4 Financial Integration

Financial Integration Fosters Prosperity

New Policy Challenges Require Active Regional Cooperation to Sustain Economic Growth

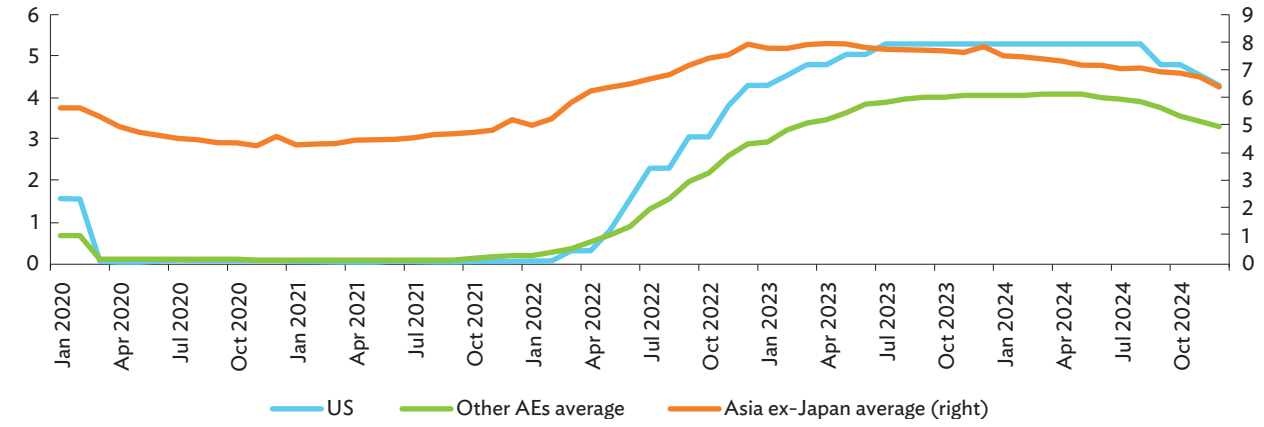
Financial integration in Asia and the Pacific increased steadily over the last 3 decades. Cross-border assets increased from 55% to 83% of regional gross domestic product (GDP) in 2010–2020 before settling at 75% in 2023. Cross-border liabilities exhibit a similar path. The region's share as a recipient of global portfolio flows increased from 6.5% in the first half of the 1990s to 22.5% before the coronavirus disease (COVID-19) pandemic. This progress in integration benefited growth and prosperity in Asia through lower cost of capital, expanded resource pools for investment, and enhanced international risk sharing. Efficiency gains followed from increased financial openness. Improved finance sector competitiveness and knowledge transfers fostered the development of regional capital markets.

Advances in building more integrated capital markets were grounded in regional cooperation initiatives. Regional cooperation remains essential to balance the benefits and costs of financial openness. However, new policy challenges such as geopolitical fragmentation, technological innovations, public health emergencies, climate change and biodiversity loss require more effective collaboration for continued integration to serve as the region's growth engine. This chapter discusses the challenges, highlights opportunities for improved cooperation, and draws attention to nature conservation as a new frontier for regional cooperation.

Financial Integration Has Prevailed amid Volatile Global Financial Conditions

Global monetary easing since mid-2024 has improved the financial conditions in Asia. Regional financial integration is set to benefit from the global easing of monetary policy that began in the second half of 2024 (Figure 4.1). As a prologue to this easing cycle, central banks in advanced economies aggressively tightened monetary policy in 2022 to tame excessively high inflation after the pandemic (Figure 4.2). While the United States (US) Federal Reserve embarked on the steepest rate hike since the 1980s, raising the policy rate from 0.25% in February 2022 to 5.5% in July 2023, central banks in developing Asia preemptively mirrored the tightening to guard against capital outflows and currency depreciations (Figure 4.1). On signs of ebbing inflation and in a nod to the effectiveness of the tight monetary policy stance, the European Central Bank, Bank of Canada, Bank of England, and Reserve Bank of New Zealand started to cut policy rates in mid-2024, followed by the US Federal Reserve in September 2024. In anticipation of the US Federal Reserve's moves, central banks in developing Asia started to lower policy rates, allowing financial conditions to improve.

Figure 4.1: Monetary Policy Rates (%, as of 31 December 2024)

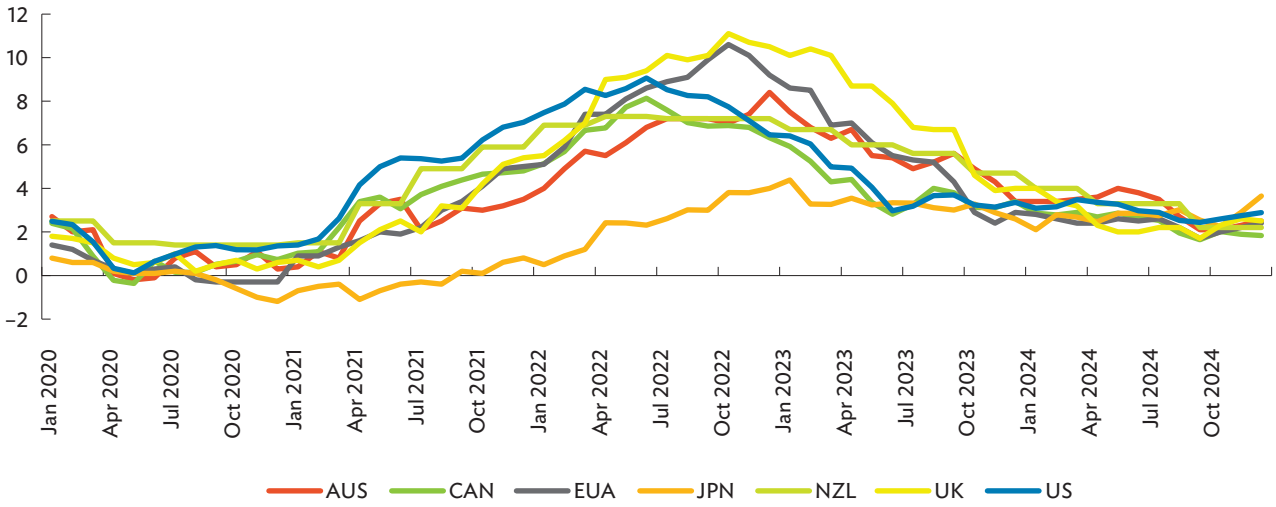


AE = advanced economy, US = United States.

Note: Advanced economies include Australia, Canada, eurozone, Japan, New Zealand, and the United Kingdom. Asian economies include Armenia; Azerbaijan; Bangladesh; Georgia; Hong Kong, China; India; Indonesia; Kazakhstan; the Republic of Korea; the Kyrgyz Republic; the Lao People's Democratic Republic; Malaysia; Mongolia; Pakistan; the Philippines; Sri Lanka; Taipei,China; Tajikistan; Thailand; Uzbekistan; and Viet Nam.

Source: ADB calculations using data from CEIC Data Company (accessed January 2025).

Figure 4.2: Inflation—Selected Advanced Economies (%, as of 31 December 2024)



AUS = Australia, CAN = Canada, EUA = Euro area, JPN = Japan, NZL = New Zealand, UK = United Kingdom, US = United States.

Note: Inflation refers to the year-on-year change of the consumer price index.

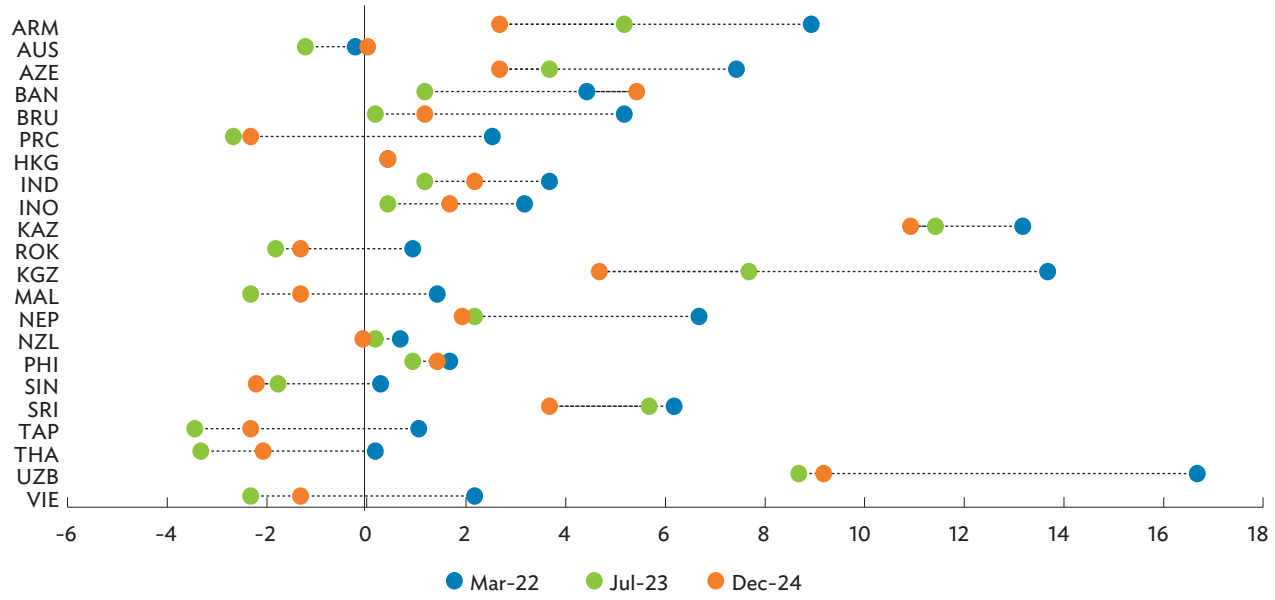
Source: CEIC Data Company (accessed January 2025).

Capital Flows into Asia Have Rebounded, Continuing the 2023 Recovery

Higher policy rate differentials between the US and Asian economies following the easing in the US along with a rise in global investors' risk appetite are likely to increase capital inflows in continuation of the 2023 recovery, as shown in Figure 4.3 (IIF 2024).[31] The region experienced capital outflows in the third quarter of 2022 as carry trades unwound in the wake of the US monetary policy hike in early 2022, leading to narrower policy rate differentials (Figure 4.4a), and due to the growth slowdown in the People's Republic of China (PRC) in the

[31] The Asian Economic Integration Report (ADB 2024c) includes an in-depth discussion of the role of the US dollar as a key driver of capital flow volatility in Asia. Given its proxy for the risk-taking propensity of global investors, the role of the US dollar has strengthened over the past decade amid an increase in the region's foreign borrowing in local currency (Gelos, Patelli, and Shim 2024).

Figure 4.3: Policy Rate Differential with the US Policy Rate—Selected Asian Economies (percentage points, as of 31 December 2024)



ARM = Armenia; AUS = Australia; AZE = Azerbaijan; BAN = Bangladesh; BRU = Brunei Darussalam; PRC = People's Republic of China; HKG = Hong Kong, China; IND = India; INO = Indonesia; KAZ = Kazakhstan; ROK = Republic of Korea; KGZ = Kyrgyz Republic; MAL = Malaysia; NEP = Nepal; NZL = New Zealand; PHI = Philippines; SIN = Singapore; SRI = Sri Lanka; TAP = Taipei,China; THA = Thailand; US = United States; UZB = Uzbekistan; VIE = Viet Nam.

Note: The Hong Kong dollar is pegged to the US dollar. The peg results in a negligibly small policy differential over the period March 2022 to December 2024.

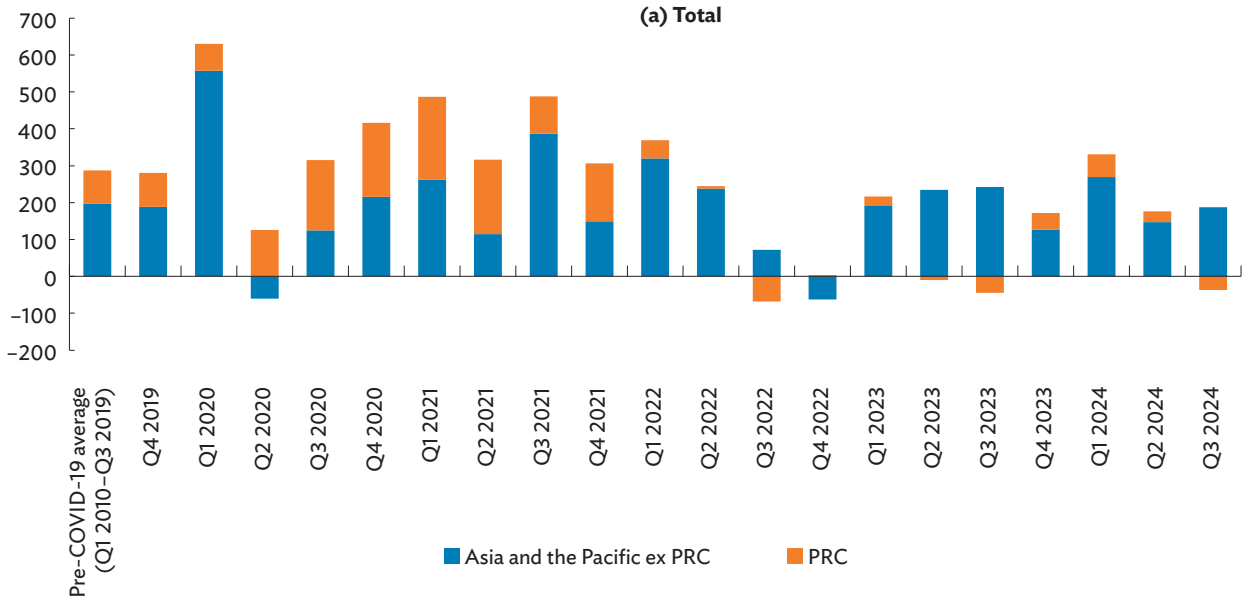
Source: ADB calculations using data from CEIC Data Company (accessed January 2025).

wake of its zero-COVID-19 policy. With US monetary policy turning less hawkish in 2023, robust growth in the region, and markets' expectation for a soft landing of the PRC's property market, capital inflows gained momentum throughout 2023. This momentum was carried into the first half of 2024, with inflows exceeding the prepandemic average on the back of solid growth in the region and US monetary easing. Developing Asia recorded cumulative net portfolio inflows for the remainder of 2024, with the PRC; Hong Kong, China; and India posting the highest inflows (Figure 4.4b). Overall, capital inflows also benefit from a decline of US dollar-denominated refinancing costs, in turn encouraging investors in Asia to borrow in the globally dominant vehicle currency for trade and investment (Avdjiev et al. 2017, 2018; ADB 2024a; Boz et al. 2020; Gopinath et al. 2020).

Capital Inflows Are Set to Boost Asset Markets in Asia

Except for the Brunei dollar, Singapore dollar, and Hong Kong dollar, as of the end of 2024, regional local currencies have not yet recovered from the broad-based depreciation against the US dollar following the 2022 US monetary tightening (Figure 4.5a). Economy-specific circumstances dominated some currency movements. Since the US Federal Reserve hinted at policy easing in July 2024, most regional currencies have begun to appreciate (ADB 2024a). The inflows observed throughout 2024 broadly lifted asset valuations across the region, with stock prices gaining 12% and bond prices gaining 4.3% on average since the start of the year (Figure 4.5b). Stock price gains were concentrated in Sri Lanka; Kazakhstan; Taipei,China; Japan; Hong Kong, China; and Singapore. In 2024, developing Asia's market-weighted return increased by 11.2% to September (ADB 2024b).

Figure 4.4: Nonresident Capital Flows—Selected Asian Economies ($ billion)

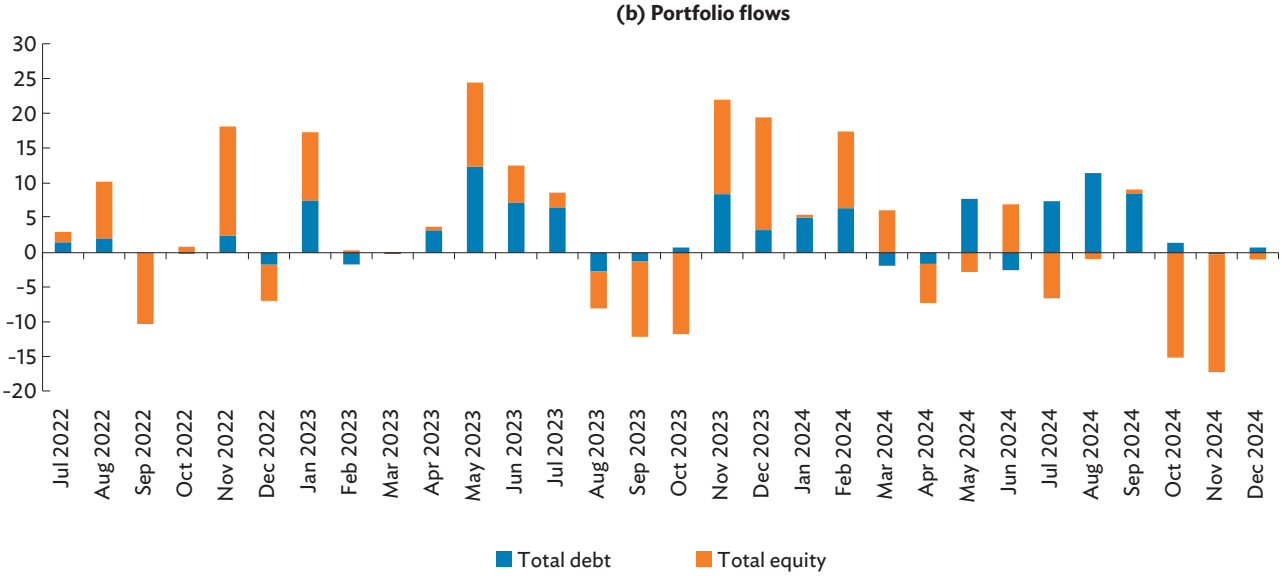


PRC = People's Republic of China, COVID-19 = coronavirus disease, Q = quarter.

Notes:

1. Nonresident capital flows are composed of foreign direct investment, portfolio equity and debt flows, and other investment flows. Other investment flows include currency and deposits; insurance, pension, and standardized guaranteed schemes; loans; other accounts payable; other equity; special drawing rights; and trade credit and advances.
2. Positive values denote net inflows, negative values denote net outflows.
3. Selected Asian economies refer to Armenia; Azerbaijan; Bangladesh; Cambodia; the People's Republic of China; Fiji; Georgia; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; the Republic of Korea; Malaysia; Pakistan; the Philippines; Samoa; Tajikistan; Taipei,China; Thailand; and Uzbekistan.

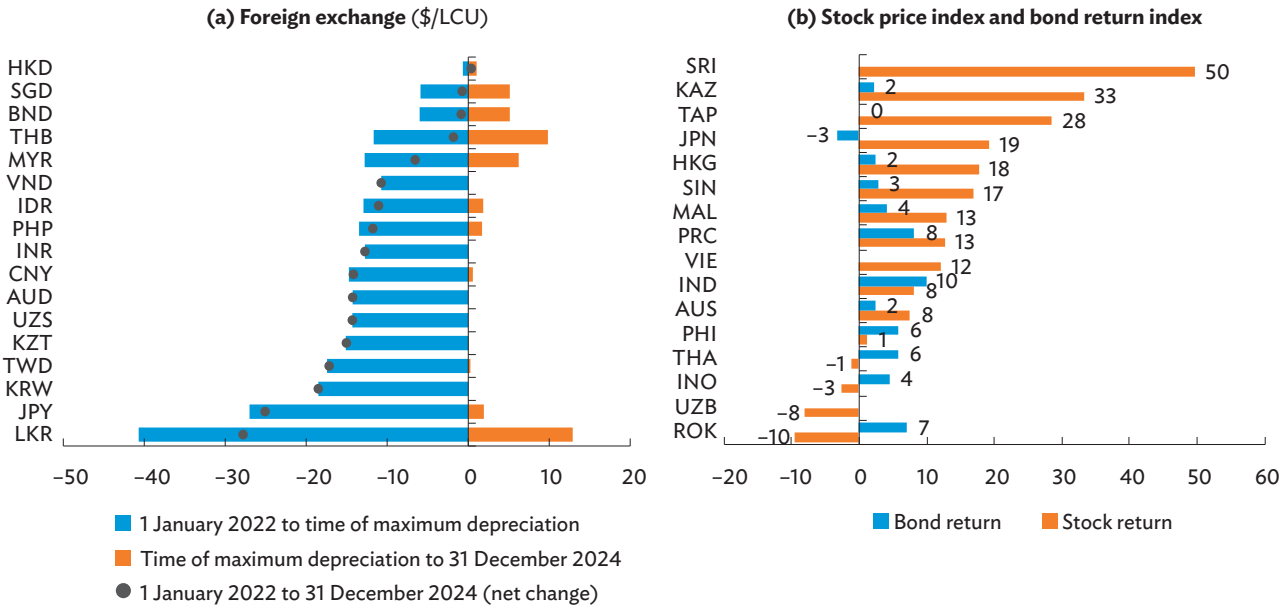
Source: ADB calculations using data from the International Monetary Fund. Balance of Payments and International Investment Position Statistics. Accessed from CEIC Data Company (accessed January 2025).



Notes: Positive values denote net inflows, negative values denote net outflows. Selected Asian economies include India; Indonesia; the Republic of Korea; Malaysia; Mongolia; Pakistan; the Philippines; Sri Lanka (equity only); Taipei,China; Thailand; and Viet Nam (equity only).

Source: ADB calculations using data from the Institute of International Finance. Capital Flows Tracker. https://www.iif.com (accessed February 2025).

Figure 4.5: Year-to-Date Change—Selected Asian Economies (%, as of 31 December 2024)



AUD = Australian dollar; AUS = Australia; BND = Brunei dollar; PRC = People's Republic of China; CNY = yuan; HKD = Hong Kong dollar; HKG = Hong Kong, China; IDR = rupiah; IND = India; INO = Indonesia; INR = Indian rupee; JPN = Japan; JPY = yen; KAZ = Kazakhstan; ROK = Republic of Korea; KRW = won; KZT = tenge; LCU = local currency unit; LKR = Sri Lanka rupee; MAL = Malaysia; MYR = ringgit; PHI = Philippines; PHP = peso; SGD = Singapore dollar; SIN = Singapore; SRI = Sri Lanka; TAP = Taipei,China; THA = Thailand; THB = baht; TWD = NT dollar; UZB = Uzbekistan; UZS = sum; VIE = Viet Nam; VND = dong.

Source: ADB calculations using Bloomberg; CEIC Data Company; and Haver Analytics (all accessed January 2025).

While capital inflows rebounded, Asia remains exposed to volatile capital flows. Foreign direct investment (FDI) proved the most stable source of foreign capital for the region, contributing one-third of the rebound over 2023 and 2024. In contrast, portfolio investment and other investment flows remain most sensitive to changing global financial conditions, and they contributed relatively more to the recovery of total capital flows in 2023 and 2024 (Eichengreen, Gupta, and Masetti 2018).

Potential global financial stress calls for vigilance of sudden capital flow reversals. Given these flows' volatility, policymakers must remain vigilant of sudden capital flow reversals if global financial stress were to increase suddenly. A brief episode of financial turmoil in global markets in early August 2024 served as important reminder. During that period, portfolio equity flows experienced outflows exceeding 130% of the region's average inflows in the preceding 2 years.

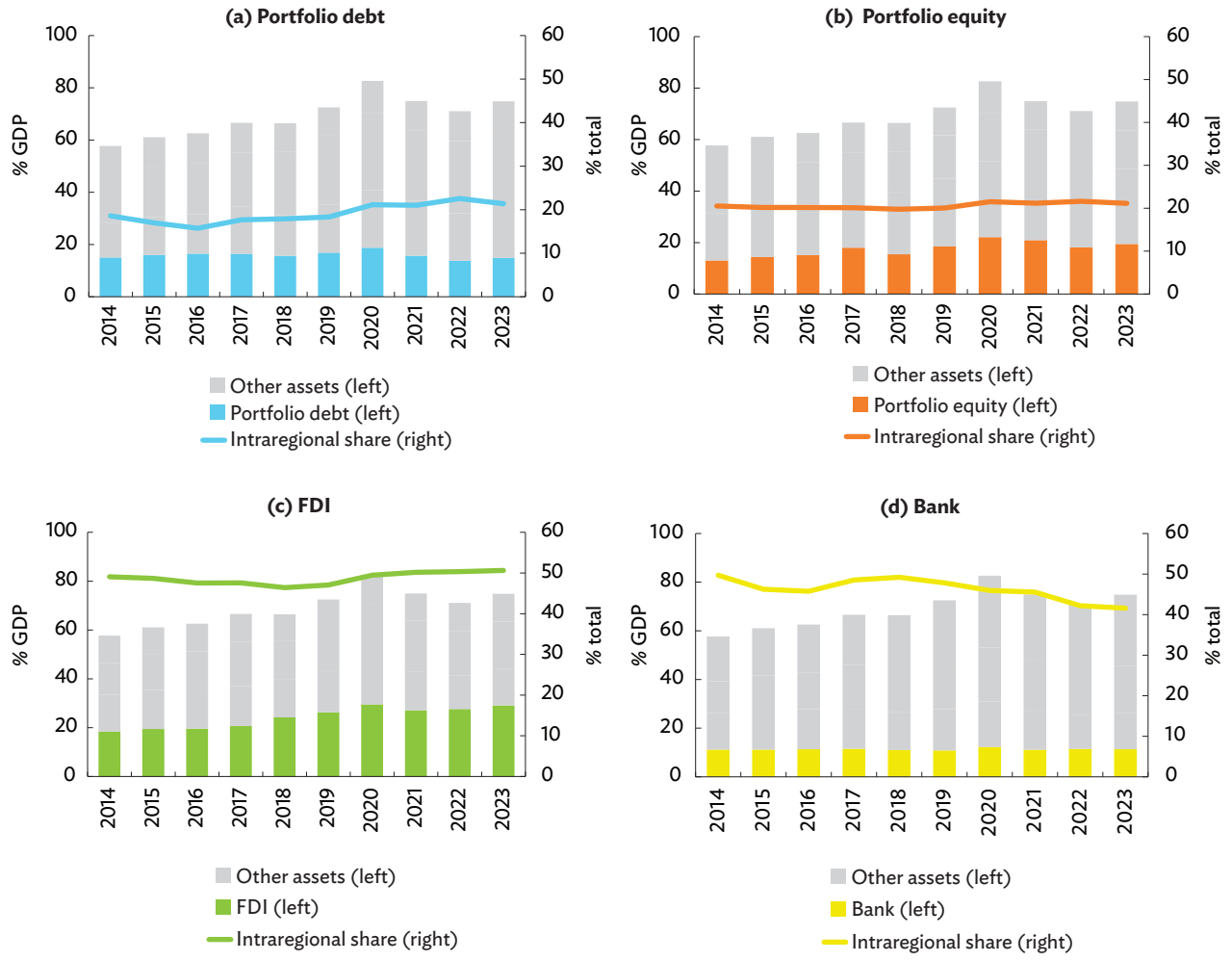
This episode of extreme volatility was triggered by an unwinding of leveraged trades in equity and currency markets in response to a perceived hawkish rate hike by the Bank of Japan amplified by US recession fears, and thus the expectation of a more cautious pace of US policy rate cuts (Aquilina et al. 2024). A long period of low borrowing costs in Japan with contained volatility exacerbated the outsized market reaction, worsened by a correction of what seemed overvalued global technology company stocks amid thin markets in August 2024 (Scheid 2024). At least $250 billion of carry trades unwound, leading to rapid asset sales globally, and thus a reversal of portfolio equity flows from the region (Figure 4.4b). Besides sudden bursts of market volatility, policymakers need to monitor the health of the US economy and associated changes to the pace of monetary easing (ADB 2024b). For instance, the region experienced portfolio outflows in April 2024 as investors anticipated delays in US monetary easing.

Regional Financial Integration Remains Robust to Volatility

Asset and Liability Exposures Remained Broadly Unchanged

Despite significant movement in the global financial cycle, Asia's intraregional cross-border asset and liability exposures remained broadly unchanged over 2022–2023 (Figures 4.6 and 4.7). As for cross-border asset exposures, the intraregional share of portfolio equity fell by 1 percentage point to 21%, while portfolio debt fell by 2 percentage points to 21%, and FDI assets rose by 1 percentage point to 51%. Cross-border intraregional liabilities exhibited similarly small changes, with portfolio debt up 1 percentage point to 30%, and portfolio equity and bank liabilities down by 2 and 1 percentage points to 20% and 44%, respectively. The intraregional shares for bank assets and FDI liabilities remained unchanged. Asia's total cross-border assets and liabilities also remained largely unchanged, with both assets and liabilities increasing by 4 percentage points, to 75% and 74% of regional GDP. Both were down from their pandemic era peaks of 83% and 80% of regional GDP, but still on par with the 10-year average.

Figure 4.6: Cross-Border Assets—Asia and the Pacific, by Type

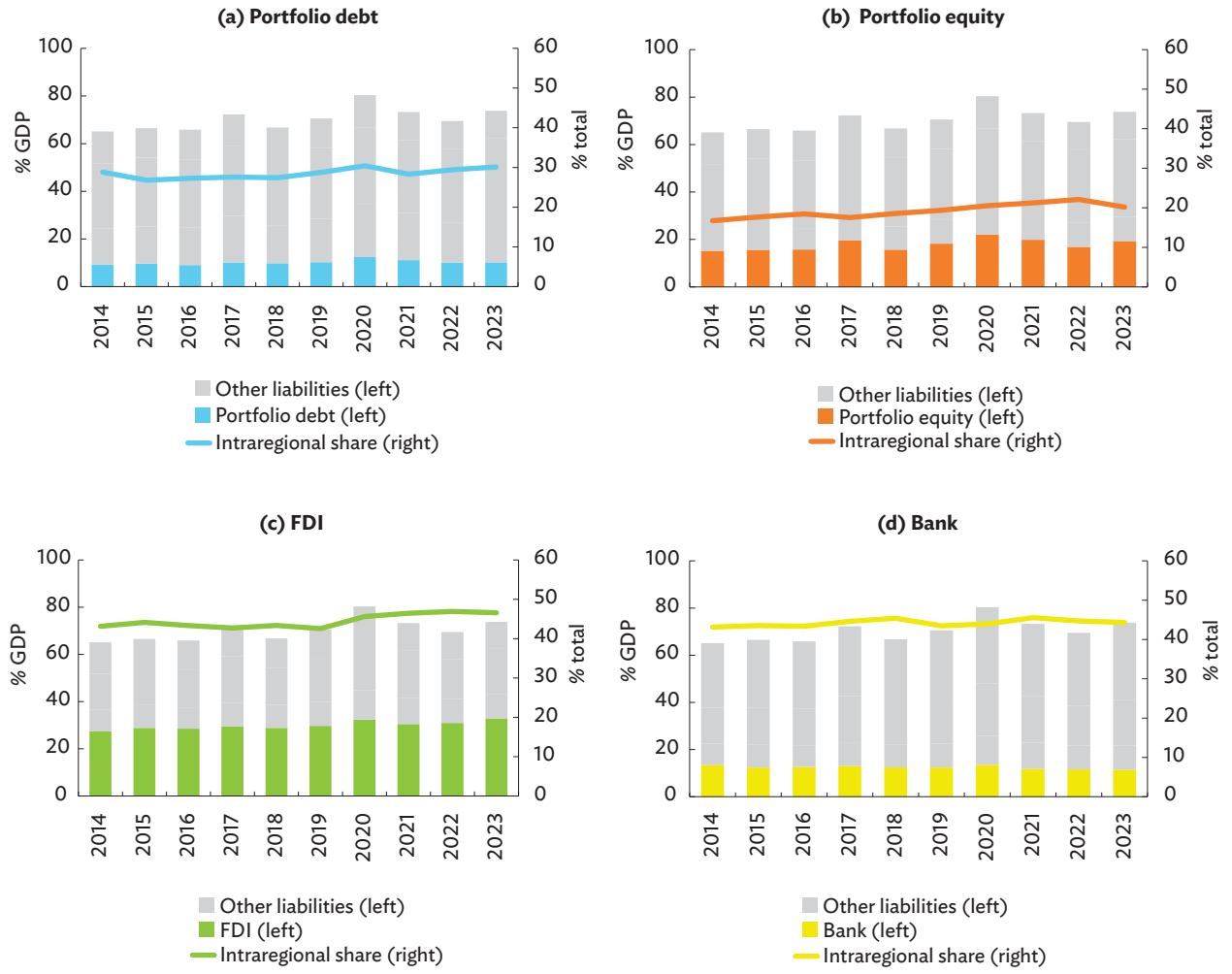


FDI = foreign direct investment, GDP = gross domestic product.

Notes: Estimates are as of the end of 2023. FDI assets refer to outward FDI holdings. Bank assets (claims) are limited to bank loans and deposits. Asia and the Pacific includes ADB regional members for which data are available.

Sources: ADB calculations using data from Bank for International Settlements. Locational Banking Statistics. https://www.bis.org/statistics/bankstats.htm; International Monetary Fund (IMF). Coordinated Direct Investment Survey. https://data.imf.org/cdis; and IMF. Coordinated Portfolio Investment Survey. https://data.imf.org/cpis (all accessed January 2025).

Figure 4.7: Cross-Border Liabilities—Asia and the Pacific, by Type



FDI = foreign direct investment, GDP = gross domestic product.

Notes: Estimates are as of the end of 2023. FDI liabilities refer to inward FDI holdings. Bank liabilities are limited to loans and deposits. Asia and the Pacific includes ADB regional members for which data are available.

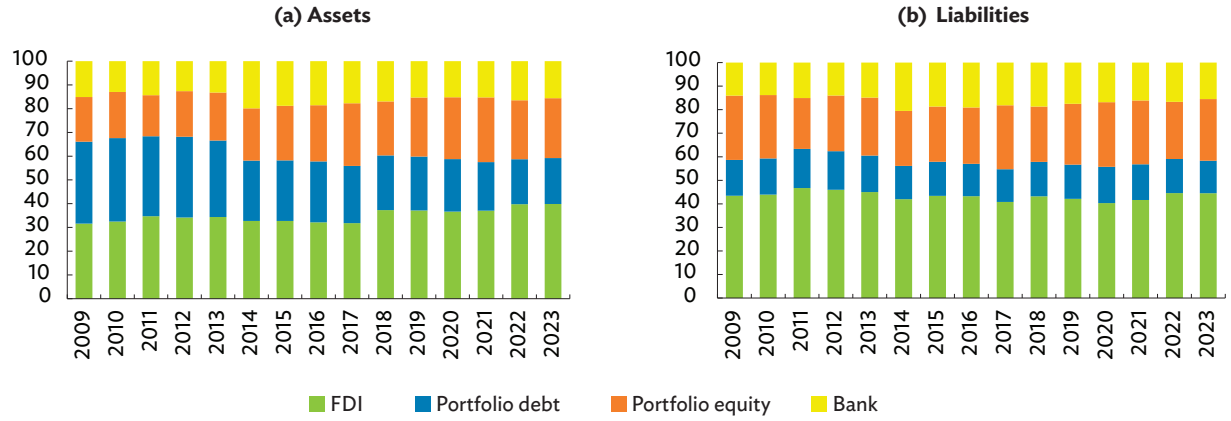
Sources: ADB calculations using data from Bank for International Settlements. Locational Banking Statistics. https://www.bis.org/statistics/bankstats.htm; International Monetary Fund (IMF). Coordinated Direct Investment Survey. https://data.imf.org/cdis; and IMF. Coordinated Portfolio Investment Survey. https://data.imf.org/cpis (all accessed January 2025).

Easing Global Financial Conditions Bode Well for Financial Integration

The easing of global conditions is likely to help extraregional investors search for yield and sets the scene for increased investments in the region. In addition, Asian investors seek to diversify portfolios by investing regionally. The steady increase in the share of FDI in cross-border assets and liabilities over recent years is welcome as it helps reduce the region's exposure to asset repricing risks in foreign markets. Asian investors have raised their FDI allocation from one-third to two-fifths over the past decade (Figure 4.8a). Over the same period, foreign investors' FDI allocation has remained largely unchanged at 45% as a share of Asia's cross-border liabilities. However, portfolio liabilities and bank liabilities still represent more than half of external investments in the region, making it susceptible to capital flow reversals in response to global financial shocks (Figure 4.8b).[32]

[32] See ADB (2024c) for a detailed discussion on Asia's vulnerability to capital flow reversals.

Figure 4.8: Cross-Border Investment—Asia and the Pacific, by Type (% of total)



FDI = foreign direct investment.

Notes: Estimates are as of the end of 2023. FDI assets refer to outward FDI holdings, while FDI liabilities refer to inward FDI holdings. Bank claims and liabilities are limited to bank loans and deposits. Asia and the Pacific includes ADB regional members for which data are available.

Sources: ADB calculations using data from Bank for International Settlements. Locational Banking Statistics. https://www.bis.org/statistics/bankstats.htm; International Monetary Fund (IMF). Coordinated Direct Investment Survey. https://data.imf.org/cdis (accessed January 2025); and IMF. Coordinated Portfolio Investment Survey. https://data.imf.org/cpis (accessed January 2025).

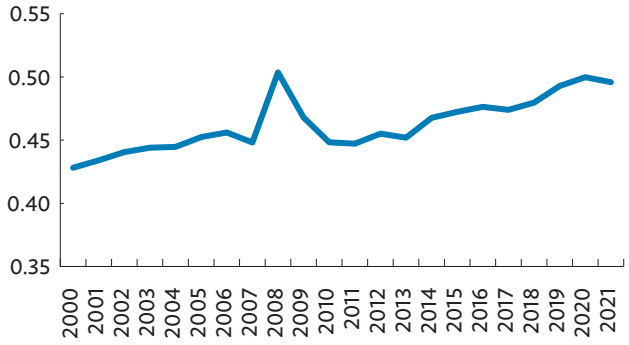
Regional Financial Cooperation as a Key Pillar of Macrofinancial Stability

Reinvigorating Regional Cooperation Can Reignite the Growth Potential of Financial Integration

The previous section provided evidence for largely stable regional financial integration in 2022–2023. This stability follows a slowdown in the integration momentum over the past decade. The slowdown contrasts with regional cooperation as a backbone to macroeconomic stability in Asia over the past 3 decades, as presented in this section. Thus, it is vital to strengthen regional cooperation as an engine of growth and prosperity. To this end, policymakers need to improve the cost–benefit balance of integration, as further discussed below. New policy challenges including geopolitical fragmentation, technological innovations, public health emergencies, climate change and biodiversity loss add urgency to strengthening regional cooperation.

Over the past 30 years, financial integration in Asia has advanced in the slipstream of globalization. Financial deregulation and capital account liberalizations from the 1990s led to a surge in capital flows to Asia. The pattern of capital flows mirrored the broader trends in globalization for trade and migration. While various restrictions on cross-border capital flows remain, capital flows to and between Asian economies rose in tandem with the improvement in de jure measures of capital account openness over 2000–2021, as captured by the Chinn–Ito Index on capital account openness (Figure 4.9).

Figure 4.9: Average Chinn–Ito Index—Asia and the Pacific



Note: The data show the average Chinn–Ito index (KAOPEN) for Asian economies. A higher index means the economy is more open to cross-border capital transactions.

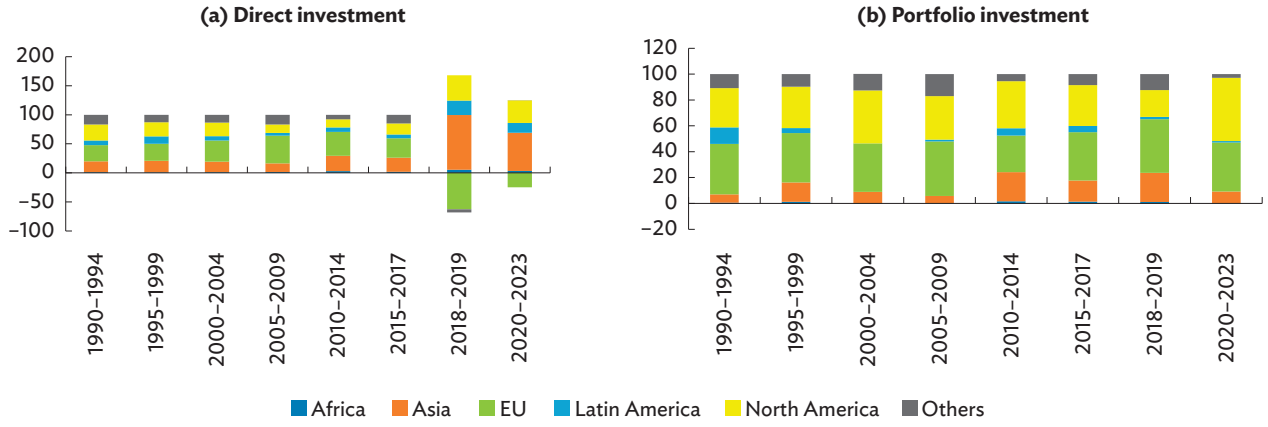
Source: ADB calculations using data from Chinn and Ito (2006, 2008).

Asia attracted an increasing share of global FDI inflows, from an annual average of 18.6% in 1990–1994 to 24.3% in 2015–2017, rising to 94.3% in 2018–2019 before settling to 65.9% during the COVID-19 pandemic (Figure 4.10a). Portfolio investment flows to the region as a share of the global total rose from 6.5% to 16.4%, further to 22.5%, and settled at 9% in the same four intervals (Figure 4.10b).

Similarly, cross-border asset and liability exposures expanded significantly in the late 1990s until the global financial crisis. Cross-border asset holdings in Asia increased from 55.1% of regional GDP in 2009 to 82.6% in 2020 before dipping to 74.8% in 2023 in the aftermath of the pandemic (Figure 4.6). The share of intraregional assets held within Asia also rose significantly, from 25.7% in 2009 to 36.2% in 2023. Intraregional shares for all asset classes, except portfolio equity, increased, with intraregional FDI recording the highest—51% in 2023. Total cross-border liabilities also grew from 54.2% of GDP in 2009 to 80.4% in 2020 before declining to 73.8% in 2023 (Figure 4.7). The share of liabilities from within the region ranged from 30% in 2009 to 37% in 2023. Intraregional shares for all categories of liabilities increased during the period shown, with intraregional FDI also recording the highest level at 46.6% in 2023.[33]

However, regional financial integration has lost steam over the past decade. The path of cross-border exposures of Asian economies diverged from emerging market and developing economies after the 1997 Asian financial crisis, and grew significantly slower after the global financial crisis, also compared to global average cross-border exposures (Figure 4.11). As a result, both equity and bond markets are more sensitive to global than regional factors (Figure 4.12). The relatively low intraregional financial integration contradicts the trend in trade (Montanes and Schmukler 2018; Park and Rajan 2021). Figure 4.13 shows that the shares of intraregional trade in goods (41%) and services (36%) exceed the intraregional share of cross-border asset and liabilities exposures discussed above. Moreover, a comparison between the Association of Southeast Asian Nations Plus Three (ASEAN+3) economies and the euro area suggests nearly identical intraregional trade shares, but significantly lower portfolio and bank holdings within ASEAN+3 (Figure 4.14). Asia's relatively slow progress on financial integration may help explain a persistently low degree of integration in the "money and finance" dimension of the Asia-Pacific Regional Cooperation and Integration Index discussed in Chapter 1.

Figure 4.10: Nonresident Financial Flows to Asia—By Type (% of total global inflows, period average)

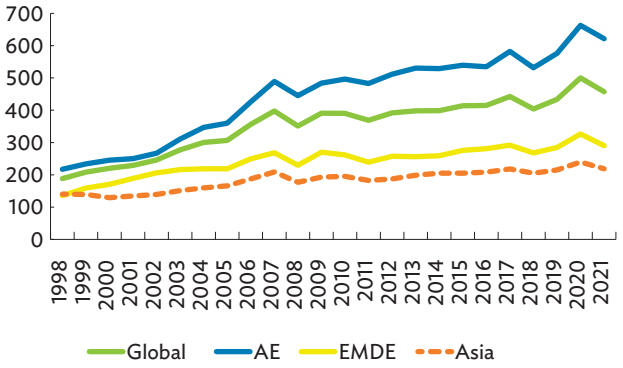


EU = European Union (27 members).

Source: ADB calculations using data from the International Monetary Fund. Balance of Payment and International Investment Position Statistics. http://data.imf.org/BOP (accessed December 2024).

[33] For both assets and liabilities, intraregional bank lending in Asia increased sharply after 2013 when data for the PRC became available.

Figure 4.11: External Financial Assets and Liabilities (% of GDP)

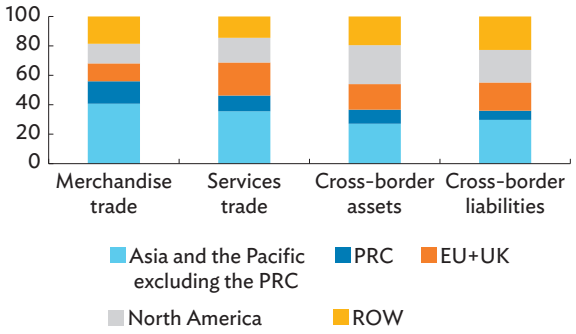


AE = advanced economy, EMDE = emerging market and developing economies, GDP = gross domestic product.

Notes: Asia includes Armenia; Australia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; the People's Republic of China; Fiji; Georgia; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; Kiribati; the Republic of Korea; the Kyrgyz Republic; the Lao People's Democratic Republic; Malaysia; Maldives; the Marshall Islands; the Federated States of Micronesia; Mongolia; Nauru; Nepal; New Zealand; Pakistan; Palau; Papua New Guinea; the Philippines; Samoa; Singapore; Solomon Islands; Sri Lanka; Taipei,China; Tajikistan; Thailand; Timor-Leste; Tonga; Turkmenistan; Tuvalu; Uzbekistan; Vanuatu; and Viet Nam.

Source: ADB calculations using IMF (2023) and Milesi-Ferretti (2024).

Figure 4.13: Trade in Merchandise and Services and Cross-Border Assets and Liabilities of Asia and the Pacific, by Partner (%)

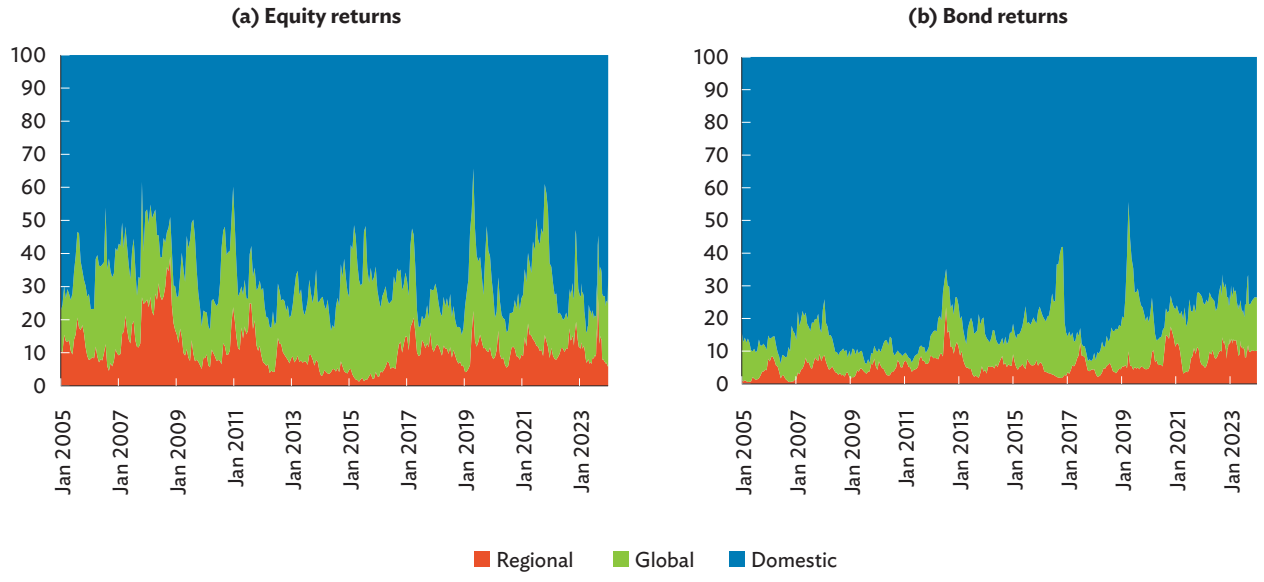


PRC = People's Republic of China, EU = European Union (27 members), ROW = rest of the world, UK = United Kingdom.

Note: Estimates are as of 2021 for services trade and as of the end of 2023 for merchandise trade and cross-border assets and liabilities.

Sources: ADB calculations using data from Bank for International Settlements. Locational Banking Statistics. https://stats.bis.org/statx/toc/LBS.html; International Monetary Fund (IMF). Coordinated Direct Investment Survey. https://data.imf.org/cdis; IMF. Coordinated Portfolio Investment Survey. https://data.imf.org/cpis (all accessed January 2025); IMF. Direction of Trade Statistics. https://data.imf.org/dot; IMF. World Economic Outlook October 2023 Database. https://www.imf.org/en/Publications/WEO/weo-database/2023/October; and WTO-Organisation for Economic Cooperation and Development (OECD). Balanced Trade in Services Dataset (BaTIS)—BPM6. https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm (all accessed November 2024).

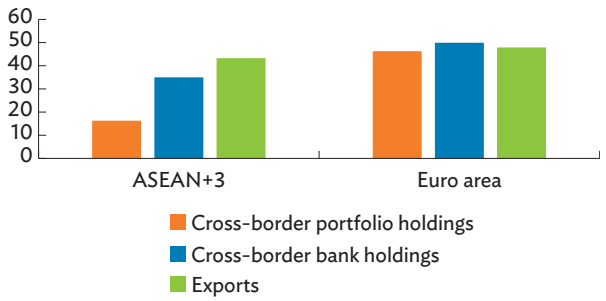
Figure 4.12: Variance Decomposition of Equity and Bond Returns (%)



Notes: Asia includes Australia; Bangladesh (equities only); Cambodia (equities only); the People's Republic of China; Georgia (equities only); Hong Kong, China; India; Indonesia; Japan; Kazakhstan; the Republic of Korea; the Kyrgyz Republic (equities only); the Lao People's Democratic Republic (equities only); Malaysia; Mongolia (equities only); Nepal (equities only); New Zealand (equities only); Pakistan (equities only); the Philippines; Singapore; Sri Lanka (equities only); Taipei,China; Thailand; Uzbekistan (equities only); and Viet Nam.

Sources: ADB calculations using data from Bloomberg; CEIC Data Company (both accessed January 2025); and methodology by Lee and Park (2011) using 1-year rolling window estimations.

Figure 4.14: Intraregional Shares, 2023—ASEAN+3 Versus Euro Area (%)



ASEAN = Association of Southeast Asian Nations; ASEAN+3 = ASEAN plus the People's Republic of China, Japan, and the Republic of Korea.

Note: ASEAN+3 includes Hong Kong, China.

Sources: ADB calculations using data from Bank for International Settlements. Locational Banking Statistics. https://www.bis.org/statistics/bankstats.htm; International Monetary Fund (IMF). Coordinated Portfolio Investment Survey. http://data.imf.org/cpis (both accessed January 2025); and IMF. Direction of Trade Database. https://www.imf.org/en/Data (accessed November 2024).

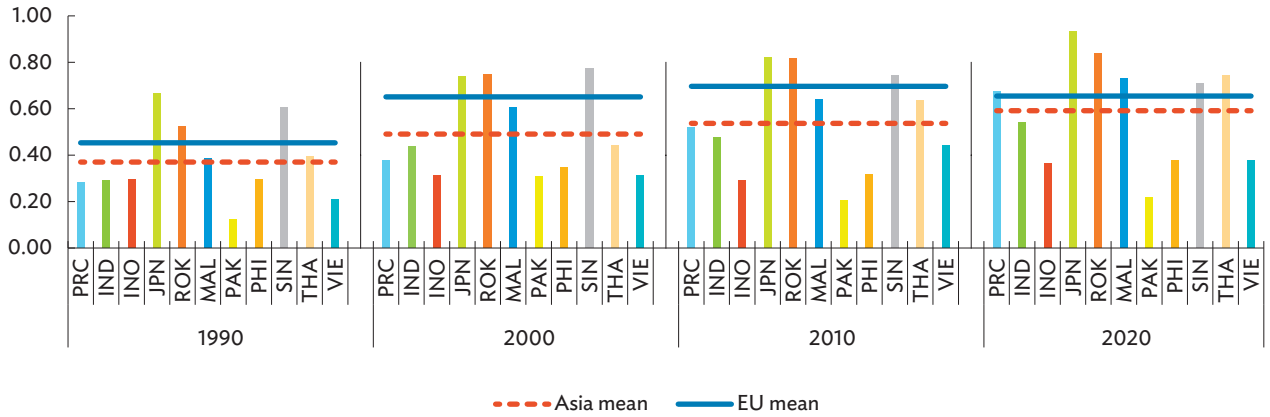
Accelerating financial integration requires developing domestic financial markets. Park, Rosenkranz, and Tayag (2020) attribute the less than complete financial integration in Asia to lower financial development in the form of high transaction costs and information asymmetries. A comparison of the higher financial development of European Union (EU)—known to be more financially integrated—with the lower development in Asia confirms the importance of domestic financial market development for integration (Figure 4.15). Lower transaction costs in the EU enabling deeper integration is in part due to regional governance structures such as the European Commission and European Securities Markets Authority issuing regulations for the EU-wide capital market, underpinned by the single currency. Figure 4.15 also highlights the lack of regional convergence as Malaysia and Thailand developed faster than Indonesia, the Philippines, and Viet Nam.

Benefits Outweigh the Costs of Well-Managed Financial Integration

Gains Stem from Macrofinancial Stability and Openness That Boost Investment and Growth

Financial integration bestows several benefits. Financial integration is recognized for reducing the cost of capital, expanding investment opportunities, and enhancing economic resilience through international risk sharing. Efficiency gains derive from integration thanks to foreign competition. This competition deepens and broadens the domestic finance sector, lowering the costs associated with information collection, contract enforcement, and transactions. Consequently, allocative efficiency improves, promoting economic growth.

Figure 4.15: Financial Development Index—Selected Asian Economies



PRC = People's Republic of China, EU = European Union, IND = India, INO = Indonesia, JPN = Japan, ROK = Republic of Korea, MAL = Malaysia, PAK = Pakistan, PHI = Philippines, SIN = Singapore, THA = Thailand, VIE = Viet Nam.

Notes: An index closer to 1 indicates high financial development. EU refers to Austria, Belgium, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, and Spain.

Source: ADB calculations using International Monetary Fund. Financial Development Index Database. https://www.imf.org/en/Data (accessed September 2024).

Moreover, financial openness attracts foreign investment to capital-scarce developing economies, thereby boosting investment and growth. Several studies confirm the growth-enhancing effect of financial integration. Bong and Premaratne (2019) find evidence for a positive relationship between growth and integration through FDI for Southeast Asia. The positive relationship stands confirmed for East Asia (Fry-McKibbin, Hsiao, and Martin 2018). Besides pro-growth effects, Yadav, Goyari, and Mishra (2019) point at reduced income and consumption volatility for financially more integrated economies. Financial integration may also relieve exchange market pressure (Phylaktis and Aftab 2024).[34]

Institutions, financial development, and sequencing of reforms are decisive to harness the benefits of financial integration. Research indicates that the advantages of financial integration for growth are contingent on income levels, trade openness, and institutional quality (Caporale, Sova, and Sova 2023; Chen and Kim 2023; Taghizadeh-Hesary et al. 2019). In addition, the capital account openness is more beneficial at advanced stages of financial development, whereas the associated costs and risks are more pronounced at lower stages. For instance, Selvarajan and Ab-Rahim (2020) find that the positive relationship between growth and financial integration in Asia declined after the Asian financial crisis because financial development was constrained by concerns about shareholder protection schemes, creditor rights, and the limited capacity of regulators. In addition, the sequencing of capital account liberalizations is essential to unleash growth accelerations. This involves developing the domestic financial market and regulatory frameworks before embracing financial openness and prioritizing long-term capital inflows over short-term ones.

Besides numerous advantages, financial integration raises the vulnerability to external shocks such as from volatile capital flows. Large capital inflows and their abrupt reversals can entail large swings in the exchange rate, exacerbating financial imbalances. During the Asian financial crisis, these swings inflicted significant damage on Asian economies, further amplified by currency mismatches and foreign currency denominated liabilities accumulated prior to the crisis. As a result, within 1 year GDP fell by a combined 30% in the most-affected economies—Indonesia, Malaysia, the Philippines, the Republic of Korea, and Thailand (ADB 2020). Banks succumbed to high nonperforming loans, leading to a collapse of investment.

Currency mismatches remain widespread almost 3 decades after the Asian financial crisis. Advances in local currency debt markets only partially remedy capital flow reversal risk from the transfer of currency mismatches to international investors (ADB 2024c; Hofmann, Shim, and Shin 2020). Given most of the region's foreign debt is denominated in US dollars, it remains prone to spillovers from the US financial system and shocks to the global financial cycle. High US dollar dependence across all dimensions of currency use amplifies the risk of sudden capital flow reversals (ADB 2024c).[35]

High interconnectedness between national financial markets can amplify vulnerabilities from financial integration. Network analysis using equity prices revealed relatively high interconnectedness among Asia's financial markets (ADB 2017). Pericoli and Yilmaz (2024) emphasize that stock markets account for most of the spillovers to other asset markets—notably bonds, foreign exchange, and commodities—with commodities receiving most of the volatility spillovers. This highlights the need for coordinated action to raise the resilience of the region's financial systems to shocks from interconnected markets.

[34] Exchange market pressure is defined as the change in the exchange rate combined with an estimated counterfactual of the change associated with the central bank's intervention in the foreign exchange market.

[35] About four-fifths of Asia's exports and imports are denominated in US dollars; over half of bank assets and liabilities, half of debt issued, and two-thirds of foreign exchange reserves are denominated in US dollars, which also serve as exchange rate anchor for 18 economies in the region (ADB 2024c).

Vulnerabilities Must Be Well Managed for the Region to Benefit from Integration

The discussion has highlighted both the benefits and costs of financial integration. The costs can be mitigated by a combination of domestic policies strengthening resilience, regional cooperation for policy coordination, and joint regional stabilization initiatives.

Policy responses to dampen vulnerabilities should address macrofinancial linkages (ADB 2020). These linkages are at the nexus between macroeconomic outcomes and financial variables. On the demand side, macroeconomic fluctuations can become more volatile in response to changes in balance sheets of borrowers. On the other side, shocks to supply affect bank lending, bank capital, the leverage cycle, and liquidity conditions. Domestically, macroprudential policies can be effective in minimizing the procyclicality of the financial system, notably in emerging markets (Bergant et al. 2023). These comprise countercyclical provisions, capital and liquidity buffers, and balance sheet instruments such as leverage ratios and limits on debt-to-income and loan-to-value ratios.

Cross-border policy spillovers warrant close coordination of policies addressing macrofinancial risks. Cross-economy differences in the design and implementation of macroprudential policies can become a source of contagion (Agénor 2024). For instance, a tightening of capital requirements at home may induce banks to increase foreign lending, in turn magnifying the international transmission of financial shocks. An internationally coordinated minimum standard on capital requirements can guard against such regulatory arbitrage. Coordination can ease the adoption of international standards, lowering the learning costs for regulatory authorities in each economy.

Regional Cooperation Is the Engine of Financial Integration

Regional Cooperation on Financial Policies Was Born from Crises

The Asian and global financial crises exposed major challenges, notably highly bank-dependent financing, inadequate regulatory frameworks, and shallow financial markets (Park 2011). At the same time, regional policymakers sought to overcome the stigma attached to the conditionality associated with requests for emergency liquidity from the International Monetary Fund (IMF) by establishing their own regional crisis management framework (Han 2022). Several new regional cooperation forums and initiatives were created. While the full potential of integration in Asia may yet to be achieved, as outlined in the discussion so far, the new institutional structures proved instrumental to create effective communication channels for coordination in times of crisis.

The Asian financial crisis unleashed a wave of forums and initiatives for regional cooperation. Several regional forums have been created to exchange information, conduct economic monitoring, as well as research and training, and engage in policy dialogue to develop expertise and build capacity for better policymaking (Lee and Kring 2024). Immediately following the Asian financial crisis, in 1998, the Association of Southeast Asian Nations (ASEAN) Surveillance Process was established, followed by the ASEAN+3 Economic Review and Policy Dialogue in 1999, later to be integrated in the Chiang Mai Initiative Multilateralisation (CMIM). These early cooperation bodies emphasized consensus and noninterference in the peer review, at the expense of forthright and comprehensive policy discussions (Menon 2012). These issues persisted until the creation of the ASEAN+3 Macroeconomic Research Office (AMRO) in 2011 and its formal mandate for regional surveillance in 2016. The setup of AMRO eventually dominated proposals for largely similar regional cooperation forums, notably the Asian Financial Stability Dialogue and Asian Systemic Risk Council (Kawai and Morgan 2014; Buckley, Avgouleas, and Arner 2020).

CMIM and AMRO constitute the backbone of Asia's financial safety net. Financial cooperation post-Asian financial crisis centered on establishing a regional financial safety net, economic and financial surveillance mechanisms accompanied by initiatives for financial market development. These functions are primarily served by the liquidity pool created with the CMIM and AMRO's macrofinancial surveillance. Created as bilateral swap lines among ASEAN+3 members under the Chiang Mai Initiative in 2000, these were consolidated into the CMIM as one multilateralized arrangement in 2007, and became effective in 2010. Initially consisting only of the crisis resolution facility, called the CMIM Stability Facility (CMIM-SF) of $120 billion for temporary balance of payment shocks, a precautionary credit line (CMIM-PL) was added for members with sound macroeconomic fundamentals. In 2014, the CMIM-SF was upgraded to $240 billion, and in 2021 the IMF delinked portion was raised to 40%, denoting the quota amount that can be drawn from member economies without simultaneous IMF program. Thus, the CMIM disposes of both a crisis resolution and a crisis prevention tool (Khor et al. 2022). A significantly smaller emergency liquidity pool of $2 billion is provided by the Reserve Bank of India for members of the South Asian Association for Regional Cooperation to cover short-term foreign exchange liquidity needs (Lee and Kring 2024).[36]

The Asian Bond Markets Initiative (ABMI) and Asian Bond Fund (ABF) exemplify effective regional cooperation mechanisms put in place after the Asian financial crisis. First, in August 2003, ASEAN+3 finance ministers launched the ABMI to mitigate currency and maturity mismatches which lay at the heart of the crisis. The ABMI established local currency bond markets by strengthening the demand for and supply of local currency bonds through information sharing and credit guarantees. To this end, the Asian Bonds Online website was launched in 2004, the Credit Guarantee and Investment Facility created in May 2010, and the ASEAN+3 Bond Market Forum (ABMF) established in 2010. The ABMF provides a common platform to foster standardization of market practices and harmonization of regulations relating to cross-border bond transactions in the region and produces stock-taking reports on regional bond markets. Second, the ABF, launched in 2003, further strengthened the demand for local currency bonds. ABF-1 equipped as a $1 billion bond fund invested in sovereign and quasi-sovereign bonds issued by eight of the Executives' Meeting of East Asia Pacific Central Banks members. The investment volume was raised to $2 billion under ABF-2.

ASEAN Serves as an Anchor of Financial Cooperation in Asia

ASEAN is seen as the "most ambitious organization of regional cooperation and integration in the developing world" (Chia and Plummer 2015). Member economies pursued close financial integration since the launch of the Roadmap for ASEAN Integration in Finance in 2003, with its main elements carried over into the ASEAN Economic Community launched in 2015. In addition to facilitating policy dialogue and capacity building for capital account and financial services liberalization, the community started several integration initiatives such as the ASEAN Banking Integration Framework, and ASEAN Payments Policy Framework for Cross-Border Real Time Retail Payment, further pursued under the Strategic Action Plan for Financial Integration 2016–2025. Box 4.1 provides details about these initiatives.

Strengthening the Regional Financial Safety Net Is Key for Deeper Integration

Limited Liquidity and Lending Instruments Could Hamstring the CMIM

The CMIM-SF has not been used despite several crises ranging from the 2013 taper tantrum to the COVID-19 pandemic and subsequent cost of living pressures (Khor et al. 2022; Lee and Kring 2024). While the mere existence of the CMIM may have calmed financial

[36] The South Asian Association for Regional Cooperation comprises Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. ADB placed on hold its regular assistance to Afghanistan effective 15 August 2021.

Box 4.1: ASEAN Regional Financial Cooperation Initiatives

Banking integration. Under the Association of Southeast Asian Nations (ASEAN) Banking Integration Framework established in 2014, ASEAN agreed on bilateral reciprocal arrangements to create qualified ASEAN banks (QABs). QABs are granted greater market access and operational flexibility similar to indigenous banks in the host economy.

Payment and settlement systems integration. The ASEAN Committee on Payment and Settlement Systems is tasked to implement interconnected and safe, innovative, competitive, efficient payment systems. Adoption of the international standard ISO20022 is the main avenue of implementation, supported by bilateral and multilateral payment system linkages for the development of settlement infrastructure for cross-border transactions. The ASEAN Payment Policy Framework sets guidelines for cross-border real-time retail payments.

Capital market integration. Three pillars define the ASEAN road map for capital market integration. First, the ASEAN working committee on capital account liberalization facilitates a freer flow of capital by gradually removing restrictions on current accounts. Second, the ASEAN working committee on capital market development focuses on capacity building and infrastructure to advance the regional integration of bond markets. Third, the ASEAN Capital Markets Forum (ACMF) aims at a regionally integrated, liquid equity capital market. Under the ACMF, several initiatives have been completed such as the ASEAN Collective Investment Scheme framework among Malaysia, Singapore, and Thailand (established in 2014), the 2017 launch of ASEAN green bond standards, the 2018 ASEAN social and sustainability bond standards, and 2021 ASEAN sustainability-linked bond standards. Over $50 billion worth of bonds have been issued under these standards.

Regional financial stability. ASEAN established the ASEAN Integration Monitoring Office in 2011, later restructured to the ASEAN Integration Monitoring Directorate (AIMD) in 2016. AIMD spearheads the implementation of regional surveillance and economic integration monitoring in ASEAN, provides technical advice on economic integration initiatives, shapes research and policy analysis programs, and ensures effective information dissemination.

Source: Ariyasajjakorn, Sirivunnabood, and Molineris (2020); ACMF (2024).

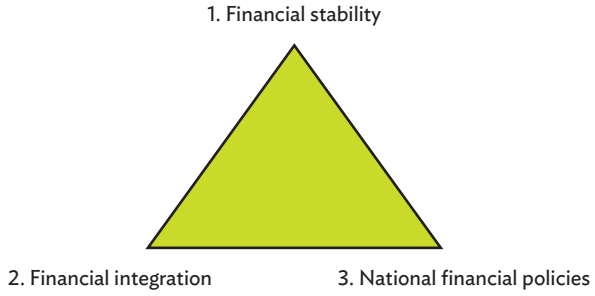
markets and thus mitigated the loss of financing access for the region's sovereigns, several factors account for its underutilization. First, the liquidity pool of $240 billion combined with fixed borrowing quotas for each member could be viewed as too restrictive if several large members were hit by shocks. Flexible multiples of swap quotas for small economies could represent a solution for financing needs below the IMF-delinked portion (Han 2022). Second, its set of lending instruments are geared for short-term balance of payment crises requiring rapid liquidity injections. In contrast, other regional financing arrangements like the European Stability Mechanism also provide for bank recapitalization and sovereign bond purchase programs (Park and Rajan 2021). The IMF also offers loan programs such as the Resilience and Sustainability Trust to tackle longer-term structural challenges like climate change.

The CMIM's arrangement as a contract among central banks and finance ministries without pre-committed funds may slow down decisions on disbursements in crises. In contrast, pooling the reserves that back the CMIM into a single account—as a quota contribution or paid-in capital, such as in the European Stability Mechanism—would allow for acting more swiftly and autonomously. The institutional setup is further complicated by the contractual nature of the CMIM. Recently announced plans to introduce a paid-in capital structure against which the CMIM would issue debt to finance emergency lending would help improve the CMIM's governance (ASEAN 2024).[37] A clear guideline for operational coordination with the IMF would also help remove uncertainty about how to resolve divergent views on surveillance and program conditionality (Han 2022). For the combined institution to stand alone, it would need to craft its own institutional views on key policy issues such as capital flow management (Khor et al. 2022).

[37] Details on the modalities of this paid-in capital structure are expected to be released in 2025.

Strengthening the regional financial safety net can mitigate the trade-offs of the financial trilemma (Figure 4.16), which states that financial stability, financial integration, and national financial policies are incompatible (Schoenmaker 2011). A larger and more institutionalized regional financial safety net as outlined in this chapter can lower these trade-offs. A stronger financial safety net implies that financial autonomy can be reoriented toward promoting greater financial openness without engendering financial stability, because the regional safety net creates more flexibility for domestic financial policy. For instance, it allows member states to accumulate fewer reserves for self-insurance and relax current account restrictions.

Figure 4.16: The Financial Trilemma



Source: Schoenmaker (2011).

New Policy Challenges Define the Frontiers of Regional Financial Cooperation

Climate change, biodiversity loss, geopolitical fragmentation, health crises, and technological disruptions define the new frontiers of regional financial cooperation. This section discusses potential repercussions for regional integration, notably for capital flows, balance sheet vulnerabilities, and the effectiveness of financial supervision. Next, the section outlines how regional cooperation can address potential adverse effects for financial integration.

Health emergencies

Regional cooperation can help with rebuilding more resilient post-pandemic economies. Asian economies entered the COVID-19 pandemic with sound macroeconomic and financial fundamentals, allowing for a swift response with substantial fiscal and monetary stimulus, including cash transfers, job retention schemes, debt relief and moratoria on debt repayments, as well as relaxing macroprudential policies (Khor et al. 2022). Prudent macroeconomic policy management and finance sector reforms since the Asian financial crisis created ample policy space. Banking systems were equipped with robust capital and liquidity buffers, and thus well positioned to absorb pandemic-related losses. The post-pandemic priorities for Asian economies comprise managing new balance sheet vulnerabilities from record high public and private debt and pursuing structural changes in preparation for similar primarily noneconomic shocks. In this context, regional cooperation is key to (i) assist economies with more severely impaired balance sheets, (ii) strengthen the financial safety net, and (iii) provide financing for structural reforms and related infrastructure, such as for health care facilities.

The pandemic underscored the need to adapt the regional financial safety net to structural shifts. While Asian economies entered the last pandemic with sufficient policy space, this may not hold for larger shocks in the future. The extraordinarily large financing needs raised by the pandemic combined with permanent shifts in productive capacities highlights that the current mandate of the CMIM geared toward short-term balance of payments crises may be too narrow to cover longer-term financing needs such as for pandemic-resilient health care systems. During the pandemic, ample financing was made available by other layers of the global financial safety net, notably the IMF and bilateral swap lines, the nonactivation of regional financing arrangements like CMIM suggests that its limited toolkit, complex deployment as multilateral agreement and the link to IMF conditionality may suppress demand for its liquidity (Mühlich, Fritz, and Kring 2022).

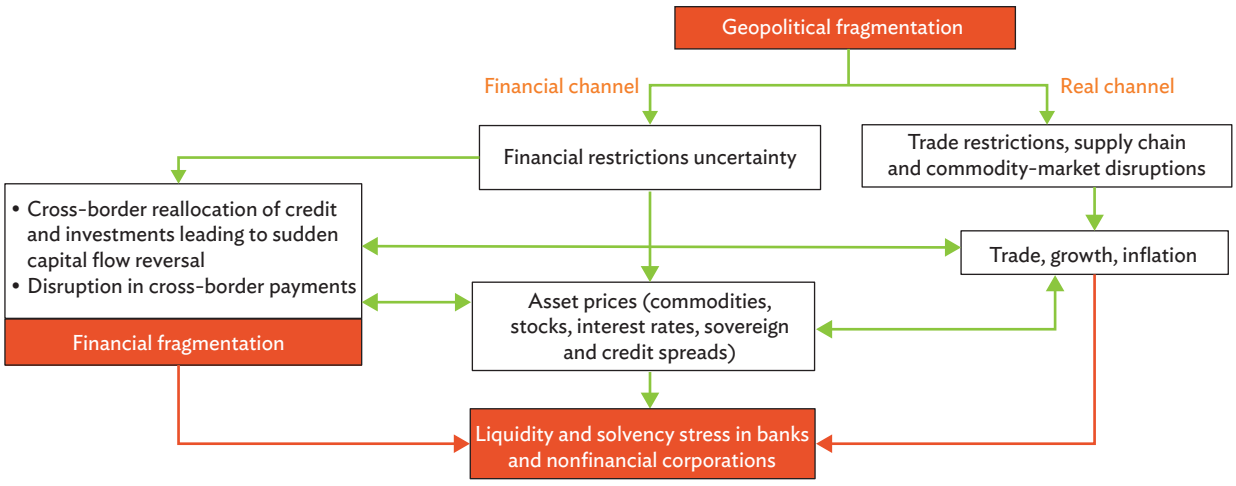
A range of measures can serve to upgrade the regional financial safety net. Greater flexibility in the use of the CMIM-SF is warranted to manage primarily noneconomic shocks and associated structural shifts, e.g., by extending the maturity of liquidity support (Khor et al. 2022). The 2024 launch of AMRO's Rapid Financing Facility is an important innovation in this respect, although financial support remains limited to 1 year. Additional ways to support medium- to long-term financing needs in the post-pandemic era are also important to explore. Mühlich, Fritz, and Kring (2022) suggest that enhanced coordination among regional financing arrangements and the IMF could lower transaction costs for borrowers and multilateral lenders. Moreover, the pandemic showed that multilateral development banks can complement the safety net through advisory services, knowledge, capacity development and financing for regional cooperation projects and emergency budget support (ADB 2022a).

Geopolitical fragmentation

Geopolitical fragmentation is a danger to macrofinancial stability in Asia. The breakup of the postwar geopolitical order increased amid deteriorating trading links between the US and the PRC. As tensions are likely to impair global trade as Asia's decade-long engine of growth, emerging market and low-income economies are most at risk (Aiyar et al. 2023). Harm to financial integration in Asia arises through financial and real channels (Figure 4.17). First, restrictions on capital flows and cross-border payments from capital controls and sanctions, or because investors have heightened risk aversion to future restrictions, could distort capital allocations. In turn, asset prices may fall as investors adjust international portfolios and cut cross-border credit lines. Second, restrictions on international trade, commodity markets, and technology transfers can reduce growth and raise inflation because of their negative knock-on effects to supply chains. These factors could, in turn, imperil the liquidity of nonfinancial corporations, generating credit risks for banks and undermining financial stability.

Regional financial cooperation can help mitigate adverse impacts from geopolitical tensions. First, geopolitical risks need to be consistently introduced and applied in regional macroeconomic surveillance. Second, cooperation mechanisms should strengthen the resilience of cross-border payment systems and develop frameworks for improved interoperability. Third, the CMIM should be relied on as primary regional safety net instead of bilateral swap lines, as these may reinforce

Figure 4.17: Transmission Channels of Geopolitical Fragmentation to Macrofinancial Stability



Notes: The figure shows the two key channels of transmission, financial and real, through which geopolitical fragmentation could contribute to financial fragmentation and exacerbate macrofinancial stability risks. In addition to these channels, macrofinancial stability could also be affected if geopolitical fragmentation increases cybersecurity risks, compliance, legal and reputational risks for entities, risks associated with money laundering and financing of terrorism, or climate-related risks because of lack of international coordination to mitigate climate change.

Source: International Monetary Fund (2023).

fragmentation. Fourth, CMIM's lending instruments require a broader scope. For instance, the CMIM-PL could explicitly account for an escalation of geopolitical tensions as trigger event.

Technological disruptions

Disruptive innovations in financial services bestow efficiency gains on financial systems in Asia. The digitalization of financial services drawing on financial technology has become ubiquitous as a function of the spread of smartphones and big data availability in combination with artificial intelligence. Digitalization, including of currencies, offers several benefits: faster transactions at lower cost, increased competition and thus higher service quality thanks to higher transparency, and improved financial inclusion by widening access to underbanked populations.

However, the digitalization of financial services and currencies can challenge Asia's financial stability. The innovations also carry microfinancial and macrofinancial risks. Microfinancial risks refer to governance and process control, cybersecurity, and legal risks. A prominent example is the rise of cyber threats, intensified during the COVID-19 pandemic because new online applications were rolled out quickly (Ong et al. 2023). The efficiency of financial services may suffer as the digitalization of financial services can lead to more fragmented processes and—absent mechanisms ensuring interoperability—outright monopolies (Beau 2021). Macrofinancial risks include unsustainable credit growth, contagion, procyclicality, excess volatility, and the rise of systemically important financial institutions (Morgan and Huang 2021). Cross-border transactions in digital currencies handled in private payment platforms could raise the volatility of capital flows, which regulators are currently not equipped to monitor because balance of payment methodologies do not account for them. This may entail blind spots for surveillance and risk mitigation (Ong et al. 2023). Privately issued digital currencies by globally dominant technology firms bear the risk of substituting domestic currencies as legal tender, and thus undermine the domestic monetary policy transmission mechanism.

Regional cooperation is fundamental to maximize the benefits of digitalized financial services and financial technology while maintaining financial stability. Key regional institutions and forums to address risks from financial service innovations are the ASEAN+3 finance ministers' and central bank governors' meetings, ABMF, the ASEAN+3 Cross-Border Settlement Infrastructure Forum (CSIF), the ASEAN Bankers Association, and the ASEAN Financial Innovation Network, supported by AMRO's financial stability assessments (Morgan and Huang 2021). Ong et al. (2023) suggest for AMRO to expand the surveillance coverage, provide training, and conduct research on the implications of digitalization for financial stability. The ABMF and the CSIF have been discussing the role of standardization to ensure cross-border interoperability. Asian economies are already represented in some international initiatives like the Global Cybersecurity Agenda under the auspices of the United Nations International Telecommunications Union. In others, few Asian economies are active such as in pilot projects like mBridge for the use of central bank digital currencies to settle cross-border payments (BIS 2024). Notably the rise of private digital currencies requires more regional supervisory coordination and information-sharing about best practices to effectively harmonize standards, and thus safeguard the transmission of domestic monetary policy.

Climate change

Substantial economic damage and financial risks from Asia's high vulnerability to climate change endangers regional financial integration. Asia is hit hard by the rising frequency and severity of storms, floods, heat waves, and droughts. The threat to livelihoods from rising sea levels is especially pronounced in the region, where 70% of the global population vulnerable to sea level rise resides. Immediately climate-dependent sectors like agriculture account for one-third of employment. Economic losses from climate change are expected to reach on average 40% by 2100 (ADB 2024f). Volz et al. (2020) enumerate several macroeconomic risks, including revenue losses from the disruption of economic activity after disasters, higher spending from subsidies to cope with rising energy prices, and adjustments in inflation

and exchange rates resulting from climate change-related supply and demand shocks. Physical damages and disaster relief spending may raise contingent liabilities. Similarly, financial assets supporting carbon-intensive activities may become stranded. In turn, these macroeconomic ramifications may abet balance-of-payment and financial crises.

Regional cooperation is essential to monitor and mitigate macrofinancial risks from climate change. The regional financial safety net requires an upgrading of its policy frameworks to manage climate-related crises. Volz (2022) suggests to systematically mainstream climate-related risks into AMRO's macroeconomic and financial assessments, to align all policy recommendations with the Paris Agreement, for cooperation to harmonize disclosure standards for climate-related financial risks, and to help regional economies integrate climate risks into fiscal policy management. Moreover, adapting lending instruments available to regional economies is an important avenue to provide climate emergency funding. Thus, the recent addition of AMRO's Rapid Financing Facility to the CMIM is an important step as the facility explicitly accounts for physical hazard-driven disaster as a disbursement trigger, although access remains conditional on having an IMF program in place (ASEAN 2024).

Regional cooperation is critical to mobilize climate finance, notably from the private sector. Asia requires an estimated $1.1 trillion a year to address climate change (Lim et al. 2024). With only $300 billion currently made available in the region, the financing needs remain large. Regional cooperation has already proven effective in developing sustainable financial markets to raise the required financing. For instance, ADB introduced the Green, Social, Sustainability and Other Labeled (GSS+) Bonds Initiative in 2022 to accelerate the development of sustainable capital markets and to support the issuance of GSS+ bonds by sovereigns, municipalities, and state-owned enterprises in Southeast Asia (ADB 2022b). The initiative is implemented jointly with the ADB technical assistance program to support GSS+ bond issuances by the private sector and to develop a sustainable finance ecosystem in ASEAN+3 (ADB 2022c). The program has catalyzed highly innovative transactions such as Asia's first sovereign sustainability-linked bond issued by the Government of Thailand (ADB 2024e). Dedicated information about sustainable bonds on the Asian Bonds Online web portal and in the companion publication "Asia Bond Market Monitor" helps to build supply and attract demand. The ABMI's activities to promote local currency bond markets can be extended to create sustainable bond markets, as noted in the ABMI Road Map for 2023–2026. Scaling up similar initiatives beyond ASEAN to the entire region would lower the learning cost for other economies. Given the catalytic role of sovereign green bond issuances for the number and size of corporate bond issuances, regional cooperation initiatives could center on sovereign issuances to grow the regional sustainable bond market (Cheng et al. 2024; WEF 2024).

Biodiversity-Proofing Regional Financial Cooperation

Unprecedented Losses of Ecosystems and Species Impose Costly Adjustments on Asian Economies

The previous section highlighted climate change as an opportunity for regional cooperation to advance integration. With climate change as an important issue in itself, complex interactions with the environment make climate change a key driver of an acute loss of biodiversity (Brondizio et al. 2019).[38] This section sheds light on its repercussions for regional integration and designates cooperation as an important avenue to mitigate the macrofinancial repercussions of biodiversity losses and mobilize capital for biodiversity action.

Globally, biodiversity declined by 73% in 1970–2020 (Figure 4.18). Losses in Asia reached 60% over the same period.[39] As a result, about 1 million animal and plant species are threatened by extinction globally (Brondizio

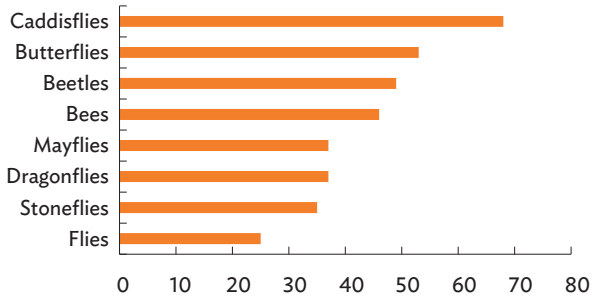
[38] The Convention on Biological Diversity defines biodiversity as "the variability among living organisms from all sources including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems" (Brondizio et al. 2019).

[39] Updated losses may exceed this 2019 estimate based on Sanchez-Bayo and Wyckhuys (2019).

et al. 2019). The rate of extinction exceeds its natural rate by a factor of 1,000 (Deutz et al. 2020). Without policy action, up to half of all species are expected to be lost by 2050 (Deutz et al. 2020). These losses are bound to impose large economic adjustment costs as about half of global value-added directly depends on the ecosystem services nature provides. Both the losses and mitigating policies are expected to lower growth and imperil financial stability (Gardes-Landolfini et al. 2024). For instance, three quarters of crop types require pollination by insects (Ritchie 2021). Among economically important anchor species, honeybee populations fell by almost half globally, with their decline threatening agriculture output and food supplies (Figure 4.19). The increasing use of mechanical or manual pollination suggests that a combination of labor and investment must compensate for the species lost.

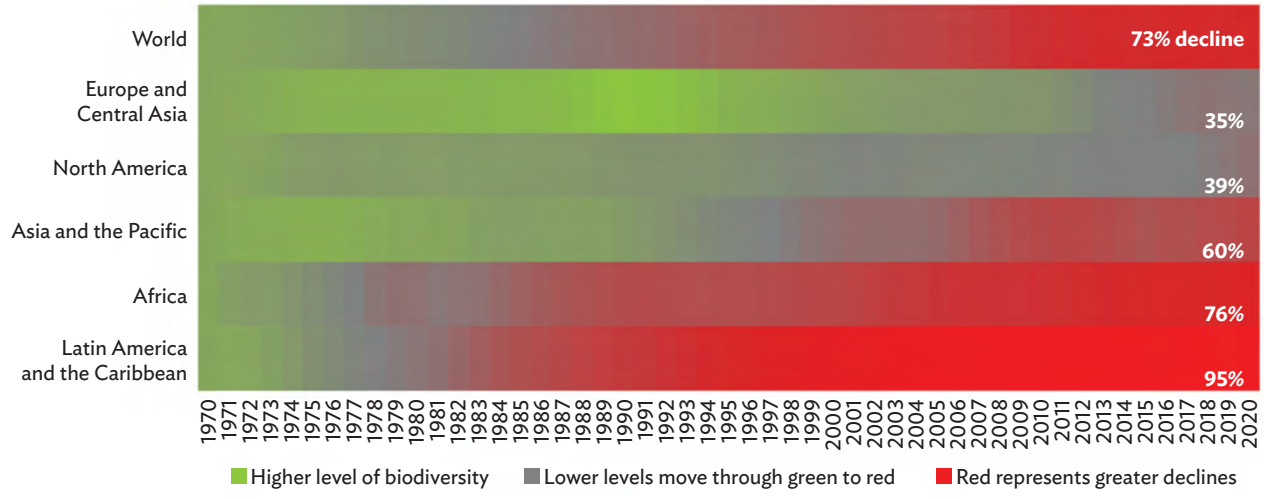
Reversing biodiversity losses requires leveraging regional cooperation to mobilize significant nature-positive investments. To halt and reverse the decline in biodiversity by 2030, about $700 billion investments in nature are required annually (Deutz et al. 2020), equivalent to 0.7% of global GDP, and up from $140 billion in 2017. The biodiversity financing gap adds to the financing needs to address climate change. The public sector provides about three-fifths of currently deployed biodiversity finance (Deutz et al. 2020). Given record-high public debt and high financing costs post-pandemic, private capital needs to be mobilized to close the financing gap. Closing the gap by mobilizing and aligning financial flows with biodiversity needs defines an important new policy challenge for regional cooperation. Reducing subsidies harmful to nature—estimated at $800 billion globally—and harmonizing nature-related disclosure standards, and developing innovative nature-related financing instruments all require regional knowledge exchanges and capacity building (Deutz et al. 2020). Common reporting standards and scenario analyses coupled with mandatory disclosures for financial institutions are critical for developing regional risk-pooling initiatives (AMRO 2023).

Figure 4.19: Decline in Selected Global Insect Populations, 2009–2019 (% change)



Source: Statista. https://www.statista.com/chart/16960/percentage-decline-in-selected-global-insect-populations/ (accessed December 2024).

Figure 4.18: Living Planet Index by Region



Source: World Wide Fund for Nature (2024).

The Mispricing of Harm to Biodiversity Imperils Regional Macrofinancial Stability

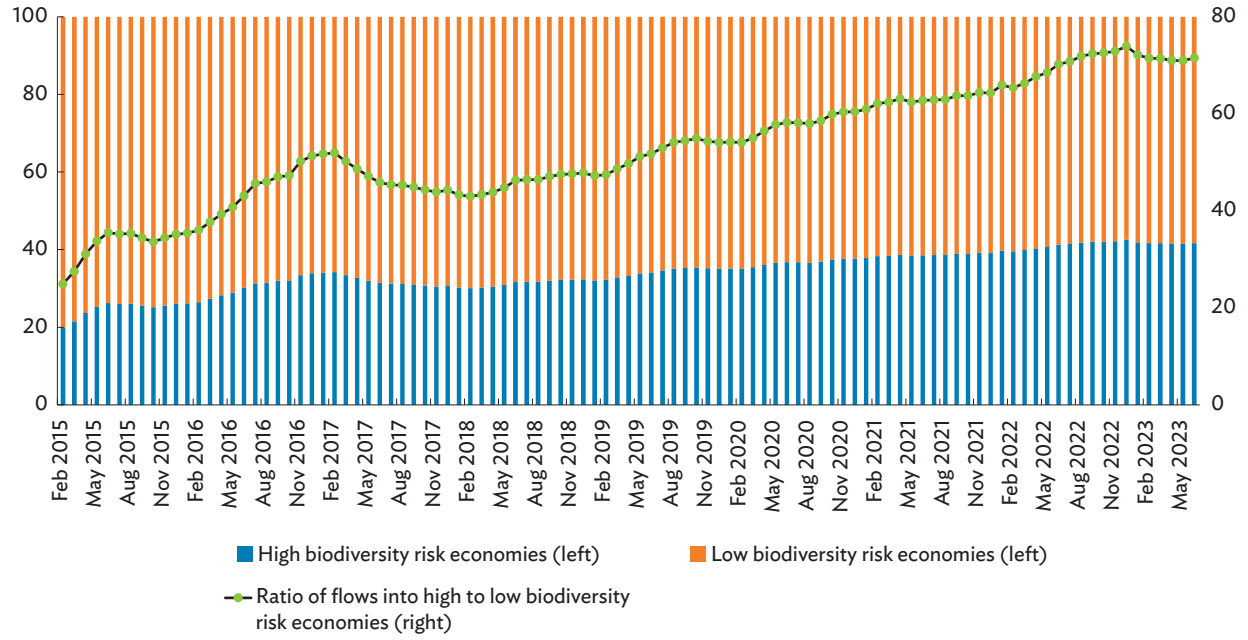
Despite a strong moral and economic case to attend to biodiversity losses, financial markets do not fully price related economic risks (Xin et al. 2023; Huang et al. 2024). Markets only started to require a premium on firms' biodiversity footprint's after the 2021 Kunming Declaration marked the adoption of the Kunming–Montreal Global Biodiversity Framework at the 15th Conference of the Parties (COP 15) of the United Nations Convention on Biological Diversity (Garel et al. 2024). Coqueret, Giroux, and Zerbib (2024) confirm that this event increased the cost of capital for companies with a high biodiversity footprint. Investors increasingly care about biodiversity footprints as the harm done by economic activity on nature risks undermining future cash flows in two ways. First, given the dependence of most economic output on nature, any deterioration of biodiversity may result in lost productivity. Second, with nature-related financial regulations likely to become more stringent, investors expect higher costs due to compliance and litigation aimed at preserving biodiversity (Hoepner et al. 2023). Thus, failure to properly account for the impact of economic activity on biodiversity can give rise to transition risk.[40]

Transition risk from mispricing biodiversity losses can unleash sudden capital flow shifts. This calls for regional cooperation to mitigate negative repercussions for macrofinancial stability. A sudden materialization of transition risk because of mispriced exposure to biodiversity losses can trigger large portfolio reallocations among investors, tightening financial conditions of sectors with large biodiversity footprints, and so imperil macrofinancial stability. For instance, half to three-quarters of banks' corporate loan portfolios strongly depend on nature (Boldrini et al. 2023; Calice et al. 2023). Thus, a sudden pricing of biodiversity risk can jeopardize economy-wide credit allocation if borrowers' creditworthiness declines because their biodiversity footprint deepens, or due to the increased cost of ecosystem services when biodiversity falls (Becker, Di Girolamo, and Rho 2023). Similarly, the world's largest banks are subject to transition risk as two-fifths of loans are extended to sectors reliant on subsidies harmful to nature, and to geographic areas targeted for environmental protection under the Global Biodiversity Framework (Gardes-Landolfini et al. 2024). At the regional level, portfolio reallocations resulting from the sudden pricing of biodiversity risks can increase the volatility of cross-border capital flows to the detriment of regional financial stability and jeopardize access to foreign biodiversity finance. Regional cooperation provides an important platform to mitigate these repercussions, as has been discussed in this chapter.

The Kunming Declaration provides a recent example of global markets pricing on biodiversity risk. Similarly important as the Paris Agreement for tackling climate change, the international treaty, which was adopted by 190 governments to address biodiversity losses, sets clear objectives and quantitative targets along a global road map for conserving, protecting, restoring, and sustainably managing biodiversity. New evidence from portfolio investment funds suggests that up until the Kunming Declaration, investment funds did not pay attention to biodiversity risks, making global financial markets susceptible to transition risk shocks. This is in line with the declaration marking the start of biodiversity-risk pricing in financial markets (Garel et al. 2024; Coqueret, Giroux, and Zerbib 2024). Prior to that, investment funds increased their exposure to economies with high biodiversity risk, both in absolute terms and as share of total investments (Figure 4.20). News of the Kunming Declaration changed this instantly. The declaration raised fund managers' awareness of the risk of negative future cash flows resulting from biodiversity losses.

[40] Transition biodiversity risk refers to the policy, legal, technology, reputational, and market risks arising from creating positive or reducing negative impacts on natural capital (GARP 2024).

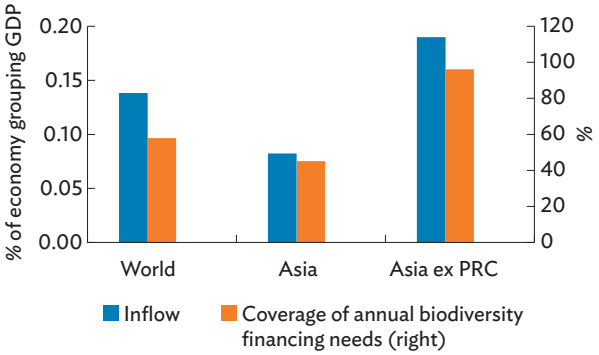
Figure 4.20: Investment Fund Inflows into Economies with High Versus Low Biodiversity Risk (%)



Source: te Kaat and Raabe (forthcoming).

Portfolio capital flows in Asia exhibit strong sensitivity to a sudden repricing of biodiversity risks. An empirical analysis using detailed data on global investment funds documents reallocations of fund portfolios in response to the Kunming Declaration, akin to a flight to biodiversity safety. Upon announcement of the declaration on 11 October 2021, funds reallocated investments away from economies with high biodiversity risk in favor of less risky economies. Given no change in funds' total assets under management, this portfolio rebalancing implies additional inflows for lower-biodiversity risk economies of $830 million (0.14% of GDP) for the average global economy up to 4 months after the declaration, covering about three-fifths of annual average biodiversity financing needs (Figure 4.21). For Asian economies, the inflows cover the financing needs almost half, and fully for Asia excluding the PRC. These flows result mainly from portfolio reallocations within the same geographic region a fund is specialized in, and to the benefit of economies in the same region but not yet in a fund's portfolio. That is, investment funds facilitate regional contagion after biodiversity risk materializes. Sustainable-labeled investment funds reacted most strongly to biodiversity risk revealed by the declaration. Similar capital flow shifts cannot be identified for other global biodiversity-related events other than the declaration, or for climate-change related events like the Paris Agreement.[41]

Figure 4.21: Biodiversity Financing from Global Investment Funds After the Kunming Declaration



PRC = People's Republic of China, GDP = gross domestic product.

Notes: The chart shows the cumulative investment fund inflows in percentage of GDP into the average economy in the respective region over 4 months after the Kunming Declaration, and as share of annual biodiversity financing needs as computed by the United Nations Development Programme's Biodiversity Finance Initiative. Asia refers to Cambodia, Georgia, India, Indonesia, Kazakhstan, the Kyrgyz Republic, Malaysia, Nepal, the Philippines, Sri Lanka, Thailand, Viet Nam. World refers to Asia plus Belize, Botswana, Colombia, Costa Rica, Cuba, Guatemala, Madagascar, Malawi, Mexico, Niger, Peru, Rwanda, Seychelles, and Tanzania.

Source: te Kaat and Raabe (forthcoming).

[41] Box 4.2 discusses the methodology.

Ambitious climate policies allow low biodiversity risk economies to attract more portfolio fund inflows. As climate change abets biodiversity losses, economies with more effective climate policies are better positioned to minimize economic damage from the functional decline of ecosystems. Moreover, stringent climate policies signal a more productive use of capital for nature-related investments. An extension of the above analysis shows that economies with simultaneously low biodiversity risk and more effective climate policies received more capital inflows resulting from portfolio reallocations and thus cross-economy spillovers induced by the announcement of the Kunming Declaration. Prudent macroeconomic management as measured by sovereign ratings also helps attract inflows. Inversely, high biodiversity risk economies with less ambitious climate policies, and lower sovereign ratings tend to experience larger outflows after the declaration.

Options for Cooperation on Financial Integration to Rise to New Challenges

Reinvigorating Regional Cooperation Initiatives Is Key to Maximizing the Benefits of Integration While Minimizing Its Costs

Financial integration remains an important source of growth and prosperity for the region. Progress has advanced steadily over the past few decades, but recently has slowed. The cooperation initiatives recommended here are imperatives for deepening integration by improving the cost–benefit balance.

Box 4.2: Methodological Note on Portfolio Capital Flows and Biodiversity Risk

The chapter discusses cross-border portfolio capital flow shifts due to investment funds' portfolio rebalancing in response to biodiversity risk revealed by the Kunming Declaration. The evidence emerges from a difference-in-difference (DiD) regression analysis symmetrically centered on the 4 months around the announcement of the declaration in October 2021, and applied to detailed data on global investment funds' portfolio allocations across economies. The regression framework is specified as follows:

First, the chapter shows that funds reallocate portfolios toward economies with lower biodiversity risk after the Kunming Declaration. For this, the DiD analysis takes as dependent variable the month-on-month change in a fund portfolio's geographic allocation, computed as the growth rate in the inverse-hyperbolic sine (IHS) transformed portfolio share of allocations to economies. The IHS transformation allows to approximate the natural logarithm, while keeping zero values (Bellemare and Wichman 2020; Burbidge, Magee, and Robb 1988). The main regressor is the interaction between a post-declaration dummy equal to one after 2021: M9, zero else, and an economy's biodiversity risk. The risk is defined as the share of endangered species, with data provided by Giglio et al. (2023). To capture nonlinearities in the distribution, biodiversity risk enters the analysis in the form of a dummy equal to one if an economy's biodiversity risk exceeds the 75th percentile of the variable's distribution. The analysis controls for various fund characteristics such as equity versus bond funds, active versus passively managed funds, funds' sustainability labeling and over or underweight of economy-specific positions, as well as a fund's assets under management and performance. The analysis further employs fund-time and fund-economy fixed effects to control for time-varying characteristics common to all funds, and time-invariant features of the relationship between funds and the economies they invest in.

Second, the chapter shows that, in response to revealed biodiversity risks, investment funds reallocate from high-biodiversity risk economies, and toward other less risky economies in the same region, notably economies where the respective fund does not yet invest. The DiD analysis is modified for this in two ways. First, a fund's economy portfolio shares in levels instead of changes is employed to allow for changes in the dependent variable to sum to zero at the fund level. Second, the set of regressors is augmented with an interaction between the post-declaration dummy and (i) the average biodiversity risk of all other economies in a fund's portfolio, (ii) the average biodiversity risk in the same region, and (iii) the average biodiversity risk of all other world regions referring to Europe, Africa, the Middle East, Asia and the Pacific, and North and South America.

Third, the chapter highlights that low biodiversity risk economies with more effective climate policies and fiscally sustainable macroeconomic management tend to benefit more from the capital flow shifts. For this, the DiD analysis additionally includes interactions with dummies equal to one when an economy's Bloomberg climate policy score and sovereign credit rating exceeds the in-sample median.

Source: te Kaat and Raabe (forthcoming).

Maintain financial stability. First, policymakers should pursue reducing vulnerabilities to negative external shocks and coordinate to guard against cross-border policy spillovers. Prudent domestic macroeconomic and financial policies rank first to maintain stability amid negative cross-border spillovers. In addition, adhering to internationally agreed minimum capital requirements lowers risks from regulatory arbitrage. Expanding the depth and breadth of local currency bond markets remains a priority to reduce currency and maturity mismatches that typically amplify spillovers from global financial market turmoil. At the same time, more sophisticated regional financial markets would allow the domestic investor base to grow. This is important since issuing local currency bonds is not a panacea to address mismatches transferred to the balance sheet of international investors (Hofmann, Shim, and Shin 2020; ADB 2024c).

More importantly, the region needs to be equipped with stronger safety nets. Key steps comprise

- increasing the pool of emergency funding available from CMIM;
- broadening the scope of its lending instruments spearheaded by the new rapid financing facility;
- improving the governance structure with regard to the separation between CMIM and AMRO; and
- continuously improving AMRO's analytical capacity to support more comprehensive macroeconomic surveillance.

Rise to new challenges. Second, regional cooperation must act on a range of new policy issues. The chapter highlights the need to mainstream new policy challenges into regional cooperation mechanisms, comprising climate change, biodiversity loss, geopolitical fragmentation, health crises, and technological disruptions:

- The COVID-19 pandemic highlighted the need to expand the lending instruments available from CMIM to unlock funding more flexibly beyond short-term balance of payments needs. The lending toolkit should explicitly account for primarily noneconomic risks like pandemics and escalating geopolitical fragmentation. These risks should also be systematically assessed in regional macroeconomic surveillance and in the resilience of cross-border payment systems.
- Regional cooperation will be essential to maintain financial stability, maximize the benefits of disruptive innovations in financial services, and manage risks from the spread of digital currencies. This may entail expanding the coverage of macroeconomic surveillance, supervisory coordination, and the harmonization of standards, training, and dedicated research.
- Stronger regional cooperation is also needed to monitor and mitigate economic risks from climate change, as well as to mobilize private climate finance to fill an $800 billion funding gap in Asia. This centers on covering climate-related risks in surveillance activities, adapting the CMIM's lending toolkit, harmonizing disclosure standards for climate-related financial risks, and expanding regional sustainable capital markets.

Tackle biodiversity loss. Third, the macrofinancial fallout from acute biodiversity loss requires the urgent attention of regional policymakers. Among new policy challenges, this chapter highlights unprecedented loss of biodiversity as a threat to regional financial integration. This warrants coverage of biodiversity loss and nature protection needs in regular macrofinancial stability assessments. New research suggests that reversing biodiversity loss helps attract foreign capital, including to finance biodiversity and climate action (te Kaat and Raabe 2024). Reversing losses requires both nature-positive investments and phasing out subsidies that are harming biodiversity. Production subsidies in agriculture, fisheries, and forestry are estimated to exceed financing for biodiversity conservation by a factor of four. Regional cooperation can help align private financial flows with nature-positive investment needs by

- adopting harmonized disclosure standards such as those developed by the Taskforce on Nature-Related Financial Disclosures;
- promoting natural capital accounting to mainstream the value of nature into all economic decisions;

- catalyzing private sector investments through derisking instruments like public guarantees; and
- supporting innovative financial instruments targeting biodiversity action.

In Asia, ADB is leading the way to mobilize private sector capital through the sale of biodiversity and nature-themed bonds (ADB 2024d). An extension of ABMI to cover this market can further catalyze private sector engagement.

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