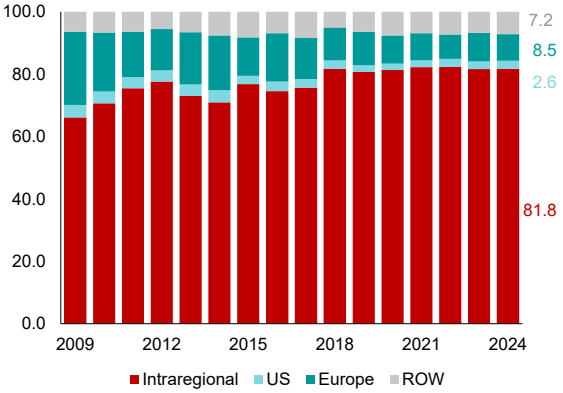


FDI Inflow Stock from ASEAN+3
(Percent share)

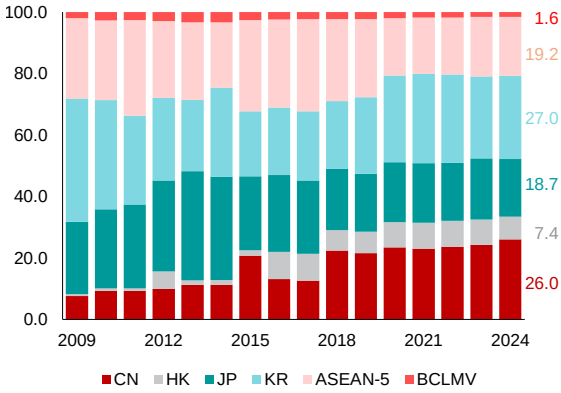


BCLMV

FDI Inflow Stock by Sources
(Percent share)

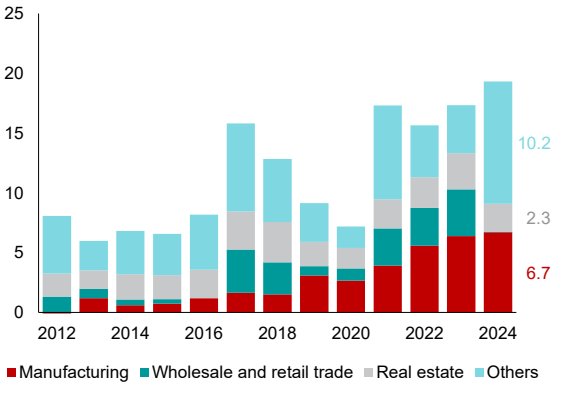


FDI Inflow Stock from ASEAN+3
(Percent share)

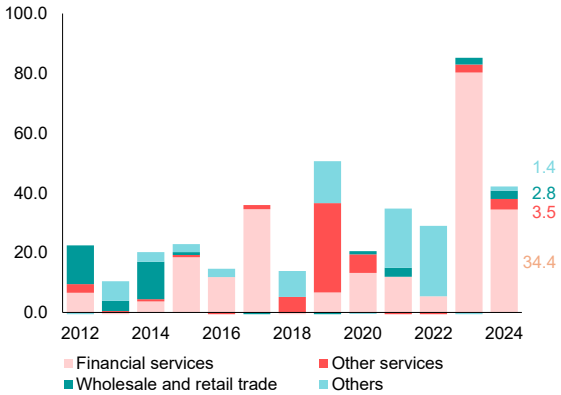


Sectoral Composition of FDI Inflow to ASEAN

Flows from China
(USD billions)



Flows from the United States
(USD billions)



Source: ASEAN Secretariat; International Monetary Fund Coordinated Direct Investment Survey (IMF CDIS); AMRO staff calculations.
Note: CN = China; HK = Hong Kong; JP = Japan; KR = Korea; US = United States; ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; FDI = Foreign direct investment; ROW = Rest of the world. The two charts on the bottom row reflect the top three sectors for FDI inflows by China and the US into ASEAN. For China, "others" refers to agriculture, mining, utilities, construction, financial services, other services, and unspecified activity. For the US, "others" refers to agriculture, mining, utilities, real estate, construction, manufacturing, and unspecified activity. The colored data labels represent the percent share of total FDI inflow stock. FDI inflow stock by source is derived from the IMF CDIS, while the sectoral composition is referenced from the ASEAN Secretariat. Percent share totals may not sum to 100 due to rounding.

Part II. Regional Business Cycle Synchronization and Policy Implications

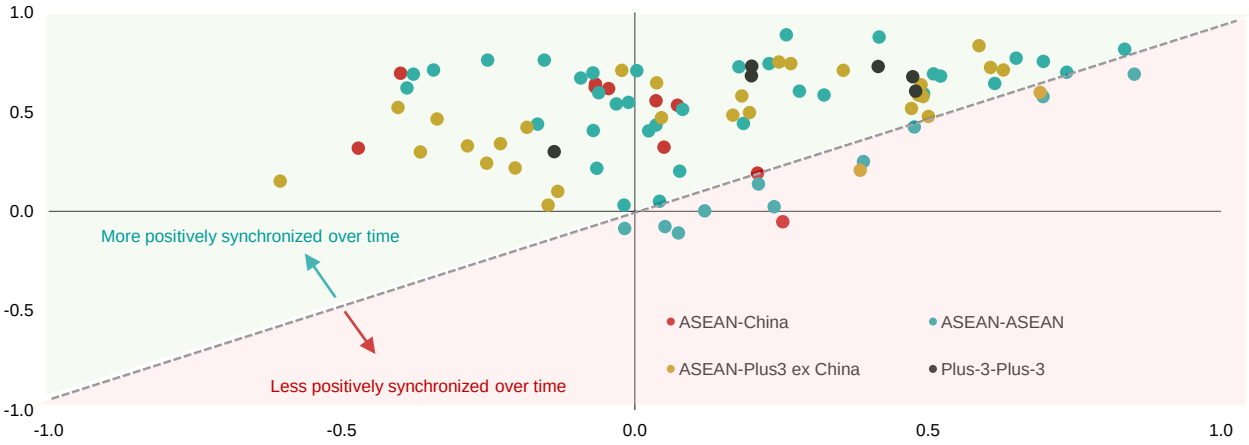
The transformation in ASEAN+3's economic linkages documented in the previous part raises a critical question: have these deeper connections brought business cycles closer together? If regional economies now move more in tandem, understanding why – and through what channels – becomes essential for macroeconomic management. This part examines these dynamics through two complementary lenses. First, it assesses whether business cycle synchronization has increased, and whether this reflects deeper regional integration. Second, it quantifies how shocks transmit across the region's integrated production networks, revealing how the tightening of supply chain linkages has altered the region's sensitivity to both intraregional and extraregional demand conditions. The findings have direct implications for how the region navigates the current environment of heightened trade policy uncertainty and geoeconomic reconfiguration.

Business Cycle Synchronization in ASEAN+3: Increasing Regional Synchronization[11]

Business cycles across ASEAN+3 have become more synchronized since 2000, coinciding with the deepening of regional economic linkages. Pairwise correlations of real GDP growth increased for most economy pairs when comparing 2001–2024 with 1980–2000, with ASEAN-ASEAN and intraregional pairs showing particularly notable increases (Figure 2.18). This pattern raises several questions. To what extent is greater synchronization driven by deeper regional linkages, as opposed to common global shocks? Can the increase be traced to supply chain integration specifically? And what are the magnitudes of cross-border spillovers when shocks occur? Three analytical steps address these questions: decomposing business cycle variance into global versus regional factors; examining if deeper regional value chain integration explains the tighter synchronization; and quantifying spillover magnitudes through input-output simulations that trace how shocks propagate through integrated production networks, including from the sectoral exposure perspective.

Regional factors have become increasingly important in explaining business cycle variation across ASEAN+3, particularly since the mid-2010s. A dynamic factor model decomposition indicates that both global and

Figure 2.18. Pairwise Real GDP Co-movement of ASEAN+3



Source: World Bank World Development Indicators; AMRO staff calculations.
Note: Plus-3 = China, Hong Kong, Japan, and Korea. Bilateral economy pairs in the green area show an increase in real GDP growth co-movement from 1980 to 2000 and 2001 to 2024, while those in the red area show a decline instead.

[11/] Box 2.4 examines the development of the regional inflation synchronization.

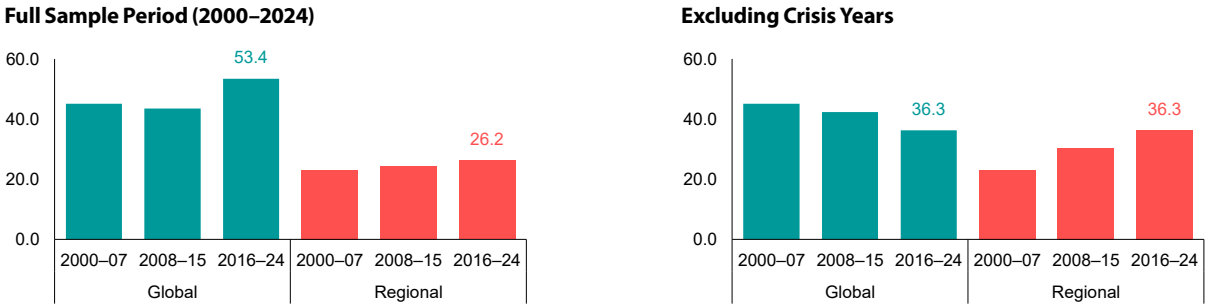
[12/] See Online annex 4 for a detailed description of the dynamic factor model employed in this chapter to assess the regional business cycle synchronization.

regional factors have grown more important over time in explaining business cycle fluctuations (Figure 2.19, left panel).[12] The importance of regional factors rose steadily, and by 2016–2024, excluding crisis years, regional factors explained a share of growth variance comparable to that of global factors (Figure 2.19, right panel). This shift became particularly pronounced after 2016, coinciding with escalating trade tensions between major economies and associated supply chain reconfigurations. The pattern contrasts with other regions globally, where the importance of regional factors has declined in recent years (Kose and others 2012; IMF 2013). Nevertheless, global factors remain a significant driver of the region's business cycle, especially during periods of global crises such as COVID-19 and the subsequent supply chain disruptions.

Supply chain integration, via deeper GVC and FDI linkages, is significantly associated with the increased business cycle synchronization in the region. Regression analysis examining the determinants of pairwise business cycle correlations finds that both GVC trade linkages and FDI integration are positively and significantly associated with co-movement among ASEAN+3 economies.[13] When examining correlations with China specifically, the estimated coefficients are roughly two to three times the magnitude of the full-sample estimates, indicating that China-anchored production and investment networks are an important channel through which regional synchronization has increased. This is consistent with literature linking trade intensity and vertical specialization to greater cyclical synchronization (Frankel and Rose 1998; Calderón and others 2007; Kose and others 2012). Overall, this finding establishes that supply chain integration is a key driver of regional synchronization. The next question is what this integration implies for how shocks actually transmit across the region – and whether the region's sensitivity to intraregional versus extraregional demand conditions has shifted as production networks deepened.

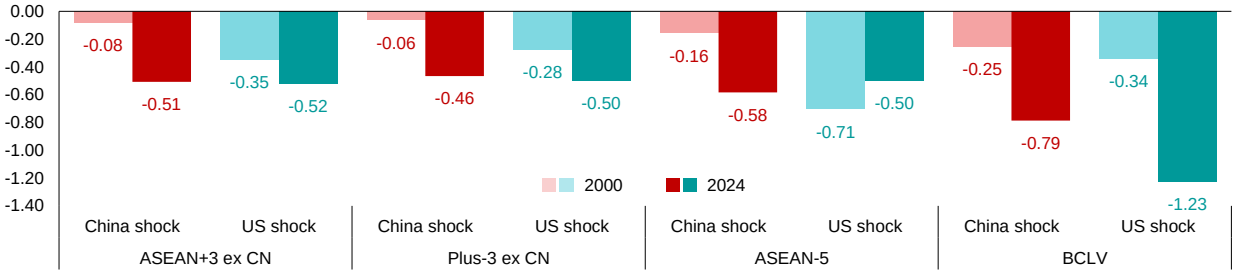
In tandem with increased regional synchronization, input-output simulations reveal that intraregional economic shocks have gained importance relative to extraregional ones since 2000. Input-output simulations indicate that a 10 percent decline in China's final demand would reduce GDP across the rest of ASEAN+3 by approximately 0.5 percent, based on 2024 trade structures (Figure 2.20). This is more than five

Figure 2.19. Variance in Real Growth of ASEAN+3 Explained by Factors
(Percent share of total variance)



Source: World Bank; AMRO staff calculations.
Note: Crisis years refer to the global financial crisis (2008–2009) and COVID-19 (2020–2021). The variance in real growth is decomposed into shares explained by global factor, regional factor, and idiosyncratic economy-specific fluctuations, based on an estimated dynamic factor model (DFM). Online annex 4 presents a detailed description of the DFM employed to assess the business cycle synchronization.

Figure 2.20. Impact on Value Added of ASEAN+3 (excl. China) due to a 10-percent China or US Final Demand Shock in 2000 and 2024
(Percent of GDP)



Source: Asian Development Bank (ADB) Multiregional Input-Output (MRIO) Table; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLV = Brunei, Cambodia, Lao PDR, and Vietnam; Plus-3 ex CN = Hong Kong, Japan, and Korea. Excludes Myanmar due to data unavailability. Values represent the simulated impacts on the regional value added due to a hypothetical 10-percent final demand shock from China or the United States, based on the ADB MRIO Table in 2024. Lighter color bars represent simulated impacts in 2000, darker color bars represent simulated impacts in 2024. See Online annex 6 for the methodology.

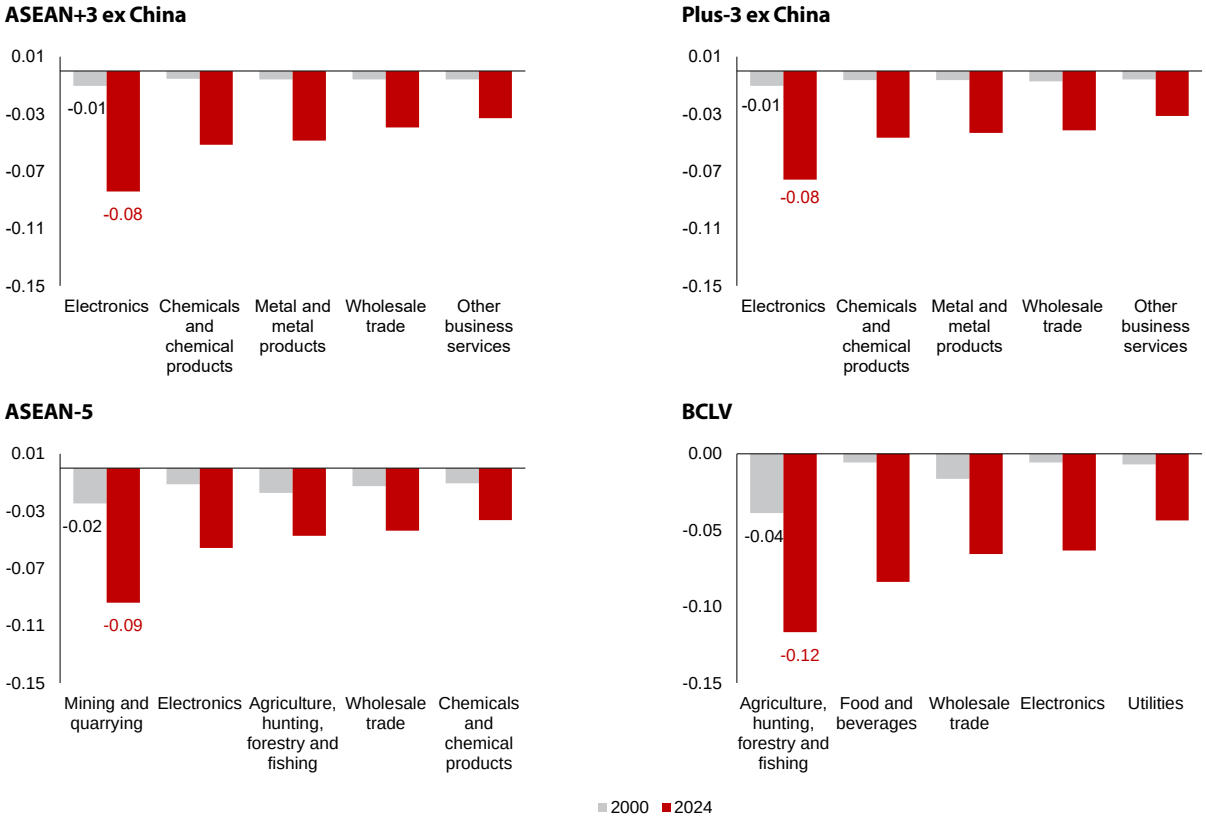
[13/] See Online annex 5 for a detailed description of the regression analysis to assess the trade and business cycle synchronization relationship.

times higher than in 2000.[14] This trend is true across all subregions within ASEAN+3 since 2000, consistent with the deepening supply chain and demand linkages documented in the previous part. By comparison, the impact of US final demand shocks, while remaining important, has seen relatively smaller increases compared to China for most regional economies, and has declined for ASEAN-5. Vietnam is a notable exception, experiencing rising sensitivity to both Chinese and US demand shocks, reflecting its rapid integration into supply chains serving both markets.

The sectoral concentration of these spillovers varies across subregions, reflecting differences in trade composition. For ASEAN+3 excluding China, the largest impacts from China demand shocks fall on electronics and chemicals sectors – consistent with the composition of regional exports serving Chinese final demand documented earlier (Figure 2.21). Subregional patterns differ: Plus-3 economies experience the greatest impact in electronics and chemical products; ASEAN-5 in mining and electronics; and BCLV in agriculture and food and beverages. US demand shocks similarly concentrate in electronics and wholesale sectors. However, while the US impact remains substantial – and has increased for Plus-3 and BCLV – China's sectoral spillovers have grown more sharply across the region, and the US impact on ASEAN-5 has declined. This sectoral pattern echoes the aggregate finding: extraregional factors remain significant, but intraregional linkages have become comparably important.

The interdependence runs in both directions: ASEAN's impact on China's economy has also strengthened over time. While the aggregate impact of ASEAN+3 excluding China on Chinese GDP has declined between 2000 and 2024, this masks a compositional shift (Figure 2.22). The impact from other Plus-3 economies has diminished, while the impact from ASEAN economies has increased – reflecting China's expanded trade relations with ASEAN over the past two decades. This two-way sensitivity

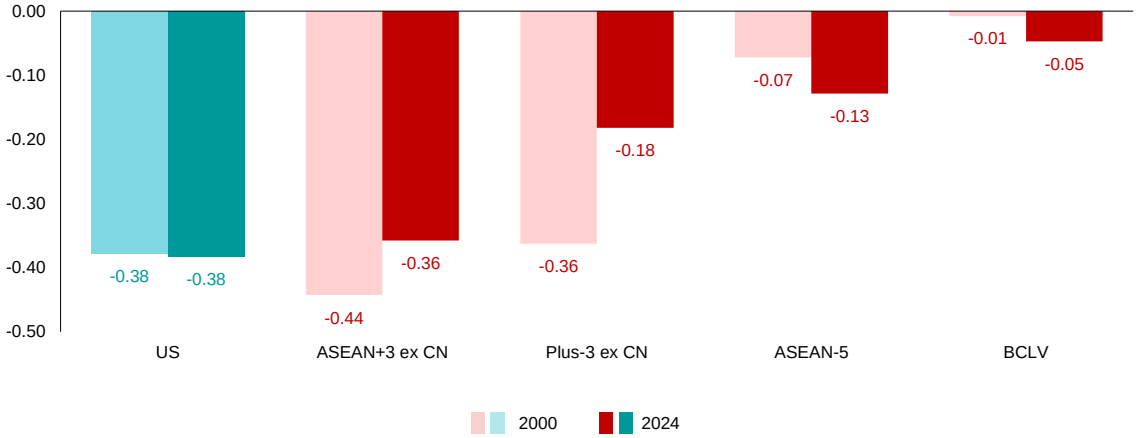
Figure 2.21. Impact on Sectoral Value Added of ASEAN+3 (excl. China) due to a 10-percent China Final Demand Shock in 2000 and 2024
(Percent of GDP)



Source: Asian Development Bank (ADB) Multiregional Input-Output (MRIO) Table; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLV = Brunei, Cambodia, Lao PDR, and Vietnam; Plus-3 ex China = Hong Kong, Japan, and Korea. Excludes Myanmar due to data unavailability. Values represent the simulated impacts on the sectoral value added due to a hypothetical 10-percent final demand shock from China, based on the ADB MRIO Table in 2024. The mapping to ADB's short sector labels is as follows: Agriculture, hunting, forestry, and fishing = AGF; Chemicals and chemical products = CHPH; Electronics = CEOE; Food and beverages = FOB; Metal and metal products = BMMP; Mining and quarrying = MIN; Other business services = OBZS; Utilities = EGWT; Wholesale trade = WXV. See Online annex 6 for the methodology and full definition of the sectors.

[14] The simulation discussed here should be interpreted as first-round, partial-equilibrium spillovers transmitting through existing production networks, it does not consider macroeconomic feedback, price adjustments, and policy responses. Additionally, results reflect the production structure recorded in periodically compiled input-output tables, which may abstract from the most recent structural shifts. See Online annex 6 for further discussion of the methodology, and simulation for all ASEAN+3 economies individually.

Figure 2.22. Impact on Value Added of China due to a 10-percent Final Demand Shock from Selected Economic Partners in 2000 and 2024
(Percent of GDP)



Source: Asian Development Bank (ADB) Multiregional Input-Output (MRIO) Table; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLV = Brunei, Cambodia, Lao PDR, and Vietnam; Plus-3 ex CN = Hong Kong, Japan, and Korea. Excludes Myanmar due to data unavailability. Values represent the simulated impacts on China's value added due to a hypothetical 10-percent final demand shock from the region or the United States, based on the ADB MRIO Table in 2024. The lighter color bars represent simulated impacts in 2000, while the darker color bars represent simulated impacts in 2024. See Online annex 6 for the methodology.

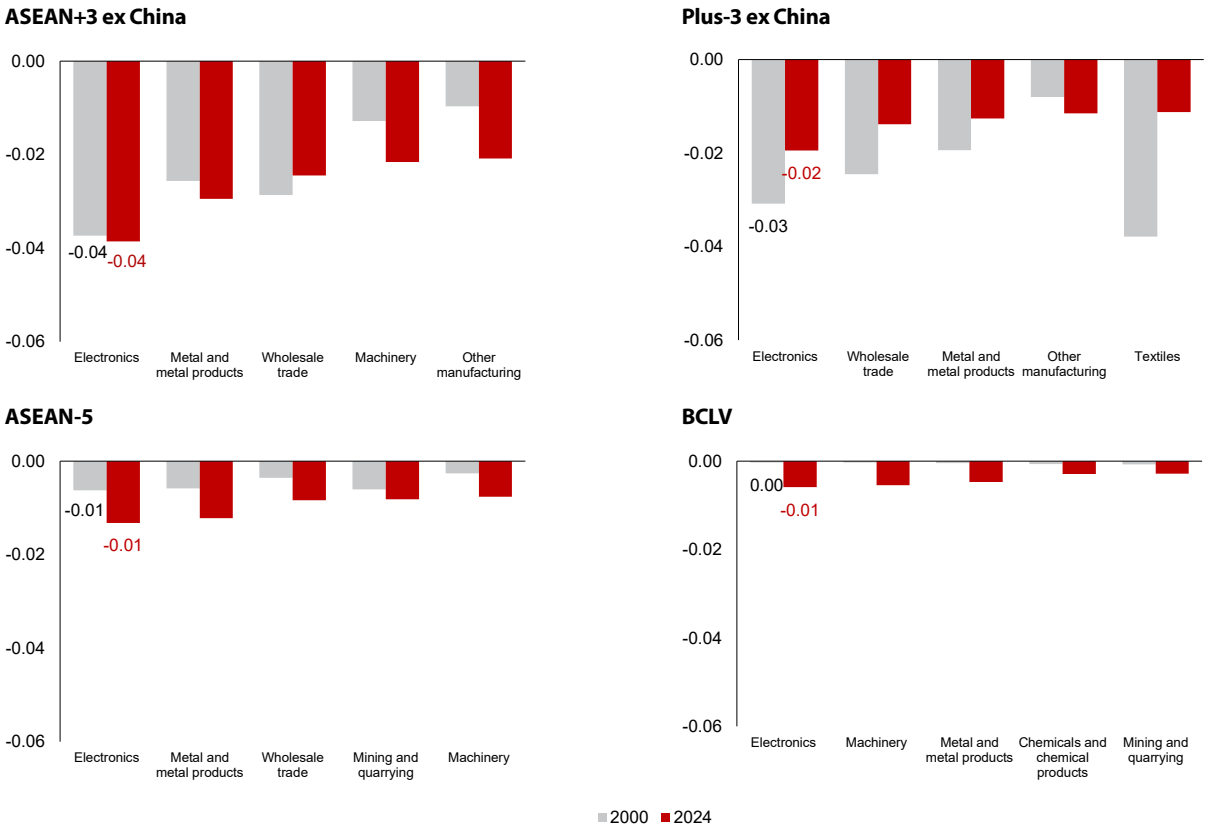
reinforces the mutual interdependence characterizing current regional linkages, though ASEAN's impact on China remains smaller in magnitude compared to the other Plus-3 economies and the United States.

China's electronics sector is most exposed to demand conditions in the rest of the region. A demand shock originating in ASEAN+3 excluding China would affect China's electronics sector most significantly, reflecting the interdependence in electronics trade documented in the previous part (Figure 2.23). The impact from Plus-3 demand shocks on China's electronics sector remains larger than from ASEAN, given China's reliance on Japan and Korea as a source of final demand for high-precision components and capital equipment – though this impact has declined over time. Demand shocks from ASEAN increasingly affect China's electronics and metals industries, consistent with China's export composition to ASEAN. Overall, the sensitivity to ASEAN demand conditions has increased in most sectors in China.

These findings – alongside those from the previous part – have direct relevance for assessing the region's vulnerability to potential further escalation in protectionist trade measures. Tariff measures represent, in economic terms, a negative demand shock from the imposing economy – higher tariffs reduce demand for trading partners' exports, transmitting contractionary pressure through the trade channel. The analysis in this section suggests that the region's sensitivity to such shocks has shifted. Two decades ago, when the United States accounted for a substantially larger share of ASEAN+3's final demand, a US demand shock would have had more pronounced regional effects. Today, the region's demand base is more regionally anchored: intraregional final demand has grown in importance while the US share has declined. The input-output simulations examine this shift: sensitivity to US demand shocks relative to intraregional demand shocks has declined.

The character of the region's supply-side integration also carries implications for exposure to trade measures aimed at transshipment. As discussed previously, intraregional trade is concentrated on intermediate and capital goods, reflecting genuine regional value chain integration rather than primarily the re-routing of finished goods. This distinction matters in an environment where concerns about trade circumvention and transshipment have prompted threats of secondary tariffs: economies embedded in regional supply chains through substantive value-added activities are positioned differently than those that are primarily transit points. None of this implies immunity to extraregional trade policy; tariff escalation would still carry real costs, and global factors remain significant drivers of regional cycles. But should external pressures intensify, the structural transformation in the region's linkages – both the shift toward regional demand sources and the deepening of genuine production integration – would provide a degree of buffering that would not have existed under earlier configurations.

Figure 2.23. Impact on Sectoral Value Added of China due to a 10-percent Final Demand Shock from Other ASEAN+3 Economies in 2000 and 2024
(Percent of GDP)



Source: Asian Development Bank (ADB) Multiregional Input-Output (MRIO) Table; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLV = Brunei, Cambodia, Lao PDR, and Vietnam; Plus-3 ex China = Hong Kong, Japan, and Korea. Excludes Myanmar due to data unavailability. Values represent the simulated impacts on the sector value added due to a hypothetical 10-percent final demand shock from the region, based on the ADB MRIO Table in 2024. The mapping to ADB's short sector labels is as follows: Chemicals and chemical products = CHPH; Electronics = CEOE; Machinery = OMQ; Metal and metal products = BMMP; Mining and quarrying = MIN; Other manufacturing = OMF; Textiles = TX1; Wholesale trade = WXV. See Online annex 6 for the methodology and full definition of the sectors.

Policy Discussion: Managing Increasing Synchronization

That ASEAN+3 economies have become more regionally anchored over the past two decades has important implications for macroeconomic management beyond the current conjuncture. The analysis in this part reveals a region fundamentally different from two decades ago, one where intraregional linkages now rival extraregional factors in shaping macroeconomic outcomes. Regional factors have become as important as global factors in explaining business cycle variation, with this shift particularly pronounced since 2016. Spillovers from intraregional demand shocks have increased across all subregions, while the region's largest economies have become more consequential for each other's cyclical dynamics. These aggregate patterns mask sectoral and subregional heterogeneity, but the overall direction is consistent: the region's economic center of gravity has shifted inward. This changed landscape carries implications for how policymakers should approach macroeconomic management – implications that extend beyond the current episode of trade tensions to the broader question of navigating an increasingly interconnected regional economy.

The trend toward greater regional integration and synchronization is likely to persist, if not intensify, going forward. A number of structural trends underpin this. Globally, continued geoeconomic reconfiguration and policy uncertainty in the trading environment are likely to reinforce regional integration momentum, as economies seek to reduce exposure to extraregional policy volatility. Technological advancement opens new frontiers for regional integration, including enabling deeper linkages in services trade that complement the goods-based production networks of the past two decades. Within the region, demographic shifts and trends toward economic rebalancing also point toward continued growth in domestic demand, further tilting the demand base toward regional sources. Taken together, these structural trends suggest that regional integration is likely to continue, and regional factors may become even more important in explaining business cycle dynamics, making the management of synchronization an increasingly central consideration for regional policymakers.

Greater synchronization brings both opportunities and vulnerabilities – and the policy challenge lies in navigating this balance. When economies face similar cyclical positions, they can more readily identify common policy priorities and coordinate responses, reducing the transaction costs of regional initiatives and enabling more efficient allocation of capital and labor across borders.[15] Policymakers also benefit from shared experiences in addressing common challenges. At the same time, synchronization creates channels for rapid transmission of shocks: a downturn originating in one economy can spread quickly through trade, supply chain, and investor confidence effects.[16] The diversification benefits that underpin regional support mechanisms are reduced when all economies contract simultaneously, potentially straining regional financial safety nets designed primarily to address economy-specific challenges. Building resilience within an increasingly interconnected regional economy is therefore the appropriate and necessary policy orientation. This points to three important policy implications: maintaining sound domestic macroeconomic management, enhancing regional policy dialogue and surveillance exchange, and preserving preparedness against global shocks.

Sound domestic macroeconomic management takes on heightened significance in a more interconnected region. As spillovers across economies have strengthened, the soundness of macroeconomic management in each economy has become a matter of regional, not just domestic, concern. Instability in one economy can transmit rapidly to others through the trade, investment, and confidence channels that now bind the region more tightly together. This is especially consequential for larger economies whose conditions carry greater weight in regional outcomes. In this sense, regional stability is built from the foundations up – the most effective insurance against regional instability is ensuring that each economy maintains the policy frameworks and buffers needed to preserve its own stability. When each economy strengthens its policy foundations and buffers, the region becomes more resilient.

Enhanced regional dialogue and surveillance exchange have also become increasingly valuable. The growing importance of regional factors in explaining business cycle variation underscores that policymakers need to understand developments in regional partner economies – not as a matter of general interest, but as an input into their own policy assessments. Existing frameworks, including the ASEAN+3 Finance Track process, provide foundations for such exchange. As regional spillovers intensify, the value of timely regional dialogue and exchange of information on macroeconomic conditions, policy intentions, and emerging risks across the region rises correspondingly. Such dialogue and exchange need not imply policy harmonization; the diversity of economic structures and policy circumstances across ASEAN+3 naturally calls for approaches suited to each economy's situation. Rather, it calls for deeper mutual awareness – a shared understanding of how developments in one economy may affect others, and how policy responses in one jurisdiction may interact with conditions elsewhere. Such dialogue and exchange can help identify vulnerabilities early and reduce the risk of policy actions that inadvertently amplify regional stress.

As the region remains exposed to global factors, preparedness against external shocks is essential. Global factors continue to explain a significant portion of business cycle variation across ASEAN+3 economies, and extraregional demand remains important for many regional exporters. In an environment likely to be characterized by continued policy uncertainty and potential further geoeconomic reconfiguration, maintaining the capacity to respond to external shocks becomes critical. This requires preserving policy optionality and agility: adequate fiscal space to deploy countercyclical support, monetary policy flexibility to respond to changing conditions, and sufficient reserve buffers to manage external pressures. It also requires robust surveillance capabilities – both within economies and the region – that can detect shifts in the global environment early and enable rapid policy adjustment. The region's experience navigating past crises demonstrates the value of such preparedness; the current environment suggests it will remain essential.

Taken together, these three priorities – sound domestic frameworks, enhanced regional dialogue, and preparedness for global shocks – form the foundation for managing synchronization in an increasingly interconnected region. They address the near-term policy challenges that arise from deeper regional linkages: reducing the risk of instability transmission, improving collective awareness of regional developments, and maintaining the capacity to respond to external pressures.

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[15] This relationship is well documented in the literature. For instance, Melitz (2003) and Duval and others (2014) demonstrate that greater business cycle alignment lowers the costs of implementing trade facilitation and financial integration initiatives, supporting more efficient cross-border resource allocation.

[16] These transmission channels have been explored in past studies. For instance, Bems and others (2010) and di Giovanni and others (2018) showed that international production sharing amplified the global trade collapse during the financial crisis, as demand shocks propagated rapidly through vertically integrated supply chains. Dai (2014) also demonstrated that the same integration supporting efficiency also strengthens contagion channels during downturns.

Part III. Harnessing Economic Linkages for Long-term Growth and Resilience

Beyond cyclical considerations, a broader policy question concerns how ASEAN+3 can harness its deepened economic linkages to sustain resilience and growth over the longer term. This question has gained urgency amid the current geoeconomic reconfiguration. The tariff measures and broader trade policy uncertainty facing the region are not isolated shocks but part of a potentially more fragmented global environment that may persist.

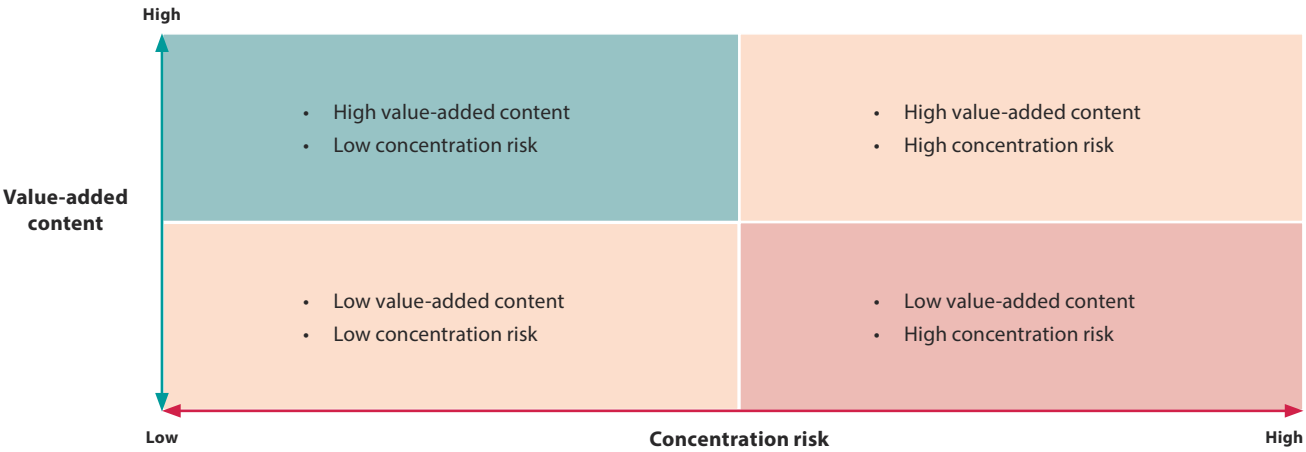
Economies must therefore consider not only how to weather current pressures but how to position themselves strategically within evolving regional and global networks. While deeper integration has contributed to the region's economic expansion and provided some buffer against external uncertainties, it also raises questions about how economies can continue capturing benefits while managing risks and ensuring gains are broadly shared.

Mapping ASEAN+3 GVC Integration: Value Chain Upgrading and Concentration Risk

The question of how to position within evolving economic linkages becomes particularly important as structural and external headwinds intensify. ASEAN+3 economies face the challenge of sustaining growth momentum as factors that previously facilitated strong macroeconomic performance are weakening. The region is aging faster than other developing regions, capital accumulation has slowed from earlier peaks, and productivity growth has remained modest (AMRO 2024, 2025). As a result, the region's potential growth declined from 6.0 percent in the early 2000s to 4.0 percent in 2025, with projections suggesting a further decline to around 3.0 percent by 2050 (AMRO 2025). These structural constraints are now compounded by geoeconomic uncertainty: the prospect of further trade policy shifts, and the potential for more lasting fragmentation add complexity to decisions about investment and supply chain configurations. In this context, how economies position themselves within evolving regional and global linkages – whether they can move up value chains, diversify against concentration risks, and ensure inclusive participation – will significantly shape their long-term resilience and growth trajectories.

A stylized framework illustrates the choices facing ASEAN+3 economies by assessing their positions across two dimensions: value-added content and concentration risk. The first dimension examines whether economies have progressed toward higher value-added activities, reflecting their ability to capture greater benefits from integration. This is measured by the share of value-added exports from higher value-added sectors in total value-added exports. The second dimension captures concentration risk – the extent to which an economy's integration exposes it to disruption from dependence on specific partners or sectors. This is measured by adapting the "pass-through frequency" approach of Inomata and Hanaka (2024), which reveals exposure to supply chain disruptions that volume-based measures may miss.[17] Together, these dimensions create four quadrants, with the world average as the dividing line, allowing comparison of each economy's position relative to global patterns (Figure 2.24).

Figure 2.24. Global Value Chain Position Framework



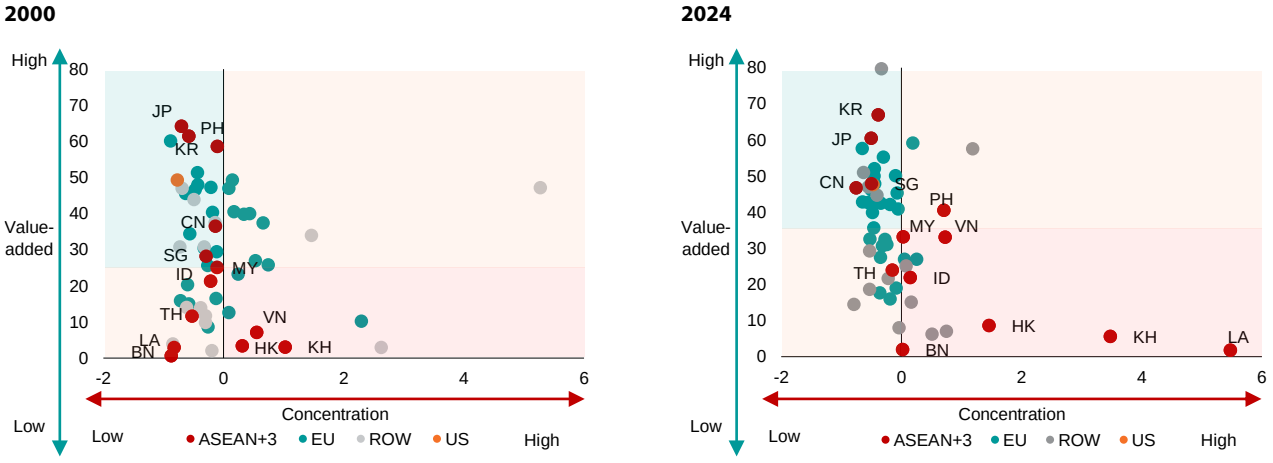
Source: AMRO staff.
Note: Online annex 7 presents a detailed explanation of the global value chain position framework, including the measurement methodology of both x-axis and y-axis dimensions.

17/ See Online annex 7 for a detailed explanation of the global value chain position framework, including the measurement methodology of the pass-through frequency index.

Mapping ASEAN+3 economies onto this illustrative framework reveals how the region's position evolved between 2000 and 2024. In 2000, China, Japan and Korea were in the top-left quadrant, combining higher value-added activities with lower concentration risk relative to the world average (Figure 2.25). Most ASEAN economies were in the bottom-left quadrant, with lower concentration risk but also lower value-added content. Cambodia, Hong Kong, and Vietnam were in the bottom-right quadrant, facing both lower value-added content and relatively higher concentration risk. By 2024, the picture had shifted notably. Singapore moved into the top-left quadrant, joining China, Japan, and Korea. However, many ASEAN economies shifted toward either the top-right or bottom-right quadrants. While these movements reflect increased value-added activities for some economies, they also indicate potential concentration risks across much of the region – a diagonal movement consistent with ASEAN economies' deeper embedding in the Asian production network cluster. This contrasts with the EU, where economies became relatively less concentrated compared to the global average over the same period.

This diagonal movement – gaining in value-added while accumulating concentration risk – encapsulates the central policy challenge. Integration has delivered benefits: economies have moved up value chains, captured productivity spillovers, and achieved scale beyond what domestic conditions alone would permit. But these gains have come alongside increased exposure to disruption. The current environment of trade policy uncertainty and potential further geoeconomic reconfiguration amplifies both the stakes and the complexity of these positioning choices – decisions made now about supply chain relationships, market diversification, and capability investments will shape how economies navigate not just current pressures but the structural environment likely to unfold over the coming decade. The policy question is not whether to pursue or avoid integration, but how to continue capturing its benefits while managing the risks that accompany deeper embedding in regional value chains.

Figure 2.25. Global Value Chain Position of Selected Economies
(Percent; Index)



Source: Asian Development Bank Multiregional Input-Output Table; Inomata and Hanaka (2024); 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; EU = EU-27 member economies; ROW = Rest of the world; US = United States. The y-axis represents each economy's value-added exports in high value-added sectors as a share of its total value-added exports. High-value sectors are defined by the Organisation for Economic Co-operation and Development as sectors with high research and development spending as a share of global value-added. The x-axis shows the normalized Herfindahl-Hirschman Index of the pass-through frequency indicator. Online annex 7 presents a detailed explanation of the global value chain position framework, including the measurement methodology of both x-axis and y-axis dimensions.

Three Policy Priorities: Upgrading, Resilience, and Inclusion

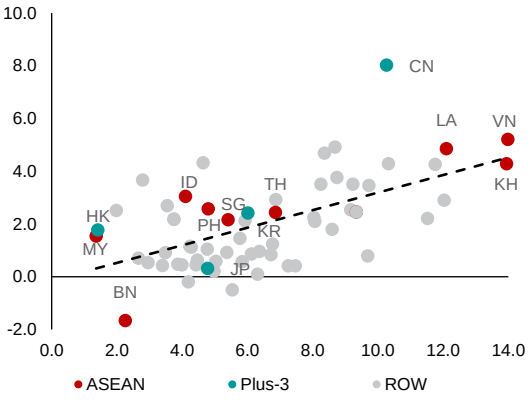
Addressing this challenge requires policy directions across three interconnected dimensions. First, economies must continue upgrading domestic capabilities to move toward higher value-added activities – the vertical dimension of the framework. Second, economies need to promote supply chain resilience by reducing concentration risks through diversification – the horizontal dimension. Third, economies must ensure inclusive participation so that integration gains are broadly shared across firms, regions, and workers – a distributional effect that cuts across both dimensions. These three priorities – upgrading, resilience, and inclusion – are interconnected and mutually reinforcing: progress in capability development supports supply chain resilience efforts, while inclusive policies help build the broad-based human capital needed for upgrading. The relative emphasis across these priorities varies depending on each economy's current position in the framework, as well as its development stage and structural characteristics.

Upgrading Domestic Capabilities

Integration generates productivity gains through multiple channels that are critical for sustaining growth, but capturing these gains requires deliberate capability building. Participation in GVCs exposes domestic firms to international best practices and competitive pressures (Taglioni and Winkler 2016; World Bank 2020). In particular, backward linkages involving imported inputs are positively associated with productivity growth – a factor that has been slowing in ASEAN+3 (Figure 2.26; AMRO 2025). FDI transfers production technologies, managerial practices, and quality standards, while labor mobility facilitates skill development and knowledge transfer (Javorcik 2004; World Trade Organization and others 2023). However, sustaining these productivity gains requires moving beyond lower value-added production stages, where some regional economies remain concentrated in. Without deliberate efforts to build domestic capabilities, economies risk becoming trapped at intermediate production stages – a "middle-technology trap" (Andreoni and Tregenna 2020).

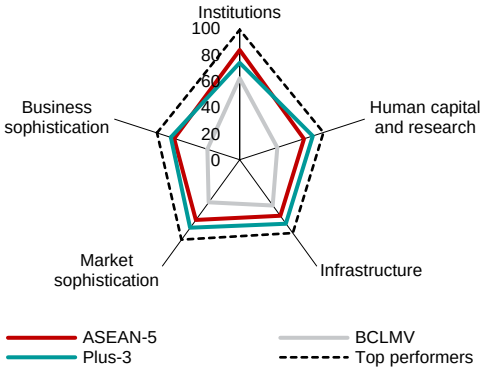
For economies in the lower half of the framework – those with lower value-added content – moving upward requires sustained investment in innovation ecosystems, human capital, infrastructure, and institutional quality. These elements form an interconnected system: innovation capacity requires not only research institutions and private research and development (R&D) but also infrastructure and intellectual property frameworks that facilitate knowledge creation (Organisation for Economic Co-operation and Development [OECD] 2015, World Bank 2020). Human capital development extends beyond foundational education to specialized technical education (OECD 2019). However, these investments alone are insufficient – realizing their potential depends on absorptive capacity, which determines whether economies can effectively identify, adopt, and diffuse relevant technologies (Perkmann and others 2013; Cirera and Maloney 2017; Bloom and others 2019). Progress in these areas varies substantially across the region, with ASEAN economies lagging behind the Plus-3 (Figure 2.27). Policy priorities should therefore reflect the development stage, with advanced economies focusing on frontier innovation and less developed economies on foundational capabilities such as basic infrastructure, technical education, and innovation financing.[18] For ASEAN economies specifically, leveraging deep extraregional linkages – particularly with Plus-3 partners – can accelerate this progression by channeling technology transfer, managerial know-how, and productivity spillovers into domestic capability building (Special Feature: ASEAN at a Crossroads: Pathways for Deeper Economic Integration).

Figure 2.26. GVC participation (x-axis) versus Productivity (y-axis) by Selected Economies
(Compounded annual growth rate, 2000 to 2024)



Source: Asian Development Bank Multiregional Input-Output Table; Harvard Growth Lab; International Monetary Fund; AMRO staff calculations.
Note: Plus-3 = China, Hong Kong, Japan, and Korea; ROW = Rest of the world. Global value chain (GVC) participation (x-axis) and productivity (y-axis) are measured as compounded annual growth rate (CAGR) from 2000 to 2024. For Cambodia, 2001 is used, and for Lao PDR, 2011 is used, due to missing 2000 data.

Figure 2.27. Global Innovation Index Pillar Scores of ASEAN+3
(Index, 0-100)



Source: Global Innovation Index (GII) Database; AMRO staff calculations.
Note: ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; Plus-3 = China, Hong Kong, Japan, and Korea. Regional aggregate scores are weighted by real GDP in 2024. "Top performers" reflect the highest score in each GII dimension across 139 economies: Singapore (Institutions), Korea (Human capital and research), Norway (Infrastructure), and the United States (Market and business sophistication). The scores are as of 2025.

[18] Several ASEAN+3 economies have pursued targeted initiatives to upgrade their domestic capabilities: Singapore's Research, Innovation and Enterprise 2025 plan emphasizes deep-tech capabilities and innovation translation; Korea's Digital New Deal supports digital infrastructure and AI development; China's Made in China 2025 strategy focuses on high-tech manufacturing upgrading; and Thailand's Eastern Economic Corridor develops specialized infrastructure and human capital in targeted industries; Malaysia's Pioneer Status and Investment Tax Allowance schemes providing tax relief for R&D activities; Vietnam's High-Tech Law offering incentives for technology enterprises; Korea's Industry-University Cooperation Foundation facilitating university-industry collaboration; and Indonesia's National Innovation System and the Philippines' Technology Application and Promotion Institute providing technical assistance to SMEs for technology adoption. Box 2.6 examines the two modalities of semiconductor global value chain integration to support long-term industrial development in Korea and Malaysia.

Promoting Supply Chain Resilience

For economies with higher concentration risk, reducing vulnerability requires greater diversification strategies that have become more pressing amid current geoeconomic uncertainty. Heavy reliance on particular value chains or trading partners amplifies vulnerability to supply disruptions, external demand shocks, and the potential reconfiguration of trade relationships that tariff escalation or secondary measures could trigger. Recent disruptions – the COVID-19 pandemic and the 2011 Great East Japan Earthquake – have illustrated how concentration in specific networks can rapidly transmit shocks across ASEAN+3 production systems.[19] The observed increase in concentration risk from the GVC perspective across many ASEAN economies between 2000 and 2024 underscores the importance of addressing this challenge, particularly as trade policy uncertainty may persist.

Supply chain resilience strategies encompass three dimensions, with the appropriate mix varying by economy. First, geographic diversification reduces exposure to single markets by deepening relationships with secondary partners and establishing new trade and investment linkages – an approach that current trade tensions are accelerating across the region. Second, developing domestic supply capacity in key inputs reduces dependence on imported intermediates while creating opportunities for regional value addition. Third, sectoral diversification reduces vulnerability to industry-specific shocks by identifying adjacencies that leverage existing capabilities rather than attempting comprehensive transformation. Smaller economies may focus on geographic diversification and niche sectors, while larger ones can pursue broader sectoral transformation. Developing denser intraregional linkages can support these national diversification strategies by expanding the range of accessible suppliers and markets, reducing dependence on any single external partner, whether within or outside the region. When disruptions affect one supply source, established relationships with other regional partners provide alternatives that would otherwise take time to develop. This is particularly true for ASEAN economies, where economic integration has stalled since the mid-2010s (Special Feature: ASEAN at a Crossroads: Pathways for Deeper Economic Integration).

Ensuring Inclusive Participation

The third priority – ensuring inclusive participation – differs in nature from the first two. While domestic upgrading and supply chain resilience concern an economy's position in the framework, inclusion concerns the distribution of gains and potential incidence of risks within economies. Without complementary policies, integration gains risk concentrating in specific sectors, locations, or demographic groups, potentially widening inequalities. Evidence shows that gains typically accrue first to sectors and locations with advantages in infrastructure, skills, and institutions (World Bank 2009; Kümmritz and others 2017). Within labor markets, workers with higher education and skills complementing imported technologies capture wage gains, while those facing import competition may experience displacement (Autor and others 2013). These distributional patterns depend significantly on domestic policy frameworks, including infrastructure investment, education systems, and social protection mechanisms, which vary by economy, as demonstrated by the diverse outcomes in inclusive growth across ASEAN+3 economies (Figure 2.28).

Ensuring inclusive integration requires broadening participation for small and medium-sized enterprises (SMEs), lagging regions, and vulnerable workers. SMEs, which constitute the majority of firms and employment across the region, face disproportionate barriers, including information gaps, financing constraints, and compliance costs. Trade facilitation measures, export credit programs, and business development services can help address these barriers (OECD 2017). Lagging regions, such as rural and inland areas, need targeted infrastructure investment, industrial park development, or fiscal transfers to improve their integration prospects (World Bank 2009). For workers, the distribution of gains depends on labor market institutions, social insurance systems, and active transition policies, including retraining assistance, job search support, and wage insurance (Autor and others 2013; Card and others 2018). Social protection coverage varies significantly across ASEAN+3, and economies with limited resources may need phased implementation, starting with basic social insurance and gradually expanding coverage as fiscal space allows (International Labor Organization 2024). Regional cooperation initiatives, such as the ASEAN Framework on Social Protection and the ASEAN Social Security Association, can complement national efforts.

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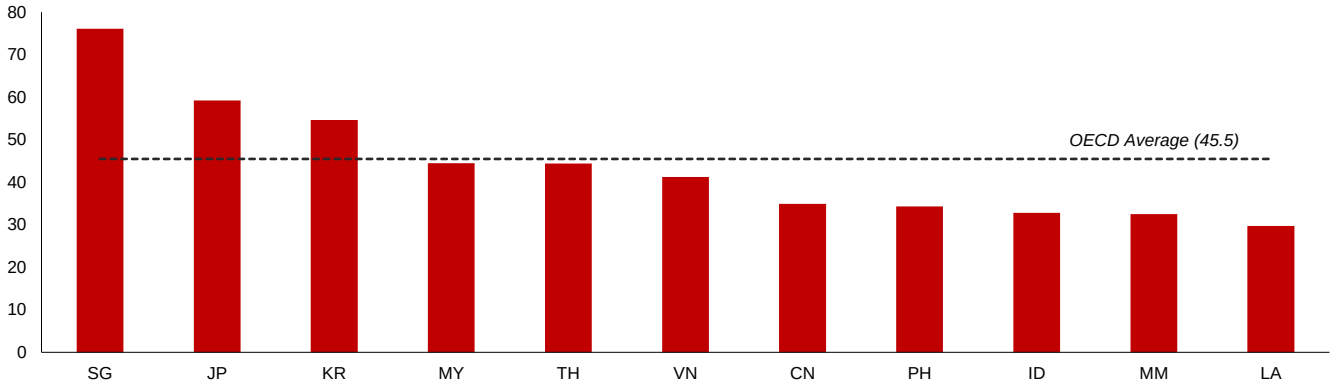
[19] These transmission effects in recent disruptions have been variously discussed. For instance, Bonadio and others (2021) found that supply chain disruptions accounted for one quarter of the pandemic-related GDP decline. Similarly, Todo and others (2015) showed that firms with more suppliers and clients outside disaster zones resumed production faster after the 2011 Great East Japan Earthquake than those relying primarily on local networks.

Figure 2.28. Inclusive Growth Index Across ASEAN+3 in 2023
(Index, 0-100)



Source: United Nations Conference on Trade and Development Inclusive Growth Index (UNCTAD IGI); AMRO staff calculations.
Note: CN = China; ID = Indonesia; JP = Japan; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. The UNCTAD IGI is a composite measure capturing how far economic growth is broad-based and inclusive, incorporating indicators of income, employment, education, health, and inequality. The Organisation for Economic Co-operation and Development (OECD) average contains the average scores of non-ASEAN+3 OECD members classified as advanced economies by the International Monetary Fund, for the purpose of relative comparison with advanced economies. Brunei, Cambodia, and Hong Kong are not shown due to data unavailability.

Summary and Concluding Discussion

The structural transformation documented in this chapter suggests the region is better positioned to weather the current trade disruptions than earlier configurations would have allowed. The region's demand base is now more regionally anchored, with intraregional final demand substantially more important than two decades ago. Its supply-side integration reflects genuine production networks – concentrated in trade of intermediate and capital goods – rather than the mere re-routing of goods without substantive value addition. This does not imply immunity to external headwinds, but it does suggest a degree of resilience that the conventional characterization of the region would not predict. The structural changes have also led business cycles to become more synchronized, with regional factors now rivalling global factors in explaining cyclical variation. While this greater regional anchoring provides some buffering against external demand shocks, it also creates channels through which regional developments transmit more readily – making the quality of domestic policy frameworks a matter of regional, not just domestic, concern. Over the longer term, the benefits of deeper integration have been accompanied by rising concentration risks for many economies – framing the central policy challenge of capturing integration's gains while managing accompanying vulnerabilities.

The deepening of regional linkages makes regional cooperation even more important than it has been in the past. Sound domestic frameworks remain essential – in macroeconomic management over the near term, and in upgrading capabilities and diversifying external linkages over the longer term. But cooperation at the regional level can amplify these domestic efforts while helping economies manage the shared vulnerabilities that deeper integration creates. For managing synchronization, policy dialogue and surveillance exchange help economies anticipate shared vulnerabilities and understand how developments in one economy may affect others – not through policy harmonization, but through deeper mutual awareness. For supporting long-term resilience and growth, regional initiatives in trade and investment facilitation, infrastructure connectivity, and financial cooperation can complement domestic efforts to upgrade and diversify. For ASEAN specifically, structural constraints mean that further deepening integration requires not only continued trade facilitation but also strengthening intraregional investment and supporting firms' cross-border expansion – pathways examined in the Special Feature (ASEAN at a Crossroads: Pathways for Deeper Economic Integration).

The landscape shaping ASEAN+3's integration will continue to evolve. The current episode of trade disruption may mark an inflection point rather than a temporary disruption. The trend toward deeper regional integration and greater business cycle synchronization is likely to persist: continued geoeconomic tensions may reinforce momentum toward deepening regional ties, while demographic shifts and economic rebalancing are shifting consumption patterns in ways that strengthen intraregional demand linkages. Beyond these, new sources of disruption and opportunity are emerging – from digital technologies creating new forms of cross-border production and service delivery, to the green transition reshaping energy systems and comparative advantage, to artificial intelligence accelerating shifts in ways that are difficult to anticipate. Geopolitical fragmentation adds further uncertainty, with the potential to reorder value chains in ways that affect the region's established patterns of integration. These developments underscore the importance of building adaptive capacity – the ability to assess how circumstances are changing and adjust strategies accordingly. The analysis in this chapter provides a framework for understanding how the region's position is evolving and where policy attention may be needed. The region has demonstrated in the past the ability to adapt collectively when shared challenges arise. ASEAN+3's growth over the past two decades was built on openness, integration, and cooperation; sustaining growth in a more uncertain world will require deepening all three.

Special Feature: ASEAN at a Crossroads: Pathways for Deeper Economic Integration

"What we have decided today is only a small beginning of what we hope will be a long and ongoing series of achievements, of which we ourselves, those who will join us later, and future generations can be proud."

Thanat Khoman, Foreign Minister of Thailand, at the founding of ASEAN (1967)

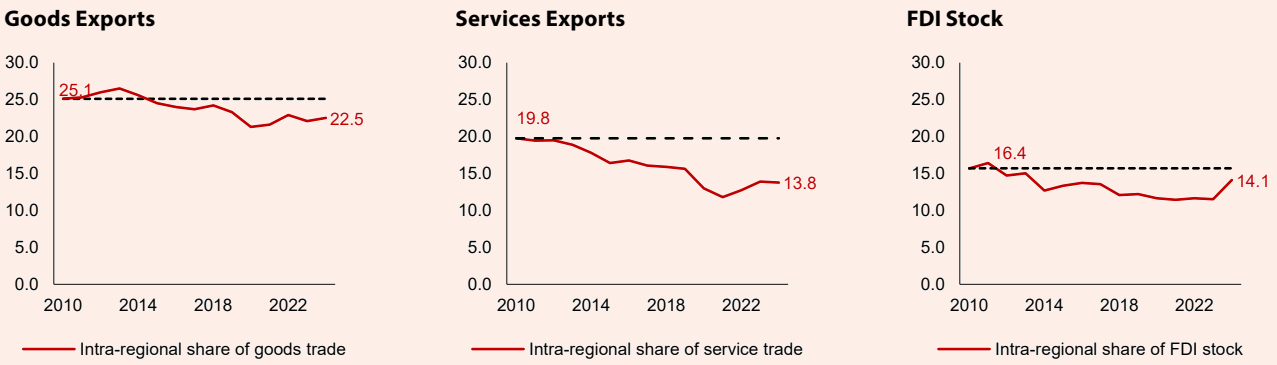
ASEAN is one of the most important economic regions in the global economy. Nearly six decades ago, Thailand's Foreign Minister Thanat Khoman described the founding of ASEAN as "only a small beginning." His words proved prescient. With 700 million people and an economy worth more than USD 4 trillion by 2024, the region is expected to surpass the Japanese economy in size by 2027 and the fifth-largest economy in the world.[20] It is also one of the fastest-growing regions in the world, with growth consistently above the global average since the 1980s. ASEAN has a highly open economy and is deeply integrated into international markets and supply chains, with a trade-to-GDP ratio exceeding 95 percent. It attracted record foreign direct investment (FDI) inflows of USD 226 billion in 2024, equivalent to 15 percent of global FDI flows.[21]

Intra-ASEAN trade and investment shares have declined since the mid-2010s. In 2010, the intra-ASEAN goods trade share stood at 25.1 percent and the services trade share at 19.8 percent; by 2024, both had fallen to 22.5 percent and 13.8 percent, respectively (Figure 2.29, left and middle panels). Intra-ASEAN investment flows present a similar picture: despite total FDI inflows to ASEAN doubling over the past five years, the intraregional investment share declined from 16.4 percent in 2011 to 14.1 percent in 2024 (Figure 2.29, right panel).

Deeper intra-ASEAN integration is important not only for improving ASEAN's resilience against mounting external challenges, but also for strengthening the broader ASEAN+3 regional architecture. The global economic environment has become increasingly fragmented as geopolitical tensions and structural shifts reshape trade networks, heightening uncertainty for smaller open economies. Yet despite decades of policy efforts, intra-ASEAN integration remains shallow relative to its potential. A more densely connected ASEAN would help mitigate external vulnerabilities while complementing – rather than substituting for – the region's deep linkages with the Plus-3 economies, creating a more balanced and resilient production network that benefits ASEAN+3 as a whole.

This special feature provides an assessment of the current state of regional economic integration in ASEAN and outlines broad policy directions to deepen it. It assesses how far ASEAN's trade integration has progressed relative to underlying economic fundamentals and peer regions such as ASEAN+3 and the European Union (EU) and uses this benchmarking to highlight the structural factors that keep intraregional trade and production linkages shallow. Building on this diagnostic, it outlines policy pathways – illustrated with model-based simulations – through which ASEAN can leverage global value chain linkages and stronger intraregional investment to advance regional integration over the medium to long term.

Figure 2.29. Intraregional Trade and Investment Shares in ASEAN
(Percent of gross goods exports; Percent of gross services exports; Percent of gross investment stock)



Source: ASEAN Stats; United Nations Comtrade; AMRO staff calculations.
Note: FDI = Foreign direct investment. The dotted line represents the initial intraregional share in 2010 for each respective panel.

The authors of this special feature are Yohnsen Ang, Allen Ng, Haobin Wang (lead), and Yuhong Wu. This special feature summarizes key findings from the working paper "ASEAN at a Crossroads: Pathways for Deeper Economic Integration" (AMRO 2026).

20/ In 2027, the nominal GDP of ASEAN is estimated at USD 4.7 trillion, larger than Japan's USD 4.6 trillion. This would place ASEAN behind the United States, China, the European Union, and India (International Monetary Fund 2026).

21/ While global FDI flows in 2024 declined by 11 percent and inflows to developing regions remained broadly stagnant, investment in ASEAN increased by 8 percent in 2024 (United Nations Conference on Trade and Development 2025).

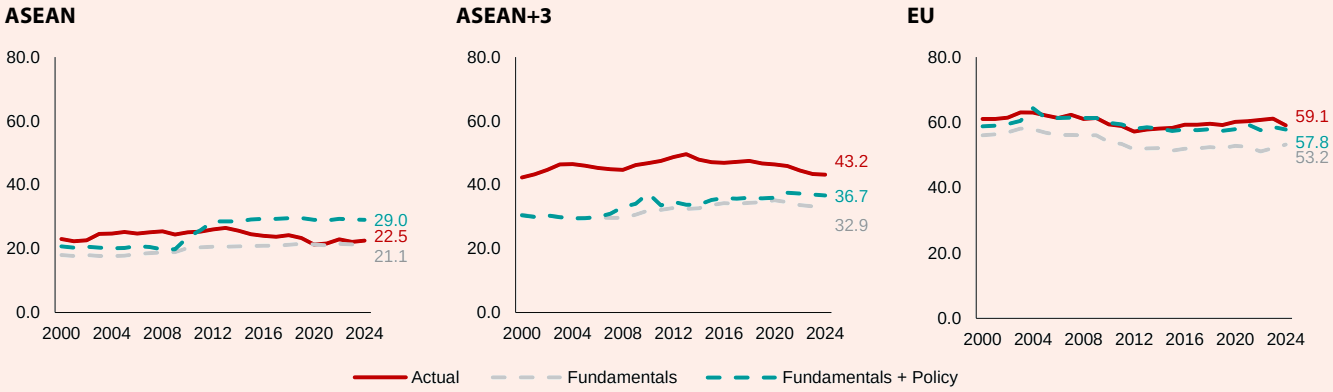
Intra-ASEAN Trade Integration: Structural Limits

Intra-ASEAN trade integration has remained modest, despite the region's overall growth and openness. While intra-ASEAN trade has expanded in absolute terms in line with regional growth, its share of total trade has hovered around 20 percent to 25 percent for the past three decades. Model-based estimates suggest that this outcome is broadly consistent with ASEAN's economic fundamentals, such as market size, geography, and historical linkages.[22] When policy variables – such as the presence of trade agreements – are incorporated, predicted integration rises slightly above 25 percent, indicating that full realization of commitments under existing trade policies and other regional frameworks could yield incremental gains in intraregional trade (Figure 2.30).

Comparisons with ASEAN+3 and the EU highlight the structural limits to deeper trade integration in ASEAN. In both the broader ASEAN+3 and the EU, actual intraregional trade shares consistently exceed levels predicted by fundamentals and trade policies (Figure 2.30). One possible reason is that the complementarities in production structures and demand patterns, which are not captured by the model, are reinforcing integration beyond the model estimates. In the EU, for instance, high income levels and dense industrial specialization have created self-reinforcing trade flows.[23] In ASEAN+3, cross-border value chains are anchored by a few large and advanced economies that provide substantial market demand and technology know-how. By contrast, ASEAN's trade integration has remained limited within the levels implied by its structural characteristics.

ASEAN's relatively modest trade integration is reflected in its limited intraregional trade complementarity. The alignment between what ASEAN economies produce and what they demand from each other remains relatively limited. ASEAN's trade complementarity index is substantially lower than that of ASEAN+3 or the EU, reflecting narrower demand structures and less diversified supply capabilities.[24] On the demand side, lower and uneven income levels across ASEAN restrict the breadth of consumption and investment needs, limiting the role of final demand within the region. On the supply side, average economic complexity in the region is below global peers, implying a more limited range of intermediate and final production capabilities. This combination reduces the likelihood that exports from one ASEAN economy can meet the needs of another. The outcome is both weaker demand–supply alignment and shallower intraregional value-chain participation, with ASEAN economies continuing to rely more on extraregional partners for both inputs and demand (Figure 2.31).

Figure 2.30. Intraregional Goods Export Share in Selected Regions
(Percent of gross goods export)



Source: United Nations Comtrade; AMRO staff calculations.
Note: EU = EU-27 member economies. "Fundamentals" and "Fundamentals + Policy" are the model-based estimates of the intraregional goods export share. Fundamentals reflects structural drivers like economic size, distance, and historical ties, while Policy accounts for trade-policy variables such as regional trade agreements. Refer to AMRO (2026) for the model specification and variable definitions.

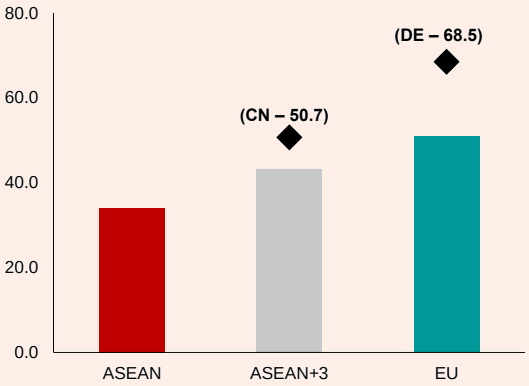
22/ A gravity model was employed to assess ASEAN's intraregional trade dynamics, comparing predicted intra-ASEAN trade shares based on economic fundamentals alone with those incorporating trade-policy variables. The results provide a benchmark for ASEAN's intraregional trade shares relative to levels implied by fundamentals and policy. Refer to AMRO (2026) for methodological details.

23/ Key determinants of intra-EU trade integration have been well studied. For instance, Balassa and Bauwens (1988) and Serlenga and Shin (2007) found that income level and industrial capacity were the important drivers of intra-EU trade integration.

24/ The trade complementarity index evaluates how closely one economy's export structure matches another economy's import structure. At the regional level, the index is calculated as a trade-weighted average of these bilateral values across member economies. Refer to AMRO (2026) for methodological details.

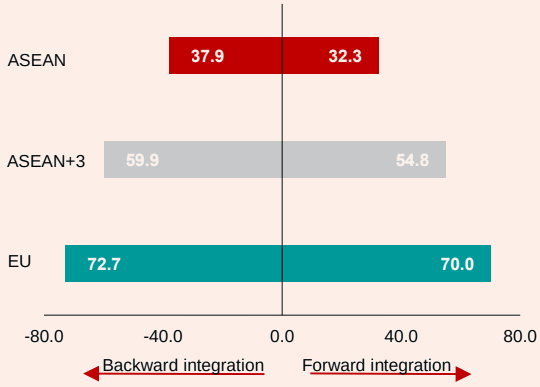
Figure 2.31. Trade Integration Indicators of Selected Regions

Trade Complementarity Index
(Index, 0-100)



Source: United Nations Comtrade; AMRO staff calculations.
Note: CN = China; DE = Germany; EU = EU-27 member economies. Regional average indices are weighted by each member's intraregional value by its share of the region's total trade to derive a region-wide average. Diamonds indicate each region's central trading-hub index value versus the rest of the region.

Regional Value Chain Integration
(Percent of total backward/forward integration)



Source: Asian Development Bank Multiregional Input-Output Table; AMRO staff calculations.
Note: EU = EU-27 member economies. Regional percentages are a simple average of individual economies' backward/ forward participation with respective regional economies as a share of total value chain participation.

Disparities in development levels, together with limited income levels and production sophistication, remain a fundamental constraint on intraregional trade in ASEAN. ASEAN economies span the full spectrum of income and industrial capability, from high-income, innovation-driven economies to lower-middle-income, more resource-based exporters (Figure 2.32). While this diversity enables integration with the global economy by matching ASEAN's supply with external demand, it reduces the degree of overlap within the region. Higher-income members demand sophisticated goods and services that lower-income partners cannot yet supply, while lower-income members lack the purchasing power to absorb higher-value exports. Conceptually, regional integration deepens most readily when economies converge to higher income levels and greater production sophistication, creating overlapping demand structures and opportunities for complementary specialization.[25] ASEAN has not yet reached this stage, and as a result, intraregional demand remains segmented and production linkages are relatively shallow compared with more advanced blocs.

Weak intra-ASEAN investment further constrains deeper trade integration. FDI is a critical enabler of trade – embedding production networks, transferring technology, raising productivity, and creating stakeholders for cross-border exchange. Empirical analysis shows that bilateral FDI has a positive, statistically significant impact on ASEAN trade flows, underscoring its catalytic role for regional trade integration.[26] However, investment flows within the region have declined in relative terms, with intraregional FDI stock standing at only about 10 percent of the total in 2023, less than roughly 50 percent seen in ASEAN+3 or the EU (Figure 2.33). This is also about 25 percent below levels predicted by fundamentals.[27] Intraregional investment weakness therefore limits ASEAN's ability to build supplier networks and deepen value-chain integration. In many respects, FDI is the weakest link in ASEAN's integration – without stronger cross-border investment, efforts to strengthen trade complementarity or reduce policy friction are unlikely to translate into significantly deeper integration.

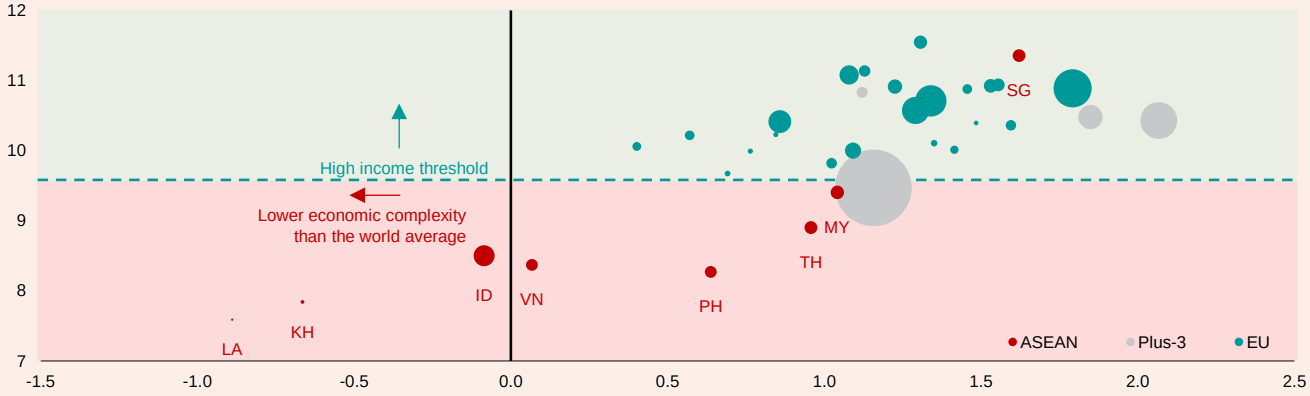
Overall, ASEAN's trade integration is limited by structural constraints that trade policies alone cannot resolve. The persistence of modest intraregional trade shares reflects the region's income gaps with advanced economies, the limited breadth of demand and production capabilities, and the weakness of investment flows within ASEAN. These structural limits explain why ASEAN's intraregional trade has remained broadly unchanged over time and why trade policy measures on their own, though necessary, will not be able to drive deeper integration to levels observed in the broader ASEAN+3 and the EU. By contrast, ASEAN's outward orientation toward Plus-3 partners reflects structural complementarities: larger and advanced economies provide the technological inputs, production sophistication, and market demand that complement ASEAN's development stage. This outward orientation is consistent with the region's fundamentals, even as ASEAN works to strengthen its own foundations for deeper intraregional trade over the longer term.

25/ As per the Linders' hypothesis, when incomes and product sophistication converge, demand structures overlap, boosting intra-industry trade and regional integration. For example, as discussed in Hallak (2010), income similarity and product-quality considerations have empirically led to stronger intra-industry trade.

26/ A two-stage least squares regression was conducted to identify the causal impact of FDI on bilateral trade flows in ASEAN, by instrumenting bilateral FDI with corporate tax differentials. The estimates confirm a positive, statistically significant relationship between FDI and trade after controlling for standard gravity covariates. Refer to AMRO (2026) for further details on the data and methodology.

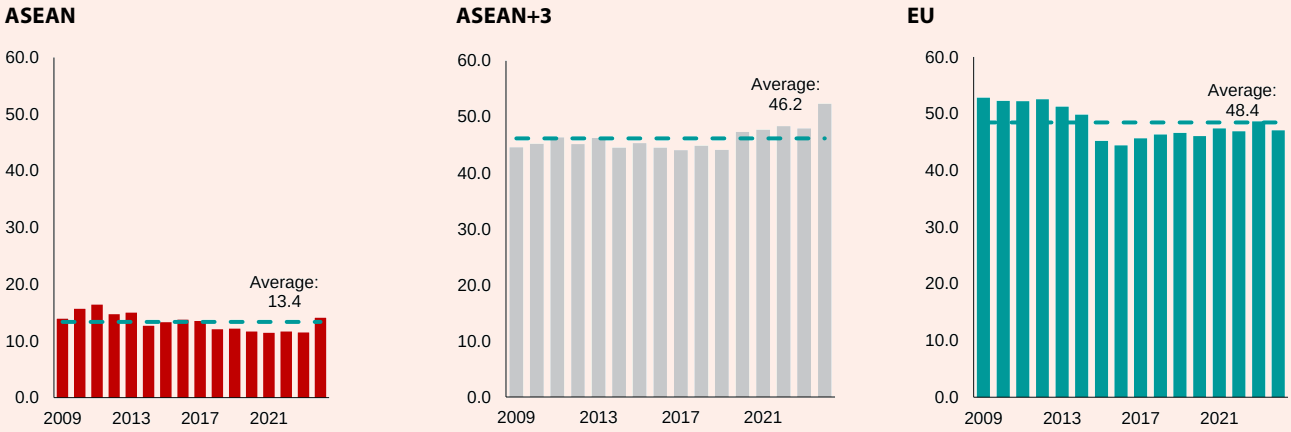
27/ Gravity-based simulations combining growth and FDI projections are used to quantify the potential increase in intra-ASEAN trade under different scenarios. Refer to AMRO (2026) for further details on methodology and model specifications.

Figure 2.32. Diversity in Income and Industrial Capability in Selected Regions, 2023



Source: Harvard Growth Lab; International Monetary Fund; AMRO staff calculations.
Note: BN = Brunei; ID = Indonesia; KH = Cambodia; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam; EU = EU-27 member economies; Plus-3 = China, Hong Kong, Japan, and Korea. The x-axis shows the Economic Complexity Index (ECI), while the y-axis represents the log GDP per capita. High income threshold follows the World Bank's definition in 2023. Negative ECI indicates the economy's export basket is less complex than the world average. The size of each bubble is the economy's nominal GDP for 2023, measured in USD. For ASEAN and ASEAN+3, the ECI for Brunei and Myanmar is unavailable. For the EU, ECI data for Cyprus. Estonia, Latvia, Luxembourg, and Malta are unavailable.

Figure 2.33. Intraregional Investments in Selected Regions
(Percent of gross FDI stock)



Source: International Monetary Fund Coordinated Direct Investment Survey (IMF CDIS); AMRO staff calculations.
Note: EU = EU-27 member economies; FDI = Foreign Direct Investment. The data covers from 2009 to 2024, based on the availability of data in the IMF CDIS database.

Policy Pathways for Deeper ASEAN Integration

Sustained progress toward deeper ASEAN integration will depend on establishing the necessary economic fundamentals that trade and liberalization initiatives alone cannot achieve. The preceding analysis identified several structural factors that constrain deeper regional integration, including relatively lower and less diverse development levels that limit the capacity to trade differentiated products and build complementary specializations. Shallow intraregional investment has further hampered the development of domestic productive capacities and regional production networks. Two reinforcing policy pathways could complement ongoing efforts to realize trade and liberalization initiatives: first, leverage existing linkages in the global value chain to build domestic capabilities and market depth, which are critical foundations for deeper intraregional integration; and second, promote greater intraregional investment and firm internationalization to make production networks denser and to embed commercial linkages across borders. Taking together, these pathways offer a pragmatic route to translate formal openness into deeper regional trade and investment ties over time (Figure 2.34).

The realization of ASEAN's existing and planned integration initiatives remains a critical foundation for deeper regional integration. ASEAN's roadmap for strengthening the Economic Community between 2026 and 2030 provides an opportunity to consolidate progress and sharpen focus on areas that matter most for the private sector – reducing nontariff barriers, advancing services liberalization, and strengthening trade facilitation through consistent standards and interoperable processes. These initiatives hold significant potential to lower costs and uncertainty across markets, provided implementation is predictable and mutually recognized. Continued emphasis on the progressive streamlining of nontariff measures, steady liberalization of modern, digitally delivered services, and more efficient cross-border procedures will be especially important. Such measures can provide the enabling environment within which domestic capability upgrading, intraregional investment, and firm internationalization can take root, positioning trade and liberalization initiatives as essential pillars that reinforce the broader pathways to sustained ASEAN integration.

Figure 2.34. Policy Pathways to Deeper ASEAN Integration

Source: AMRO staff.
Note: While ASEAN's existing integration initiatives provide a strong foundation, these policies alone are unlikely to overcome deeper structural constraints on further regional integration. Refer to AMRO (2026) for a comprehensive analysis of ASEAN's current integration measures.

Leveraging Existing Global Value Chain Linkages for Domestic Upgrading

Existing global value chain linkages offer a practical way for ASEAN to build the economic fundamentals necessary for deeper intraregional integration. ASEAN's deep participation in global value chains and its role as a major destination for foreign investment provide practical existing channels to upgrade domestic industrial capabilities and, over time, develop the foundations for deeper integration – outcomes that liberalization measures alone are unlikely to secure. For instance, ASEAN's position in the global electrical and electronics sector – now tightly integrated into Asia's supply and production networks – and its growing role as a provider of digital services to both China and the United States (US) provide an opportunity to attract FDI in new growth areas, such as those related to artificial intelligence, and develop new capabilities to move up the technological ladder. Yet the extent to which such gains are realized depends on whether high-value FDI is matched by adequate domestic absorptive capacity. Human capital, institutional quality, openness in services, and financial development are all important in determining whether external linkages lead to broad-based productivity improvements or remain confined to enclave activities.

Policy emphasis, therefore, falls on raising the yield from extraregional FDI and guiding domestic upgrading toward a more complementary regional supply base. This involves attracting FDIs with high spillovers and network-embedded activities matched to local capability starting points, strengthening linkages between anchor firms and local suppliers, and fostering industrial ecosystems where capabilities can accumulate and diffuse over time. Particular attention should be given to the role of small and medium-sized enterprises (SMEs), whose integration into regional and global supply chains is essential for broadening the base of firms that benefit from spillovers. Differentiation across member economies, aligned with comparative strengths, would help emerging specializations reinforce one another rather than duplicate efforts. In this way, existing global value chain linkages not only build the fundamentals identified earlier but also prepare the ground for stronger intra-ASEAN investment and firm internationalization.

Promoting Intraregional Investment and Firms' Internationalization

Building a more resilient ASEAN requires complementing existing global value chain linkages with denser ties among ASEAN members themselves. Trade openness and global FDI have firmly embedded individual ASEAN economies in international production networks, but predominantly through outward-facing, hub-and-spoke linkages with larger partners such as China, Japan, and Korea, rather than with each other. This has left intra-ASEAN investment comparatively shallow, constraining the development of dense intraregional supplier networks and the mutual interdependence that underpins thicker regional trade. Building such linkages requires not only maintaining attractive conditions for foreign capital but also supporting ASEAN's own firms to invest in regional peers. Outward investment by regional firms is the channel through which domestic capabilities are translated into regional production links – reinforcing trade flows and gradually strengthening intra-ASEAN investment that has proven critical in other integration experiences.

Internationalization of ASEAN firms also represents the next stage of the region's structural transformation. Many member economies have advanced as recipients of foreign investment; the next phase is to nurture competitive domestic firms that expand across borders and embed their capabilities into regional production networks. This outward orientation not only reinforces integration but also supports the broader economic transformation needed for countries to move from middle- to higher-income status, as seen in past high-growth economies where outward investors drove industrial upgrading and

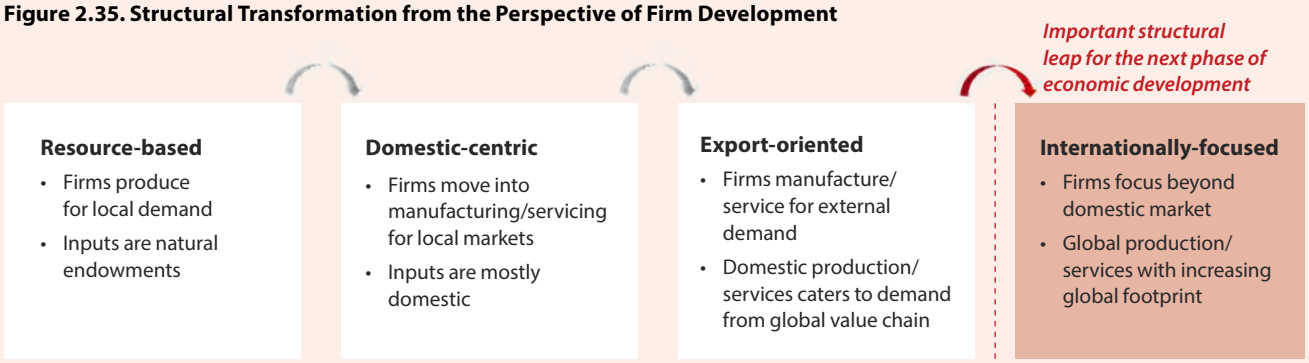
productivity growth (Figure 2.35).[28] SMEs will be central to this process, bringing specialized capabilities into supply chains but requiring broader ecosystems – skills and managerial upgrading, recognition of standards, efficient regulatory frameworks, and access to finance and enabling services – that allow them to scale across markets. In this framing, external integration builds capabilities, while intra-ASEAN investment and firm internationalization embed them regionally, creating a reinforcing cycle between domestic upgrading and deeper regional integration.

Finance-related initiatives can play a pivotal role in supporting the internationalization of ASEAN firms. As firms expand across borders, the availability of predictable and cost-effective financial services becomes an important enabler. Looking ahead, continued efforts to broaden cross-border payment linkages, promote the practical use of local currencies, deepen regional capital markets, and expand the regional reach of banking services can help create a more seamless environment for business expansion. For smaller enterprises in particular, such developments can reduce the frictions of operating in multiple jurisdictions and lower the risks associated with exchange rate volatility and working-capital constraints. In this way, financial cooperation complements the broader integration agenda by providing the foundations on which both large corporations and SMEs can participate more actively in regional production networks and investment flows.

ASEAN's intraregional trade share could rise to nearly 40 percent by 2050 if efforts to build domestic capabilities and strengthen intraregional investment are advanced. Model simulations indicate that, with all identified pathways advancing in tandem, intra-ASEAN trade could approach 40 percent by 2050, compared to only 25 percent to 30 percent under baseline projections, underscoring the scale of the opportunity (Figure 2.36). The potential gains reflect a reinforcing cycle: external investment helps build technological and managerial capacity; internationalizing firms embed these capabilities into regional networks; and stronger intra-ASEAN investment creates the mutual interdependence that attracts higher-quality capital and sustains more intensive trade. In this sense, ASEAN is in effect pursuing a regionwide investment strategy – focused on capability formation and regional investment linkages that complement its long-standing commitment to trade openness.

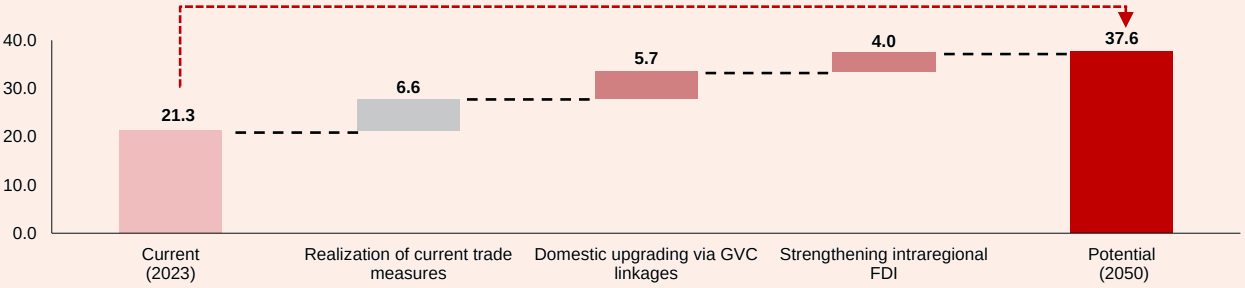
Looking ahead, deeper regional integration pursued alongside continued global openness will be essential to strengthen ASEAN's resilience. By focusing on leveraging its extraregional ties to strengthen economic fundamentals and deepening regional investment links, ASEAN can reinforce the outward orientation that has underpinned its success. A balanced strategy of deeper regional integration alongside continued global openness will enhance resilience, consolidate more competitive supply chains, and chart a path of shared prosperity in an increasingly uncertain world.

Figure 2.35. Structural Transformation from the Perspective of Firm Development



Source: AMRO staff.

Figure 2.36. Potential Policy Impacts on Intra-ASEAN Trade Integration
(Percent of gross goods exports)



Source: AMRO staff estimates.
Note: FDI = Foreign direct investment; GVC = Global value chain. This is based on a simulation in which ASEAN+3 economies converge toward the region's productivity frontier by 2050, while ASEAN fully leverages existing trade policies, and sees intra-regional FDI rise toward the level predicted by an FDI gravity model. Refer to AMRO (2026) for methodological details.

[28] This pattern is documented well in the literature. For instance, Cherif and Hasanov (2019) showed that economies developing internationally competitive firms in advanced industries moved up the value chain and transformed their economic structure, achieving rapid growth and sustaining high-income status.

Box 2.1:

Japan as the Region's Hub Before the 2000s

The regional production networks that underpin ASEAN+3 economic integration today have their origins in Japan's trade and investment expansion in the late 20th century. By the mid-1980s, Japan had emerged as one of the largest trading partners and a leading source of foreign direct investment (FDI) in ASEAN – accounting for about 20 percent of total FDI inflows and surpassing the United States in several economies. Understanding how Japan established this hub position illuminates both the structural foundations of regional integration and the conditions that have since enabled other economies to assume more prominent roles. Japan's emergence as the region's production hub reflected the interaction of proactive government policies, the distinctive *keiretsu* corporate structure, and favorable host-economy conditions.

Strategic Government Support for Outward Trade and Investment

Japan's outward trade and investment into ASEAN was not purely market-driven but was facilitated by government strategy. Following the end of the fixed exchange rates and oil shocks in the 1970s, Japanese policymakers increasingly viewed outward investment as a means to sustain industrial competitiveness while easing domestic structural pressures (Urata 2002). This strategy intensified after the sharp appreciation of the yen following the 1985 Plaza Accord, which significantly raised domestic production costs and accelerated the offshoring of labor-intensive and intermediate manufacturing stages (World Bank 1993).

The Ministry of International Trade and Industry (MITI) promoted a "regional production network" approach, while the Japan External Trade Organization provided firm-level information, feasibility studies, and investment facilitation services to Japanese multinationals entering ASEAN markets (Japan External Trade Organization 2010). Japanese policy banks – most notably the Export-Import Bank of Japan (JEXIM) – supplied long-term financing and political risk mitigation, lowering barriers to large-scale overseas investment.[1]

Japanese official development assistance also aligned closely with private investment by financing transport infrastructure, power generation, industrial estates, and ports across ASEAN, creating complementary conditions for Japanese manufacturing FDI (Kawai and Takagi 2009). This "aid–trade–investment nexus" reinforced Japan's position as a long-term production partner.

The *Keiretsu* System and Network-Based Internationalization

The organizational structure of Japanese firms reinforced Japan's presence in ASEAN investment networks. The *keiretsu* system – characterized by stable cross-shareholdings, long-term main-bank relationships, and tightly coordinated supplier networks – enabled Japanese firms to internationalize as integrated production ecosystems rather than as standalone entities (Gerlach 1992).

Large manufacturing firms acted as anchor investors, with tiers of affiliated suppliers following them into host economies. This pattern was particularly evident in the automotive and electronics sectors, where Japanese assemblers established dense clusters of parts suppliers in Thailand and Malaysia, replicating domestic production hierarchies overseas (Kimura and Ando 2005).

The *keiretsu* structure also supported long investment horizons. Stable financing from Japanese banks insulated overseas affiliates from short-term volatility, allowing sustained investment in worker training, process upgrading, and supplier development.

This box was written by Kriti Andhare and Naoaki Inayoshi.

[1] MITI and JEXIM have since been renamed as the Ministry of Economy, Trade and Industry (METI) and the Japan Bank for International Cooperation (JBIC), respectively.

Favorable Host-Economy and Regional Conditions

ASEAN economies' policy orientation further reinforced Japan's central role. From the late 1970s onward, many ASEAN economies adopted export-oriented industrialization strategies, offered generous investment incentives, and maintained relatively open regimes toward Japanese capital, which was seen as technologically advanced and politically neutral (Athukorala 2011). ASEAN economies' role as Japan's primary offshore production base, positioned Japan at the center of "flying geese" (Akamatsu 1962; Kojima 2000).

Japan's hub position began to evolve from the 2000s as China's accession to the World Trade Organization and its rapid industrialization reshaped regional production geographies. Japanese firms increasingly integrated Chinese operations into their regional networks, even as they maintained substantial production bases in ASEAN. Today, Japan remains deeply embedded in regional value chains – as a source of capital goods, advanced components, and technology – but now operates within a more multipolar network architecture where China has emerged as both a dominant global manufacturing platform and a major source of final demand, reinforcing both its roles as the central component of production and of consumption within regional and global value chains. This transition – from a Japan-centered hub to one anchored by China, with denser and more complex linkages across the region – forms the context for the trade and investment patterns examined in this chapter.

Box 2.2:

China's Emergence as a Source of Global and Regional Final Demand

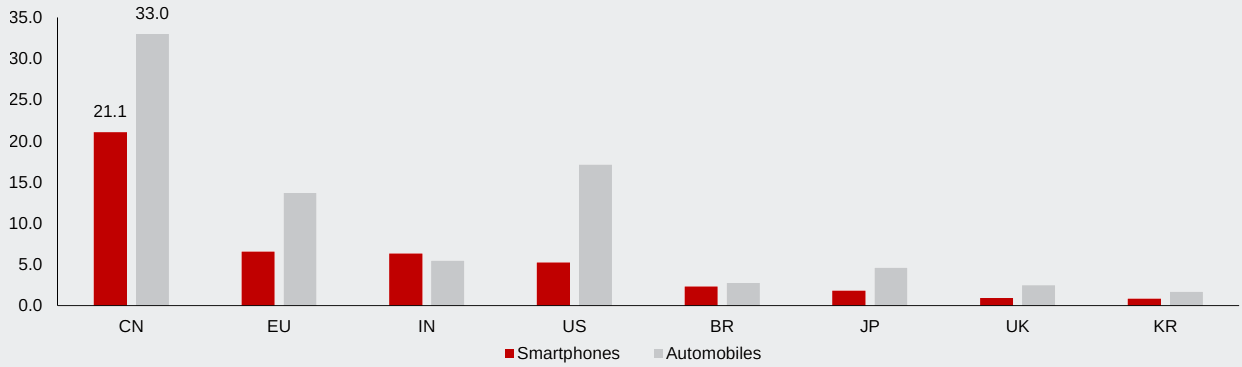
A prevailing characterization of China's position in the global economy centers on its role as a supplier of manufactured goods to global markets. This captures only part of the picture. Over the past two decades, China has also emerged as one of the most important sources of final demand globally – a shift with significant implications for ASEAN+3 economies. This box examines China's growing role as an end-market and explains why conventional trade statistics tend to understate this dimension.

China as a Major Global End-Market

China's role as a final demand market has expanded dramatically since 2000, growing to become the second-largest globally. This shift has been underpinned by a near sixteen-fold increase in nominal GDP – from USD 1.2 trillion in 2000 to USD 19 trillion in 2024 – while per capita income rose from around USD 1,000 to approximately USD 13,000 over the same period, lifting household purchasing power and spending. Even as consumption remains a relatively low share of GDP, China's sheer market size has pushed annual private consumption above USD 7 trillion in 2024.

This expansion is particularly evident in consumer durables such as electronics and automobiles – products where demand is sensitive to rising incomes.[1] The scale of China's end-market for many of these products is now unmatched globally (Figure 2.2.1). In 2024, China accounted for almost a third of global automobile sales – nearly double the share of the United States and larger than the United States and European Union (EU) combined. In smartphones, China represents more than 20 percent of global users, about four times the US share. These product categories align precisely with ASEAN+3 economies' production strengths, from semiconductor components and electronic parts to automotive assemblies and finished vehicles. China's emergence as the world's largest end-market for these goods has therefore created a significant and growing final demand for regional production. This extends to upstream supply chains, where China is now the largest market for regional inputs feeding its domestic production. For instance, nearly half of Vietnam's smartphone component exports go to China. China thus serves as an increasingly critical demand anchor for the region.

Figure 2.2.1. Share of Global Smartphone Users and Automobile Sales by Selected Economies in 2024
(Percent of global users; Percent of global sales)



Source: International Organization of Motor Vehicle Manufacturers; World Bank Global Findex Database; AMRO staff calculations.
Note: BR = Brazil; CN = China; EU = EU-27 member economies; IN = India; JP = Japan; KR = Korea; UK = United Kingdom; US = United States. Economies are ordered from left to right by their 2024 share of global smartphone users in descending order. The number of smartphone users is estimated as the product of the mobile penetration rate, the share of individuals whose main mobile phone is a smartphone, and the total population.

This box was written by Yohnsen Ang and Allen Ng.

[1] Market data on end-consumption corroborates this observation. For example, in consumer electronics–which includes smartphones–China has been the world's largest market since overtaking the United States in 2013, with revenues roughly 30 percent to 40 percent higher. In automobiles, China has held the position of largest global market since 2009–its share of global vehicle sales is now approximately double that of the United States. See industry data from the China Association of Automobile Manufacturers, the European Automobile Manufacturers' Association, and major market research firms.

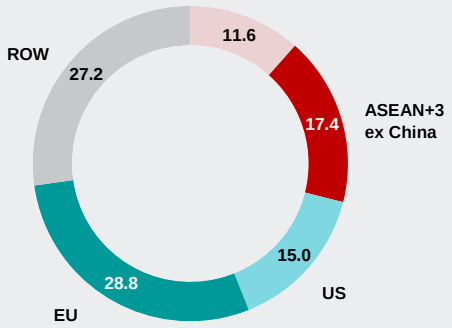
Why Conventional Trade Data Understates China's Role

Despite its scale, China's importance as an end-market is often masked in gross trade statistics. With close to 30 percent of global manufacturing output and a high domestic value-added share in what it consumes, many goods purchased by Chinese households are produced and assembled domestically rather than imported as finished products. As a result, China can appear less important as an end-market in conventional gross import data, even when domestic consumption is large in absolute terms.

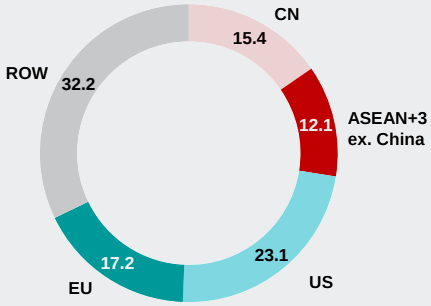
This understatement is reinforced by the structure of regional production networks. Much of ASEAN+3 trade with China is in intermediate inputs rather than finished products – components, parts, and semi-processed goods shipped to China for processing and assembly. A meaningful share of the resulting output is ultimately absorbed by China's domestic market rather than re-exported. In this sense, regional economies are already serving Chinese final demand, but through supply chain linkages that gross export and import statistics do not cleanly attribute to China's consumption (Figure 2.2.2). Value-added trade statistics, which trace production across stages and identify where regional value added is ultimately consumed, make China's position as a final-demand hub for the region more visible.[2]

Figure 2.2.2. China's Share of Global Imports versus Global Value-added in Final Demand in 2024
(Percent of global imports; Percent of global value-added in final demand)

Gross Imports



Final Demand



Source: Asian Development Bank Multiregional Input-Output Table; United Nations Comtrade; AMRO staff calculations.
Note: CN = China; EU = EU-27 member economies; ROW = Rest of the world; US = United States. Chart data reflects 2024 data. Import data for Vietnam and Lao PDR use 2023 due to data availability.

Implications for the Region

China's emergence as a major source of final demand represents a structural shift in the region's external demand landscape. For ASEAN+3 economies, exports to China increasingly serve not only as global supply chains but also as Chinese final consumption – a source of demand that has grown relatively more important. Looking ahead, China's gradual economic rebalancing toward more consumption growth could further strengthen this dimension, expanding the role of Chinese domestic demand regionally. The extent to which this shift materializes will depend on factors that include household income growth and the continued change of consumption patterns in China. These dynamics will shape the region's export opportunities and the nature of its economic linkages with China.

[2/] As discussed in Part 1's analysis of final-demand destinations for ASEAN+3 economies, China's final demand has increasingly served as a major end-market for other ASEAN+3 economies.

Box 2.3:

China's External Balance Sheet: From Reserve Accumulation to Outward Investment

China's growing role as a source of investment capital for ASEAN+3 reflects a broader transformation in its external balance sheet. Over the past decade, China's external position has shifted from one centered on reserve accumulation toward an increasingly outward-oriented International Investment Position (IIP) – driven by expanding outward foreign direct investment (FDI), overseas lending, and the internationalization of Chinese firms. This box traces these structural changes and the policy frameworks that have shaped them.

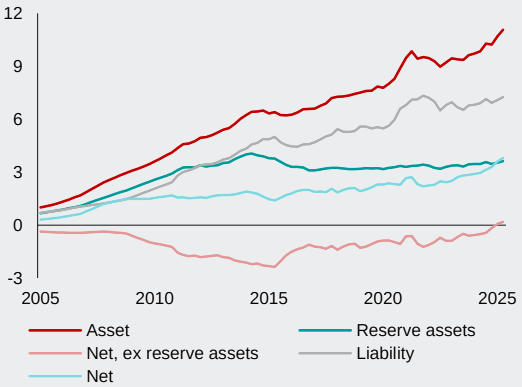
Recent Developments in China's IIP

China's net IIP exceeded USD 3 trillion in 2024 (Figure 2.3.1). By the first quarter of 2025, the net IIP excluding official reserves turned positive for the first time, underscoring the growing role of companies and financial institutions in shaping the economy's external balance sheet. In absolute terms, China's net IIP overtook that of Japan and was close to Germany's by the third quarter of 2025 (Figure 2.3.2). Relative to GDP, however, China's net IIP remains more modest – around 19.3 percent, compared with 85.1 percent for Japan and 77.8 percent for Germany.

China's IIP has been reshaped most visibly through the rise of Outward Direct Investment (ODI). Over the past decade, ODI has consistently exceeded inward flows, narrowing the net liability position as Chinese firms expand globally in infrastructure, energy, and high-tech sectors. Although ODI held back during the COVID-19 pandemic, it has since regained momentum as firms diversify markets and reconfigure supply chains. The post-COVID rebound has been driven primarily by new project investment and greater destination diversification – particularly toward emerging markets, while acquisitions and expansions of existing assets have softened.

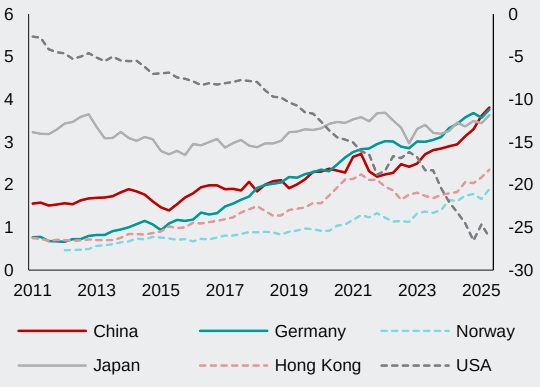
In contrast, inward FDI has decelerated amid China's shift toward services, geoeconomic tensions, and a maturing industrial base. Investment has increasingly shifted toward advanced manufacturing, clean energy, and automation – sectors closely aligned with China's technology-upgrading goals. This reflects a gradual reorientation of foreign investment toward sectors viewed as more resilient and policy-supported.

Figure 2.3.1. Asset, Liability, and Net Term of IIP
(USD trillion)



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: IIP = International investment position.

Figure 2.3.2. Net IIP across Economies
(USD trillion)



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: IIP = International investment position.

This box was written by Xianguo (Jerry) Huang.

A second major driver has been the evolution of portfolio and "other investment" flows. Portfolio outflows accelerated after the COVID-19 shock as domestic investors sought global diversification amid low interest rates and heightened uncertainty. Inward portfolio liabilities expanded rapidly through 2021 – supported by favorable yield differentials, index inclusion, and expectations of renminbi appreciation – but have moderated since 2022. Meanwhile, "other investment" has undergone a marked transformation, shifting from near balance in the early 2010s to a net asset position approaching USD 1 trillion by the first quarter of 2025. This reflects the expansion of overseas lending, trade credit, and deposit placements by banks, policy institutions, and companies engaged in cross-border trade and project financing.

Official reserves have remained broadly stable in value but increasingly diversified, highlighting China's gradual shift away from passive reserve accumulation. While total reserve levels have been broadly steady, their composition has changed, with a rising share of monetary gold – whose value has more than tripled over the past decade due to both price effects and active accumulation. Together with the growth of ODI, portfolio assets, and other investments, this points to a transition toward a more decentralized and market-driven external balance sheet, with official reserves playing a less dominant role.

Capital Flow Management: A Decade of Policy Calibration

Over the past decade, China's capital-flow management has been characterized not by a linear liberalization path but by adaptive calibration, encouraging flows that align with evolving macroeconomic conditions and strategic priorities. On the inflow side, policies have supported productive and stability-enhancing investment, including FDI into advanced manufacturing, green technologies, and financial services, alongside portfolio inflows facilitated through mechanisms such as Stock Connect, Bond Connect, and global bond-index inclusion. These measures reflect a measured approach to opening that prioritizes quality, resilience, and long-term economic benefits. On the outward side, China has promoted longer-term and strategic investment abroad, including supply-chain diversification, Belt and Road Initiative-related lending, and the international expansion of competitive firms. Rather than unrestricted capital outflows, outward liberalization has been oriented toward projects and investments that support industrial upgrading, market diversification, and external risk management.

At the same time, China has systematically discouraged capital movements deemed excessive, volatile, or misaligned with macrofinancial stability objectives – underscoring that the framework is far from a simple "open or closed" regime. Controls were tightened during periods of stress, including restrictions on speculative overseas direct investment during 2015 to 2017, enhanced monitoring of rapid corporate outward remittances in 2023 to 2024, and macroprudential management of cross-border financing, including closer oversight of short-term external debt exposures. In parallel, regulatory measures covering platform companies, data security, and foreign investment reviews have moderated certain inward flows associated with national-security or systemic-risk concerns.

Outlook: An Evolving External Balance Sheet

Looking ahead, China's IIP is set to become more outward-oriented, diversified, and market-driven. The continued expansion of ODI, overseas portfolio holdings, and trade- and lending-related assets has already shifted China from a reserve-accumulating economy toward a more pronounced net capital exporter – a trend that should deepen as firms internationalize supply chains and build foreign-asset buffers. At the same time, China is expected to maintain selective two-way openness, encouraging high-quality investment and stable portfolio inflows while managing more volatile exposures.

Box 2.4:

Inflation Co-movement and Supply Chain Linkages in ASEAN+3

Business cycles across ASEAN+3 have become more synchronized as trade and production linkages have deepened. A related question is whether price dynamics exhibit similar patterns of regional co-movement. As economies become more tightly linked through supply chains, upstream cost shocks – particularly from major suppliers of intermediate inputs – can propagate through production stages and affect domestic inflation dynamics. This box examines inflation co-movement across ASEAN+3, with a focus on producer prices, and assesses how global value chain integration shapes the transmission of China-origin price shocks to the region.

Regional inflation exhibits close co-movement, particularly at the producer price level. Principal component analysis of regional price indices shows that the first principal component – representing the common regional factor – closely tracks GDP-weighted averages of both consumer-price inflation (CPI) and producer-price inflation (PPI) across ASEAN+3 (Figure 2.4.1). The alignment is especially pronounced for producer prices during major global shocks, including the post-pandemic surge in 2021 and 2022 and the subsequent disinflation.

The strength of co-movement varies across economies and price measures. For producer prices, the regional common factor explains a large share of variation – often exceeding 80 percent – in Korea, Malaysia, Singapore, and Thailand. Consumer price synchronization is weaker and more heterogeneous: Korea, Singapore, and Thailand exhibit relatively strong CPI co-movement, while China, Hong Kong, and Indonesia display lower alignment with regional trends (Table 2.4.1).

To assess China's role in transmitting price pressures to the region, panel regressions estimate the pass-through from Chinese prices to domestic inflation across ASEAN+3 economies. A 1 percent increase in China's export prices or PPI has a statistically significant impact on ASEAN-5 inflation – especially producer prices – reflecting close production linkages and reliance on Chinese intermediate inputs (Figure 2.4.2, top panel). In contrast, pass-through to Plus-3 economies is generally weaker and statistically insignificant. This divergence suggests that direct transmission of price shocks from China is concentrated in the more tightly integrated China-ASEAN production networks, with Plus-3 economies exhibiting greater insulation.

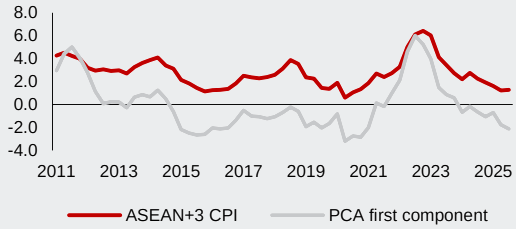
A second set of regressions examines whether deeper integration into supply chains with China amplifies this transmission, using an interaction term capturing bilateral vertical integration. The results confirm that greater vertical integration strengthens pass-through, but the pattern differs across subregions and price measures (Figure 2.4.2, bottom panel). For ASEAN-5 economies, the amplification is statistically significant for both PPI and CPI, though considerably stronger for producer prices. For Plus-3 economies, the amplification effect is evident but relatively weaker for PPI, but essentially absent for CPI.

Taken together, the results point to increasing inflation synchronization in ASEAN+3, shaped by regional production networks but differentiated across subregions and price measures. Producer-price cycles have become increasingly aligned, particularly among economies with deeper vertical integration with China. Consumer-price synchronization, by contrast, remains weaker – present in ASEAN-5 but largely absent in Plus-3, reflecting the continued importance of domestic and other factors in anchoring consumer inflation dynamics beyond production chain integration.

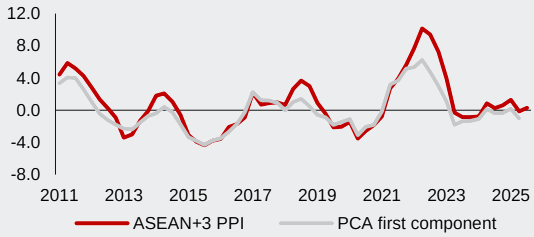
This box was written by Kriti Andhare, Naoaki Inayoshi, and Yuhong Wu.

Figure 2.4.1. ASEAN+3 Inflation Co-movement

PCA First Component versus Weighted Average CPI
(Percent, year-on-year)



PCA First Component versus Weighted Average PPI
(Percent, year-on-year)



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: CPI = Consumer Price Index; PPI = Producer Price Index; PCA = Principal Component Analysis. ASEAN+3 quarterly CPI and PPI inflation are measured as year-on-year percentage changes at the economy level. Regional ASEAN+3 CPI and PPI series are constructed as GDP-weighted averages of member economies. The sample period covers Q1 2011 to Q3 2025.

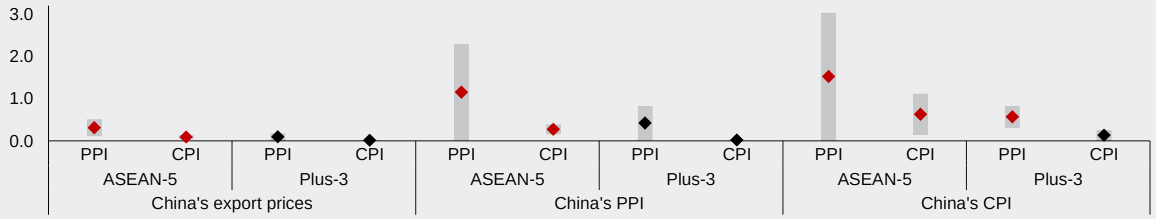
Table 2.4.1. Share of Local Inflation Explained by the Regional Inflation Common Factor Between the First Quarter of 2011 to the Third Quarter of 2025

Economy	CPI First Component	PPI First Component
Brunei	0.06	0.01
China	0.17	0.73
Hong Kong	0.16	0.21
Indonesia	0.09	0.66
Japan	0.06	0.56
Korea	0.79	0.95
Malaysia	0.33	0.81
Philippines	0.54	0.54
Singapore	0.82	0.88
Thailand	0.82	0.82

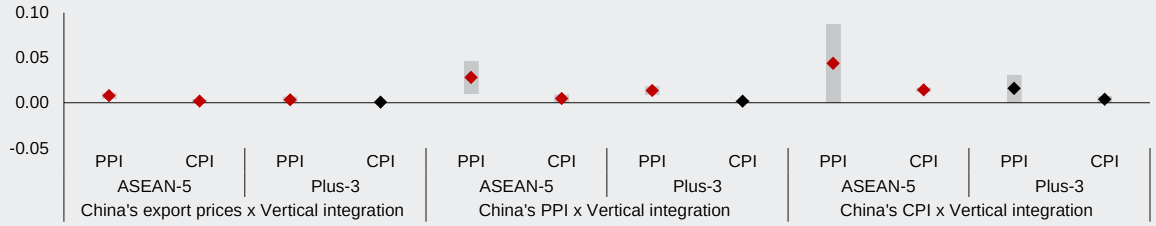
Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: CPI = Consumer Price Index; PPI = Producer Price Index. The table reports the R2 of the regressions of each economy's CPI and PPI inflation on the regional inflation common factor, defined as the first principal component derived from a principal component analysis of CPI and PPI price indices for Brunei, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, and Thailand. Cambodia, Lao PDR, Myanmar, and Vietnam are excluded due to data unavailability.

Figure 2.4.2. Change in ASEAN+3's Inflation due to a 1 Percent Change in Chinese Prices
(Percentage points)

Baseline impact



Vertical integration-adjusted impact



Source: National authorities via Haver Analytics; AMRO staff calculations.
Note: CPI = Consumer Price Index; PPI = Producer Price Index; ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, Thailand; Plus-3 = Hong Kong, Japan, Korea. Panel regressions are estimated using quarterly data for ASEAN+3 economies, with year-on-year growth in CPI or PPI inflation from Q1 2011 to Q3 2025 as the dependent variable. Explanatory variables include China's export prices, CPI, or PPI, together with macroeconomic controls (bilateral exchange rates against the US dollar, policy rates, unemployment rates, output gaps, and global oil prices). Selected specifications include an interaction with a bilateral vertical-integration index with China, defined as the ratio of total foreign value added to total domestic value added in bilateral trade flows. To mitigate multicollinearity, control variables are orthogonalized with respect to China price variables. The diamonds denote coefficient estimates, with those in black representing statistically insignificant coefficients and bars indicating 95 percent confidence intervals.

Box 2.5:

Semiconductor GVCs: Contrasting Upgrading Paths in Korea and Malaysia

Korea and Malaysia illustrate contrasting strategies for leveraging global value chain (GVC) integration to support long-term industrial development. Their experiences offer insights into the opportunities and constraints that shape upgrading trajectories – and how factors such as domestic firm capabilities, the role of foreign investment, and exposure to geopolitical realignments condition an economy's capacity to move into higher-value segments.

Distinct but Complementary Roles in the Semiconductor GVC

Korea and Malaysia occupy distinct but complementary positions in the semiconductor GVC.[1] Korea sits at the upper segments of the chain: it is a global leader in the design and manufacturing of memory semiconductors – particularly DRAM, HBM, and NAND.[2] Korea also has manufacturing capabilities in advanced logic and is strong in certain materials.[3]

Meanwhile, Malaysia anchors the mid- to downstream segments. It is among the world's largest hubs for outsourced semiconductor assembly and testing (OSAT), especially for automotive semiconductors, power electronics, and sensors. Malaysia has also built a globally competitive niche in test, inspection, automation, and backend-related equipment.

Evolving Export Patterns and GVC Reconfiguration

Changes in global production geography and geopolitical dynamics have led to significant shifts in semiconductor export patterns over the past few decades. For Korea, exports were traditionally concentrated in China, which became the world's largest electronics manufacturing base (Figure 2.5.1). This reliance has moderated as assembly relocates to ASEAN – particularly Vietnam – and Taiwan, Province of China as United States (US) export controls reshape the ecosystem for advanced chips amid rising Chinese self-sufficiency. Korea's growing supply of HBM chips for AI, data centers, and high-performance computing, as well as major Korean fab investments in the US have increased the importance of the US as an export destination.

Malaysia's exports have diversified from traditional markets such as the United States, Europe, and Japan toward China, Singapore, and other ASEAN economies, reflecting China's rise as the hub of Asian manufacturing and growing investments into the region, alongside deepening regional production networks in Southeast Asia (Figure 2.5.2). However, more recently, Malaysia has seen stronger demand from the US as firms relocate backend operations into trusted hubs and as OSAT and EMS networks adjust to China-related supply chain risks. Malaysia's neutral geopolitical positioning, lower costs, and established electronics ecosystem make it a key beneficiary of supply chain realignment.

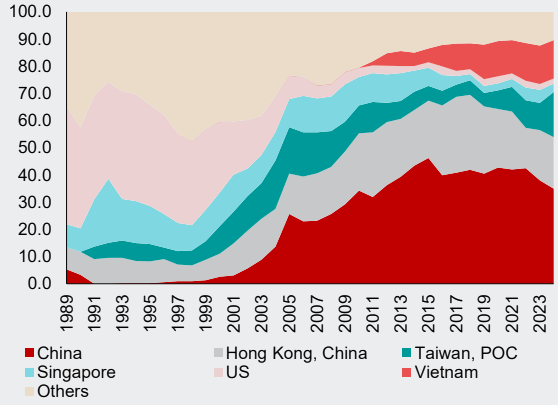
This box was written by Wee Chian Koh.

1/ Semiconductor production comprises three stages: design, fabrication, and assembly, test, and packaging (ATP). Design uses EDA software, reusable IP, and foundational research; fabrication converts designs into chips through advanced manufacturing steps; and ATP packages and tests chips, often alongside EMS that support high-volume production and system assembly.

2/ Dynamic Random Access Memory (DRAM) is a type of volatile memory that provides fast, short-term data access. High Bandwidth Memory (HBM) refers to premium high-performance stacked DRAM that delivers very high bandwidth for AI accelerators, GPUs, and advanced computing. Not AND (NAND) is a form of non-volatile flash memory used for long-term storage.

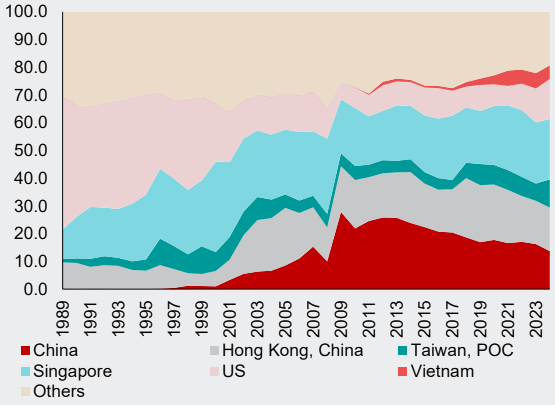
3/ Advanced logic refers to leading-edge logic semiconductor manufacturing (wafer fabrication) using the most advanced process nodes (5 nanometers and below). Samsung Foundry (Korea) and TSMC (Taiwan Province of China) are the only companies capable of volume manufacturing of advanced logic chips.

Figure 2.5.1. Korea's Semiconductor Exports
(Percent of total)



Source: S&P Global Atlas; UN Comtrade; AMRO staff calculations.

Figure 2.5.2. Malaysia's Semiconductor Exports
(Percent of total)



Source: S&P Global Atlas; UN Comtrade; AMRO staff calculations.

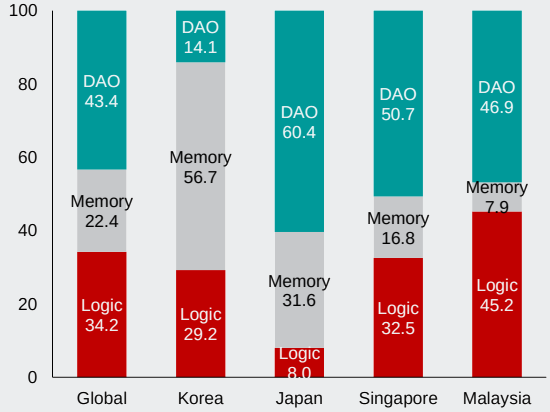
Moving Up the Value Chain

Both Korea and Malaysia are seeking to move into higher-value segments of the semiconductor GVC, driven by industry shifts toward more complex chip architectures, advanced packaging, and tighter integration between hardware and system design. These shifts toward smaller, faster, and more integrated chips raise the value of advanced manufacturing and design capabilities.

For Korea, the main opportunity lies in broadening beyond its traditional strength in memory to capture a larger role in advanced logic, AI accelerators, chip design, and next-generation packaging. This is particularly important as Korea's heavy reliance on memory – an industry prone to sharp price swings and commoditized cycles – creates structural volatility in exports, earnings, and investment (Figures 2.5.3 and 2.5.4). However, the push up the GVC faces challenges: a fabless ecosystem that lacks scale and variety, shortages of design and EDA talent, and intensifying global competition in logic foundry services. In addition, Korea is still highly dependent on global partners for some critical inputs, especially on Japanese materials and US equipment.

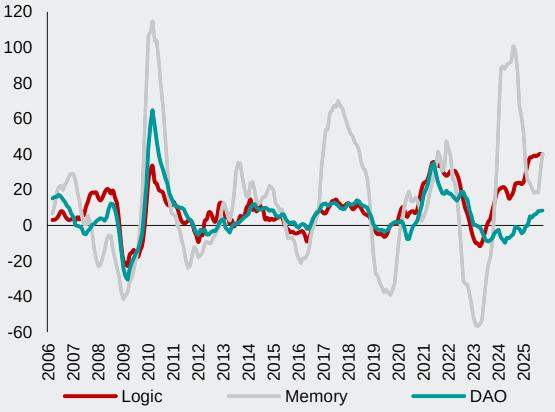
Malaysia's upgrading opportunities stem from its strong base in ATP and the supplier ecosystem. The deep operational know-how of ATP is directly relevant to advanced packaging, hence creating space for Malaysia to capture more value. Malaysia's OSAT, EMS, and equipment firms also provide a platform to expand into engineering services and applied R&D. Yet Malaysia faces several constraints, including a limited domestic design ecosystem, competition from lower-cost regional hubs, and persistent shortages in specialized engineering talent.

Figure 2.5.3. Composition of Semiconductor Exports in Selected ASEAN+3 Economies
(Percent of total)



Source: S&P Global Atlas; UN Comtrade; AMRO staff calculations.
Note: Shares are 2019 to 2024 average. DAO refers to discrete, analog, and others (including optoelectronics and sensors).

Figure 2.5.4. Semiconductor Sales by Product
(Percent, year-on-year, 3-month moving average)



Source: World Semiconductor Trade Statistics; AMRO staff calculations.
Note: DAO refers to discrete, analog, and others (including optoelectronics and sensors).

Semiconductor Industrial Policy

To address these challenges, both economies have launched ambitious semiconductor industrial policies focused on deepening their ecosystems, boosting R&D, and ensuring a robust talent pipeline. Korea's strategy prioritizes full-stack capability – from materials and equipment to advanced logic, memory, and packaging – supported by tax incentives and major infrastructure investments under the "K-Semiconductor Belt." These aim to target key bottlenecks, including scholarships and fast-track engineering programs to ease talent shortages, as well as initiatives to grow the fabless sector and localize key materials and components. Korea is also actively forging global partnerships in R&D, foundry services, and equipment to strengthen competitiveness in logic and AI chips.

Malaysia's industrial policies similarly aim to upgrade beyond existing ATP strengths. The New Industrial Master Plan and National Semiconductor Strategy set clear priorities: attract high-value investments in foundry and advanced packaging, provide targeted incentives for R&D and chip design, and build semiconductor talent pipelines through specialized TVET and university programs. Successful implementation, however, will hinge on improved execution capacity, higher retention of skilled engineers through competitive incentives, stronger R&D linkages between industry and academia, and deeper integration with global technology partners.

Distinct Development Strategies

Korea and Malaysia have taken fundamentally different developmental paths in semiconductors. Korea's growth has been anchored by indigenous champions – Samsung and SK Hynix – which have given the government greater scope to shape outcomes through industrial policy, coordination, and sustained investment in R&D, infrastructure, and skills. These firms have driven technological upgrading, built global-scale manufacturing capabilities, and helped Korea capture high value-added segments such as advanced memory and leading-edge fabrication.

By contrast, Malaysia's semiconductor development has been largely FDI-led, with multinational corporations (MNCs) shaping the pace and direction of upgrading. Malaysia benefited through job creation, export growth, and deep integration into GVCs, particularly in ATP and EMS. However, it also means that Malaysia's ability to move into higher-value activities depends heavily on MNC decisions and limits the scope for the government to mandate knowledge transfer or technology upgrading. The two experiences suggest that different development pathways – shaped by history, firm structure, and policy choices – can deliver meaningful progress, even if they lead to different positions in the semiconductor value chain.

Box 2.6:

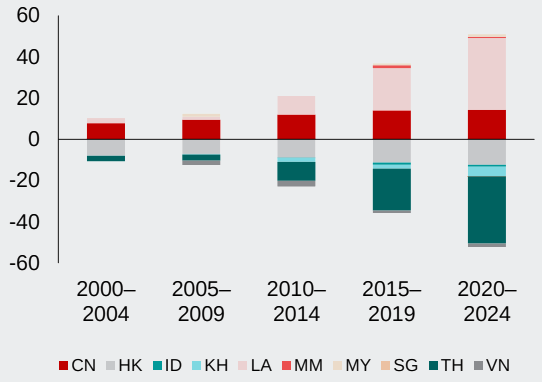
Macroeconomic Impacts of ASEAN+3 Green Energy Integration on CLM Economies

Regional integration extends beyond trade in goods and is increasingly visible in the region's energy markets. For ASEAN+3, deeper clean-energy integration offers a pathway to more affordable and sustainable power systems. It would also reinforce the region's expanding clean-technology value chains, ranging from solar manufacturing in Vietnam, Thailand, and Malaysia to EV-battery production in Indonesia, supported by capital and technology from China, Japan, and Korea. Beyond the larger economies, this box highlights how greater participation in regional electricity markets can unlock new economic opportunities for Cambodia, Lao PDR, and Myanmar (CLM) and contribute to the region's aspiration for a low-carbon, integrated, and resilient energy future.

Regional Electricity Trade Potential and ASEAN Power Grid (APG)

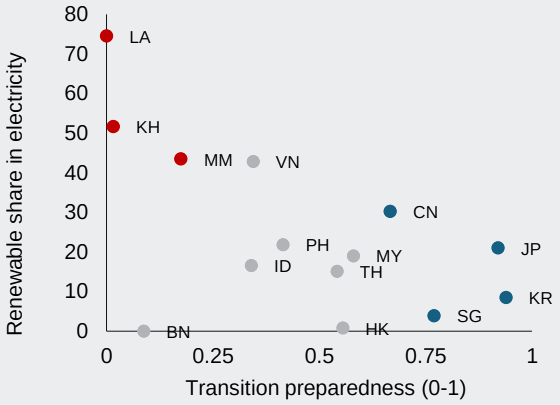
Over the past two decades, ASEAN+3's potentially tradable electricity surplus, measured by the gap between production and domestic demand, has averaged around 50 terawatt hours (TWh) per year, roughly five times higher than in the early 2000s (Figure 2.6.1). Yet, actual cross-border electricity trade remained limited, held back by limited transmission capacity and institutional barriers. As of 2024, the ASEAN Power Grid (APG) provides only 2.8 gigawatts (GW) of grid-to-grid transfer operational capacity and 7.5 GW of generation-to-grid connection capacity.[1] Nonetheless, the APG will be a key regional energy integration mechanism to unlock ASEAN's substantial renewable-energy potential, estimated at 8.1 TW of solar and 0.34TW of wind capacity (ASEAN Center for Energy [ACE] 2025). Strengthening grid integration will be essential to support the region's decarbonization pathway to net zero.

Figure 2.6.1. Electricity Net Importer
(Annual average TWh)



Source: Our World in Data; AMRO staff calculations.
Note: CN = China; HK = Hong Kong, China; ID = Indonesia; KH = Cambodia; LA = Lao PDR; MM = Myanmar; MY = Malaysia; SG = Singapore; TH = Thailand; VN = Vietnam. There are no data available for Brunei, Japan, Korea, and the Philippines. Economies with positive values are net importers of electricity; negative values are net exporters.

Figure 2.6.2. Renewable Share versus Transition Preparedness
(Index)



Source: International Labour Organization; International Monetary Fund; Our World in Data; United Nations Statistics Division; AMRO staff calculations.
Note: BN = Brunei; CN = China; HK = Hong Kong, China; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. Economies in red would benefit from leveraging the comparative advantages of those in blue.

This box was written by Yuventus Effendi, Laura Britt Fermo, and Chenxu Fu.

1/ APG, proposed in 2014 as the region's first multilateral power-trade initiative, began with flows from Lao PDR to Malaysia and later to Singapore. Phase 1 concluded in 2024, with 266 GWh traded. Capacity measures the maximum instantaneous output a system can deliver, whereas GWh reflects the total electricity generated or traded over a specific period.

Although CLM economies remain less economically developed than the rest of ASEAN+3, they hold strong potential to supply electricity, including green power from hydro and solar, to neighbors through interconnected grids. Opportunities for deepening energy integration are anchored in the region's diverse resource endowments. CLM already records the highest share of renewable electricity sources in the region (Figure 2.6.2). Endowments in CLM range from abundant Mekong hydropower to relatively high-irradiance solar zones. However, this potential remains underutilized due to constraints in regulatory fragmentation, infrastructure, finance, and technology. On this front, Plus-3 economies and regional financial centers are well positioned to provide the capital, technology, and skilled workforce needed to unlock CLM's renewable-energy potential for the region.

Gain for CLM from Deeper Energy Integration

Theoretically, deeper energy integration of CLM into ASEAN+3 will enable the region to capitalize on CLM's abundant renewable resources, delivering economic gains both region-wide and, more important, for the CLM economies themselves. The direct and indirect impacts of regional electricity integration on GDP, factor incomes, and emissions are measured[2] under two scenarios: CLM expands renewable electricity output, that is measured in million USD, by 10 percent, substituting fossil fuel electricity (i) without integration versus (ii) with full integration. Full integration means CLM can export renewable electricity to all ASEAN+3 economies, proportional to GDP and sector output, through expanded grid connectivity.

The results demonstrate that a shift toward renewable electricity without integration cannot fully offset the positive effects of rising GDP, sectoral output, and factor incomes that fossil fuel electricity currently provides to the economy (Table 2.6.1). First, GDP gains from generating renewable electricity without any integration are modest. Second, there are slight reductions in outputs of the primary sectors that cover the coal mining activities in Lao PDR and Myanmar. These reductions indicate that the expansion of renewable energy alone would not entirely compensate for the negative effects of reducing fossil-fuel electricity. Labor incomes also fall in Lao PDR and Myanmar. Nonetheless, this substitution does produce a clear environmental benefit: CLM economies experience lower carbon dioxide emissions, highlighting the climate advantages of renewables even in the absence of deeper energy integration.

In contrast, renewable substitution under a fully integrated scenario leads to stronger economic gains than without integration. The CLM economies experience increases in GDP, with Lao PDR benefiting the most due to its comparative advantage in renewable electricity exports. As sectoral outputs expand, returns to capital and skilled labor also rise markedly under full integration. On the downside, this scenario results in a slight increase in total sectoral carbon emissions in Cambodia and Myanmar, suggesting that economic benefits may come with environmental risks if efficiency measures are not prioritized. This underscores the need for Cambodia and Myanmar to adopt low-carbon technologies in producing goods and services to fully realize the benefits of integrated renewable electricity.

Going Forward

Empirical evidence and the steady expansion of regional electricity trade highlight the importance of scaling up the APG as a cornerstone of energy cooperation. Achieving full energy integration, however, will require cross-border regulatory harmonization, pricing mechanisms, political commitment – factors the model does not capture – as well as substantial investment, with an estimated financing gap of over USD100 billion (ACE 2025). For regional green energy cooperation to be sustainable, benefits must be shared across members, particularly the CLM economies whose

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[2/] An Inter-regional Social Accounting Matrix (IRSAM), based on the GTAP Power database, is constructed to simulate regional electricity integration. The model provides a static and comparative analysis of the direct and indirect impacts of the regional electricity integration on GDP, factor incomes, and emissions through interlinked supply chains.

untapped renewable potential forms a key pillar of future energy integration. Looking ahead, the APG should remain a strategic priority, complemented by efforts to mobilize new green technologies and redirect public and private capital toward cross-border energy infrastructure, securing long-term gains for both CLM and the broader ASEAN+3 region.

Table 2.6.1. Macroeconomic Impacts of 10-percent Renewable Electricity Substitution
(Percentage changes)

		Without Integration			With Full Integration		
		KH	LA	MM	KH	LA	MM
GDP		0.03	0.00	0.01	0.12	0.44	0.14
Sectoral Output	Primary	0.00	–0.04	–0.04	0.01	0.00	0.01
	Secondary	0.00	0.00	0.00	0.02	0.02	0.09
	Tertiary	0.00	0.00	–0.05	0.32	0.54	0.25
Factor Income	Capital	0.05	0.02	0.03	0.17	0.62	0.19
	Unskilled	0.00	–0.02	–0.02	0.03	0.16	0.07
	Skilled	0.01	–0.03	–0.01	0.07	0.34	0.10
Total carbon dioxide emissions		–3.06	–1.04	–3.09	0.27	–0.02	0.03

Source: Global Trade Analysis Project (GTAP) Power; AMRO staff calculations.
Note: KH = Cambodia, LA = Lao PDR, MM = Myanmar. In the GTAP Power database, Myanmar and Timor-Leste are treated as a single data entry due to data limitations. The impact on the results is expected to be minimal as Timor-Leste's economy is much smaller relative to Myanmar's. Capital consists of land, natural resources, and capital. Unskilled labor consists of agricultural, clerical, service, and shopworkers. Skilled labor consists of technicians, professionals, officials, and managers.

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