4 Financial Integration

Opportunities and Risks of Financial Integration

Integration Has Made the Region More Vulnerable to Global Financial Shocks

Financial integration of economies in Asia and the Pacific has deepened significantly in recent decades, both within the region and outward globally.[20] A 34% increase in cross-border assets and 22% increase in liabilities as shares of regional gross domestic product (GDP) over 2010–2022 reflects the region's financial openness and the effectiveness of numerous policy initiatives to build more integrated capital markets. Progress in cross-border financial integration further attests to significant gains in harnessing the opportunities of financial openness, notably access to foreign capital in support of the region's development priorities, knowledge transfers aiding the development of regional capital markets, and risk sharing. In line with rising wealth, greater integration with international financial markets allows Asia's investors to better diversify risks.

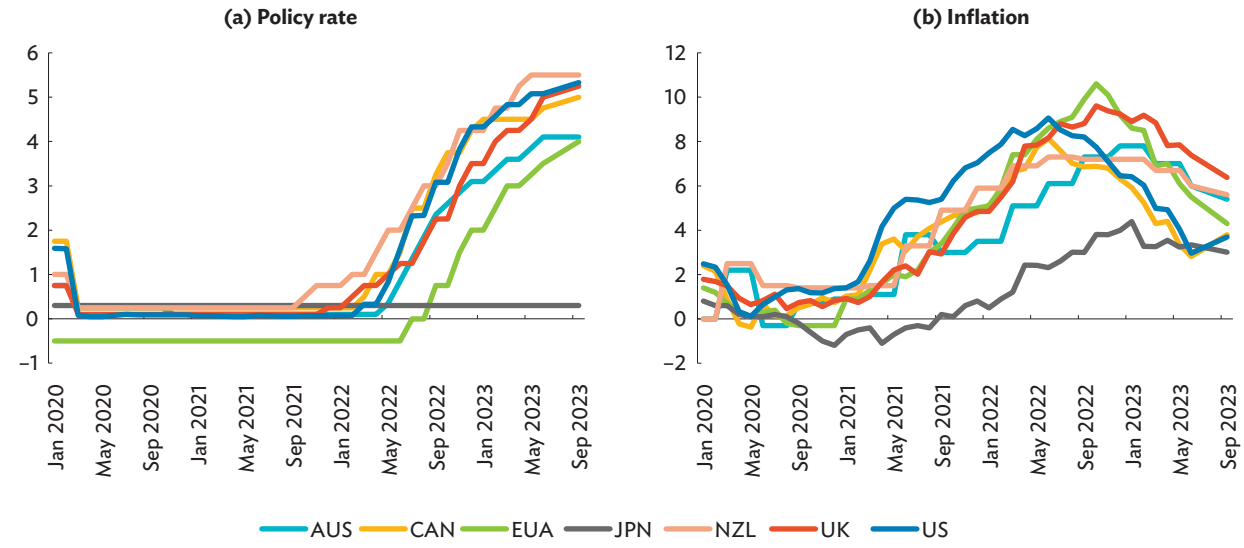
Advances in financial integration bestow many benefits such as access to foreign capital to supplement domestic investment, consumption smoothing, and improved finance sector competitiveness. However, financial integration also makes the region more prone to external shocks, which increases the volatility of capital flows. Large inflows and their sudden reversals entail significant risks such as sizable exchange rate movements and finance sector imbalances. Various policy initiatives such as the Asian Bond Market Initiative in support of local currency bond issuance strengthened regional economies' resilience to external shocks (Kim et al. 2023; Park, Shin, and Tian 2018). Nevertheless, the region remains vulnerable. This chapter focuses in particular on vulnerabilities arising from the region's dependence on external funding denominated in United States (US) dollars.

Global financial conditions remained tight in 2023, raising financial stability risks.

Advanced economy central banks aggressively tightened monetary policy in 2022 (Figure 4.1). The increase in the US policy rate was the steepest rate hiking cycle since the early 1980s, with restrictive monetary policy mirrored in the euro area, the United Kingdom (UK), and emerging markets. The significant tightening raised recession concerns given that a decade of low borrowing costs may have weakened balance sheets' resilience to financial stress. Financial conditions started to ease in the second half of 2022 as US monetary policy became less hawkish on account of slowing US inflation. This improvement continued in the first half of 2023, initially buoyed by the reopening of the People's Republic of China (PRC) after its pandemic lockdowns. The collapse of US regional banks and the globally systemically important bank Credit Suisse led to financial turmoil in the first quarter of 2023,

[20] Asia and the Pacific, or Asia, refers to the 49 regional members of the Asian Development Bank (ADB), which includes Japan and Oceania (Australia and New Zealand) in addition to 46 developing Asian economies. Subregional compositions for Central Asia, East Asia, the Pacific and Oceania, South Asia, and Southeast Asia are outlined in ADB. Asia Regional Integration Center. Economy Groupings. https://aric.adb.org/integrationindicators/groupings.

Figure 4.1: Monetary Policy Rates and Inflation—Selected Advanced Economies *(%)*



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.

though it was quickly contained by decisive regulatory action. Global financial conditions are expected to remain tight and uncertainty high given the risk of financial stress from high interest rates for longer, potential negative spillovers from the PRC's growth slowdown, the continued Russian invasion of Ukraine, and geopolitical tensions.

Nonresident capital flows to Asia experienced significant outflows in 2022, with only partial recovery in the first half of 2023.

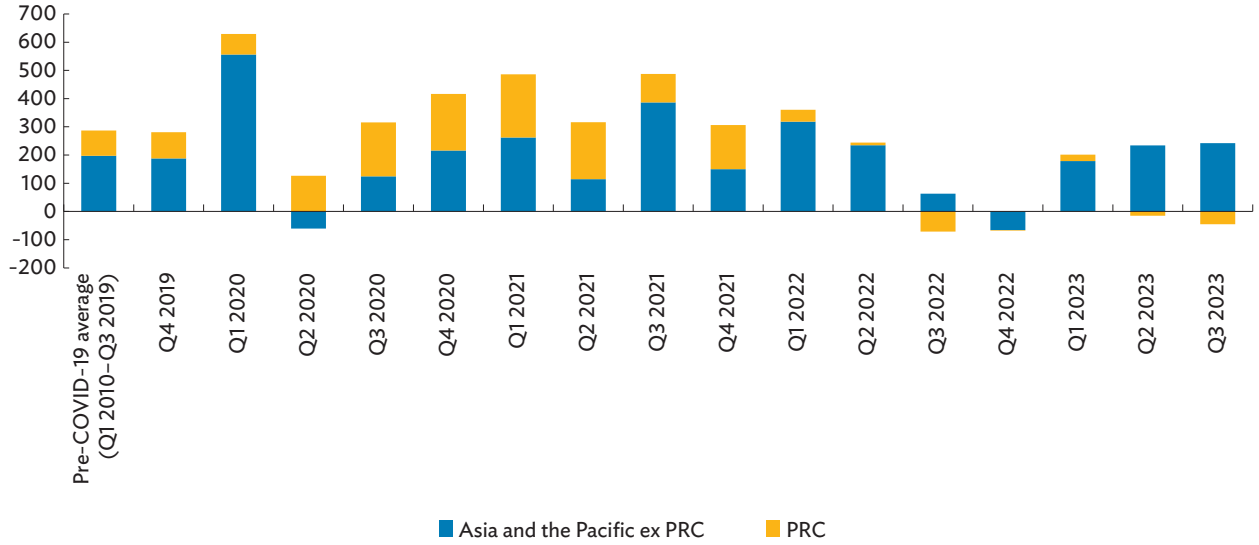
The abrupt advanced economy monetary policy tightening and associated unwinding of carry trades, as well as the PRC's growth slowdown due to its zero-COVID (coronavirus disease) policy, resulted in a reversal of capital inflows in the second half of 2022 (Figure 4.2). Capital inflows started to return gradually in 2023 as the slowing pace of US interest rate rises led investor sentiment to improve, with India, Japan, and the PRC's reopening leading the recovery, although the PRC's subsequent growth slowdown decelerated the recovery. As global financial conditions remain restrictive and uncertainty high, capital inflows are still below their pre-pandemic average and remain vulnerable to renewed global financial stress triggering capital flow reversals from Asia.

Portfolio investment and other investment flows contributed most to the recovery of capital flows in 2023, accounting for around two-thirds of inflows into the region. As these capital flow types have been shown to be the most sensitive to global financial conditions (Eichengreen, Gupta, and Masetti 2018; Levy Yeyati and Zúñiga 2015), the region remains prone to capital flow reversals should global financial stress suddenly intensify. Foreign direct investment (FDI) is considered a less volatile source of inflows and accounted for one-third of inflows into the region (Figure 4.3).

Asset markets in Asia show signs of a moderate, but varied recovery relative to the end of 2022.

Following a broad-based depreciation of regional currencies against the US dollar following the 2022 US monetary policy tightening, regional local currencies only partially recovered against the US dollar from their trough in the second quarter of 2022 (Figure 4.4a).

Figure 4.2: Nonresident Capital Flows—Selected Asian Economies ($ billion)

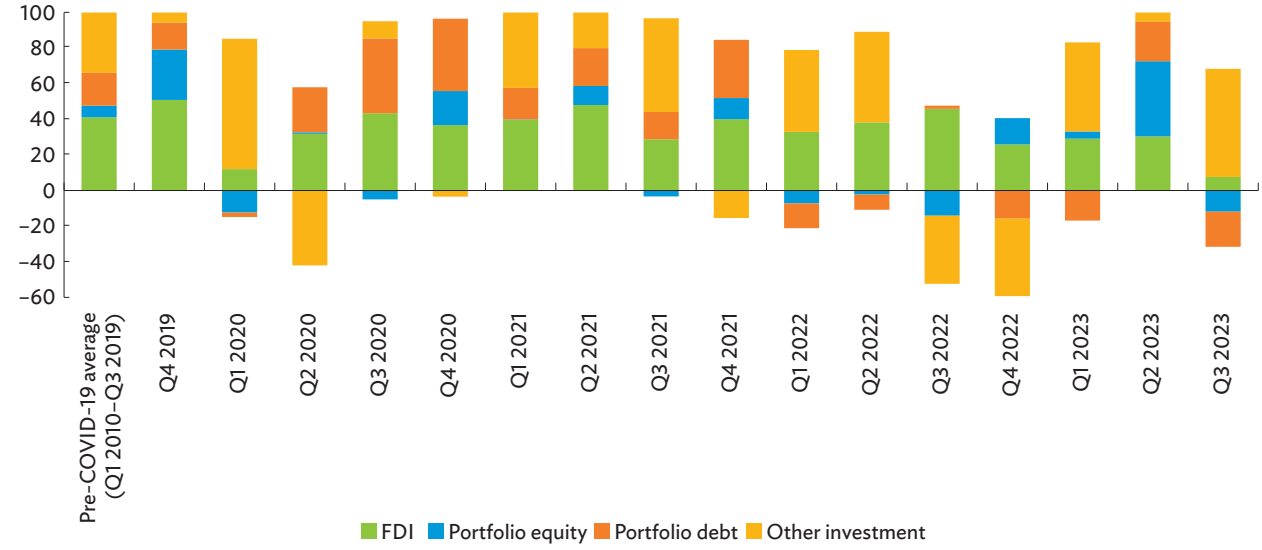


COVID-19 = coronavirus disease, PRC = People's Republic of China, Q = quarter.

Notes:
(i) Nonresident net capital flows in the third quarter of 2022 amounted to $4 billion.
(ii) Positive values denote inflows, negative values denote outflows.
(iii) Selected Asian economies include Armenia; Azerbaijan; Bangladesh; Cambodia; Fiji; Georgia; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; Malaysia; Pakistan; the PRC; the Philippines; the Republic of Korea; 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.

Figure 4.3: Nonresident Capital Flows by Type—Selected Asian Economies (% of total)

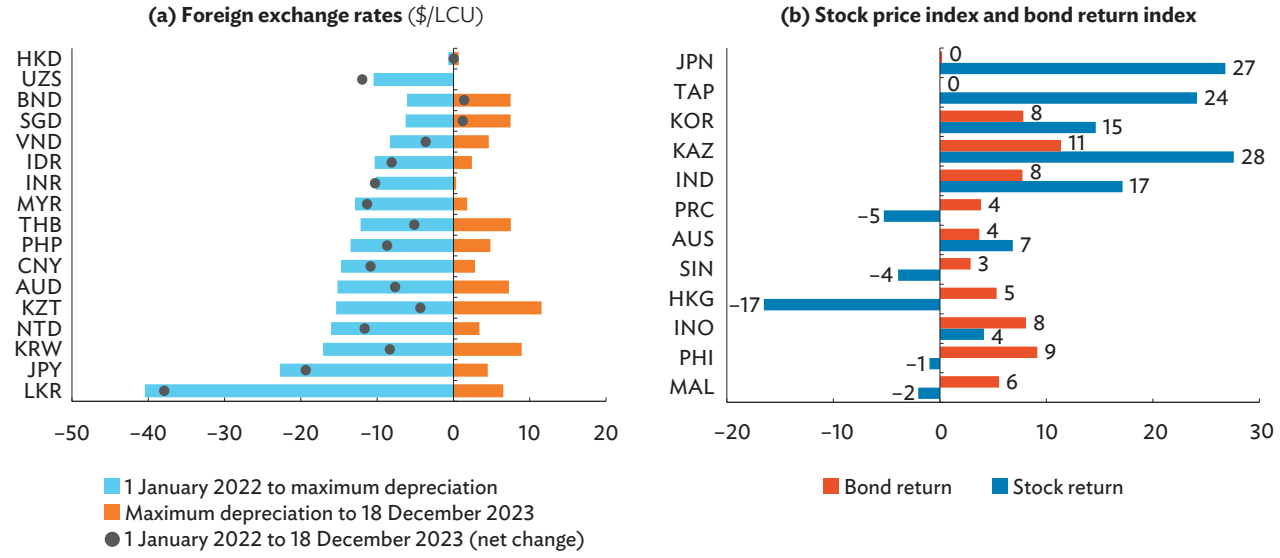


COVID-19 = coronavirus disease, FDI = foreign direct investment, Q = quarter.

Notes:
(i) Selected Asian economies include Armenia; Azerbaijan; Bangladesh; Cambodia; Fiji; Georgia; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; Malaysia; Pakistan; the People's Republic of China; the Philippines; the Republic of Korea; Samoa; Tajikistan; Taipei,China; Thailand; and Uzbekistan.
(ii) The "Other investment" category includes currency and deposits; insurance, pension, and standardized guaranteed schemes; loans; other accounts payable; other equity; special drawing rights; and trade credit and advances.

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

Figure 4.4: Year-to-Date Change—Selected Asian Economies (%, as of 18 December 2023)



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

Note: The point in time at which local currencies reach maximum depreciation in Figure 4.4a is specific to each economy.

Source: Bloomberg L.P.

The still restrictive monetary policy stance in advanced economies is a key reason for the partial recovery (Figure 4.1a). Equity and bond markets in the region performed unevenly through most of 2023. Advanced Asian economies led the recovery (Figure 4.4b).

Asia's Financial Markets Are Increasingly Driven by Global Factors

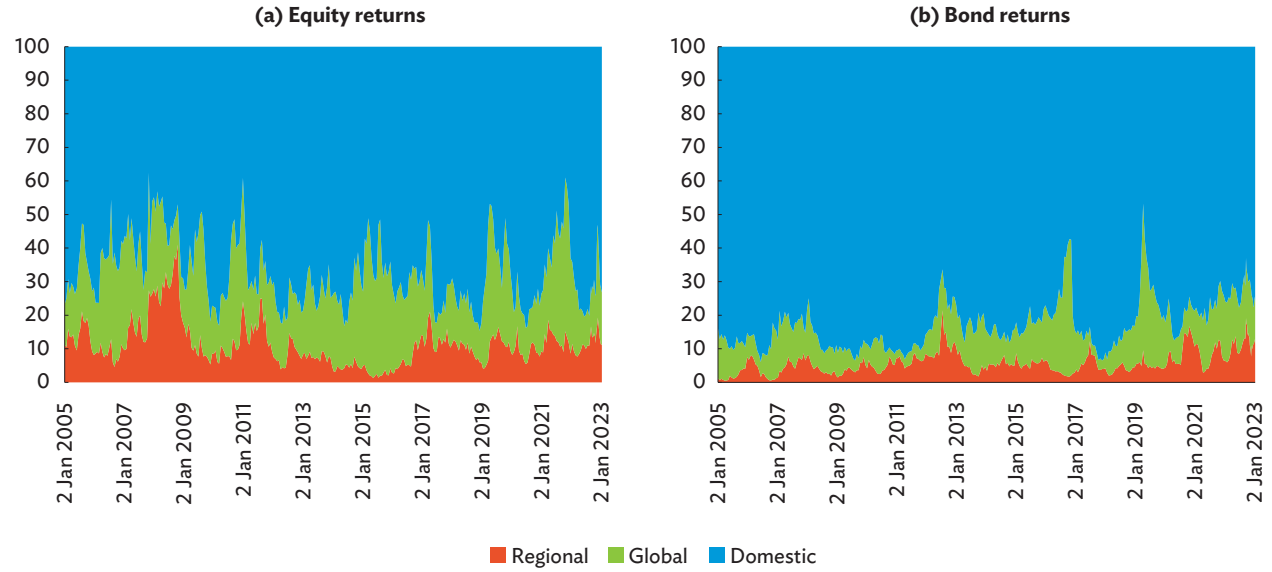
Equity and bond markets are more sensitive to global than regional factors, indicating vulnerability to global financial shocks (Figure 4.5). The impact of global factors is particularly pronounced in crisis periods such as the onset of the coronavirus disease (COVID-19) pandemic. While equity markets are on average more exposed to global factors, bond markets have become more sensitive to global factors since 2021.

Asia's increased cross-border assets and liabilities imply heightened exposure to global shocks.

Asia's cross-border assets increased by 16 percentage points in 2014–2022, expressed as share of regional GDP, but declined in 2020–2022 in line with the crises of the pandemic, the Russian invasion of Ukraine, and monetary policy tightening in advanced economies. Over the same period, Asian investors retrenched more from investments outside the region than from intraregional investments, leading intraregional shares to rise slightly for portfolio debt from 21% to 23%, and for equity from 21% to 22%. Meanwhile, shares for FDI remained stable at 51% (Figure 4.6). However, over 2014–2022, the intraregional share remained broadly unchanged across all of Asia's cross-border investment types.

The region's exposure to global shocks also increased on the liability side. Total cross-border liabilities in terms of regional GDP increased by about 5 percentage points over 2014–2022 while the intraregional share increased from 17% to 22% for portfolio equity liabilities, from 43% to 45% for bank liabilities, and from 29% to 30% for portfolio debt liabilities (Figure 4.7). Extraregional investors primarily from the European Union (EU) and the US account for Asia's increased borrowing (Figures 4.9 and 4.10).

Figure 4.5: Variance Decomposition of Equity and Bond Returns *(%)*



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

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

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

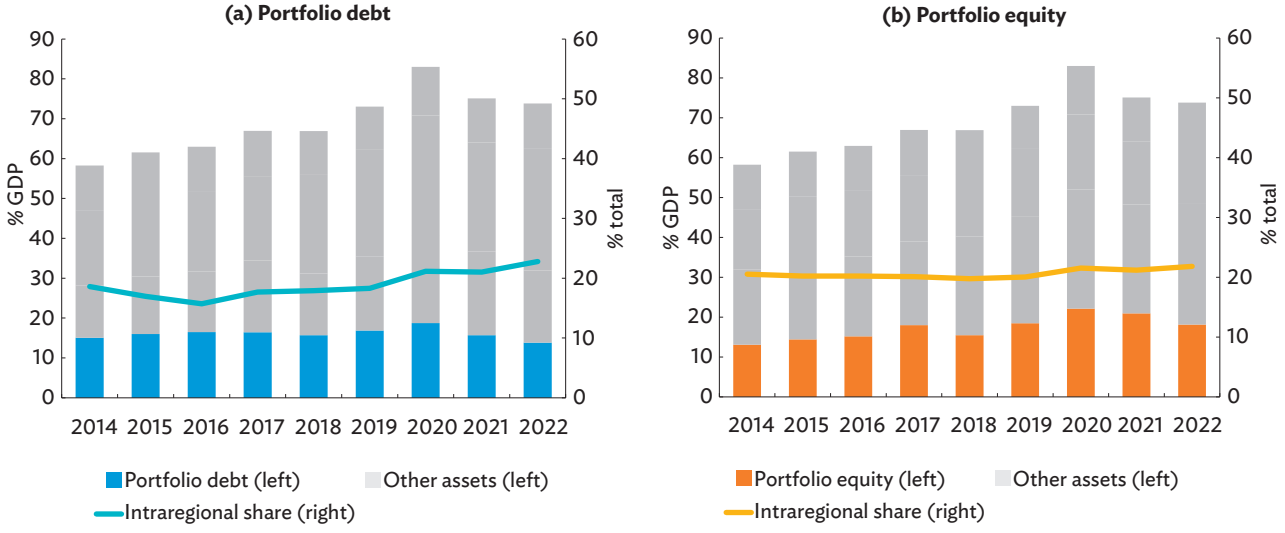


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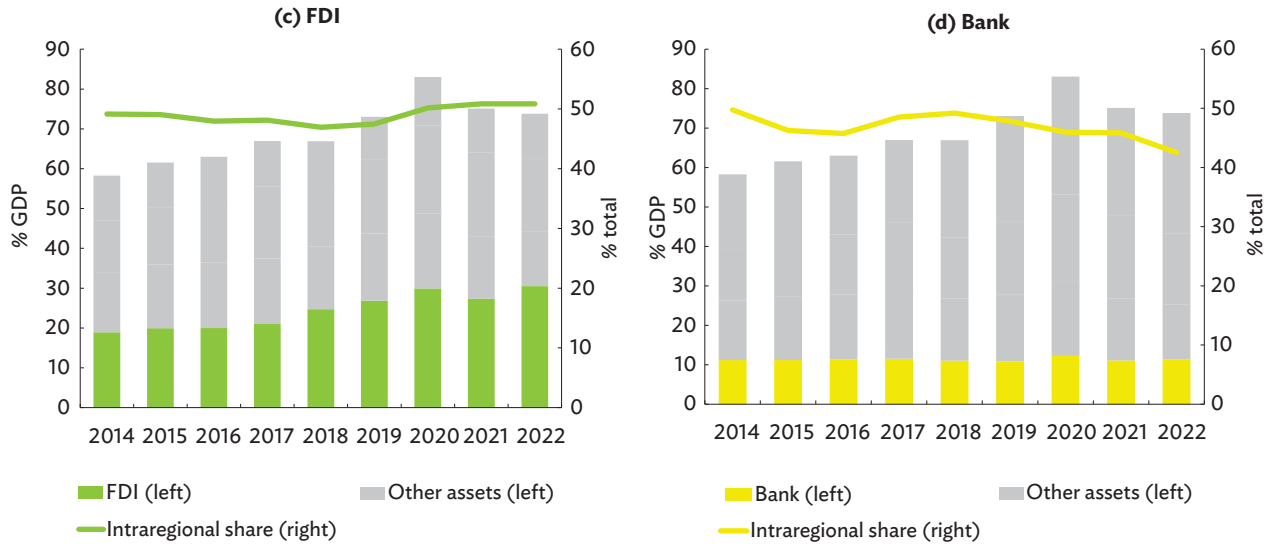
Figure 4.6 continued



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

Notes: Estimates are as of the end of 2022 for bank, portfolio equity, and FDI. FDI assets refer to outward FDI holdings. Bank assets (claims) 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://stats.bis.org/statx/toc/LBS.html (accessed April 2023); International Monetary Fund (IMF). Coordinated Portfolio Investment Survey. https://data.imf.org/cpis (accessed September 2023); and IMF. Coordinated Direct Investment Survey. https://data.imf.org/cdis (accessed December 2022).

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

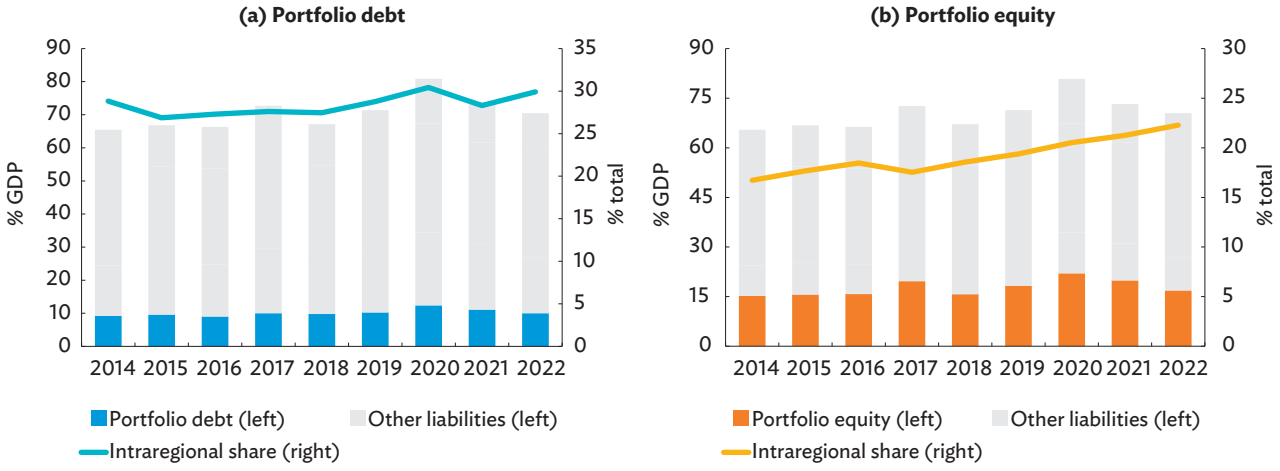


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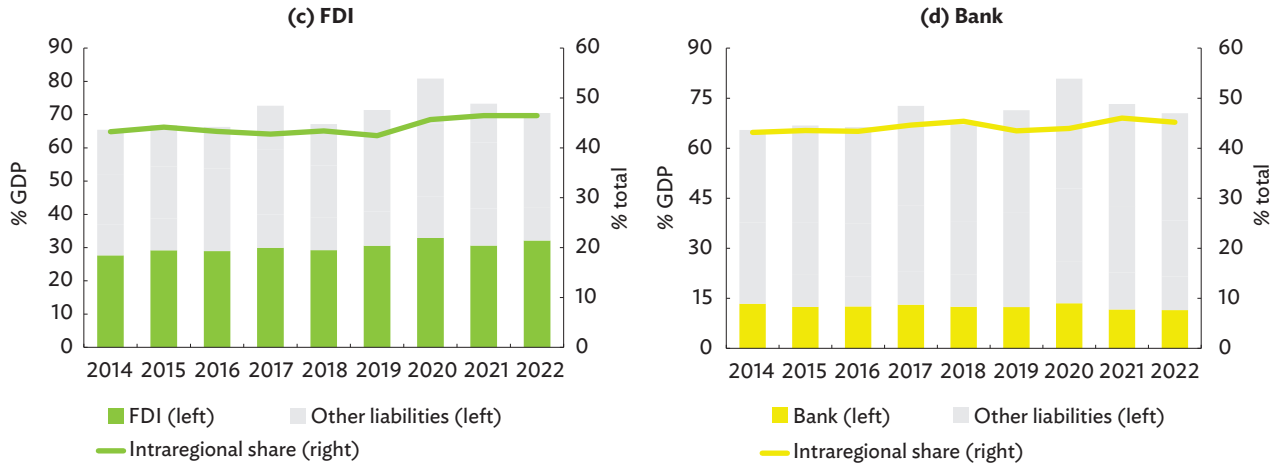
Figure 4.7 continued

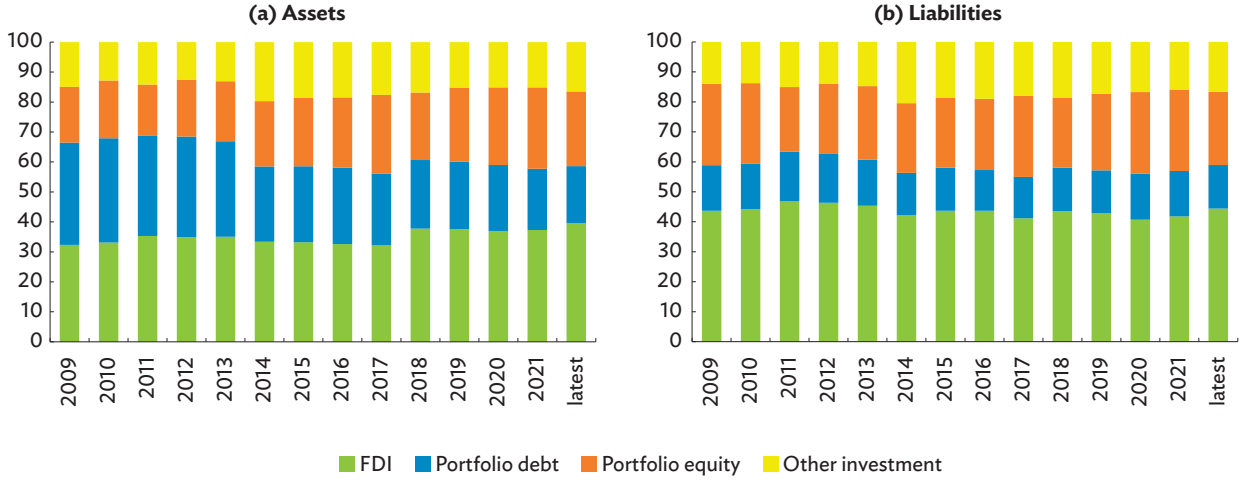


FDI = foreign direct investment, GDP = gross domestic product.

Notes: Estimates are as of the end of 2022 for bank, portfolio equity, and FDI. 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://stats.bis.org/statx/toc/LBS.html (accessed April 2023); International Monetary Fund (IMF). Coordinated Portfolio Investment Survey. https://data.imf.org/cpis (accessed September 2023); and IMF. Coordinated Direct Investment Survey. https://data.imf.org/cdis (accessed December 2022).

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



FDI = foreign direct investment.

Notes: Estimates are as of the end of 2022 for bank, portfolio debt, and portfolio equity; and as of 2021 for FDI. FDI assets refer to outward FDI holdings. Bank assets (claims) are limited to loans and deposits. 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://stats.bis.org/statx/toc/LBS.html (accessed April 2023); International Monetary Fund (IMF). Coordinated Portfolio Investment Survey. https://data.imf.org/cpis (accessed September 2023); and IMF. Coordinated Direct Investment Survey. https://data.imf.org/cdis (accessed December 2022).

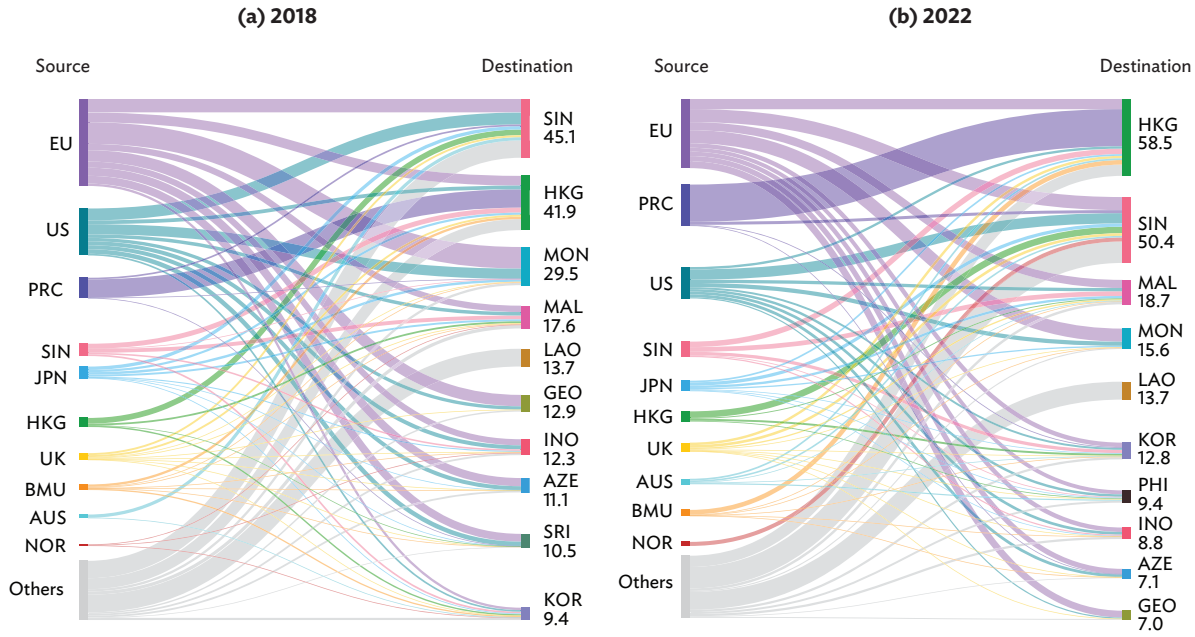
Whereas Asian investors have tended to allocate larger shares of foreign assets into FDI, mostly at the expense of equity portfolio investments, portfolio and bank claims still dominate investment portfolios, which exposes the region to asset repricing in foreign markets. The share of FDI investments grew from one-third of assets in 2009 to two-fifths in 2022 (Figure 4.8a). Similarly, Asia's liabilities depend on volatile sources, further exposing the region to external shocks. Since 2009, portfolio liabilities and bank liabilities have accounted for more than half of external investment in the region (Figure 4.8b).

The US and the EU are the largest extraregional investors in Asia, and thus likely sources of external shocks.

The US and the EU combined account for about two-fifths of Asia's inward portfolio debt investment, with some regional economies remaining significantly exposed (Figure 4.9). For instance, debt investment from the EU in Mongolia and Singapore account for about 10% of recipient economies' GDP. Thus, Asia is particularly vulnerable to economic and financial shocks from the US and the EU. Important financial centers like Singapore and Hong Kong, China maintain significant links across Asia, potentially transmitting shocks from the US and the EU.

The US and the EU were also the largest portfolio equity investors in the region, accounting for about half of total portfolio equity investment in Asia (Figure 4.10). Some regional economies display pronounced exposures: Hong Kong, China and Taipei,China received inward equity investments from the US worth about one-third of their respective GDP. The figure stands at about three-twentieths for Singapore. The Republic of Korea joined these three economies in being significantly exposed to the EU. In 2022, EU portfolio equity investments reached about 25% of destination economy GDP in Hong Kong, China; about 17% in Taipei,China; and about 10% in Singapore.

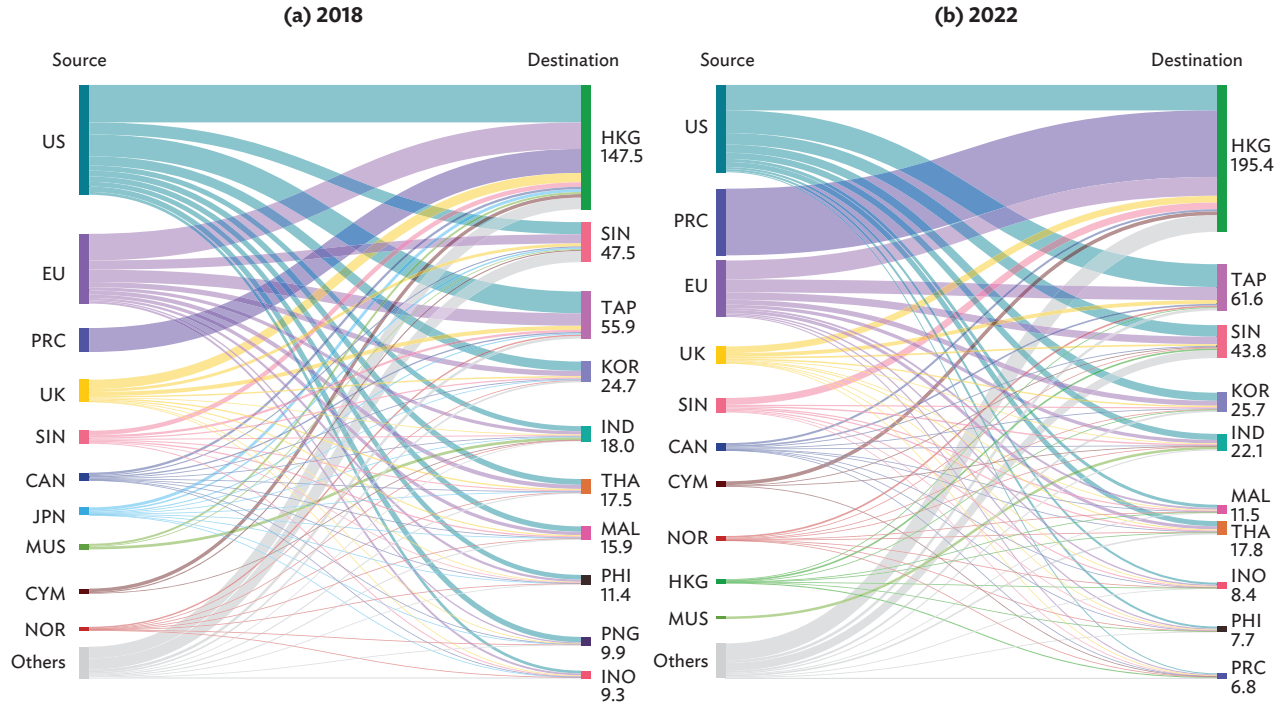
Figure 4.9: Inward Portfolio Debt Investment from Top 10 Sources (% of destination economy GDP)



AUS = Australia; AZE = Azerbaijan; BMU = Bermuda; EU = European Union (27 members); GDP = gross domestic product; GEO = Georgia; HKG = Hong Kong, China; INO = Indonesia; JPN = Japan; KOR = Republic of Korea; LAO = Lao People's Democratic Republic; MAL = Malaysia; MON = Mongolia; NOR = Norway; PHI = Philippines; PRC = People's Republic of China; SIN = Singapore; SRI = Sri Lanka; UK = United Kingdom; US = United States.

Source: International Monetary Fund. Coordinated Portfolio Investment Survey. https://data.imf.org/cpis (accessed September 2023).

Figure 4.10: Inward Portfolio Equity Investment from Top 10 Sources (% of destination economy GDP)



CAN = Canada; CYM = Cayman Islands; EU = European Union (27 members); GDP = gross domestic product; HKG = Hong Kong, China; IND = India; INO = Indonesia; JPN = Japan; KOR = Republic of Korea; MAL = Malaysia; MUS = Mauritius; NOR = Norway; PHI = Philippines; PNG = Papua New Guinea; PRC = People's Republic of China; SIN = Singapore; TAP = Taipei,China; THA = Thailand; UK = United Kingdom; US = United States.

Source: International Monetary Fund. Coordinated Portfolio Investment Survey. https://data.imf.org/cpis (accessed September 2023).

Drivers of Capital Flow Volatility in Asia

A Significant Rise in US Dollar Funding Costs Hit Global Financial Conditions in 2023

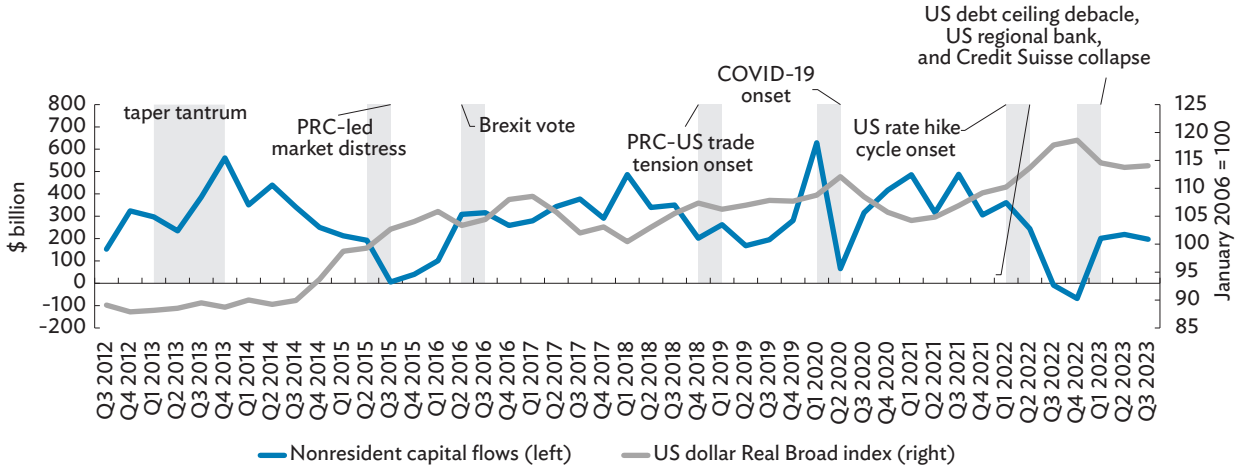
The previous section illustrated Asia's rising global financial integration. Consequently, the region is significantly exposed to spillovers from advanced economies, notably the US financial system. Together with global risk aversion, global liquidity, and commodity prices, US monetary policy and the US dollar exchange rate are key drivers of capital flows (BIS 2021a; Koepke 2019). Capital flows to Asia experienced significant volatility during US monetary policy tightening episodes like the 2013 taper tantrum and 2022 rate hiking cycle and declined sharply during US dollar funding stress episodes as exacerbated by rising trade tensions in 2019 and the COVID-19 pandemic (Figure 4.11).

With financial conditions tight amid elevated uncertainty and rising geoeconomic tensions, financial market turmoil in the US triggered global risk-off market moves in 2023. During such periods, the US dollar tends to appreciate against a broad basket of currencies, signaling increased demand for safe US dollar-denominated assets (Figure 4.11). This so-called broad US dollar exchange rate is a key gauge of global investor sentiment and reflects the US dollar as the ultimate safe asset as well as its pervasive role in trade finance and global payment systems (Avdjiev et al. 2017). This section highlights the key US dollar funding shocks exerting capital outflow pressure on Asia in 2023.

Recent aggressive US monetary policy tightening triggered large capital outflows from Asia.

Advanced economy central banks significantly raised monetary policy rates in 2022, likely to remain at historically high levels. Consequently, global investor

Figure 4.11: Aggregate Capital Inflows Timeline—Asia and the Pacific

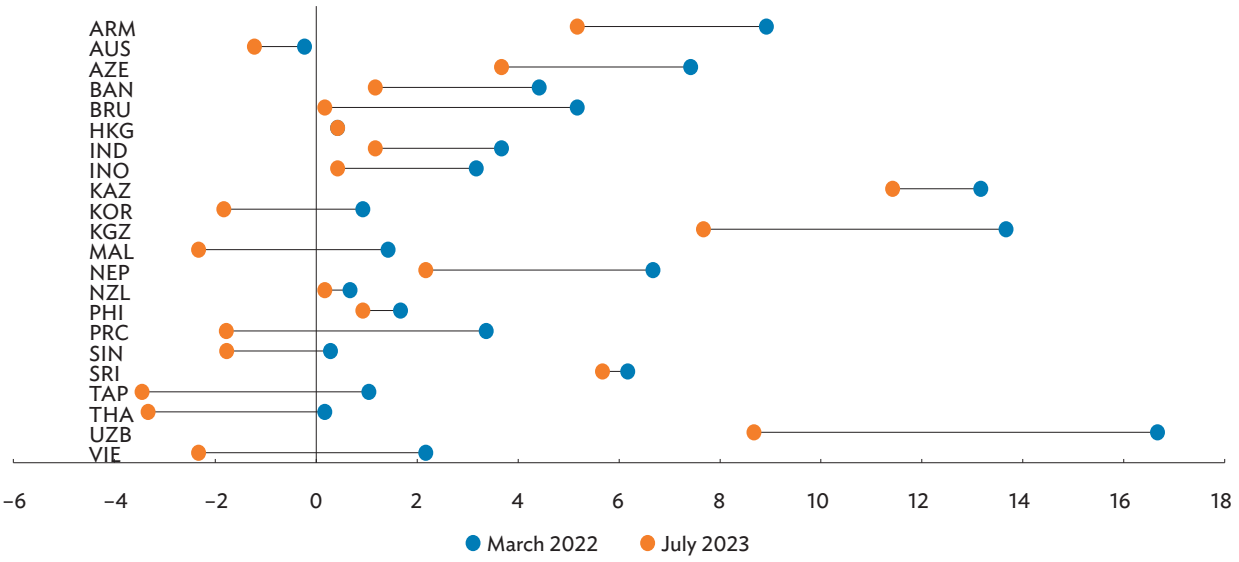


COVID-19 = coronavirus disease, PRC = People's Republic of China, Q = quarter, US = United States.

Note: The US dollar Real Broad index denotes the trade-weighted real effective US dollar exchange rate against a broad basket of 26 currencies.

Source: ADB calculations using data from CEIC Data Company.

Figure 4.12: Policy Rate Differential with the US Policy Rate—Selected Asian Economies (percentage points, as of July 2023)



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

Source: CEIC Data Company.

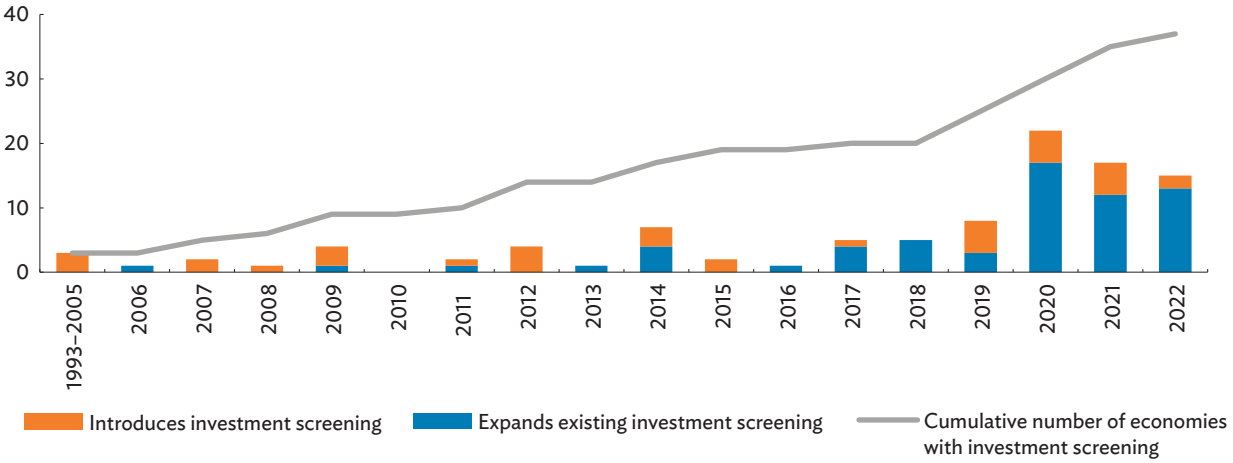
sentiment darkened and may decline further as the increase in borrowing costs raised the risk of financial stress. The US policy rate increases led to a narrowing of interest rate differentials between Asian economies and the US, triggering an unwinding of carry-trades and capital flow reversals from the region (Figures 4.11 and 4.12). While capital flows to Asia have partly recovered since late 2022 as discussed above, the recent rate hiking cycle underlines the US monetary policy as a key driver of capital flow volatility in the region.

Shifts in the geopolitical world order amplify capital flow volatility.

Trade tensions between the US and the PRC and the Russian invasion of Ukraine fostered fragmentation of the post-war geopolitical order across political, economic, financial, and technological spheres. The precedence of strategic competition and national security concerns over economic efficiency risks stalling global trade and investment as Asia's decades-long engine of growth. The number of economies introducing or expanding frictions to FDI such as investment screening related to national security concerns has nearly doubled since the onset of US–PRC trade tensions in 2019 (Figure 4.13). Continued geoeconomic fragmentation is also likely to harm trade through heightened uncertainty (Aiyar et al. 2023). The Russian invasion of Ukraine saw global uncertainty reach levels last seen during heightened US–PRC trade tensions in 2019 (Figure 4.14).

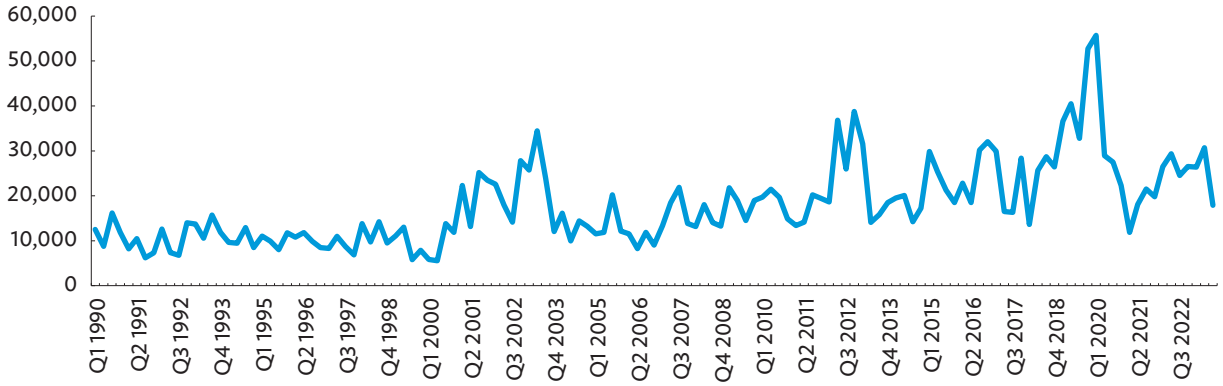
Spikes in trade tensions have been shown to increase capital flow volatility, as global investors reallocate portfolios and reduce cross-border credit (IMF 2023). This reversal of capital flows may increase borrowing costs in Asia and undermine financial stability through sudden corrections in asset prices. Moreover, borrowing costs may also rise because further geoeconomic fragmentation may raise demand for the US dollar as a safe asset, driving its price yet higher.

Figure 4.13: Number of Economies Introducing National Security-Related Investment Screening



Source: UNCTAD (2023).

Figure 4.14: Global Uncertainty Measure—Asia and the Pacific (index)



Q = quarter.

Notes: The World Uncertainty Index (WUI) is computed by counting the percentage that the word "uncertain" (or its variant) occurs in Economist Intelligence Unit (EIU) economy reports. The WUI is then rescaled by multiplying by 1,000,000. A higher number means higher uncertainty and vice versa. For example, an index of 200 corresponds to the word uncertainty accounting for 0.02% of all words, which—given the EIU reports are on average about 10,000 words long—means about two words per report.

Source: ADB calculations using data from Ahir, Bloom, and Furceri (2022).

Spillovers of US financial market gyrations add to Asia's capital flow volatility.

March 2023 bank runs caused the failure of two US regional banks, Silicon Valley Bank and Signature Bank of New York. Subsequent selling pressure on other US banks with similarly runnable assets forced the mid-sized First Republic Bank to be placed in receivership. The commensurate decline in market sentiment reverberated across the Atlantic leading to the collapse of Zurich-based Credit Suisse.

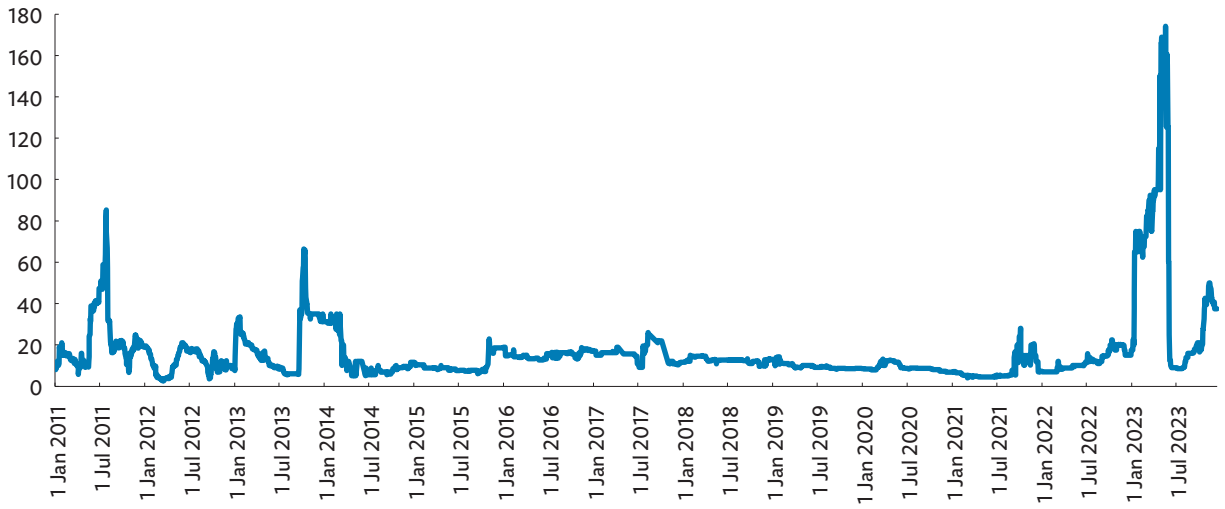
While the decisive action of regulators prevented a broader meltdown of global financial markets, the ensuing financial stress caused US dollar funding costs to rise globally (IMF 2023). This highlights that Asia remains vulnerable to US financial turmoil triggering sudden stops of capital flows, further accelerated by the rise of digital cross-border payment systems.

A near US default on federal debt in June 2023 highlighted the fragility of US dollar funding for Asia.

In January 2023, the US federal debt limit prevented the federal government from issuing debt and thus US dollar-denominated safe assets underpinning global financial stability. Uncertainty about the debt limit's political resolution saw US credit default swaps—a financial instrument protecting investors against a US sovereign default—rise to levels higher than during similar US debt ceiling discussions in 2011 (Figure 4.15).

While a default was narrowly averted, uncertainty lingers over the political process to resolve future debt limit debates. Coupled with declining US fiscal capacity to backstop US dollar-denominated debt, the episode led the rating agency Fitch to downgrade US debt in August 2023, the second downgrade after Standard & Poor's rating cut in 2011. A prospective US government shutdown in September 2023 further highlighted uncertainty about the process of US fiscal policymaking, leading the third big rating agency, Moody's, to issue a negative credit warning, later adding a negative outlook to the US credit rating. Volatility in short-term US dollar funding markets shot up in the wake of the debt debacle as markets expected an increased US debt issuance to replenish the US Treasury's cash buffers (BIS 2023). Such bouts of volatility in Asian financial institutions' core funding market suggests continued vulnerability to US dollar funding shocks.

Figure 4.15: US Dollar 1-Year Euro Credit Default Swap—United States (basis points)



Source: Investing.com. https://www.investing.com/rates-bonds/united-states-cds-1-year-eur-historical-data (accessed 22 September 2023).

Risks of Entrenched US Dollar Dependence

Asia Is Prone to US Dollar Funding Shocks Due to High US Dollar Dependence

Asian economies are highly exposed to the US dollar, the globally dominant reserve currency over the past 60 years. The US dollar's central role fostered Asia's integration in global value chains, helping the region reap a growth dividend from globalization. On the flipside, high US dollar dependence injects a range of macrofinancial fragilities into the region. This section portrays stylized facts of US dollar dominance in Asia, and outlines its negative macroeconomic and financial repercussions for the region.

Most of Asian economies' trade is invoiced in US dollars, even when excluding the US as trading partner. Globally, one-third of exports and close to half of imports are invoiced in US dollars (Annex 4a, panels a and b). This contrasts with over four-fifths of exports and imports in Asia, with only Latin America and in part the Middle East posting higher US dollar invoicing shares (Annex 4b, panel a). The US dollar invoicing share in Asia stood between close to three and four times higher than the world average for exports over the past 2 decades, and about two times higher for imports, highlighting the outsized role of the US dollar for trade in Asia (Annex 4a, panels a and b). For both export and import trade invoicing, the US dollar is as important in Asia as the euro is in the euro area, where the euro is the common currency. This implies that the US dollar's role in Asia is akin to a common trade currency (Annex 4a, panels c and d).

Asian banks' balance sheets are skewed strongly toward the US dollar. As most of Asia's trade is invoiced in US dollars, bank trade financing for the region reflects the US dollar's heft. Coupled with demand from Asian investors for safe US dollar-denominated assets and banks' reliance on the depth and breadth of US dollar funding markets for short-term wholesale finance, Asian banks' balance sheets also strongly reflect use of the US dollar. Globally, about two-fifths of banks' international assets and liabilities are denominated in US dollars (Annex 4a, panel e). In Asia, the share stands even higher at 55% in 2022, rising from 51% in 2001, and higher than in Africa and Europe (Annex 4b, panel b).

The US dollar constitutes the preferred currency for external debt issuances in Asia, accounting for about half of outstanding debt liabilities (Annex 4a, panel f). Only Latin America and North America excluding the US have a higher propensity to issue debt in US dollars (Annex 4b, panel c). Similarly, the US dollar plays a larger role in Asia for total external liabilities, with its share standing at 20% in Asia compared to 15% globally (Annex 4a, panel g). The US dollar has been the preferred currency for Asia's external debt issuances since at least 2010.

The US dollar remains the dominant store of value not only globally, but also in Asia. Two-thirds of disclosed official foreign exchange reserves in Asia are denominated in US dollars (Annex 4a, panel h). In line with Asian economies' buildup of self-insurance, this share increased from about half of total reserves at the time of the Asian financial crisis in the late 1990s. This contrasts with a decline of the US dollar's share in currency reserves globally from 71% in 2000 to 59% in 2023 (Annex 4a, panel h). The drop at the global level reflects central bank reserve managers' portfolio diversification (Arslanalp, Eichengreen, and Simpson-Bel 2022). Latest data suggest that US sanctions of the Russian Federation did not trigger a broad-based reallocation of reserves.

The US dollar is the key reference point for exchange rates of Asian economies. In line with the US dollar's historical role as anchor of the international monetary system, the US dollar serves as exchange rate anchor either exclusively or as part of a currency basket for 62 economies globally, of which 18 in Asia represent about one-fifth of global GDP including the PRC, and about 2% of global GDP if the PRC is excluded from that calculation (Annex 4a, panel i). This compares to 3.6% of world GDP for the Middle East, 1.5% for Latin America, and 0.4% for Africa. The use of the US dollar as anchor currency has increased over the past 2 decades, with economies using the US dollar as anchor, accounting for about one-quarter of world GDP (Ilzetzki, Reinhart,

and Rogoff 2019). Moreover, the US dollar is the main reference point for crypto assets, as almost all stable coins are linked to the US dollar (Bertaut, von Beschwitz, and Curcuru 2023).

As a means of exchange, the US dollar ranks first in payments. Two-fifths of global payments are denominated in US dollars, followed by about one-third in euros, and the pound sterling accounting for less than 10% and the yen less than 5% (Annex 4a, panel j). The US dollar's share in global payments has increased by 10 percentage points over the past decade, largely at the expense of the euro and other smaller currencies. The US dollar's payments footprint in Asia could rise yet more if a US dollar-backed digital currency were to become widely used for payments in Asia.

The US dollar has the largest footprint in international currency trading. Reflecting US dollar liquidity needs for trade and cross-border finance as well as debt issuance, the US dollar takes the lead in international currency trading and was bought or sold in 44% of all international currency trades in 2022 (Annex 4a, panel k). Despite significant technological advances in international currency trading benefiting the trade of more currency pairs, the US dollar's share remained unchanged over the past 2 decades.

US dollar dominance could aggravate macroeconomic and financial fragilities in Asia.

The International Monetary and Financial System's high concentration in a handful of reserve currencies with the US dollar at its pinnacle led to global imbalances, excess capital flows, and liquidity shortages around the world, making the world dependent on the US Federal Reserve to act as lender of last resort. These repercussions are particularly pronounced in Asia given the region's high US dollar dependence, as evidenced repeatedly by excessive capital flow volatility during global financial stress. A large body of literature documents the drawbacks of US dollar dominance for developing economies, including in Asia.

A stronger US dollar reduces dollar-denominated cross-border capital flows and ultimately investment and GDP growth in recipient economies (Avdjiev et al. 2017, 2018; Di Giovanni and Rogers 2023; Hofmann, Shim, and Shin 2022). Export activity also falls (Hofmann and Park 2020). The subsequent decline in global economic activity affects the US economy relatively less, reinforcing the US dollar's appreciation and the negative repercussions of its rise (Akinci et al. 2022). Emerging Asia is particularly susceptible to declines in cross-border lending since such economies have limited ability to turn to other sources of US dollar borrowing, as few benefit from direct swap lines with the US Federal Reserve (Barajas et al. 2019).

The US dollar exchange rate is now a key conduit for US dollar funding conditions to Asia. Declines in cross-border credit growth and trade arise through the so-called "financial channel" of the exchange rate: a stronger US dollar lowers the US dollar value of local currency-denominated collateral of non-US borrowers, resulting in lower cross-border credit provision (Bruno and Shin 2015). Further, exports decline as a US dollar appreciation raises the cost of working capital of exporting firms (Bruno and Shin 2023). This financial channel of US dollar appreciations dominates the traditional "trade competitiveness channel" (Lee et al. 2021). The latter would suggest that a US dollar appreciation and commensurate local currency depreciation raises exports. The financial channel of the US dollar exchange rate compounds the effect of the "trade-invoicing channel," suggesting that an appreciation of the US dollar predicts a decline of global trade (Boz et al. 2020; Gopinath et al. 2020). This effect is increasing in the share of imports invoiced in US dollars (Ma, Schmidt-Eisenlohr, and Zhang 2020). In turn, the share of US dollar-denominated trade invoicing correlates positively with economies' participation in global value chains (GVCs) because of the strategic complementarity between price setting and integration in GVCs (Georgiadis et al. 2021; Mercado, Jacildo, and Basu Das 2023).

US dollar dominance in trade invoicing lowered Asia's resilience to external shocks, as flexible exchange rate regimes came to function less well as shock absorber

(Adler et al. 2020; Casas, Meleshchuk, and Timmer 2022). For instance, for a commodity-importing economy faced with rising commodity prices, a flexible exchange rate regime traditionally implies that a subsequent depreciation of the exchange rate automatically rebalances the external position. Under US dollar dominance in trade invoicing, such rebalancing requires large exchange rate adjustments. These may come with significant negative repercussions for fiscal and financial stability, especially given high US dollar-denominated debt.

Increased financial, nonfinancial corporate and sovereign stress may result from US dollar dominance. A US dollar appreciation can push firms in emerging markets with US dollar debt financing local currency assets into distress (Bruno and Shin 2018). Previously loose US dollar funding conditions incentivized firms to issue foreign-currency denominated bonds, increasing exchange rate mismatches and thus financial stability risks (Bacchetta, Cordonier, and Merrouche 2023). Rollover risks in currency hedges of Asian investors investing in US dollar-denominated assets abroad further fuel financial stability risks (McGuire et al. 2021). A US dollar appreciation also raises sovereign bond spreads, even for local currency sovereign bonds (Hofmann, Shim, and Shin 2017; Lee et al. 2021).

A high reliance on US dollar funding raises financial market stress. The COVID-19 induced US dollar funding squeeze sharply raised funding costs, capital outflows, and local currency depreciations, further aggravated by the pronounced US dollar funding dependence of globally active banks headquartered in high-income Asian economies (Pande and del Rosario 2020; Park, Rosenkranz, and Tayag 2020). This US dollar funding shortage highlighted the region's dependence on central bank swap lines offered by the US Federal Reserve. Global non-US banks' dependence on US dollar funding may also amplify the region-wide decline in asset prices when US dollar funding becomes more expensive (Ehlers, Hoffmann, and Raabe 2020).

US Dollar Dependence Puts Capital Flows at Risk

Capital inflows bring much-needed funding for investments, but can reverse quickly in response to factors unrelated to the recipient economy. Such reversals often destabilize the economy as a result of sudden asset price and growth declines (Calvo 1998; Forbes and Warnock 2012). As discussed above, US dollar funding shocks were a key driver of recent capital flow volatility. Asia relies heavily on the US dollar, and is thus particularly exposed to related shocks. This section presents empirical evidence how Asia's US dollar dependence culminates in heightened risk of capital flow reversals.

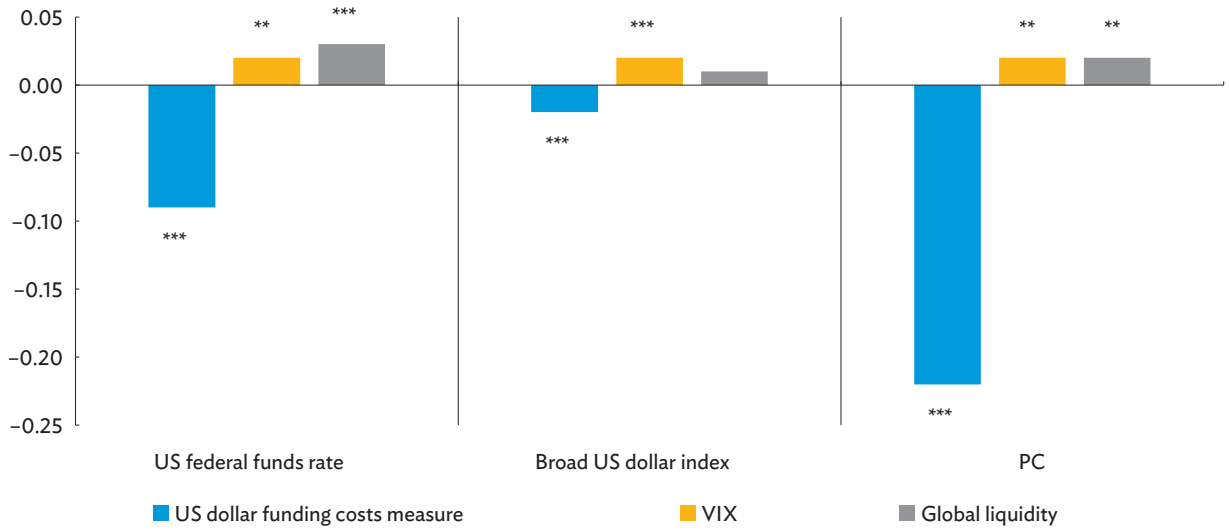
Capital flows to Asia tend to reverse in response to US dollar funding shocks.

An empirical analysis for a broad sample of developing economies and emerging markets in Asia shows that a one standard deviation increase in US dollar funding costs lowers medium-term portfolio debt flows into the region as a share of GDP by 0.2% to 0.25% and raises outflows by the same magnitude (Figure 4.16). US dollar funding costs are measured by the US short-term monetary policy rate known as federal funds rate, and by the US dollar Real Broad index measuring the trade-weighted real effective US dollar exchange rate against a broad basket of currencies. Other global factors commonly identified by the literature as global drivers of capital flows—notably global liquidity and investor sentiment—exert a smaller and statistically less significant effect on capital inflows. This emphasizes the US dollar's central role as predictor of capital flow reversals.

Dollar dependence amplifies capital flow reversals driven by US dollar funding shocks.

The analysis further reveals that the effect of more expensive US dollar funding costs on capital flows is increasing in economies' dependence on US dollar funding. The latter is defined as the need to refinance US dollar-denominated debt, measured by an economy's share of US dollar-denominated international debt.

Figure 4.16: Regression Coefficients of Capital Inflow Determinants



PC = first principal component of the US federal funds rate and the US dollar Real Broad index, US = United States, VIX = volatility index. Stars denote statistical significance levels: *** at 1%, ** at 5%, and * at 10%.

Note: See Box 4.1 for technical details.

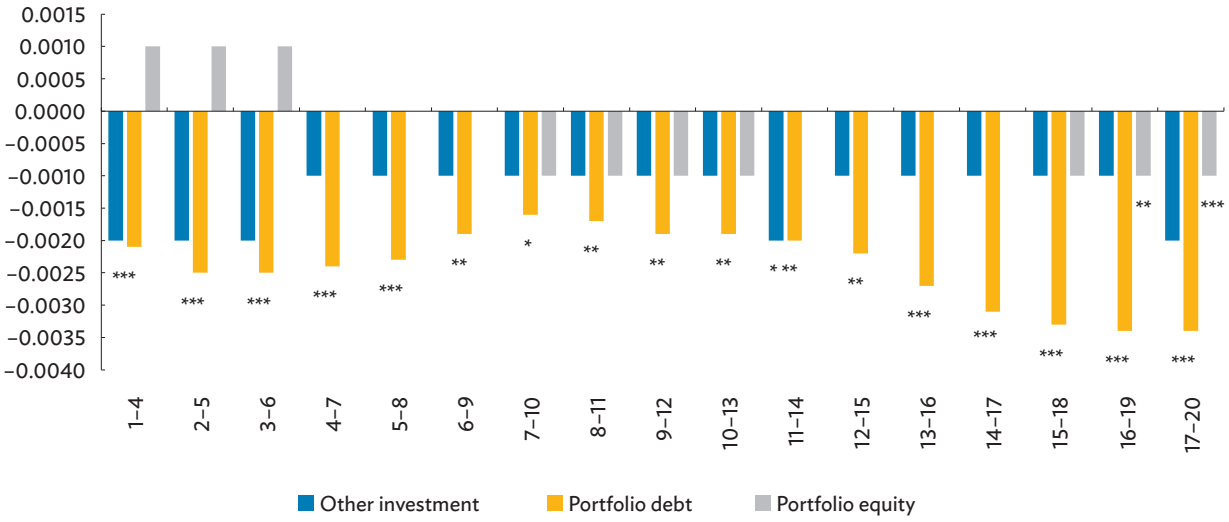
Sources: ADB calculations using data from Bank for International Settlements (BIS). Global Liquidity Indicators. https://data.bis.org/topics/GLI; BIS. Effective Exchange Rate Indices. https://www.bis.org/statistics/eer.htm (both accessed August 2023); Bloomberg L.P.; and Haver Analytics.

The importance of US dollar dependence can be rationalized as follows: increased foreign funding costs weaken economies' debt sustainability, lowering their creditworthiness. Foreign creditors' lending capacity is also known to decline as funding costs increase, and a US dollar appreciation lowers the foreign credit to emerging market borrowers (Bruno and Shin 2015). Thus, rising US dollar funding costs are conjectured to reduce capital inflows more for economies with higher US dollar-denominated debt.

The results indicate that for a given level of US dollar funding costs measured by either the federal funds rate or the US dollar Real Broad index, an economy with a one standard deviation higher US dollar dependence experiences 0.05% to 0.3% lower capital inflows in addition to the direct effect of rising US dollar funding costs, and analogously, higher outflows by the same magnitude (Figure 4.17).

The response of capital flows to US dollar funding shocks varies by capital flow type and time horizon. Given a rise in US dollar funding costs, capital flow reversals due to higher US dollar dependence are most pronounced for portfolio debt and other investments. Higher US dollar dependence combined with an increase in US dollar funding costs can provoke portfolio debt outflows in both the short and long term. This effect rises over time, as the long-term effect is one-third larger than the short-term effect, suggesting that the effect of US dollar dependence takes time to become apparent. Results for a similar analysis using the effective US federal funds rate as a measure for dollar funding costs confirms US dollar dependence as a powerful vector in the international transmission of US dollar funding conditions (Annex 4c).

Figure 4.17: Regression Coefficients—International Debt Share and US Dollar Funding Costs



US = United States. X-axis shows 4-quarter long periods ahead. Stars denote significance levels: *** at 1%, ** at 5%, and * at 10%.

Note: See Box 4.1 for technical details.

Sources: ADB calculations using data from Bank for International Settlements (BIS). Global Liquidity Indicators. https://data.bis.org/topics/GLI; BIS. Effective Exchange Rate Indices. https://www.bis.org/statistics/eer.htm (both accessed August 2023); Bloomberg L.P.; and Haver Analytics.

Box 4.1: Methodological Note on the Determinants of Capital Inflows

This chapter discusses how the high dependence of Asia and the Pacific on the US dollar amplifies the risk of capital flow reversals from the region.

First, the chapter discusses how an increase in US dollar funding costs lowers medium-term portfolio debt flows into the region. The related evidence shown in Figure 4.16 relies on fixed effect panel regressions of capital inflows on US dollar funding costs, other global factors, and domestic economic conditions for a broad sample of developing and emerging market economies in Asia and the Pacific. The dependent variable is the 4-quarter average of gross portfolio debt inflows to individual economies scaled by gross domestic product (GDP) between 5 and 8 quarters ahead. US dollar funding costs are measured by (i) the effective US federal funds rate, (ii) the trade-weighted US real effective exchange rate against a broad basket of currencies (US dollar Real Broad index), and (iii) the first principal component of (i) and (ii). Other global factors comprise the S&P500 volatility index (VIX) and global liquidity measured by total international banks' claims on all sectors as scaled by global GDP. Domestic economic conditions include GDP per capita and the domestic monetary policy rate.

Second, this chapter shows that the effect of more expensive US dollar funding costs on capital flows is increasing in economies' dependence on US dollar funding. The results portrayed in Figure 4.17 are based on panel regressions of capital inflows on US dollar funding costs interacted with US dollar dependence and domestic economic conditions for a broad sample of emerging markets in Asia using economy and time fixed effects. The dependent variables are the 4-quarter average of capital inflows to individual economies scaled by GDP rolling forward over quarters 1 to 17 ahead, where capital inflows denote (i) portfolio debt inflows, (ii) portfolio equity inflows, or other investment inflows. US dollar funding costs are measured by (i) the effective US federal funds rate, and (ii) the trade-weighted US real effective exchange rate against a broad basket of currencies (US dollar Real Broad index). US dollar dependence corresponds to the share of US dollar-denominated international debt. Domestic economic conditions include GDP per capita, real GDP growth, the differential between the US and domestic monetary policy rate, a measure of capital account openness, and the ratio of external debt to foreign currency reserves. Results for the interaction between the international debt share and the federal funds rate as a measure of US dollar funding costs are available in Annex 4c.

Source: ADB.

Policy Options Can Mitigate Risks from US Dollar Exposure

Various policies aimed at lowering US dollar dependence may help prevent and mitigate its negative repercussions for capital flow volatility and financial stability.

First, it is important to strengthen the Asian banks' balance sheet resilience to US dollar funding shocks. Asian banks largely obtain US dollar funding through foreign exchange swap markets and indirectly through cross-border banking networks. These US dollar funding channels proved fragile during past global financial stress periods (Park, Rosenkranz, and Tayag 2020). Given the importance of bank-based finance in Asia, it is crucial to improve regulatory oversight of banks' foreign exchange liquidity risks and to broaden currency hedging mechanisms (BIS 2021b).

Second, expanding the depth and breadth of local currency bond markets remains a priority to reduce US dollar dependence. The Asian Bond Markets Initiative of the Association of Southeast Asian Nations Plus Three (ASEAN+3) has helped to significantly increase the issuance of and demand for local currency securities in long maturities, reducing short-term US dollar funding needs. Further efforts are being pursued to facilitate cross-border issuance, trading, and settlements for more integrated regional capital markets (Park 2017). However, local currency bond issuance only partially remedies capital flow reversal risk as a result of the transfer of currency mismatches to international investors (Hofmann, Shim, and Shin 2020). Given a small domestic investor base, regional economies' bond markets came to rely on these international investors. Their typically unhedged local currency bond holdings combined with obligations in their respective home economy currency and foreign currencies like the US dollar makes international investors prone to exchange rate shocks. International investors' losses from local currency depreciations lead to capital outflows further amplifying the depreciation. To avoid capital outflows resulting from such currency mismatches, it is important to broaden the domestic investor base.

Third, carefully calibrated policy interventions may help manage capital flow reversal risk. Sudden capital flow reversals are known to quickly tighten financial conditions, often leading to financial crises while also precipitating growth declines. In a first instance, to stem outflows, and where appropriate, central banks should raise monetary policy rates gradually. As this may give rise to increased financial vulnerabilities, and recognizing that flexible exchange rate regimes do not always fully insulate economies against external shocks, foreign exchange intervention and capital controls can improve policy trade-offs (IMF 2020). While Asian economies have successfully deployed macroprudential policies, capital flow management measures, and foreign exchange interventions, evidence points at the importance of the nature of shocks, economy characteristics, and initial conditions for the policies to be effective (Bergant et al. 2020; Eller et al. 2021; Frost, Ito, and van Stralen 2020; Gelos et al. 2019; Nier, Olafsson, and Rollinson 2020; Rebucci and Ma 2019). Importantly, these policy measures should not substitute for warranted macroeconomic, financial, and structural adjustments (IMF 2020).

Fourth, strengthening regional financial safety nets is imperative. Incorporating the lessons learned from the 1997 Asian financial crisis, the Chiang Mai Initiative Multilateralization's (CMIM) liquidity pool with a lending capacity of $240 billion allows ASEAN+3 economies (Japan, the PRC, and the Republic of Korea) to access liquidity by swapping local currency for US dollars or local currency of the swap provider. The CMIM is complemented by a precautionary credit line. The ASEAN+3 Macroeconomic Research Office (AMRO) supports the CMIM through macroeconomic surveillance and monitoring of CMIM funds, if deployed. Regional defenses against US dollar funding shocks can be strengthened by (i) increasing the CMIM's lending capacity such as through bond issuances backed by paid-in capital, (ii) widening its mandate to include the recapitalization of systematically important banks, and (iii) improving AMRO's surveillance capabilities for a timely and agile crisis response rooted in deep regional expertise.

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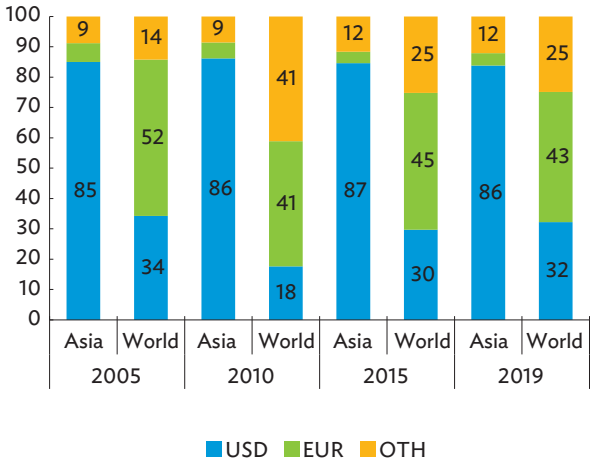
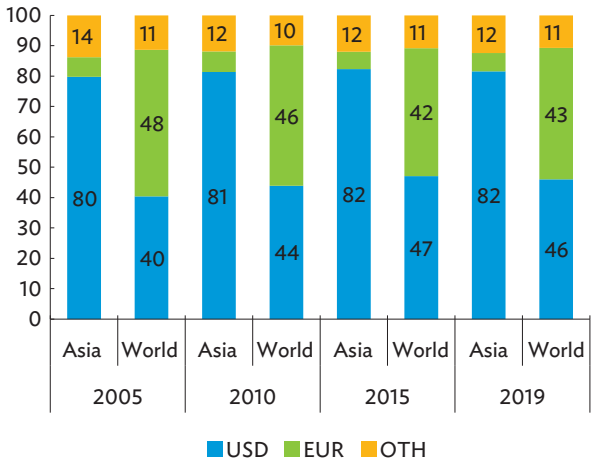
Annex 4a: Currency Composition by International Currency Use (%)

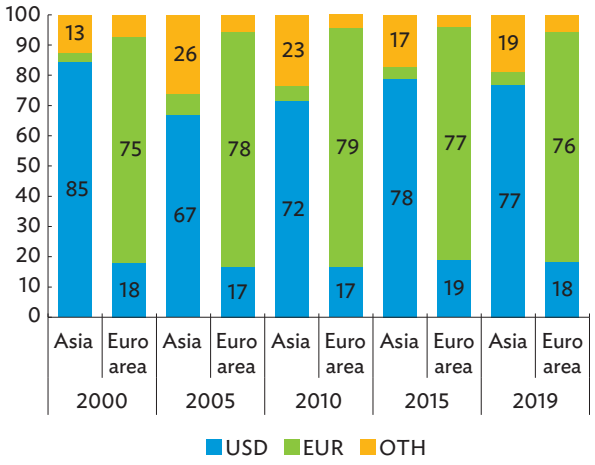
(a) Export invoicing—Asia and the Pacific and the World



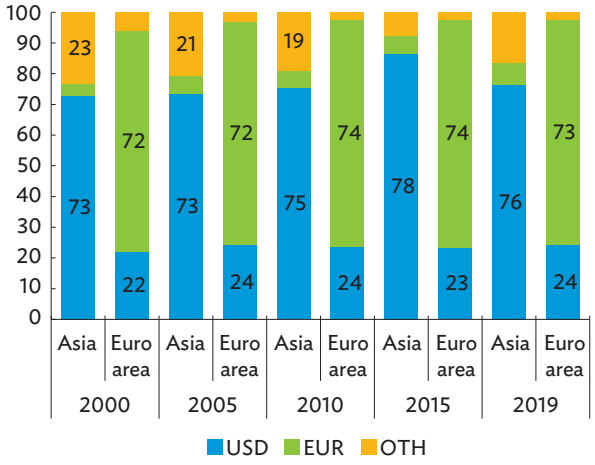
(b) Import invoicing—Asia and the Pacific and the World



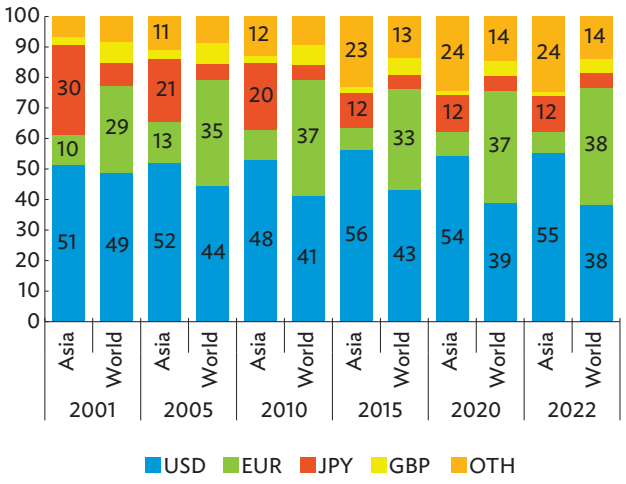
(c) Export invoicing—Asia and the Pacific and the euro area



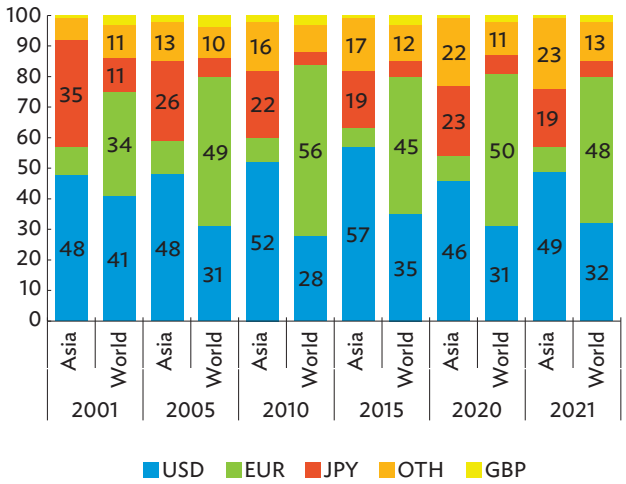
(d) Import invoicing—Asia and the Pacific and the euro area



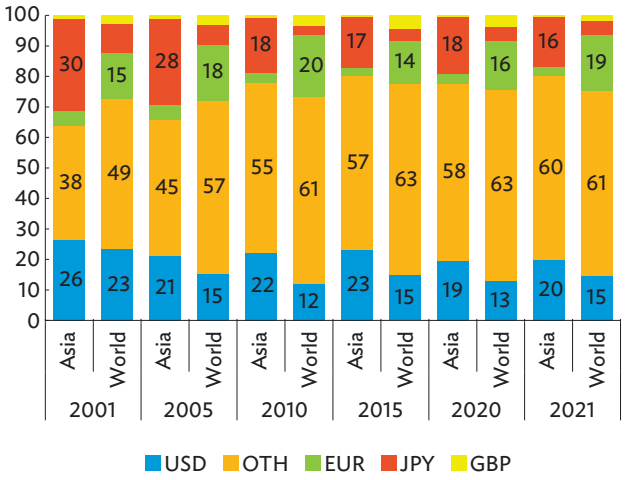
(e) Bank assets and liabilities—Asia and the Pacific and the World



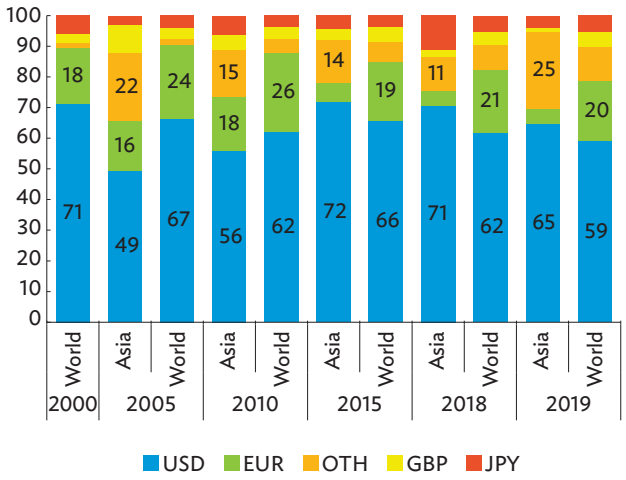
(f) International debt liabilities—Asia and the Pacific and the World



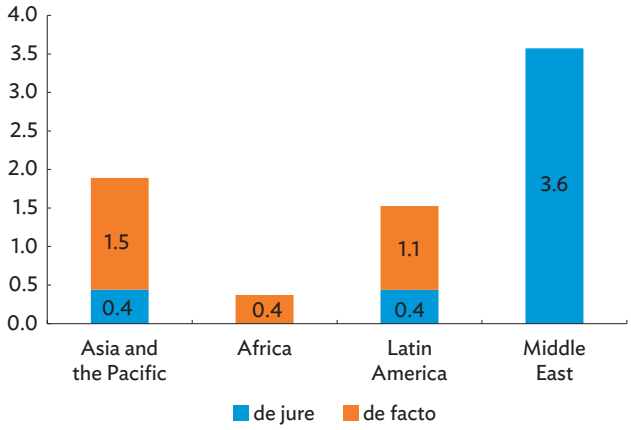
(g) International liabilities—Asia and the Pacific and the World



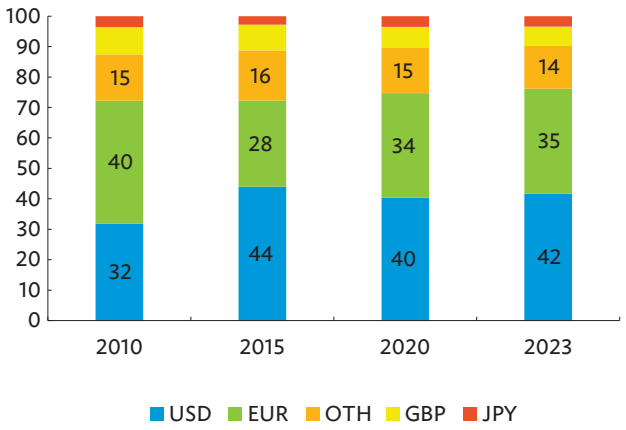
(h) Official foreign exchange reserves—Asia and the Pacific and the World



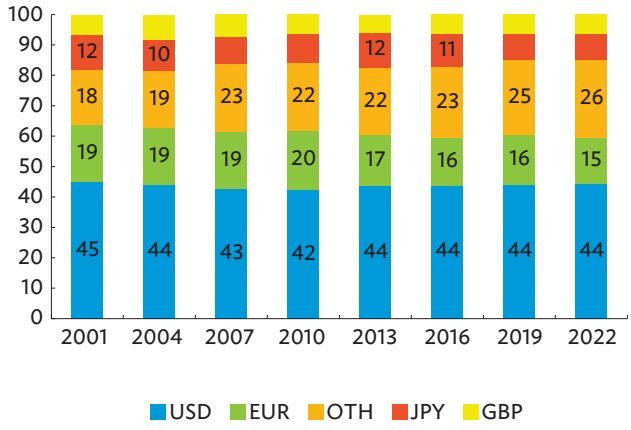
(i) Currencies anchored to the US dollar (% of world GDP)



(j) Cross-border payments—World



(k) Foreign exchange turnover—World



EUR = euro, GBP = pound sterling, GDP = gross domestic product, JPY = yen, OTH = other currencies, USD = United States dollar.

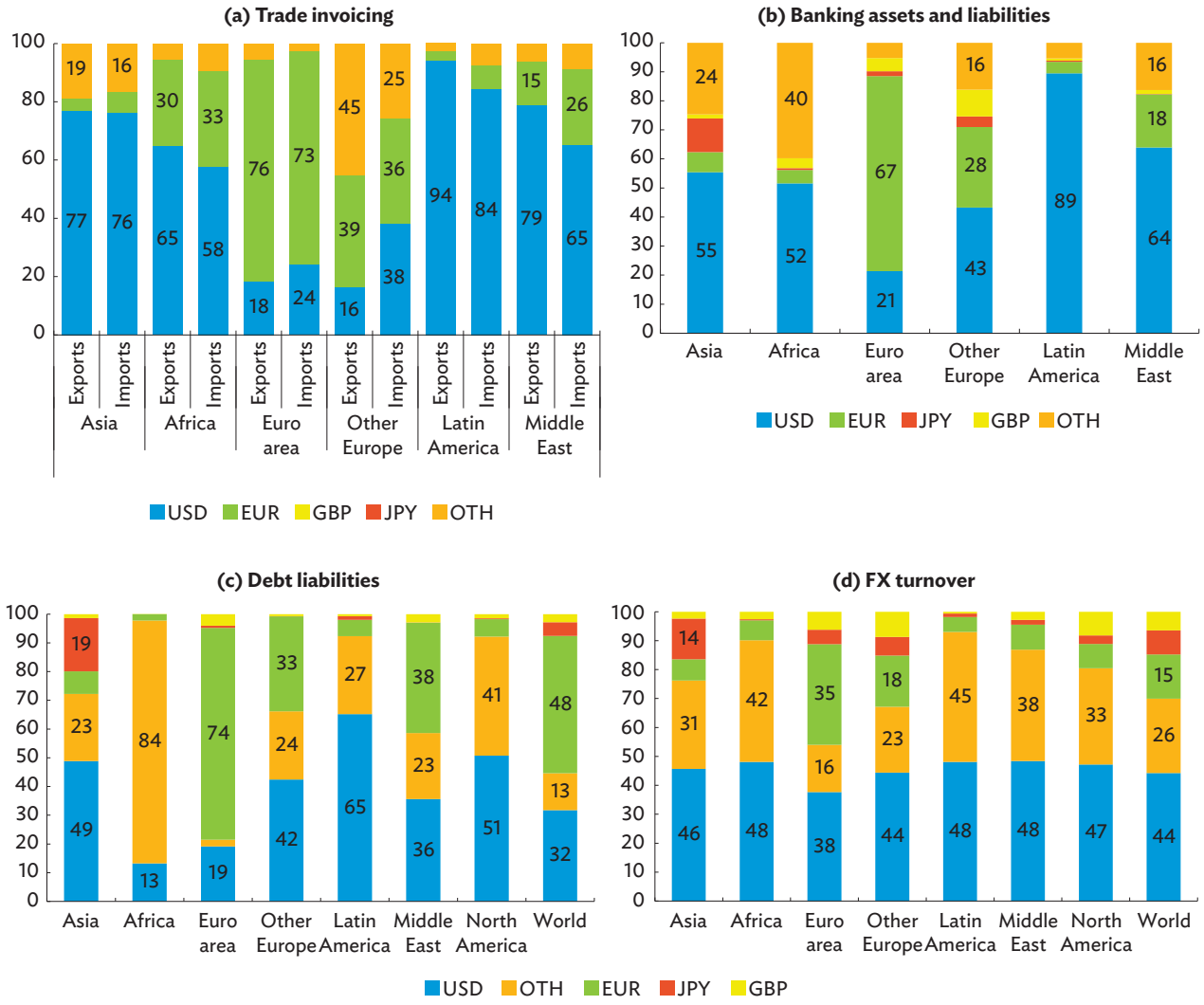
Notes:

(i) For panel f, the international debt liabilities category consists of portfolio debt liabilities and other debt liabilities from the International Monetary Fund's International Investment Position statistics, with the currency composition derived from Locational Banking Statistics of the Bank for International Settlements in line with Lane and Shambaugh (2007).

(ii) Panel i excludes the People's Republic of China.

Sources: ADB calculations using data from Bank for International Settlements. Locational Banking Statistics. https://stats.bis.org/statx/toc/LBS.html (accessed August 2023); Bloomberg L.P.; Boz et al. 2020; International Monetary Fund (2023); International Monetary Fund (IMF). Balance of Payments and International Investment Position Statistics. http://data.imf.org/IIP (accessed September 2023). IMF. Coordinated Direct Investment Survey. https://data.imf.org/cdis (accessed December 2022); IMF. Coordinated Portfolio Investment Survey. https://data.imf.org/cpis; IMF. Currency Composition of Official Foreign Exchange Reserves. https://data.imf.org/COFER; IMF. Direction of Trade Statistics. https://data.imf.org/dot; IMF. International Foreign Reserves and Foreign Currency Liquidity. https://data.imf.org/IRFCL; World Bank. World Bank Open Data. https://data.worldbank.org (all accessed September 2023); and national data sources; and methodology by Lane and Shambaugh (2007).

Annex 4b: Currency Composition by International Currency Use and by World Region (%)



EUR = euro, FX = foreign exchange, GBP = pound sterling, JPY = yen, OTH = other currencies, USD = United States dollar.

Notes:

(i) Data for trade invoicing are as of 2019, data for debt liabilities are as of 2021, and data for FX turnover are as of 2022.

(ii) Asia and the Pacific includes Armenia; Australia; Azerbaijan; Bangladesh; Fiji; Georgia; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; Kyrgyz Republic; Malaysia; Mongolia; Nepal; New Zealand; Pakistan; the People's Republic of China; the Philippines; the Republic of Korea; Singapore; Taipei,China; Thailand; and Timor-Leste; with heterogenous data availability.

(iii) Africa includes Angola, Botswana, Cabo Verde, Cote d'Ivoire, the Democratic Republic of Congo, Egypt, Eswatini, Ghana, Lesotho, Liberia, Malawi, Mauritius, Morocco, Mozambique, Namibia, the Niger, Nigeria, Rwanda, the Democratic Republic of São Tomé and Príncipe, Senegal, South Africa, Tanzania, Tunisia, and Zambia; with heterogenous data availability.

(iv) The euro area includes Austria, Belgium, Croatia, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovak Republic, Slovenia, and Spain; with heterogenous data availability.

(v) Other Europe includes Albania, Andorra, Belarus, Bosnia and Herzegovina, Bulgaria, the Czech Republic, Denmark, Hungary, Iceland, Moldova, Montenegro, North Macedonia, Norway, Poland, Romania, the Russian Federation, Serbia, Sweden, Switzerland, Ukraine, and the United Kingdom; with heterogenous data availability.

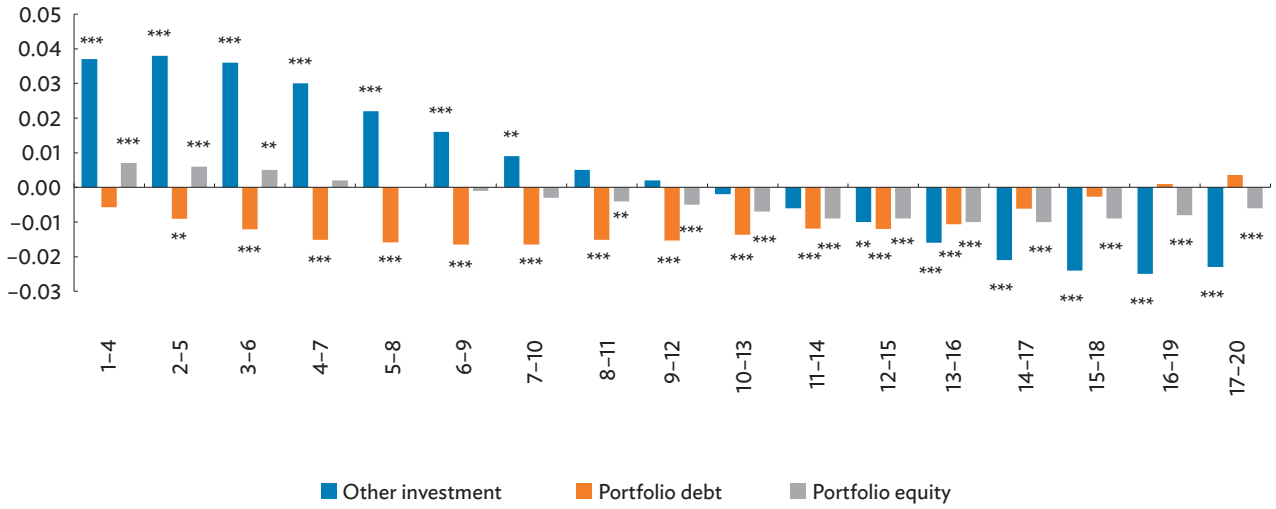
(vi) Latin America includes Argentina, the Bahamas, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Panama, Paraguay, Peru, Suriname, and Uruguay; with heterogenous data availability.

(vii) The Middle East includes Bahrain, Israel, Jordan, Saudi Arabia, Türkiye, the United Arab Emirates, and Yemen; with heterogenous data availability.

(viii) North America includes Canada and Mexico.

Sources: ADB calculations using data from Bank for International Settlements (BIS). BIS Triennial Central Bank Survey of Foreign Exchange and Over-the-counter (OTC) Derivatives Markets. https://www.bis.org/statistics/rpfx22.htm (accessed July 2023); BIS. Locational Banking Statistics. https://stats.bis.org/statx/toc/LBS.html (accessed August 2022); Boz et al. 2020; IMF. Balance of Payments and International Investment Position Statistics. http://data.imf.org/IIP (accessed September 2023). IMF. Coordinated Direct Investment Survey. https://data.imf.org/cdis (accessed December 2022); IMF. Coordinated Portfolio Investment Survey. https://data.imf.org/cpis; and IMF. Currency Composition of Official Foreign Exchange Reserves. https://data.imf.org/COFER (both accessed September 2023). IMF. Direction of Trade Statistics. https://data.imf.org/dot (accessed September 2023); and domestic sources.

Annex 4c: Regression Coefficients—International Debt Share and Federal Funds Rate



US = United States. X-axis shows 4-quarter long periods ahead. Stars denote significance levels: *** at 1%, ** at 5%, and * at 10%.

Notes: Results are based on panel regressions of capital inflows on US dollar funding costs interacted with US dollar dependence and domestic economic conditions for a broad sample of emerging market economies in Asia and the Pacific using economy and time fixed effects. The dependent variables are the 4-quarter average of capital inflows to individual economies scaled by gross domestic product (GDP) rolling forward over quarters 1 to 17 ahead, where capital inflows denote (i) portfolio debt inflows, (ii) portfolio equity inflows, or other investment inflows. US dollar funding costs are measured by (i) the effective US federal funds rate, and (ii) the trade-weighted US real effective exchange rate against a broad basket of currencies (broad US dollar index). US dollar dependence corresponds to the share of US dollar-denominated international debt. Domestic economic conditions include GDP per capita, real GDP growth, the differential between the US and domestic monetary policy rate, a measure of capital account openness, and the ratio of external debt to foreign currency reserves.

Sources: ADB calculations using data from Bank for International Settlements (BIS). Global Liquidity Indicators. https://data.bis.org/topics/GLI/data; BIS. Effective Exchange Rate Indices. https://www.bis.org/statistics/eer.htm (both accessed August 2023); Bloomberg L.P.; and Haver Analytics.