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Anusha Chari, Nathan Converse, Arnaud Mehl,
Gian Maria Milesi-Ferretti, and Isabel Vansteenkiste

GEOPOLITICAL TENSIONS AND INTERNATIONAL FINANCIAL FRAGMENTATION

EVIDENCE AND IMPLICATIONS

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The views in this report are solely the responsibility of the authors and should not necessarily be interpreted as reflecting the views of the European Central Bank, the Board of Governors of the Federal Reserve System, or any other person associated with the Federal Reserve System or the Eurosystem.

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Foreword

The Geneva Reports on the World Economy series was launched in 1999 by the International Center for Monetary and Banking Studies (ICMB) and the Centre for Economic Policy Research (CEPR) to provide timely and authoritative analyses of key issues in the global economy. Each report aims to combine academic rigor with practical relevance, offering insights to policymakers, market participants, and scholars alike.

This 28th Geneva Report comes at a moment of profound change in the global financial landscape. The steady erosion of the cooperative international order that underpinned decades of economic integration has given way to rising geopolitical tension and uncertainty. Trade patterns, investment flows, and financial linkages are increasingly being reshaped by strategic considerations and security concerns. The report explores how these developments – manifested in the realignment of cross-border capital flows, the reconfiguration of payment systems, and the shifting use of international reserve currencies – are transforming the structure and stability of global finance.

The authors analyse how a more fragmented world, disrupted by factors such as the invasion of Ukraine, increasing competition between China and the West, and the US trade tariffs, could undermine the efficiency and resilience of international financial integration, increase macroeconomic volatility, and strain the mechanisms designed to safeguard global stability. They show that while the global financial system remains interconnected, new geopolitical fault lines risk weakening the global financial safety net and complicating the coordination of crisis response. Moreover, the emergence of alternative financial infrastructures, from parallel payment systems to regional lending arrangements, could over time erode the effectiveness of the current framework built on multilateral cooperation.

The report's findings underscore that the costs of financial fragmentation will be borne unevenly. In particular, emerging and developing economies face heightened vulnerabilities as access to global liquidity becomes more uncertain and financing conditions tighten. Yet even advanced economies are not immune: divisions within the West could threaten the very foundations of the international monetary and financial system. Against this backdrop, the policy challenges are formidable. Preserving financial openness whilst bolstering resilience, ensuring that new technologies strengthen rather than divide the global payments architecture, and reforming international institutions to maintain legitimacy and effectiveness are all essential to sustaining stability in an increasingly multipolar world.

This report was produced following the Geneva Conference on the World Economy held in May 2025. CEPR and ICMB are very grateful to the authors and several discussants for their efforts in preparing material for this report, as well as to the conference attendees for their insightful comments. We also thank Laurence Procter for her

continued efficient organisation of the Geneva conference series, Antoine Cornevin and Maïa Debs for recording and summarising the discussions, and Anil Shamdasani for his excellent handling of its production.

CEPR, which takes no institutional positions on economic policy matters, is delighted to provide a platform for an exchange of views on this important topic.

Tessa Ogden
Chief Executive Officer, CEPR

Ugo Panizza
Director, ICMB

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Executive summary

Throughout history, geopolitical dynamics have influenced the international financial architecture and the patterns of cross-border capital flows.[1] The recent resurgence of geopolitical tensions has raised the specter of geopolitical fragmentation dividing the international order into competing economic blocs. The realignment of trade and finance in the wake of the Ukraine invasion, the intensifying strategic competition between China and the West, and the recent imposition of high tariffs by the US administration on partner countries, including geopolitical allies, are some salient examples. These developments threaten to unravel an era of unprecedented economic and financial integration that has prevailed since the mid-20th century, built on a stable and cooperative international order. Fault lines are emerging at a time of unprecedented economic and financial integration, as evidenced by record levels of international trade and cross-border financial flows.

The benefits of international financial integration are widely documented in the academic literature. While measures to strengthen resilience can reduce vulnerabilities to external shocks, geoeconomic fragmentation would adversely impact international allocative efficiency, disrupting international risk sharing and thereby undermining the benefits of decades of financial integration. Fragmentation would also weaken the global financial safety net, hampering international macroeconomic coordination mechanisms and financial responses when crises hit. Moreover, geopolitical tensions increase the frequency of real and financial shocks and raise the cost of external finance, particularly for more financially vulnerable countries.

This 28th report in the Geneva Reports on the World Economy series examines the impact of the recent rise in geopolitical fragmentation on the international financial landscape, the potential repercussions of further fragmentation, and the policy measures that could avert or mitigate its economic consequences.

Chapter 1 examines the impact of rising geopolitical tensions on the structure of external financial linkages. It traces the evolution of the external balance sheets of major economies by summarising changes in their cross-border creditor and debtor positions since the rise of geopolitical tensions in 2017. While global financial integration has remained broadly stable over this period, changes in external balance sheets suggest that gradual fragmentation along geopolitical lines has begun to emerge. For instance, the data show increased concentration in foreign direct investment (FDI) within geopolitical blocs, particularly in strategic sectors. The near-total pivot away from

1 Throughout history, the pursuit of political and strategic interests has driven the creation and evolution of global financial systems. In the nineteenth century, the British Empire's political dominance was mirrored in the financial world by the widespread adoption of the gold standard. London emerged as the world's financial hub. The two World Wars dramatically altered the global financial order. The devastation wrought by World War II prompted a new approach with the creation of the Bretton Woods system in 1944 and established the US dollar as the world's primary reserve currency. The Cold War era further illustrates the interplay between geopolitics and finance, resulting in competing economic blocs with distinct financial systems.

Western financial systems by Russia illustrates the extreme end of fragmentation. Over the past decade, its external liabilities have more than halved in dollar terms, with a pronounced decline in assets held vis-à-vis Western economies following its 2022 full-scale invasion of Ukraine.

For advanced economies, the period since 2017 marks strengthened financial ties, especially vis-à-vis the United States. In contrast, China's external balance sheet shows ongoing diversification away from US assets, with more lending channelled to emerging markets and developing economies (EMDEs), and an increased use of offshore financial centres. Data limitations, however, obscure the full extent of these shifting patterns.

The United States is by far the world's largest net debtor. Its largest creditors are other advanced economies, while China's creditor position vis-à-vis the United States is more modest, especially when considering US holdings of Chinese securities issued offshore. The euro area is a large creditor vis-à-vis the United States and a net debtor vis-à-vis China. However, part of its claims on the United States reflects holdings by international investors from outside the euro area, intermediated by the very large investment fund industry in Ireland and Luxembourg.

The United States and its allies remain the guezant players in international finance, accounting for the lion's share of global external assets and liabilities. An enduring structural asymmetry thus persists between advanced and emerging economies, implying that the latter could face substantial challenges in reducing their exposures to Western markets without cutting themselves off from international financial markets. These trends put countries that rely on investment from geopolitically distant countries at risk of facing sharper declines in capital inflows and higher funding costs.

In contrast, Western economies could scale back financial ties with China and its allies with relatively limited impact on their international connectedness – even though the strength of trade linkages complicates financial decoupling. However, the costs of fragmentation for FDI could be more salient: FDI plays a pivotal role in the global allocation of production, technological spillovers across countries, and the control of key natural resources, and has closer ties to trade than to portfolio investment or other investment. Even more importantly, escalating geopolitical tensions among advanced economies could pose a greater risk to global financial stability, given their deep financial interconnectedness.

Chapter 2 examines the evolving role of international currencies and assesses the extent to which changing patterns reflect geopolitical fragmentation. The global dominance of a currency depends on the economic strength and institutional credibility of the country that issues it. A large economy can provide the scale necessary for the widespread use of a currency in international trade and finance. Economic size is, however, necessary but not sufficient. Macroeconomic stability – i.e., low inflation, sustainable public debt, sound fiscal and monetary policies – and the credibility of its legal and institutional frameworks are essential to cementing a currency's global status. Equally important are the depth, liquidity, and openness of the country's financial markets.

Geopolitical factors also play a role in bolstering the international status of currencies. Political relationships and strategic alliances can factor in the widespread use of a currency in global trade, finance, and reserves. Security partnerships and military might play a further role in determining a currency's dominance.

The role of the dollar and the euro in the international monetary system is currently disproportionate to their respective shares of global output. In the post-World War II era, the US dollar assumed the mantle of the world's dominant currency. The dollar accounts for 58% of global foreign exchange reserves, is used in approximately 90% of all foreign exchange transactions, and serves as the principal vehicle currency for international trade invoicing – including in key commodities such as oil. By contrast, the euro, the second most widely used international currency, accounts for approximately 20% of global foreign exchange reserves and remains primarily a regional currency. Europe and its neighbours predominantly use the euro as a medium of exchange in trade and finance.

At the same time, China's growing economic weight and official policies aimed at reducing its reliance on the dollar and promoting the use of the renminbi in cross-border trade and finance have supported the wider use of its currency internationally. When compared to China's share of global economic activity, however, the renminbi's international role remains limited. In 2024, renminbi holdings accounted for 2.2% of global foreign exchange rate reserves. Capital controls, limited financial transparency, and concerns about capital convertibility are some factors that continue to impede its international use.

Recent developments do not point to an imminent change in the overall constellation of international currencies. Gradual but notable shifts have, however, emerged. The US dollar remains the world's primary reserve currency, but its global share fell by five percentage points between 2017 and 2024. Structural changes in the global economy have been the major drivers of this decline. The improved liquidity and market depth of several non-traditional currencies, such as the Canadian and Australian dollars, have increased their attractiveness to reserve managers. Emerging market economies now issue significantly less debt denominated in dollars and more in their currencies than was the case just two decades ago, thereby reducing their reliance on the US dollar.

Geopolitical factors are beginning to alter the landscape of international currencies. Recent research finds that geopolitics may affect the allocation of official reserves. Indeed, surveys show that geopolitical considerations currently play a heightened role in reserve management decisions. Changes in geopolitical alignment in the wake of Russia's invasion of Ukraine have substantially reduced trade invoicing in US dollars and euros, particularly among countries that have geopolitically distanced themselves from the West, such as Russia, Belarus, Kyrgyzstan, and Uzbekistan. However, the reduction in foreign reserve holdings in the main reserve currencies by countries outside the Western sphere has thus far been modest. At the same time, reflecting the increased caution as well as the post-COVID resurgence in inflation, central banks have begun

accumulating gold at a record pace, with holdings now approaching the levels of the Bretton Woods era in 1965. In April 2025, the tariffs imposed by the US administration and a sharply expansionary budget bill triggered a notable weakening of the US dollar from very appreciated levels, accompanied by higher long-term interest rates.[2] This highly unusual cross-asset correlation raised questions about the dollar's traditional role as a safe haven. Available data show shifts in demand for US assets – albeit not unusually large – and an increase in hedging activity. Correlations have returned to their typical patterns since then, but as of September 2025, the depreciation of the dollar has persisted.

In parallel, statements from policymakers, particularly from countries geopolitically more distant from the West, suggest that new initiatives could sow the seeds for greater fragmentation of the international monetary system in the future. For example, some countries are actively exploring or developing alternatives to Western-dominated cross-border payment systems. While still in nascent stages, such efforts signal a growing resolve among non-Western economies to reduce their vulnerability to geopolitical pressures and assert greater autonomy in cross-border financial transactions.

Chapter 3 examines recent innovations in global payment systems and highlights the increasing prominence of the architecture of global payment systems in economic policy debates. The chapter explores the risks and consequences of the fragmentation of cross-border payment systems.

Payments are a vital component of the international economic and financial system, facilitating both domestic and cross-border transactions. Forecasts suggest that cross-border payments will increase from $190 trillion in 2023 to $290 trillion by 2030. International trade, migration patterns, and e-commerce are some factors driving the potential increase. Currently, these payment flows are predominantly in US dollars and euros. Correspondent banking networks, involving 90,000 banks worldwide, and Western-based infrastructures facilitate secure financial messaging, large-value international transactions, and the simultaneous settlement of foreign exchange transactions.

For decades, Western payment system infrastructures maintained geopolitical neutrality. This neutrality began to shift in 2010. New US legislation extended extraterritorial powers to impose secondary sanctions enabling the exclusion of foreign banks from dollar-based payment systems if they engaged in transactions with sanctioned entities. Although it was adopted with the support of a broad coalition of governments, the unprecedented expulsion of Russia's banks from the Swift network following its invasion of Ukraine nonetheless signalled a significant turning point in which payment systems became explicit instruments of geopolitical strategy.

2 Prior to the bill's passage, the US Congressional Budget Office estimated that it would increase the US budget deficit by $3.4 trillion over ten years (CBO, 2025).

While the payments 'financial plumbing' has operated unnoticed, historically, it is at a crucial juncture resulting from rising geopolitical tensions and technological advances. A decline in Western correspondent banking relationships in certain countries and payment corridors is becoming more evident, as banks face high compliance costs for AML/CFT and attempt to minimise their exposure to sanctions risk. In parallel, non-Western countries have accelerated their efforts to develop alternative payment arrangements to reduce their dependence on Western-dominated systems. Since 2014, countries such as Russia, China, and Iran have built their own cross-border payment infrastructures. China's Cross-Border Interbank Payment System (CIPS), launched in 2015, has expanded rapidly, facilitating renminbi-based transactions in more than 160 countries and gaining support among BRICS members. Nevertheless, the adoption of these alternative systems remains uneven. The reliance by many countries on Western networks continues to reflect the challenges associated with transitioning away from the established infrastructure.

Rapid technological innovation is also facilitating the transformation of the international payments landscape, particularly through the adoption of distributed ledger technology and the emergence of crypto assets, stablecoins, and central bank digital currencies (CBDCs) as potential alternatives to traditional payment systems. The viability of private-led solutions as alternatives, however, remains uncertain. For example, while stablecoins offer benefits such as bypassing intermediaries in cross-border payments and programmability, the scalability and speed of many blockchain technologies face limitations, making them often unsuitable for high-volume, real-time payments. However, some blockchain platforms using alternative consensus mechanisms have significantly improved processing speeds.

To address the risks associated with crypto-asset markets, the Financial Stability Board (FSB) has issued recommendations for the regulation and supervision of these markets. The European Union and the United States have also moved forward with comprehensive stablecoin legislation. A key challenge in the future will be to ensure that national regulations are consistent with the FSB's recommendations, to avoid regulatory fragmentation in the rapidly evolving payments ecosystem while maintaining a level playing field. Moreover, an open question is whether the enactment of US legislation over the summer establishing a regulatory framework for payment stablecoins could drive greater use of dollar-pegged stablecoins, increasing demand for US Treasuries and reinforcing the global role of the US dollar.

Chapter 4 explores how rising geopolitical tensions and financial fragmentation are reshaping the international financial architecture and the institutional mechanisms that govern global economic interactions and manage crises. The chapter examines the evolution of the global financial safety net (GFSN), the role of multilateral institutions, and implications for sovereign debt restructuring.

A core component of the international financial architecture, the GFSN is a multilayered system designed to provide liquidity support to countries facing economic distress. Initially centred almost exclusively on the IMF, it has expanded to include national foreign exchange reserves, regional financial arrangements (RFAs), and bilateral central bank swap lines. This diversification has significantly enhanced the system's capacity to respond to shocks, as witnessed during the 2008 Global Financial Crisis and the COVID-19 pandemic. By 2020, the GFSN's lending capacity had grown to approximately 20% of global GDP, or around $16 trillion. Self-insurance through official reserves holdings accounts for about three-quarters of the total GFSN; the remaining amount is split evenly among the IMF, RFAs, and central bank swap lines.

However, the GFSN also faces significant challenges. Coordination gaps and uneven access undermine its effectiveness. Moreover, stigma continues to deter some countries from seeking assistance from the IMF. Further, the capacity of the GFSN has not kept pace with the rapidly evolving international economic landscape, despite the $650 billion general allocation of SDRs in 2021. While the establishment of the G20 aimed to acknowledge the growing influence of emerging markets in the global economy, the persistent concerns about the degree of participation of emerging and developing economies in the governance of key international institutions such as the IMF has furthered calls for reform.

Geopolitical tensions exacerbate the challenges facing the institutions and mechanisms that comprise the GFSN and can lead to further financial fragmentation. Decision-making in international forums is becoming more contentious, delaying essential institutional reforms. Further fragmentation will make it increasingly difficult for countries to agree on key priorities for international financial institutions and multilateral forums. Once considered trusted providers of objective analysis and policy advice, multilateral institutions risk becoming arenas of confrontation and competing interests.

More profound polarisation would also erode the ability to coordinate global economic policies and weaken the ability of GFSN institutions to respond decisively and collaboratively to crises, both in terms of prevention and mitigation. This is a significant concern. Multilateral forums, such as the G20 and the IMF, have played a pivotal role in shaping the macroeconomic and financial responses to major crises, including the 2007-2009 Global Financial Crisis. Given the high degree of integration in the world economy – both in trade and financial systems – shocks are transmitted across borders with considerable speed and intensity. As is the case with other urgent global challenges, policy action to mitigate such shocks clearly necessitates coordinated responses across nations.

Sovereign debt restructuring offers a stark illustration of the challenges posed by geopolitical fragmentation. The lack of transparency and divergent legal frameworks that have accompanied the rise of new bilateral lenders, such as China, pose further challenges for the IMF, the Paris Club, and private creditor coordination mechanisms.

As a result, the risk of complicated negotiations, delayed relief, and disorderly defaults has grown. The G20 Common Framework and the Sovereign Debt Roundtable strive to be more inclusive coordination mechanisms. However, their effectiveness has been stymied by internal disagreements.

IMPLICATIONS FOR THE GLOBAL FINANCIAL LANDSCAPE FROM A DEEPENING OF GEOPOLITICAL RIFTS

Geopolitical fragmentation poses profound risks to the stability of the international financial landscape. While much of the policy discourse has focused on tensions between the Global North and South or between established and emerging powers, a more fundamental threat could arise from fragmentation within the West. A breakdown in transatlantic cooperation would shake the foundations of the current global financial system. Shared norms, trust, and coordinated action among advanced economies form the core of the current system. Consequently, fragmentation within the West would have far-reaching consequences. Thus far, the international monetary system has remained largely immune to geopolitical fragmentation along these lines. The long-term trajectory of the international monetary system will depend on the ability of the major currency blocs to maintain economic resilience, institutional credibility, and uphold the international rule of law.

Movements towards geopolitically aligned payment systems could precede broader changes in the patterns of international currency use and could signal more fundamental financial fragmentation. Integrated payment systems benefit from enhanced efficiency through economies of scale and reduced transaction costs. By contrast, a fragmented payments infrastructure would increase operational complexity, raise costs, and slow transaction speeds. More critically, it could introduce new vulnerabilities – such as heightened exposure to cyberattacks, liquidity disruptions, and settlement delays. Fragmentation may also reduce transparency, facilitate illicit financial flows and sanctions evasion, and offer opportunities for regulatory arbitrage. Over time, such fragmentation could weaken the effectiveness of sanctions as a tool of geopolitical deterrence and erode the rules-based international order.

A multi-polar currency order may emerge if fragmentation intensifies further, creating a landscape in which multiple currencies compete for dominance in trade and finance. While multipolarity may offer diversification benefits, it also carries significant risks, particularly if the new system is rooted in fragmentation. If competing monetary blocs have divergent policy frameworks, exchange rate volatility and market uncertainty could increase. Policy misalignments could also disrupt cross-border trade and investment flows. In particular, emerging and developing economies are likely to face increased vulnerability to external shocks, for instance, because rising geopolitical tensions may lead to a higher frequency of such shocks. Movements towards settling trade in local

or regional currencies could reduce the global demand for US dollar reserves, thereby weakening the 'exorbitant privilege' that allows reserve currency issuers to finance deficits at low cost. Such developments could lead to higher interest rates in the United States, necessitating a broader rebalancing of global savings and investment flows.

Moreover, an equilibrium that shifts away from the dominance of a single reserve currency could increase systemic risks by fragmenting global liquidity pools and complicating crisis response efforts. Fragmentation could thus compromise the effectiveness of the global financial safety net. Further increases in geopolitical fragmentation could delay coordination efforts amongst international institutions, liquidity coverage gaps could widen, and funding shortfalls could become more frequent. The IMF, which already faces lending capacity constraints and governance issues, would find it increasingly difficult to act as a central stabilising force. In sum, while the current international financial system remains intact, the risks posed by geopolitical fragmentation are salient and continue to increase.

CHAPTER 1

External portfolio structure

1.1 INTRODUCTION

To understand the potential consequences of increased financial fragmentation driven by geopolitical factors, we start our analysis by characterising international financial linkages. Specifically, we look at the 'external balance sheets' of major countries – their creditor and debtor positions vis-à-vis other countries and regions – and how these balance sheets have evolved during the past few years as geopolitical tensions rose. Our starting point is around 2017, when the impact of geopolitical tensions in the economic sphere increased (including US tariffs on China as well as financial sanctions on technology transfers). But an earlier episode is also very instructive: the change in Russia's financial linkages after its occupation of Crimea in 2014, which was followed by the imposition of trade and financial sanctions by the United States and its allies. We discuss this case in Box 1.1.[3]

There is a rapidly expanding academic literature that discusses evidence on global financial fragmentation. This literature has focused mostly on bilateral financial flows (FDI, portfolio flows, and banking flows) and has sought to determine whether changes in these in recent years are correlated with various measures of 'geopolitical distance' between countries, after taking into account other gravity-type determinants of such flows.[4] We discuss the insights from this literature in the next section. Related literature has focused on foreign exchange reserves and their composition and is discussed in detail in Chapter 2 of this report.

The approach adopted in this chapter, which focuses on cross-border creditor and debtor positions, provides evidence on the magnitude of existing linkages and their shifts, which makes it easier to investigate their potential macroeconomic repercussions, even though it cannot separate effectively the impact of geopolitical tensions from the consequences of other variables affecting countries' external portfolios. The analysis follows the 'traditional' notion of geopolitical blocs, which sees a bloc comprising the United States and its allies (including 'Western' economies) and a bloc including China, Russia, and some other emerging market and developing economies (with other

3 There are other episodes of severe financial sanctions such as those imposed on Iran and Venezuela. For Iran, the very limited extent of financial integration with the global economy and the lack of basic data prevents an analysis like the one conducted for Russia. For Venezuela, we face similar constraints, since no external statistics have been published for the past 7-8 years. See Fishman (2025) for a fascinating discussion of sanctions on Iran during the past 15 years. The case of Venezuela is discussed in McDowell (2023), who examines how countries subject to US sanctions try to reduce their dependence on the dollar.

4 The measure of geopolitical distance most often used is the ideal point distance, constructed based on the pattern of voting at the United Nations; see, for instance, Signorino and Ritter (1999) and Häge (2011).

economies not necessarily associated with one of the blocs). Geopolitical developments in recent months have substantially increased uncertainty over the extent to which these patterns will persist. Still, the focus on the size of bilateral financial linkages across countries and regions (and not just across geopolitical blocs) makes the approach a useful tool to study the potential consequences of a more fractured world financial system across different geopolitical lines.

1.2 GEOPOLITICAL TENSIONS AND FINANCIAL FLOWS: LITERATURE REVIEW

Interest in the relationship between geopolitical tensions and financial flows has increased sharply in recent years, especially since the Russian occupation of Crimea in 2014, the rise in tensions between the United States and China from 2017 onwards, and the Russian invasion of Ukraine in 2022. This has stimulated a growing literature studying the impact of rising geopolitical tensions on cross-border capital flows by asset class: portfolio debt, portfolio equity, bank flows, and FDI. This literature examines how geopolitical risk events – proxied by increases in geopolitical risk indices – affect financial flows across countries and over time. An early example is Chapter 3 in the 2023 *Global Financial Stability Report* (IMF, 2023a), which examines the impact of geopolitical tensions on aggregate cross-border capital flows. These are broken down into inflows and outflows, and examined separately for advanced and emerging economies using impulse response functions to capture the reaction of capital flows over time following a geopolitical shock. Overall, the authors find evidence that geopolitical tensions systematically discourage cross-border capital allocation, particularly for more liquid and risk-sensitive instruments. The findings suggest that geopolitical risk is an increasingly important factor in global financial stability, influencing investor behaviour in nuanced ways depending on the asset class. Similar results on the sensitivity of cross-border financial transactions to geopolitical distance are reported by Aiyar and Ohnsorge (2024).

A key finding from that chapter on the impact of geopolitics on financial fragmentation is that capital inflows decline significantly when geopolitical tensions rise, especially for emerging markets.[5] Emerging markets typically see sharper and more prolonged reductions in aggregate capital inflows, reflecting their higher sensitivity to global risk sentiment and geopolitical instability. Advanced economies also experience a decline, but the magnitude of the effect thus far is smaller and appears to dissipate more quickly. On the outflow side, there is evidence of a moderate increase following geopolitical shocks, particularly from emerging markets, suggesting a potential 'flight to safety' behaviour

5 In a separate study on the intertwining of geopolitics and international capital flows, Mohr and Trebesch (2025) examine how governments can direct capital flows to achieve geopolitical aims. This can involve state-owned enterprises, sovereign wealth funds, and policy banks extending credit or making investments that align with the state's strategic interests. Such practices can strengthen political alliances, secure access to critical resources, or expand a nation's influence in key regions. The authors note that while these capital flows can promote development and economic integration, they may also lead to dependencies that can be leveraged for geopolitical advantage. Additionally, the strategic deployment of capital can reshape global financial networks, potentially challenging existing power structures and leading to shifts in the international balance of power.

where investors reallocate funds to safer jurisdictions, often in advanced economies. Overall, the evidence points to an asymmetrical impact of geopolitical risk on capital movements – disrupting financial inflows more severely than triggering outflows – and highlights the greater vulnerability of emerging markets.

Portfolio investment flows

Rising geopolitical distance, measured by divergent UN General Assembly (UNGA) voting behaviour (Signorino and Ritter, 1999; Häge, 2011), leads to lower financial flows. Specifically, a one standard deviation increase in geopolitical distance between source and destination country (akin to the rising distance in voting patterns between the United States and China since 2016) is correlated with a decline in bilateral cross-border allocation of portfolio investment and bank claims of about 15%, with portfolio investment equity and bond funds retrenching by amounts exceeding 20% (IMF 2023a, Figure 3.7). Similarly, Catalan et al. (2024) find evidence that a one standard deviation increase in geopolitical distance reduces equity investment flows by about 40% and bond investment flows by 60%. The authors also document an investment diversion effect whereby rising geopolitical tensions between countries lead to a reallocation of cross-border flows towards alternative markets, with the scale of diversion influenced by the institutional quality and absorptive capacity of the recipient countries.

Portfolio equity flows experience the strongest and most immediate decline in response to elevated geopolitical tensions (IMF, 2023a). These effects tend to manifest quickly, with significant outflows observable within the first quarter after a shock, and often persist for several quarters, likely due to the inherently volatile and sentiment-driven nature of equity investments, which are more sensitive to political uncertainty and risk aversion (Chari et al., 2020; 2022a).

Portfolio debt flows also decline, though the response is more muted and delayed compared to equity. Fixed-income investors may have longer horizons or stronger ties to macroeconomic fundamentals, making them somewhat less responsive in the short term to geopolitical noise. Furthermore, bonds are contracts with specified payments whereas equity returns are far easier to manipulate (at the expense of foreign investors).

Cross-border banking flows

Cross-border bank flows also show a significant reduction when geopolitical tensions rise, though the magnitude is generally between that of portfolio debt and equity (IMF, 2023a). The response reflects a combination of heightened risk perception and the institutional rigidity of bank lending, which may slow down the reallocation of capital even amid geopolitical instability. However, evidence suggests that rising geopolitical tensions lead to a reallocation of cross-border capital, increasing funding costs for banks and reducing lending (Catalan and Tsuruga, 2023). Using bilateral cross-border bank claims by nationality, Pradhan et al. (2025) show that a rise in geopolitical tensions between countries (disagreements in UN voting, broad sanctions, or sentiment captured by geopolitical risk indices) significantly dampens cross-border bank lending.

Consolidated banking statistics data from the Bank for International Settlements (BIS) show that foreign banks' exposures to counterparties in Russia were scaled down following the annexation of Crimea of 2014 and the invasion of Ukraine in 2022, with reduced lending, credit lines and guarantees (see also Box 1.1) There is also evidence that geoeconomic fragmentation has influenced Chinese banks to adjust their lending strategies, focusing more on FDI-related opportunities and engaging with higher-risk EMDE borrowers (Casanova at al., 2024). Beyond Russia and China, more broadly, geopolitical differences impact the growth rate of cross-border claims (von Peter, 2024). However, the activity within countries that do not report data to the BIS is unobserved, the activity of non-bank financial institutions is captured by BIS data only to the extent that such institutions interact with BIS-reporting banks, and questions remain about how to define and measure geopolitical factors.

Foreign direct investment flows

Alfaro and Chor (2023) argue that the world is in the early stages of a 'Great Reallocation' with US outward FDI and supply chains shifting towards geopolitical allies. The United States and other major economies are focusing on protecting industries such as semiconductors, electric vehicles, and pharmaceuticals, reflecting a shift toward national security-driven industrial policies (Aiyar et al., 2023a).

Chapter 4 in the IMF's April 2023 *World Economic Outlook* (IMF, 2023b) explores how geopolitical tensions are reshaping global FDI flows, using data from the *Financial Times*' fDi Markets database, which tracks around 300,000 greenfield FDI projects from 2003 to 2022. The chapter identifies growing signs of FDI fragmentation, with investment increasingly concentrated within geopolitically aligned countries, especially in strategic sectors like semiconductors.

To measure countries' vulnerability to FDI relocation, the study constructs a multidimensional index based on geopolitical distance between countries, host nations' market power in key industries, and the share of strategic sectors in their FDI portfolios. EMDEs are particularly at risk due to their reliance on investments from geopolitically distant partners.[6] Strategic sector FDI is identified at the three-digit industry level to assess which sectors are most vulnerable to fragmentation and excludes mergers and acquisitions (M&As) due to data limitations. The analysis reveals that a decline in greenfield FDI – especially in strategic industries – is a leading indicator of economic fragmentation.

Key findings highlight the divergence of FDI flows, the economic costs of fragmentation, and the countries that are most vulnerable to investment shifts. FDI is increasingly concentrated within geopolitical blocs, particularly in strategic sectors such as semiconductors. Since 2018, following rising US-China trade tensions, firms have shifted

6 The primary FDI measure used in the study is the number of new greenfield investments, rather than the value of flows. This approach is taken because investment values in the fDi Markets database are often estimated, making the number of projects a more reliable metric.

investments towards politically aligned countries, reducing FDI flows to unaligned or geopolitically distant nations. Countries engaging in 'friend-shoring' and 'reshoring' have seen a reconfiguration of FDI patterns, particularly in advanced economies like the United States and the European Union.

The geopolitical distance between countries now has a stronger influence on FDI than geographic proximity, with over 50% of global FDI now occurring between geopolitically aligned nations. China has seen its greenfield FDI fall by over 30%, while investment in the United States and Europe – especially in high-tech sectors – has increased, signalling a reconfiguration of global investment patterns.

Along related lines, Setser (2023b) suggests that countries with similar foreign policy stances engage in stronger financial ties, while geopolitical rivals experience diminished financial integration. In particular, cross-border investment realignments suggest that FDI patterns are changing, with more capital flows directed toward geopolitically aligned nations. Greenfield FDI projects have declined since the Global Financial Crisis (2007-2009), with a notable shift in US FDI towards 'friendly' nations such as Canada, Costa Rica, and South Korea, while investment in China and Hong Kong has declined. This shift is driven by concerns over economic security, political stability, and strategic supply chain resilience. EMDEs face greater economic risks due to their dependence on global capital markets. Reduced foreign investment flows into these economies could lead to slower growth, increased capital costs, and a higher risk of financial crises.

Gopinath et al. (2025) draw comparisons between current developments and the early years of the Cold War. The authors use granular bilateral data to examine the shift toward economic fragmentation along geopolitical lines and show a significant decline in economic interactions between countries in opposing geopolitical blocs with the onset of the Russia-Ukraine war in early 2022. In particular, the study documents a sharp decline in FDI flows (approximately 20%) since the start of the conflict. The evidence from the recent period is consistent with earlier work using the gravity model of bilateral cross-border financial relationships to show that countries tend to allocate significantly less capital to countries with whom they are less aligned on foreign policy issues (Portes and Rey, 2005).

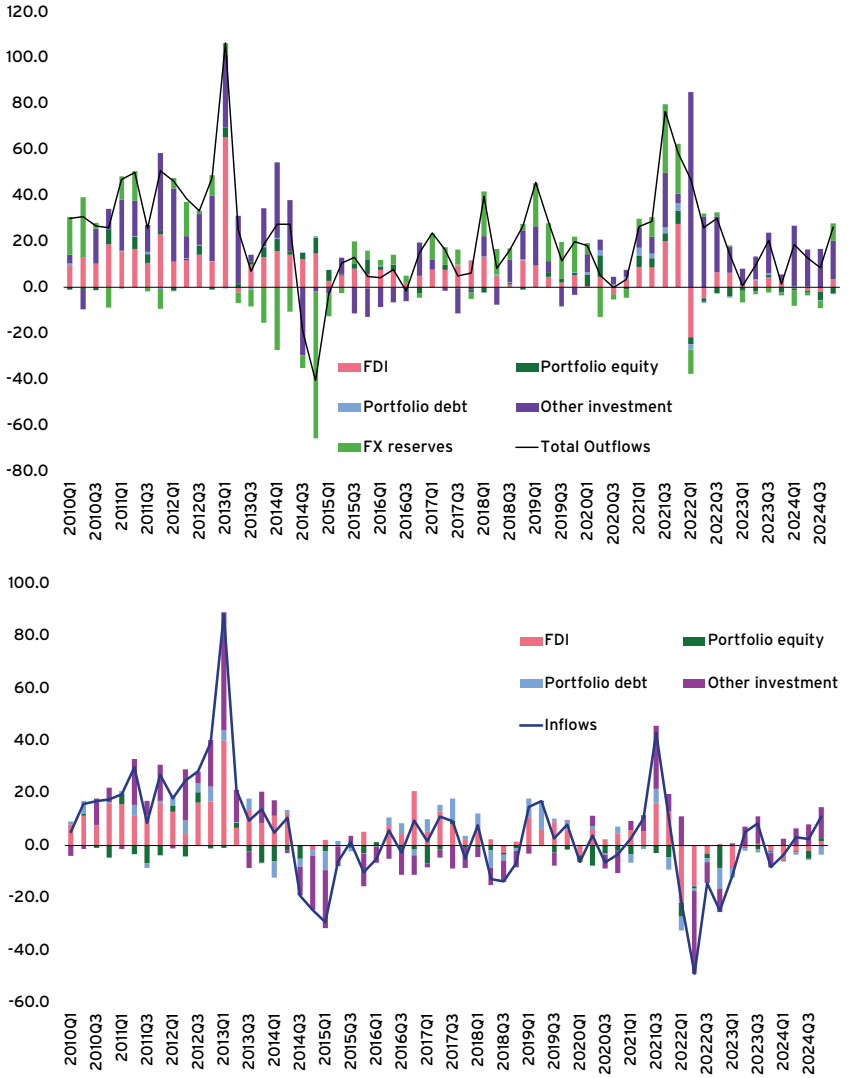
Finally, Kallen (2025) distinguishes among five dimensions of FDI fragmentation along ideological and geographic lines: shifting away from ideologically distant countries; prioritising politically aligned countries (friendshoring); reducing exposure to specific high-risk countries (derisking); moving production closer to the home country (nearshoring); and returning investment to the home country (reshoring). He finds evidence consistent with different dimensions of fragmentation across measures of FDI, including financial transactions, capital expenditures, and mergers and acquisitions.

BOX 1.1 RUSSIA'S EXTERNAL PORTFOLIO: INCREASING FRAGMENTATION

At the end of 2013, the Russian economy was becoming increasingly integrated with global financial markets. Benefiting from high oil prices, Russia was running substantial current account surpluses, which made it a net creditor vis-à-vis the rest of the world, despite an undercount of asset accumulation by residents abroad due to historically large capital flight. The economy was also receiving significant financial inflows, especially in the form of FDI as well as other investment (loans and deposits).

This pattern changed sharply starting in 2014. Following the invasion and annexation of Crimea, Russia was subject to sanctions and during the year oil prices declined, further denting macroeconomic prospects. Consequently, financial inflows and outflows turned sharply negative during 2014-15, with particularly heavy losses of foreign exchange reserves in the last quarter of 2014 (Figure 1.1).

FIGURE 1.1 **RUSSIA: FINANCIAL INFLOWS (TOP) AND OUTFLOWS (BOTTOM), 2010-24 (US$ BILLIONS)**

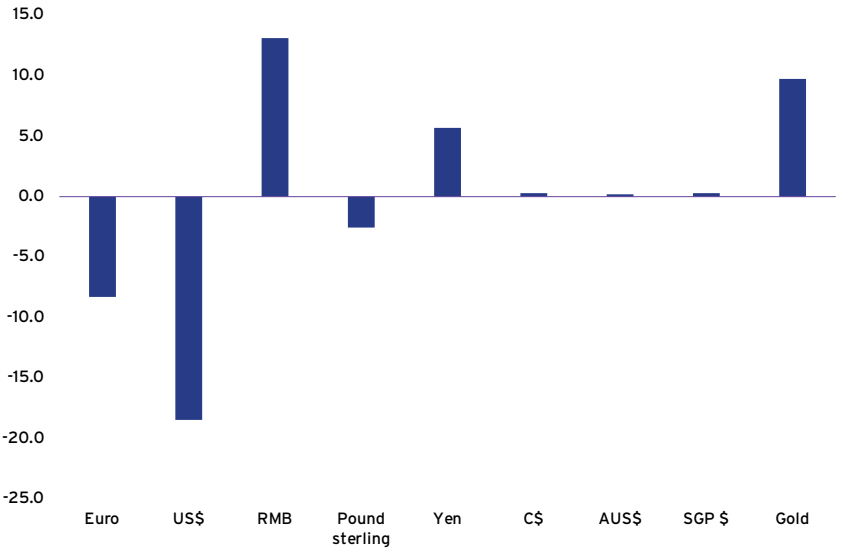


Source: IMF, Balance of Payments Statistics and Central Bank of Russia.

BOX 1.1 **(CONTD.)**

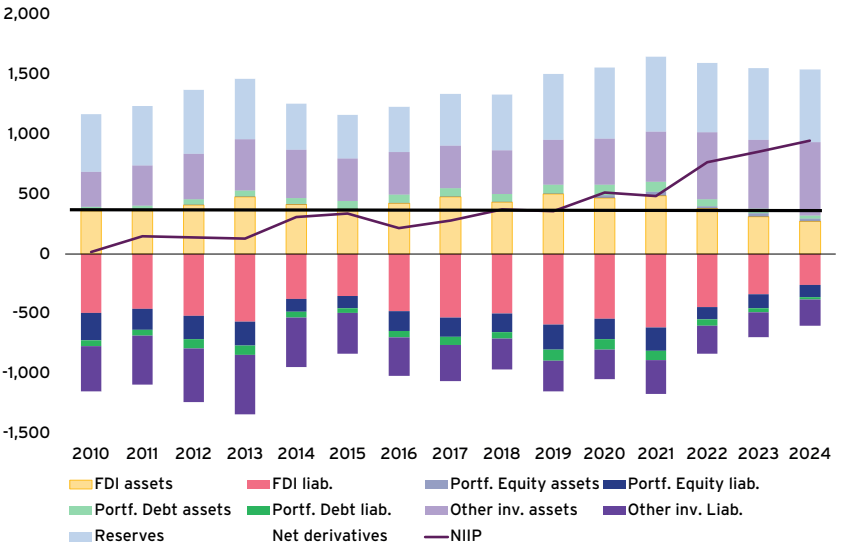
As discussed in Milesi-Ferretti (2022), foreign financial inflows remained very modest even in subsequent years, as Russian policymakers sought to increase financial autarky, including by repaying a sizeable portion of external debt (which declined by over $200 billion between 2013 and 2015). In subsequent years inflows remained very low – total external liabilities at the end of 2020 were some $300 billion below those at the end of 2013. Financial claims increased with a rapid buildup of foreign exchange reserves, which exceeded $600 billion by the end of 2021. During this period their composition changed sharply, with the share of the euro and the dollar falling sharply and the share of gold and the renminbi rising (Figure 1.2).

FIGURE 1.2 **RUSSIAN RESERVES: CHANGE IN CURRENCY SHARES, 2014-21 (PERCENTAGE POINTS)**



Source: Authors' calculations based on data from the Central Bank of Russia.

FIGURE 1.3 **RUSSIA'S NIIP, 2010-2024 (US$ BILLIONS)**



Source: IMF, Balance of Payments Statistics and Central Bank of Russia.

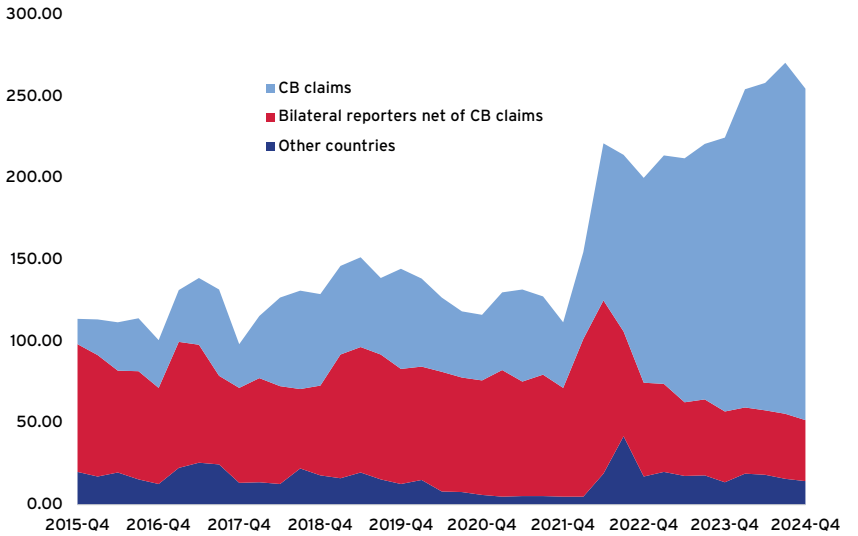
BOX 1.1 **(CONTD.)**

After the invasion of Ukraine in early 2022, financial sanctions froze a sizeable share of Russia's foreign exchange reserves (primarily in euros and held in custody at Euroclear in Belgium), foreign investors reduced their portfolio and FDI claims on Russia, and Russia also scaled back its FDI and portfolio holdings overseas. With high oil and gas prices, Russia ran a very large current account surplus, which resulted in a rapid accumulation of other investment assets abroad (Figures 1.1 and 1.3).

By late 2022, Russia's financial ties with Western economies were substantially reduced and Western imports from Russia were scaled back. Russia continued to run a large current account surplus, redirecting its oil exports to countries such as China and India, and accumulated additional net assets overseas, again in the form of other investment assets, while the scaling down of FDI and portfolio ties continued.

But the extent and geographical pattern of integration changed substantially. By the end of 2024, external liabilities had almost halved in dollar terms compared to 2019, as a result of exchange rate depreciation (most liabilities are denominated in domestic currency) and reduced valuations – the latter also reflecting de facto expropriations/holdups whereby foreign investors could only exit at a massive discount.[7] On the asset side, Russian claims on BIS-reporting banks fell substantially (Figure 1.4), after adjusting for the increase in central bank holdings resulting from the maturing of frozen foreign exchange reserves held as securities.[8]

FIGURE 1.4 **RUSSIA'S CLAIMS ON BIS-REPORTING BANKS, 2015-24 (US$ BILLIONS)**



Note: The brown area represents claims on BIS-reporting countries that disclose their bilateral liabilities vis-à-vis Russia, while the blue area represents countries (such as China and India) that report data to the BIS but do not disclose bilateral positions.

Source: Authors' calculation based on BIS locational banking statistics.

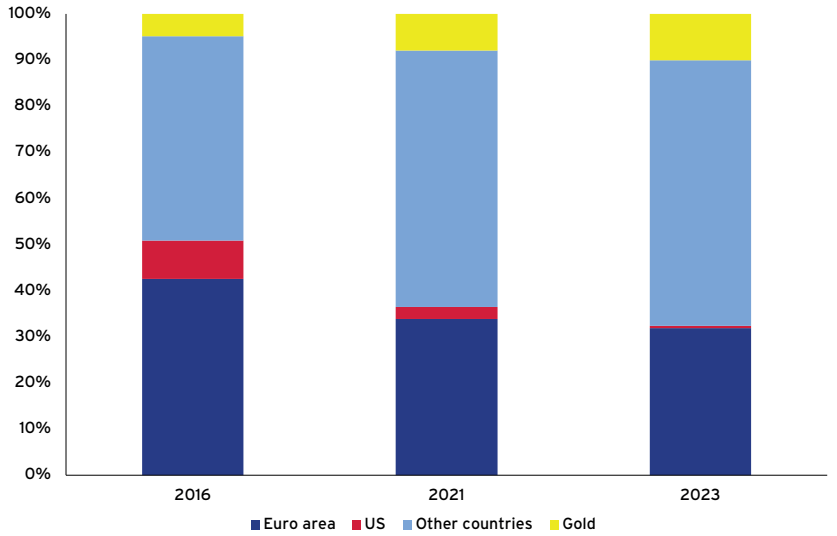
7 Net inflows were close to zero over the 2020-24 period, on account of strong inflows during 2021.

8 The principal from those matured securities is classified as a claim by the Russian central bank on Belgian banks.

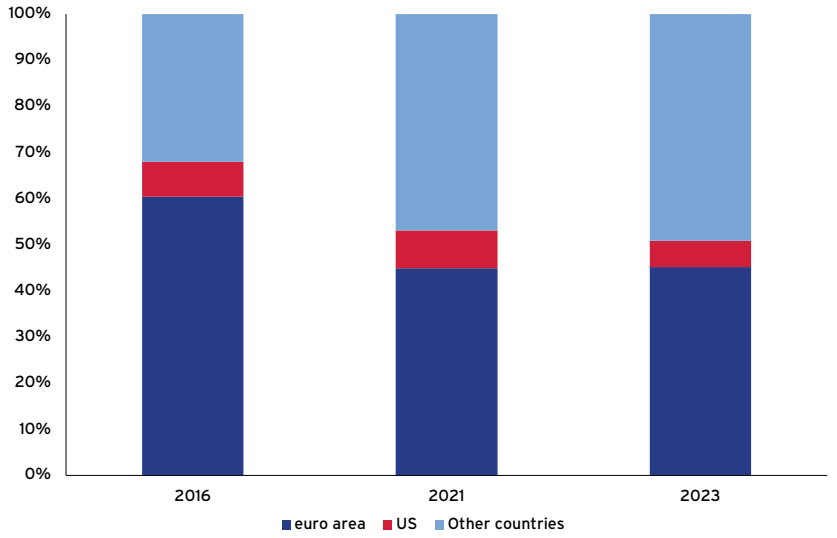
BOX 1.1 **(CONTD.)**

FIGURE 1.5 **RUSSIA: FINANCIAL COUNTERPARTS**

A) RUSSIA'S EXTERNAL ASSETS (COUNTRY SHARES)



B) RUSSIA'S EXTERNAL LIABILITIES (COUNTRY SHARES)

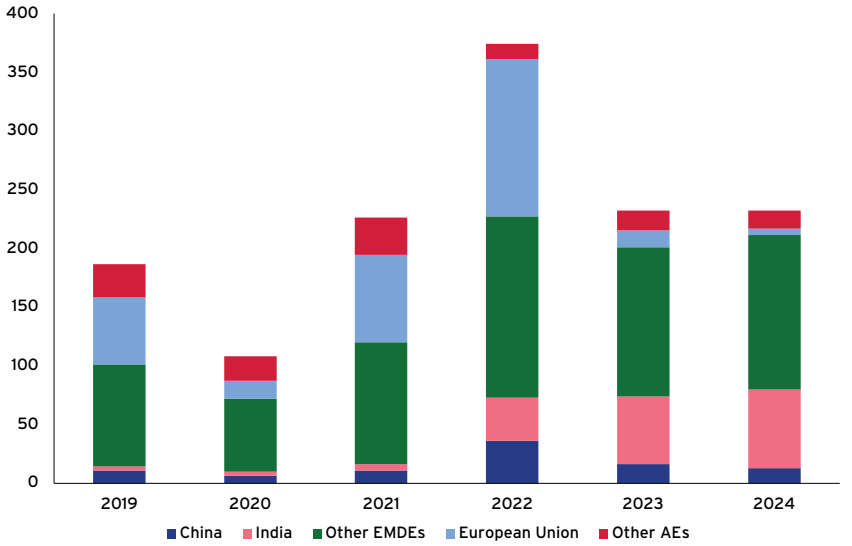


Source: Authors' calculation based on data from the European Central Bank, US Treasury, Central Bank of Russia, CPIS, CDIS, and BIS.

BOX 1.1 **(CONTD.)**

Figure 1.5 documents the decline in the role of the euro area and the United States as Russian financial counterparts over the past few years.[9] As discussed in Milesi-Ferretti and Conner (2024), it is now much more difficult to track the allocation of Russian assets abroad: Russia has stopped reporting data on its bank claims and liabilities to the BIS, and has also stopped participating in the IMF's FDI and portfolio investment surveys (the Coordinated Direct Investment Survey, or CDIS, and CPIS, respectively). Because of sanctions, many Russian financial transactions are routed outside the 'Western' financial system. Aggregate IIP data indicate a rapid buildup in trade credits (included in in other investment under "other accounts receivable", which reached $180 billion at the end of 2024). As argued by Milesi-Ferretti and Conner (2024) and Cocozza and Savini Zangrandi (2025), this could reflect a buildup of trade credits vis-à-vis countries against which Russia is running large trade surpluses. Partner-country trade data (Figure 1.6) show that over 2023-24 Russia's trade surplus was primarily vis-à-vis emerging and developing economies, with the surplus vis-à-vis India growing particularly rapidly. Financial linkages with China are also likely to have increased, but the absence of bilateral data on other investment makes it difficult to provide comprehensive estimates.

FIGURE 1.6 **RUSSIA: TRADE BALANCE IN GOODS, 2019-24 (US$ BILLIONS)**



Source: Authors' calculations based on data from the Central Bank of Russ

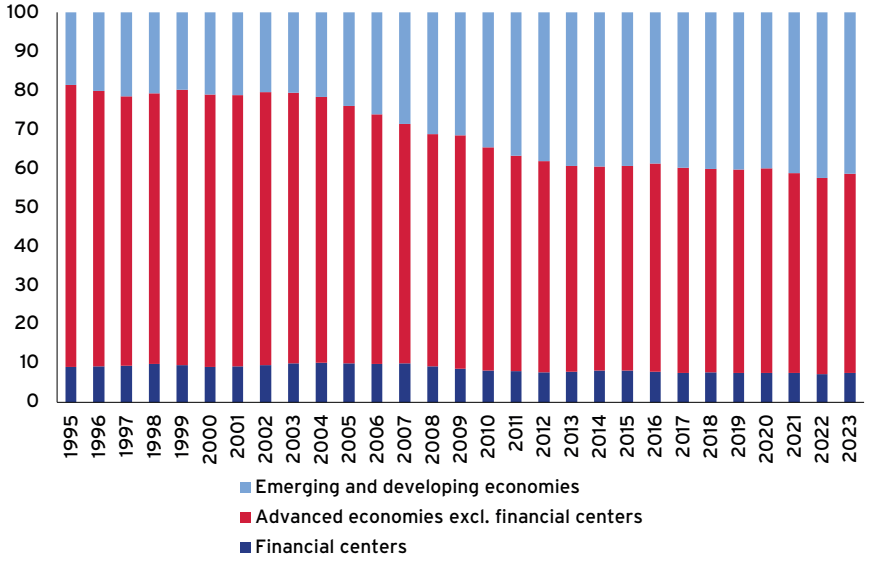
9 Figure 1.5 exaggerates the role of the euro area as a financial counterpart to Russia because of the role of Cyprus in intermediating Russia's foreign direct investment. Russia's FDI claims and liabilities vis-à-vis Special Purpose Entities incorporated in Cyprus were around $150 billion in 2021 (some 9% of assets and 13% of total liabilities). These claims capture mostly round-tripping.

1.3 EXTERNAL BALANCE SHEETS: ADVANCED ECONOMIES VERSUS EMERGING MARKETS

The literature on international financial integration has highlighted how advanced economies dominate cross-border claims and liabilities in financial instruments, to a much larger extent than in trade in goods and services. Here we follow the country classification in Lane and Milesi-Ferretti (2018), which divides economies into three groups: financial centres, defined as economies whose primary role in international financial flows is one of intermediation; advanced economies excluding financial centres; and emerging markets and developing economies excluding financial centres. Table A1 in the Appendix contains the list of countries in the various categories, which follows the current IMF classification for identifying advanced economies from emerging and developing ones. Financial centres include the United Kingdom, the Netherlands, Switzerland, Luxembourg, Ireland, as well as small offshore centres such as Bermuda and the Cayman Islands.

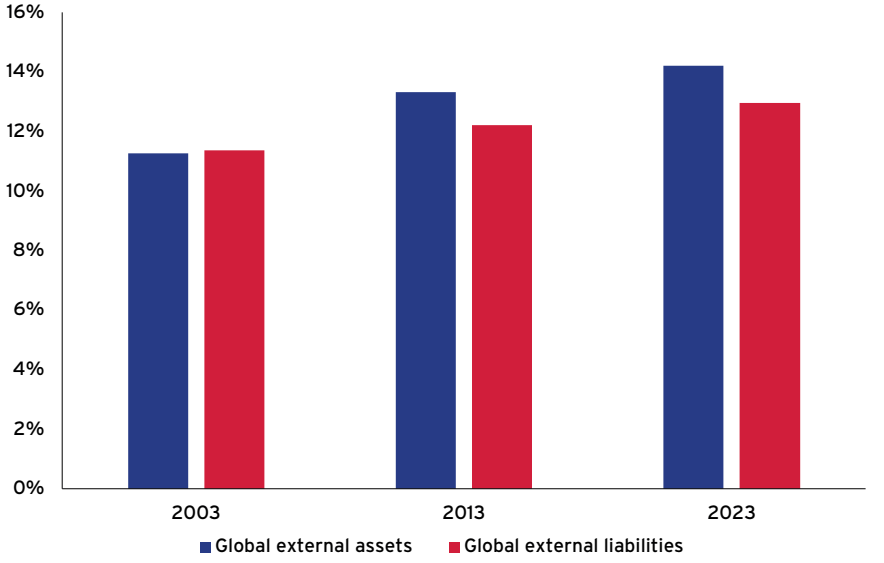
The role of emerging and developing economies in global economic activity has been increasing over time. Figure 1.7 documents this trend, showing the shares of global nominal GDP at market prices accounted for by the three country groups. But while in 2023 EMDEs accounted for about 40% of global GDP at market prices (and a share closer to 60% of GDP at PPP), their weight in global external assets and liabilities, while increasing over time, was much smaller, at around 14% for global assets and 13% for global financial liabilities (Figure 1.8). In comparison, their share of global trade in goods and services was around 38% in 2023.

FIGURE 1.7 **WORLD GDP SHARES**



Source: Authors' calculations based on IMF World Economic Outlook.

FIGURE 1.8 **SHARE OF GLOBAL EXTERNAL ASSEETS AND LIABILITIES: EMERGING MARKETS AND DEVELOPING ECONOMIES**



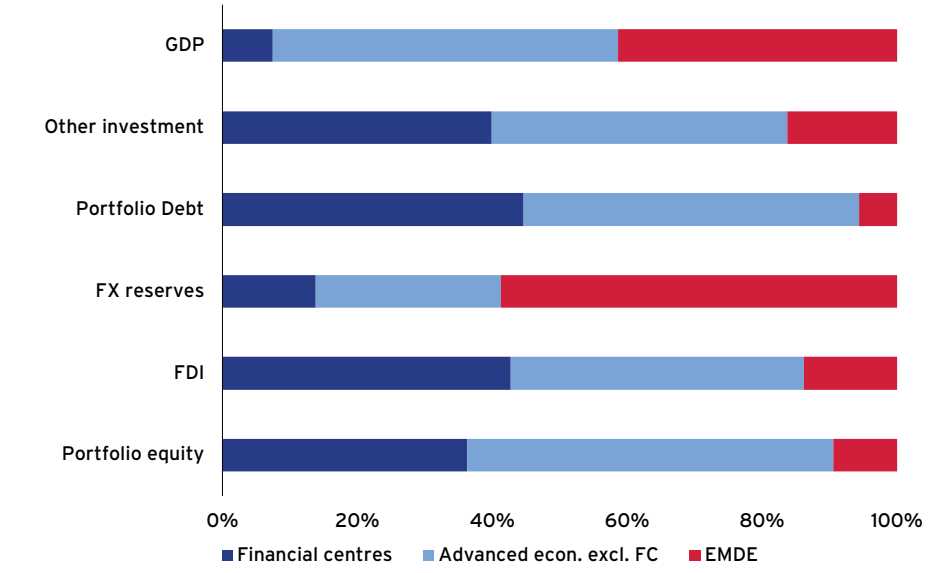
Source: Authors' calculations based on Milesi-Ferretti (2025).

The following figures show the relative importance of financial claims and liabilities of emerging market and developing economies in various financial instruments. Figure 1.9 shows how, on the asset side, EMDEs account for most global foreign exchange reserves, but for a much smaller share of other financial assets (first panel). The second panel in Figure 1.9 reallocates holdings of reserves to the financial instruments in which these reserves are held – primarily debt securities but also bank deposits (which are part of other investment in balance of payments statistics). With this correction, EMDEs account for a larger share of global holdings of portfolio debt securities and other investment instruments than of equity-type instruments such as FDI and portfolio equity. In contrast, on the liability side of the EMDE balance sheet, the largest category is FDI, with portfolio instruments playing a more modest role (Figure 1.10).

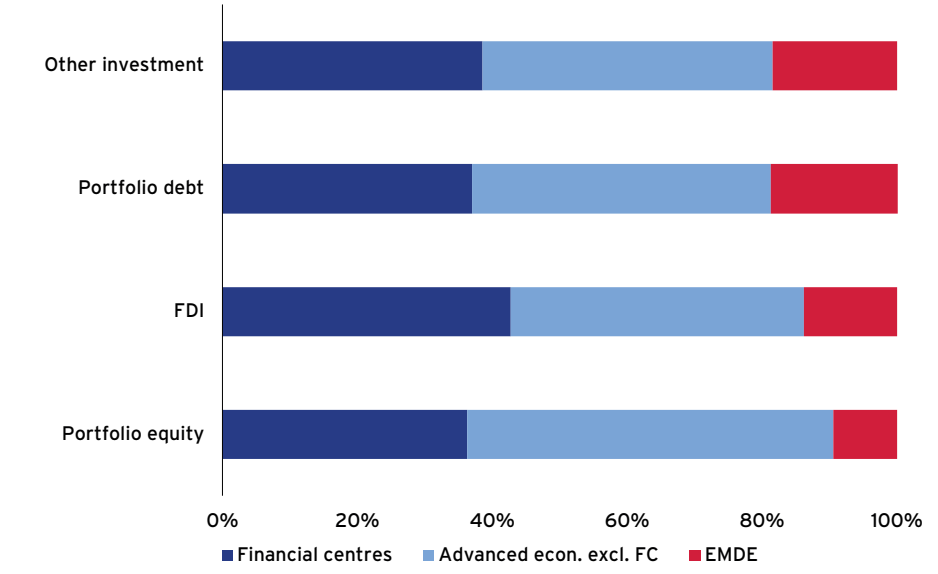
Since China accounts for a significant share of the aggregate GDP of emerging and developing economies, it is useful to decompose financial assets and liabilities into those held by China and the rest of the EMDE group. The results are shown in Figure 1.11. China's share of EMDE GDP was about 40% in 2023. Its share of FX reserves within the group was similar, but shares in other categories were smaller. Overall, the evidence shows that emerging markets and developing economies play a much smaller role in global portfolio holdings than they do in global production and global trade. It also shows that, within the emerging market group, the role of China is small compared to its share of EMDE economic activity or trade.

FIGURE 1.9 **SHARES OF OUTSTANDING GLOBAL EXTERNAL ASSETS BY DIFFERENT COUNTRY GROUPS**

a) GDP and global assets, 2023 group shares

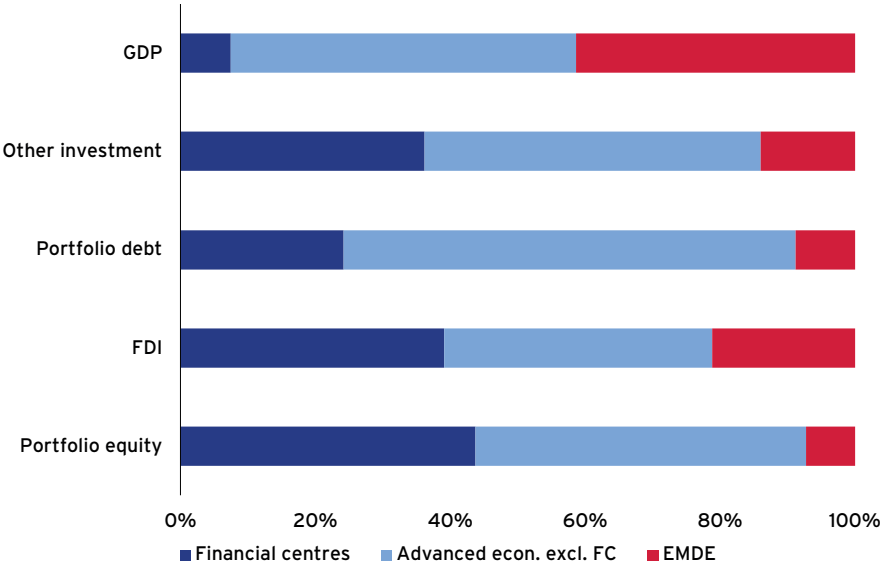


b) Global external assets, 2023 group shares (adjusted to reallocate reserves)



Source: Authors' calculations based on Milesi-Ferretti (2025).

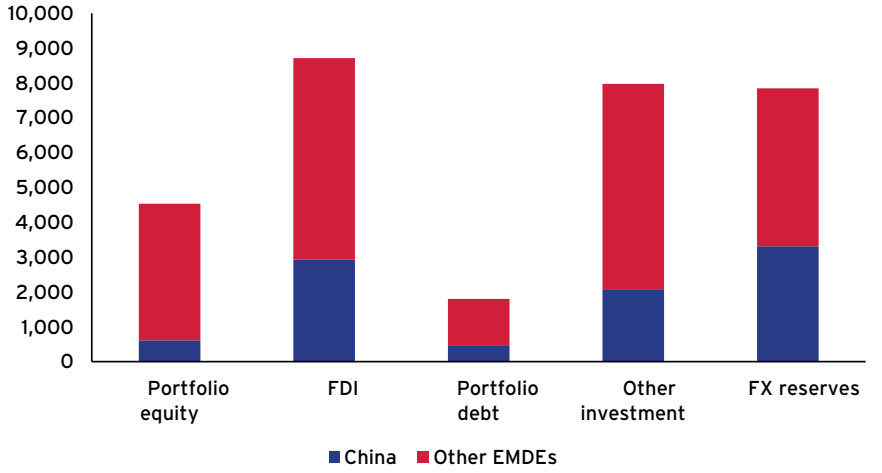
FIGURE 1.10 **SHARES OF OUTSTANDING GLOBAL EXTERNAL LIABILITIES BY DIFFERENT COUNTRY GROUPS**



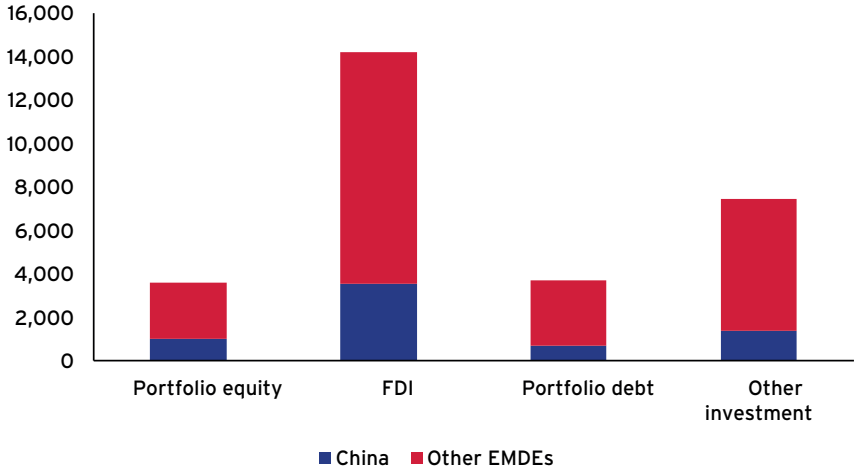
Source: Authors' calculations based on Milesi-Ferretti (2025).

FIGURE 1.11 **EXTERNAL ASSETS AND LIABILITIES OF EMERGING ECONOMIES: THE ROLE OF CHINA**

a) External assets, 2023 (US$ billions)



a) External liabilities, 2023 (US$ billions)



Source: Authors' calculations based on Milesi-Ferretti (2025).

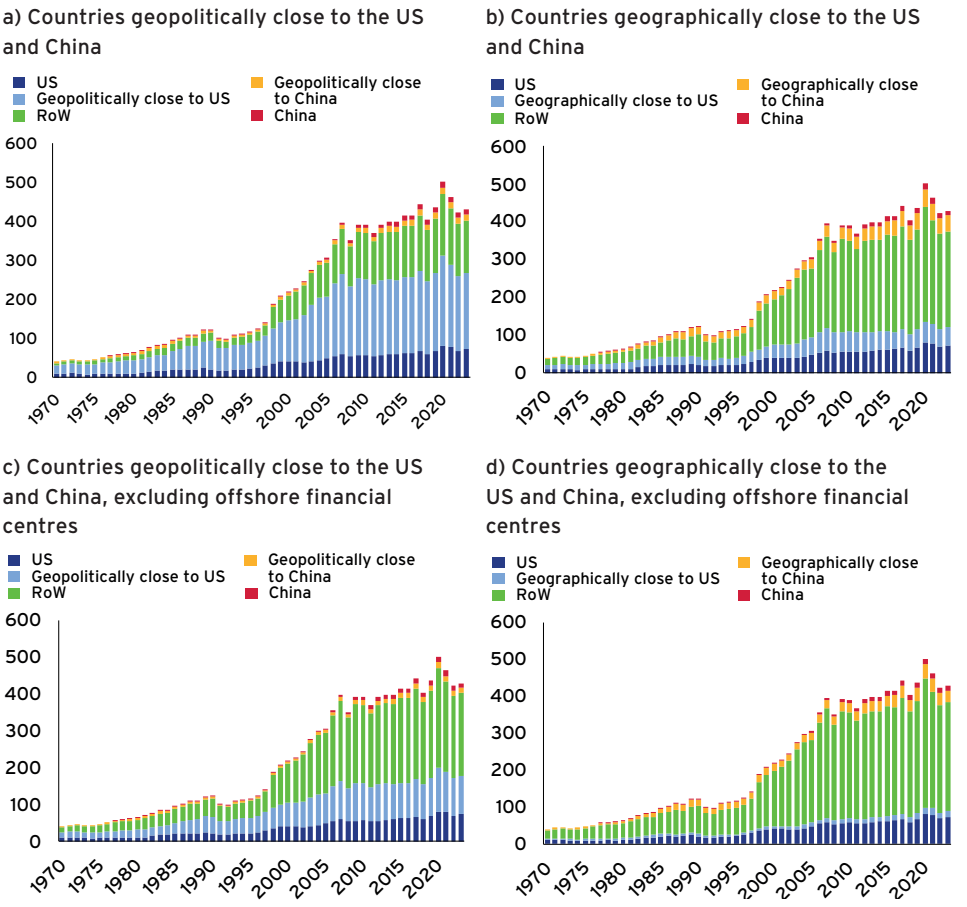
1.4 EXTERNAL BALANCE SHEETS: GEOPOLITICAL FACTORS AND GEOGRAPHICAL DISTANCE[10]

International financial integration – measured as the global sum of external assets and liabilities scaled by global GDP – has broadly stabilised since the Global Financial Crisis of 2007-09 (Figure 1.12a). Looking at data at this very broad level of aggregation, it is hard to detect clear signs of global financial fragmentation along geopolitical lines. For instance, the plateauing of international financial integration coincided with the onset of the Global Financial Crisis and there are no visible structural breaks from either Russia's occupation of Crimea since 2014 or its invasion of Ukraine in 2022.[11] Evidence of fragmentation – and, more generally, of shifts in global portfolios – is more clearly visible in data on financial flows for the past few years (as highlighted in the literature reviewed earlier in this chapter) as well as in the examination of the external balance sheets for specific countries closely involved in rising geopolitical tensions. Indeed, Box 1.1 shows clear shifts in the structure of Russia's external portfolio, both in the aftermath of its occupation of Crimea and after the invasion of the Ukraine.

Figure 1.12a shows how the United States and countries geopolitically close to it still dominate global finance, accounting roughly for 65% of global external assets and liabilities.[12] The share of China and countries geopolitically close to China in total gross assets and liabilities has increased in recent years, from about 2% to 3%, hence remaining comparatively low. This stands in contrast with China's much larger footprint in global GDP (15%) and global trade (13%).

10 We are grateful to Anja Brüggen, Peter McQuade, Martin Schmitz, and Alessandro Vallin for work on this section.
11 Note also that the 'integration peak' in 2020 is driven by the weakness in global GDP that year, and the subsequent decline is linked to high growth and inflation rates that accompanied the global rebound in activity in 2022-23.
12 The US-aligned countries account for more than 45 percentage points of this share, of which euro area countries (28 percentage points) and the UK (7 percentage points) are the major contributors.

FIGURE 12 **INTERNATIONAL FINANCIAL INTEGRATION (% OF WORLD GDP)**



Source: External Wealth of Nations and ECB staff calculations.

Notes: International financial integration ratio is the sum of stock of total gross external financial assets and liabilities. Latest observation: 2023

As Figure 1.12b shows, geopolitical distance and geographical distance play distinctive roles. Countries geographically close to China account for a sizeable share of global asset and liability holdings.[13] This reflects the importance of US-aligned countries in Asia, such as Japan and Korea, which account for almost 45% of external assets and liabilities. The sizeable role of countries that are not geographically close to the United States or China reflects the importance of European Union members as well as the United Kingdom – with the City of London being one of the world's main global financial hubs.

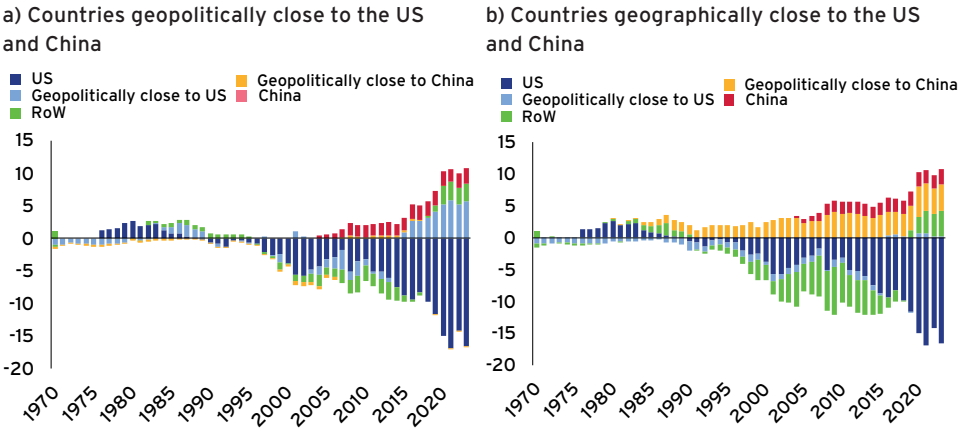
13 The country classification as geographically close to the US or China reflects the most proximate quartile based on the distance between the capital cities from the CEPII database (Mayer and Zignago, 2011). See Annex B for the full list of countries classified as geographically close in each bloc.

Therefore, while geographical distance is traditionally thought of as a key pecuniary determinant of patterns in international financial flows in standard gravity models – for instance, as a proxy for iceberg transportation costs – geopolitical distance also plays a role and may segment global finance in a distinctive way.

These conclusions are robust to the exclusion of financial centres from the US and China geopolitical blocs.[14,15] These financial centres play a sizeable role in the global financial system. They make up to one-third of global assets and liabilities, as shown by the significant rise in the share of the rest of the world when financial centres are instead included in that category (Figures 1.12c and 1.12d).

Examining net rather than gross positions, the United States' outsized negative net international investment position (NIIP) (equivalent to close to 15% of global GDP in 2023) is mirrored by the positive NIIPs of its allies, with some exceptions such as the United Kingdom, and in the rest of the world (Figure 1.13). China and countries geopolitically close to China have a large positive NIIP, but smaller than the combined position of US allies and the rest of the world.

FIGURE 1.13 **NET INTERNATIONAL INVESTMENT POSITION (% OF WORLD GDP)**



Source: External Wealth of Nations and ECB staff calculations.

1.5 EVIDENCE FROM BILATERAL DATA

The evidence presented so far has provided some useful stylised facts based on the aggregate external balance sheets of countries, but an understanding of financial linkages within and across blocs requires data on bilateral positions across countries and regions. In this section, we therefore turn to an examination of bilateral data on external assets and liabilities, so as to establish the pattern of direct financial linkages

14 The classification of financial centers follows Lane and Milesi-Ferretti (2018). These include Andorra, Belgium, Ireland, Luxembourg, Malta, the Netherlands, San Marino and the United Kingdom for the US bloc, and Bahrain only for the China bloc.
15 Financial centres are dropped from the US and China blocs and reclassified as part of the rest of the world bloc.

between the main world economies and their financial trading partners. We focus in this report on the main economies in each geopolitical bloc – China and the United States – as well as on the euro area, which has the largest external balance sheet across all economies.

China

In the past two decades, the role of China in global finance has increased sharply. In the first decade of the 21st century, China's foreign exchange reserves rose by $3 trillion, the largest increase in the world by a wide margin, and it attracted $1.8 trillion in FDI. Its large current account surpluses led to a buildup in its net external creditor position, which, at $1.5 trillion, became the second largest after Japan. In the second decade of the 21st century, China gradually opened its capital market to foreign portfolio investment, its currency entered the SDR basket and has become a reserve currency, and with continuing current account surpluses it has roughly doubled the US dollar value of its net creditor position. Today, China's foreign reserves exceed $3 trillion (about one-quarter of the world total) and it has also become one of the world's largest foreign direct investors, with claims reaching $2.9 trillion at the end of 2023. [16] China's NIIP – the difference between the financial assets its residents own abroad and their financial liabilities to non-residents – was $2.9 trillion at the end of 2023 (about $1 trillion higher than at a decade before), with Hong Kong accounting for another $1.8 trillion.

Counterparty breakdown on a residence basis

The construction of bilateral external position data for China is difficult, given the paucity of bilateral data on other investment and foreign exchange reserves, which are important components of total Chinese external claims. It is even harder to ascertain the pattern of ultimate exposures, given the importance of offshore entities in Hong Kong, the Cayman Islands, and the British Virgin Islands in intermediating Chinese investment abroad and foreign investment in China. Indeed, given the strength of financial linkages between mainland China and Hong Kong, an aggregate perspective would help to better understand China's investment patterns. Unfortunately, data limitations prevent this exercise.

Bilateral estimates of mainland China's external assets and liabilities are shown in Figure 1.14. They show a sizable net creditor position vis-à-vis the United States, reflecting large holdings of US dollar assets in China's foreign exchange reserves, as well as (to a smaller extent) a net creditor position vis-à-vis the euro area.[17] Two more stylised facts emerge from Figure 1.14. The first is the very large volume of assets and liabilities vis-à-vis Hong Kong, the Cayman Islands, and the British Virgin Islands, which obscure

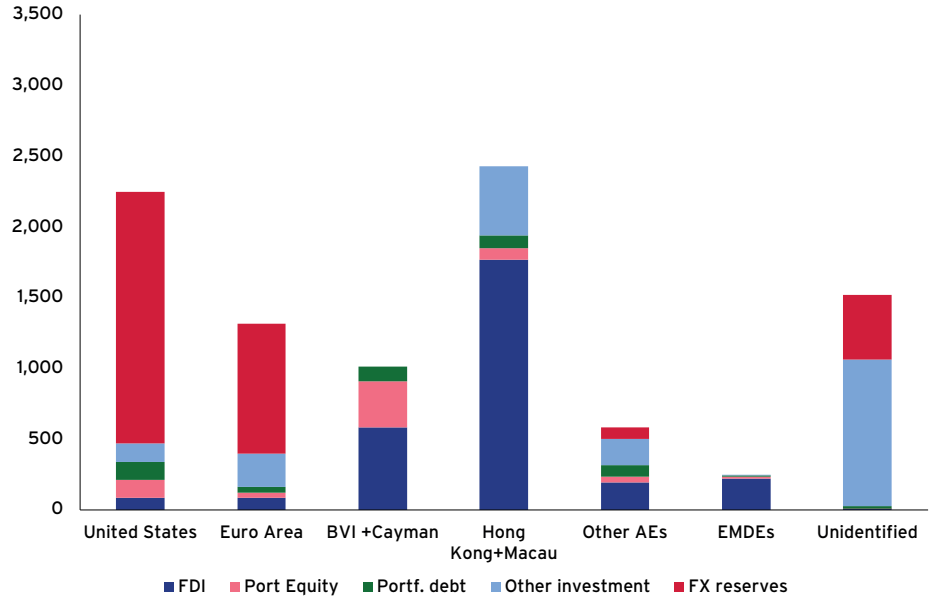
16 Only the United States, the financial centres of the Netherlands and Luxembourg, Germany, and Canada had larger FDI assets at the end of 2023.

17 Estimates of China's holdings of claims on the Unites States in its foreign exchange reserves makes use of TIC data, complemented with data on the share of foreign exchange reserves held in US dollars published in the annual report of China's State Administration of Foreign Exchange (SAFE). On this issue, see the useful discussion in Setser (2023a, 2024). Estimates for the euro area are obtained from euro area data on the region's bilateral portfolio liabilities vis-à-vis China, after subtracting China's reported portfolio claims on the euro area (which do not include securities held as reserves).

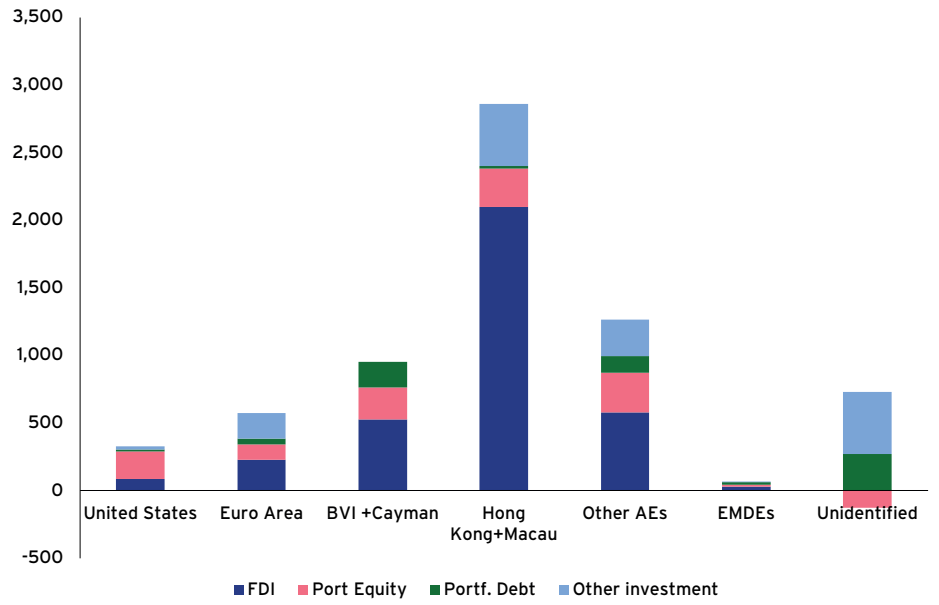
the underlying linkages between China and its ultimate financial trading partners. The second is the substantial net creditor position vis-à-vis unidentified partners, particularly in financial instruments such as loans and deposits (other investment) but also in foreign exchange reserves.

FIGURE 1.14 **CHINA'S BILATERAL CLAIMS AND LIABILITIES, 2023 (US$ BILLIONS)**

a) External claims



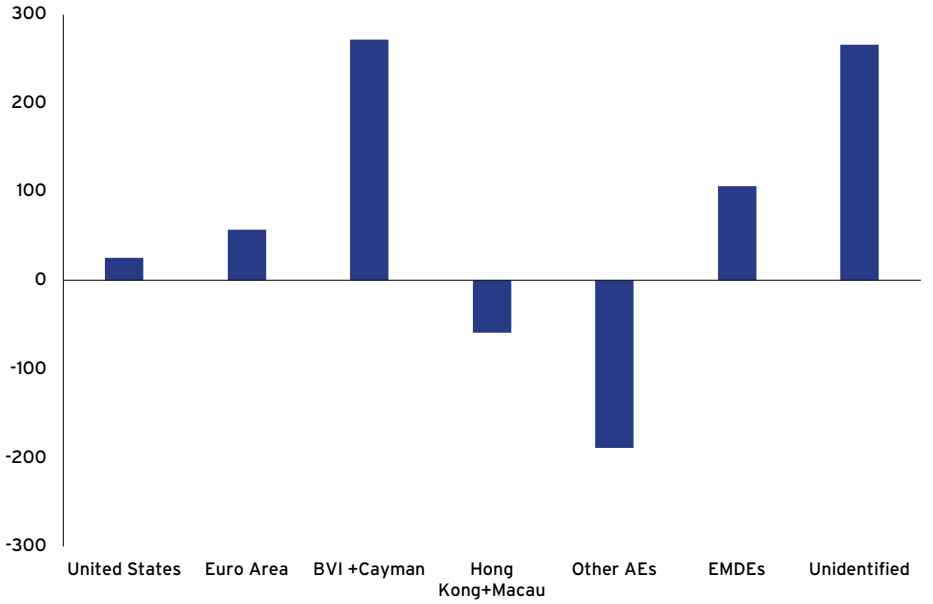
b) External liabilities



Source: Authors' calculations based on BIS locational banking statistics; IMF Coordinated Direct Investment Survey; IMF Coordinated Portfolio Investment Survey; and Treasury International Capital data.

The share of China's claims that are on the United States has dropped sharply during the past decade, reflecting broadly stable foreign exchange reserves in nominal terms. Work by Liu (2023) and Setser (2023a, 2024) discusses how China has diversified its overseas investment pattern after the Global Financial Crisis of 2007-09 to reduce its exposure to the United States. At that time, foreign exchange reserves accounted for about 70% of total external assets and were held predominantly in US Treasury and agency bonds. The Chinese Investment Corporation (CIC), a sovereign wealth fund, was established with foreign exchange reserves transferred by the central bank in 2007. In the following years, the State Administration for Foreign Exchange (SAFE) started to provide 'entrusted loans' (foreign exchange loans) to facilitate expansions/acquisitions overseas by Chinese companies. These were channelled through policy banks (such as the China Development Bank) as well as commercial banks, which expanded their external footprint, including by providing funding for the Chinese Belt and Road Initiative. The overall result was a large increase in lending to, and foreign direct investment in, emerging markets and developing economies.

FIGURE 1.15 **CHINA: CHANGE IN NET EXTERNAL POSITION, 2017-23 (BY COUNTERPART ON A RESIDENCE BASIS)**



Source: Authors' calculations based on BIS locational banking statistics; IMF Coordinated Direct Investment Survey; IMF Coordinated Portfolio Investment Survey; and Treasury International Capital data.

Figure 1.15 shows the change in China's net claims on other countries and regions between 2017 and 2023. Net claims on the United States increased only marginally, while those on emerging market economies, and especially unidentified claims and claims routed through the British Virgin Islands and the Cayman Islands, rose sharply. The increase in claims vis-à-vis other EMDEs is understated in the data presented in Figures 1.16 and 1.17 for two reasons. The first is that the vast majority of FDI claims

(80% in 2023) as well as bank lending abroad are routed through Hong Kong and the British Virgin Islands, rather than reaching directly their ultimate destination.[18] The second is the already-mentioned paucity of available bilateral data on other investment (which includes loans, deposits, trade credits, etc.) originating from entities resident in China. The bilateral data underpinning the estimates in Figures 1.14 and 1.15 rely on counterparty data on Chinese bank lending reported to the BIS. Only a small fraction of emerging and developing economies report such data, and lending by nonbank entities is not included. In sum, holdings in EMDEs by Chinese entities resident in China are understated, and claims on EMDEs through Chinese entities offshore are not included in the data.

Counterparty breakdown on a nationality basis

We therefore turn to additional evidence which identifies claims by Chinese entities abroad on a nationality basis, even if booked through affiliates outside China. One source is confidential data on Chinese bank lending on a nationality basis from the BIS, that identify claims by Chinese banks on other economies even if booked through affiliates located outside China.[19] These data, discussed in Cerutti et al. (2018, 2023) and Casanova et al. (2024, 2025), show that Chinese banks undertake a substantial amount of lending to EMDEs from their offices located in major advanced economies or offshore centres. Casanova et al. (2024) note that for China "about 40 percent of their cross-border claims to EMDEs are extended from their home country, while 12 percent are extended from offices in host AEs, and about 43 percent are extended from host offshore centres and the rest from offices in other host EMDEs as of end-2022". Hence banking data on a residence basis (which are included in the NIIP estimates) understate the extent of China's creditor position vis-à-vis these countries, while overstating its creditor position vis-à-vis advanced economies and financial centres.[20] The funding for these bank loans comes in part from the parent bank in China, but affiliates of Chinese banks also issue international debt securities offshore (over $200 billion outstanding as of the end of 2023, according to the BIS), which – as discussed above – are held at least in part by international investors from advanced economies.

Different sources provide additional evidence on the importance of Chinese lending to emerging and developing economies. These include the contract- and loan-level data painstakingly assembled by AidData (see, for example, Parks et al., 2023, and Parks, 2024), which show how China has become the largest official lender to EMDEs, and which document the evolution in the pattern of such investment and associated clauses.

18 Liu (2023) provides examples of international investment operations by CIC and SAFE channelled through Hong Kong-based funds established for the purpose.

19 Offshore lending by Chinese bank affiliates is captured as long as it takes place from affiliates based in economies that report locational banking data to the BIS.

20 For the third quarter of 2024, the creditor position of Chinese banks towards EMDEs on a nationality basis was $520 billion, compared to $372 billion on a residence basis (Casanova et al., 2025). In turn, these claims on a residence basis vastly exceed China's other investment claims on EMDEs that we can identify for that period based on publicly available BIS data (the same data that are reported for 2023 in Figure 1.14). Another $477 billion of cross-border lending by offshore Chinese banks as of the third quarter of 2024 was directed back to China, underscoring the complexity of financial linkages through offshore centres.

A nationality-based perspective also alters the pattern and volume of exposures for China's external liabilities. Research by Bertaut et al. (2019), Coppola et al. (2021), Clayton et al. (2022, 2023b), and Beck et al. (2024) provides estimates of US and euro area holdings of portfolio instruments (both equity and debt) issued by Chinese entities though their offshore affiliates. These estimates are obtained from security-level information on portfolio holdings by US and euro area investors, as well as information on the portfolio holdings of a large share of investment funds. These partner-country estimates of claims on Chinese entities identify much larger portfolio investment liabilities on a nationality basis. [21]

Conceptually, the issuance of securities offshore by affiliates of domestic companies should be reflected in a country's IIP liabilities, to the extent that the funds being raised offshore are subsequently channelled to the parent company onshore, for instance through 'reverse FDI' (a loan by the affiliate to the parent). For bonds, at a consolidated company level the liabilities will be matched by the assets acquired with the proceeds of the bond sale, which could be FDI abroad or domestic investment. For portfolio equity, the market value of entities incorporated abroad should in principle reflect their claims on the profits of the mainland company they are associated with and as such be reflected in FDI claims on China. In practice, as discussed below, this is unlikely to be the case for the equity securities issued offshore by Chinese entities.

The affiliates of Chinese companies issue a large amount of bonds offshore (some $800 billion as of end-2023), which are held by international investors (and possibly Chinese residents as well). If those securities are included in the bond exposures to China (in addition to those bonds issued by entities resident in China) the overall holdings of Chinese securities by US and euro area investors rise considerably. For instance, Bertaut et al. (2019) estimate US holdings of Chinese bonds on a nationality basis to be about $27 billion in 2022, while holdings on a residence basis are below $3.5 billion. Beck et al. (2024) estimate that holdings of offshore-issued Chinese bonds by euro area investors totalled some $90 billion in 2020, with a further $65 billion held by non-euro area investors through Irish and Luxembourg investment funds, while holdings of Chinese bonds issued in China were $34 billion and $24 billion, respectively, for the two groups.

In the case of China, offshore issuance is not limited to bonds. Foreign residents hold large equity positions vis-à-vis Chinese entities called 'variable interest entities' (VIEs) incorporated in the Cayman Islands as well as Hong Kong and listed on stock markets such as the New York Stock Exchange and the Hong Kong Stock Exchange. As discussed in Whitehill (2017) and Coppola et al. (2021), these entities have a complex structure designed to ensure that they have control over the profits of the onshore company. The structures are designed to skirt official Chinese restrictions on onshore foreign equity

21 It would be useful to conduct a similar exercise to help determine the ultimate counterparts of Chinese investment routed through financial centres, but the paucity of reporting by both China and the financial centres such as Hong Kong, Bermuda, the Cayman Islands, and the British Virgin Islands which intermediate a large share of China's financial investment precludes its undertaking.

investment in telecommunication and other 'strategic' companies. Large Chinese firms such as Alibaba and Tencent are prominent examples of these structures. The market value of these positions should be reflected in FDI statistics, to the extent that the listed VIEs exercise control on the profits of the onshore companies. However, as documented by Coppola et al. (2021), there is a clear disconnect between the stock price of such entities and Chinese FDI liabilities, which suggests that their inclusion of VIE structures in Chinese FDI liabilities statistics is partial at best.

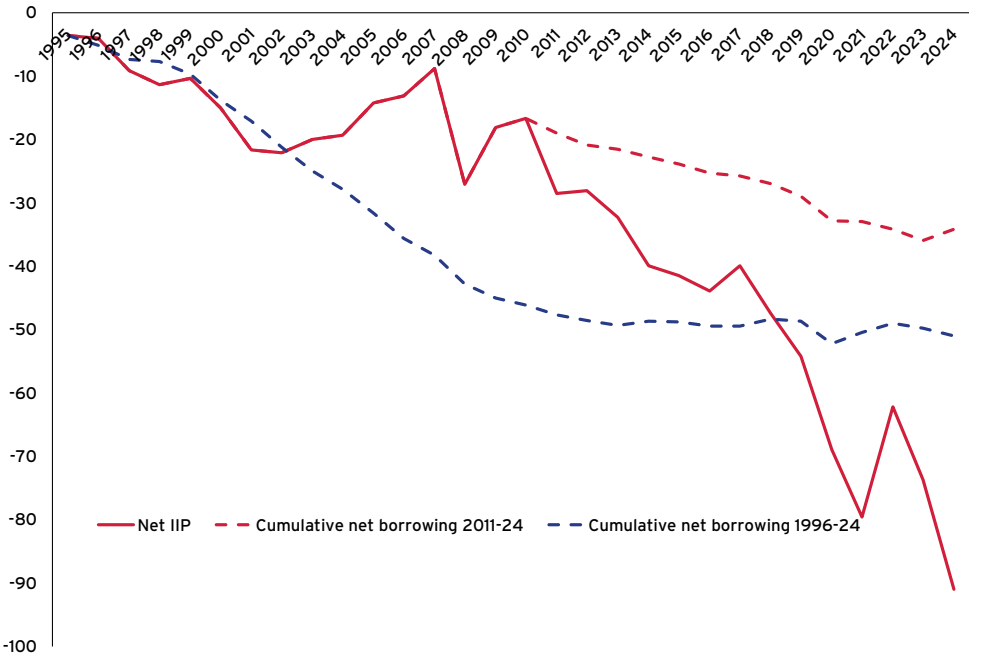
Including equity holdings in offshore-incorporated Chinese VIEs raises the equity exposure of US and European investors to Chinese entities substantially and correspondingly reduces China's net creditor position vis-à-vis the United States and the euro area – as we also discuss in the next two sections. For example, calculations based on Bertaut et al. (2019) suggest that US holdings of offshore-issued Chinese equities amounted to around $420 billion at the end of 2023, against some $200 billion in holdings of equity claims on entities resident in China. Estimates by Beck et al. (2024) of holdings of offshore-issued Chinese equity at the end of 2020 by euro area investors as well as rest of the world (ROW) investors holding shares of Irish and Luxembourg funds were both around $90 billion, compared to some $70 billion in holdings of Chinese equities issued onshore for each group. Coppola et al. (2021) argue that outstanding equity from VIEs held by international investors would reduce China's net creditor position by over $1.1 trillion as of end-2018, an amount that could well be larger for subsequent years given the dynamics of equity prices for these entities.

In sum, a broader perspective that takes into account claims routed through offshore Chinese entities show a much larger creditor position of China vis-à-vis other EMDEs (even though that expansion has slowed in the past five years). Accounting for portfolio instruments issued by Chinese entities in offshore centres and held by investors from the main advanced economies reduces the net liabilities of the United States and the euro area vis-à-vis China compared to residence-based statistics, especially in light of the market value of shares in VIEs. More detailed evidence on the United States and the euro area is presented below.

United States

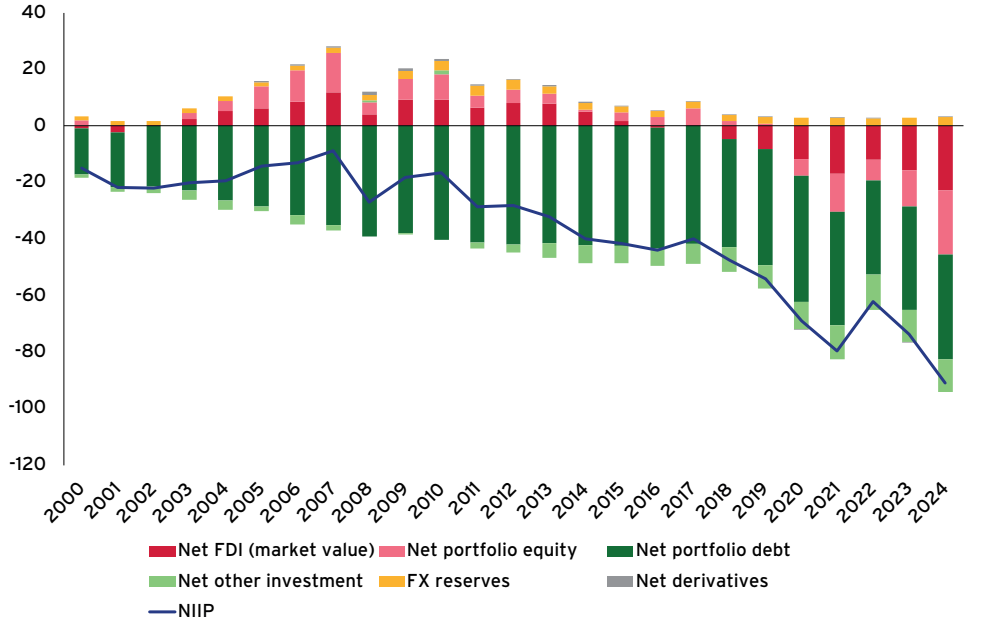
Highlighting the bilateral patterns of financial trade between the United States and the rest of the world is a particularly important endeavour given the centrality of the United States in the world financial system, the role of the US dollar as the pre-eminent world reserve currency and key currency of denomination in international trade and finance, and the ensuing ability of the United States to use financial sanctions against its geopolitical foes.

FIGURE 1.16 **US NET EXTERNAL POSITION AND CUMULATIVE BORROWING (% OF US GDP)**



Sources: Authors' calculation based on international transactions and international investment position data from the Bureau of Economic Analysis.

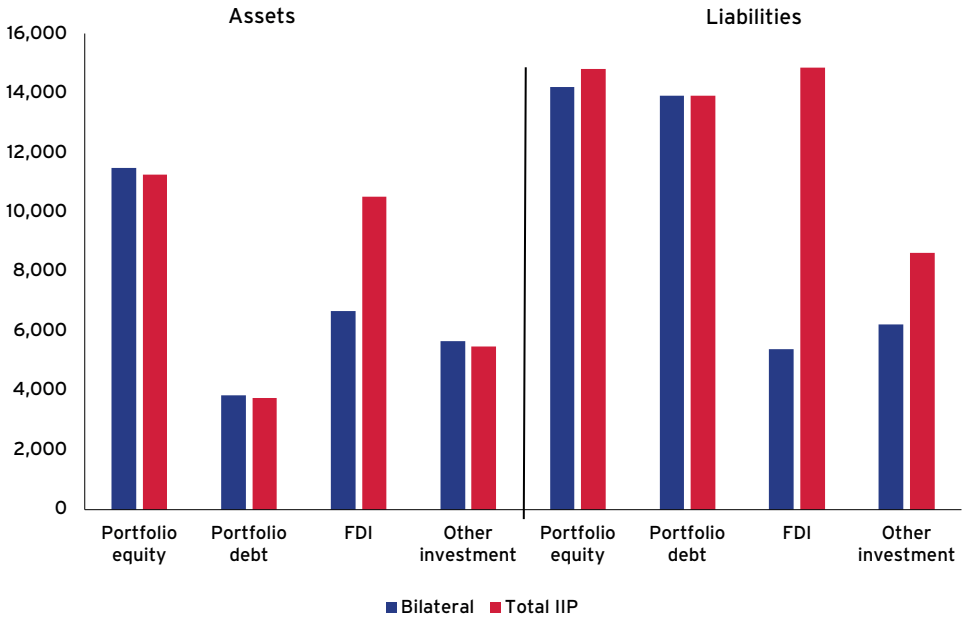
FIGURE 1.17 **US NET INTERNATIONAL INVESTMENT POSITION BY FINANCIAL INSTRUMENT (% OF GDP)**



Source: Authors' calculations based on data from the US Bureau of Economic Analysis.

The United States has become a net external debtor since the end of the 1980s, as a result of persistent current account deficits. Its negative net international investment position remained modest in relation to GDP during the first decade of the current century, as large net borrowing from the rest of the world was offset by favourable valuation effects, triggered by dollar weakness and stock prices underperforming those in the rest of the world.[22] Since then, however, the US NIIP has deteriorated sharply, reaching 90% of GDP at the end of 2024. Atkeson et al. (2025) and Milesi-Ferretti (2024a) document how this deterioration was primarily driven by valuation effects, as the market value of US stocks has soared and the dollar has appreciated (Figure 1.16). Figure 1.17 shows that, for many years, the United States was a net creditor in equity instruments (portfolio equity and FDI) but, because of the spectacular increase in the valuation of US equities over the past decade, the US net position has turned negative in those categories as well.[23]

FIGURE 1.18 **US ASSETS AND LIABILITIES AND BILATERAL DATA, 2023 (US$ BILLIONS)**



Source: Authors' calculations based on BIS locational banking statistics; IMF Coordinated Direct Investment Survey; IMF Coordinated Portfolio Investment Survey; and Treasury International Capital data.

The ease of identifying the geographical sources and destinations of US investment differs across asset classes, with more information on portfolio investment (especially on the asset side, where the identification of the counterpart is straightforward) and less information on other investment liabilities as well as FDI. Figure 1.18 shows the

22 For the United States, dollar weakness raises the US dollar value of those external assets denominated in foreign currency relative to its external liabilities which are denominated in US dollars.

23 While measurement of the portfolio equity position is more straightforward, it is much more challenging to estimate FDI at market value. As discussed in Milesi-Ferretti (2024a), the methodology adopted by the BEA overstates the market value of US FDI liabilities and understates the value of its assets. Alternative measures (including both current cost and historical cost estimates) show the US as a net creditor in FDI instruments.

consistency between the bilateral data and the 'headline' IIP data. The bilateral data 'shortfall' is concentrated in FDI and, on the liabilities side, also in other investment. The very large gap for FDI is due to the fact that the United States estimates bilateral FDI positions only at 'historical cost', while the headline estimate for aggregate FDI is calculated at market value.[24] For other investment liabilities we lack an official bilateral breakdown of holdings abroad of US currency, which are estimated to be around $1.5 trillion (Judson, 2025).

Counterparty breakdown on a residence basis

To construct bilateral data on US asset and liability positions, we rely primarily on US-source statistics, in particular for all categories of US assets and for US FDI liabilities. For US portfolio liabilities and other investment liabilities, we use a blend of US-source data and data reported by partner countries. For US portfolio investment liabilities in particular (equity and debt), we combine US-source data with partner-country data on holdings of US securities reported in the Coordinated Portfolio Investment Survey, or CPIS (adjusted to account for foreign exchange reserves held in US securities, since those holdings are not included in portfolio claims reported to CPIS).[25] The reason for the reliance on partner-country data is the difficulty for US statisticians in inferring the ultimate holder of US financial instruments held in custody outside the United States, which tend to inflate reported US liabilities vis-à-vis certain financial centres. For instance, US-source statistics report some $800 billion in US debt securities held by Belgium in 2023, while Belgian statistics report holdings of US securities which are just above $20 billion. The difference reflects the presence in Belgium of Euroclear, a very large custodian, holding securities on behalf of a variety of international investors, including official ones.[26] Similar large discrepancies between US-reported liabilities and foreign-reported claims on the United States occur for other financial centres, most notably the United Kingdom (Milesi-Ferretti, 2024b). Given the difficulty in determining the residence of the ultimate holders of securities held in financial centres, some holdings of US equity and debt securities are classified as having an unknown foreign counterpart, even though US statistics provide a complete geographical breakdown of (immediate) holders of US securities.

Figure 1.19 shows a bilateral decomposition of US claims and liabilities at the end of 2023 vis-à-vis different country groups (the composition of which is in this chapter's Appendix). Claims (first panel) are concentrated in portfolio instruments (especially equity) and are overwhelmingly vis-à-vis other advanced economies, especially the euro area and "Commonwealth" countries, which include in particular Canada and

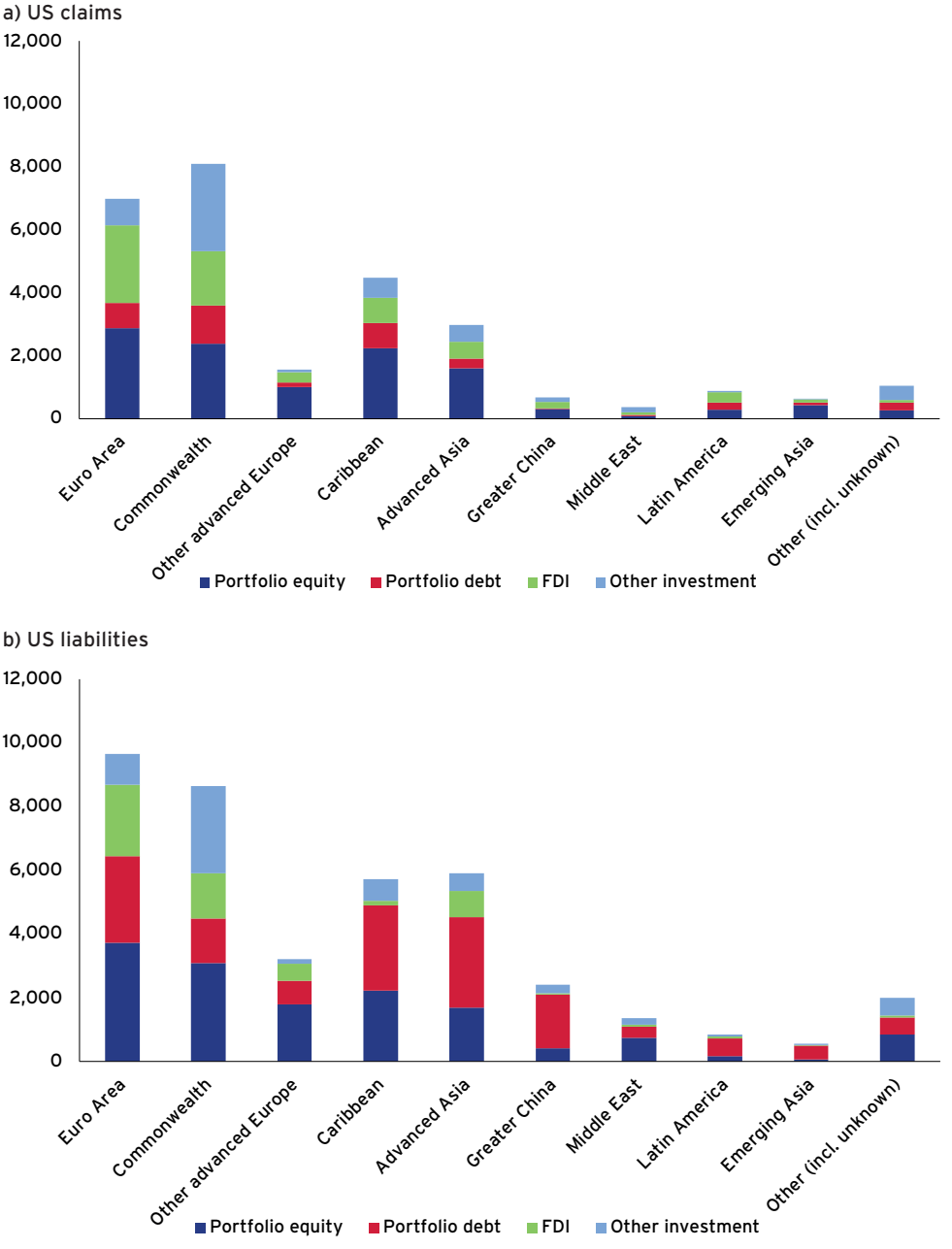
24 The difference in valuations relative to market value estimates are extreme: the historical cost estimate for 2023 was $5.4 trillion (directional basis), or 19% of GDP, while the market value was estimated at $14.8 trillion (asset-liability basis), or 64% of GDP, and the current cost estimate at $8.1 trillion, or 29% of GDP.

25 On the currency composition of foreign exchange reserves, see Ito and McCauley (2020) and Arslanalp et al. (2022).

26 As discussed in the Box on Russia, most holdings of euro area bonds by the Russian central bank at the time of the Russian invasion of Ukraine in 2022, which were subsequently frozen, were held at Euroclear.

the United Kingdom. The United States also reports large claims vis-à-vis Caribbean countries and advanced Asia (which includes Japan, Korea, Singapore, and Taiwan). Claims on emerging markets and developing economies are substantially smaller.

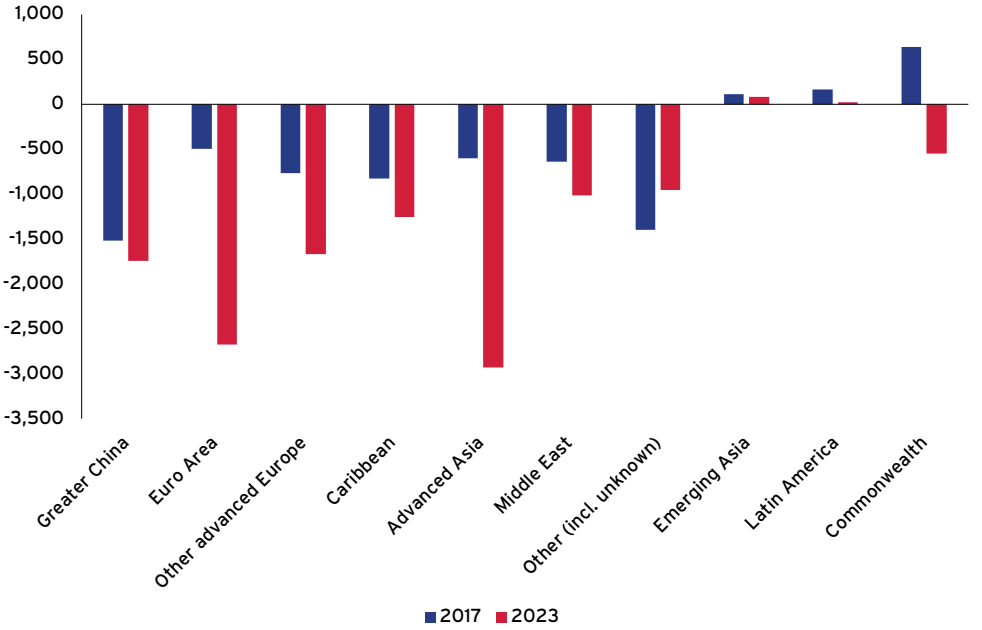
FIGURE 1.19 **US EXTERNAL ASSETS AND LIABILITIES: GEOGRAPHICAL PATTERNS, 2023 (US$ BILLIONS)**



Source: Authors' calculations based on BIS locational banking statistics; IMF Coordinated Direct Investment Survey; IMF Coordinated Portfolio Investment Survey; and Treasury International Capital data.

Liabilities (second panel) are concentrated in portfolio instruments. Debt securities play a much larger role than they do on the asset side, given that US bonds, especially those issued by the US Treasury, are the lynchpin of global reserves and are also widely held by private sector investors. Portfolio equity liabilities are also very large given the runup in US stock prices during the past 15 years. As on the asset side, the most important financial counterparts are advanced economies of the euro area and Commonwealth, followed by advanced Asia, whose holdings are more concentrated in bonds. Greater China holds substantial portfolio debt claims vis-à-vis the United States, reflecting China's foreign exchange reserves, but its holdings of equity instruments (both portfolio and FDI) are very modest.

FIGURE 1.20 **US NET EXTERNAL POSITION BY REGION, RESIDENCE BASIS: 2017 VS 2023 (US$ BILLIONS)**



Source: Authors' calculations based on BIS locational banking statistics; IMF Coordinated Direct Investment Survey; IMF Coordinated Portfolio Investment Survey; and Treasury International Capital data.

In Figure 1.20 we depict the net position by region and compare it to the one outstanding in 2017. The comparison shows that greater China was the largest US net creditor in 2017, but now the euro area, and especially advanced Asia, are larger creditors. This reflects three factors. The first is the already-documented shift in the pattern of foreign investment by China. Despite running large bilateral current account surpluses vis-à-vis the United States, China has invested abroad in other destinations, while net investment flows to the United States from other advanced economies have been

stronger.[27] A second factor is the composition of investment: countries holding equity instruments benefited from very large capital gains on their US holdings, while holders of debt securities experienced capital losses because of higher long-term interest rates. Finally, the net debtor position vis-à-vis unknown foreign partners simply reflects the difficulty in establishing the residence or nationality of the ultimate holders of US securities compared to establishing the foreign counterpart for US assets.

Counterparty breakdown on a (partial) nationality basis

A shortcoming of the data presented above is that residence-based statistics on financial counterparts can fail to properly capture bilateral exposures. For instance, if a US resident buys a bond issued in the Netherlands by the Brazilian oil company Petrobras, US statistics will record a claim on the Netherlands, rather than on Brazil. Similarly, a sizable share of US FDI abroad is in financial centres hosting holding company subsidiaries of US multinational enterprises, which subsequently invest the funds in other destinations.

We address these shortcomings in this report, albeit in a still partial fashion. Specifically:[28]

For **portfolio investment assets** (equity and debt) we make use of data from Bertaut et al. (2019) which provide a re-allocation of US investment based on the nationality of the entities issuing the securities held by US investors, as opposed to the residence captured in balance of payments statistics. The most substantial changes involve an almost complete re-allocation of the massive US holdings in the Caribbean ($2.6 trillion) to domestic holdings (e.g., US-held shares of US-based hedge funds domiciled in the Cayman Islands and investing in the US) or to claims on China (reflecting the value of VIEs based in the Caribbean discussed in the previous section). They also involve a notable reduction in US claims on the euro area (Irish and Luxembourg funds with holdings outside the euro area as well as US companies incorporated in Ireland following tax inversions).

For **US FDI abroad**, we use a blend of data for partner countries on US FDI in the country on an 'ultimate beneficial owner' (UBO) basis and data on foreign affiliates of US multinational enterprises by country of location. The foreign affiliates' data by country include the value of their property, plants, and equipment; compensation of employees; and sales. These data are used to construct country weights (excluding those countries reporting US FDI there on a UBO basis) for each of the three metrics. The correlation across the three different measures of weights exceeds 0.9, and the correlation with unadjusted FDI weights averages 0.8. We take the average of the three weights for each country as the share of total US FDI based in that country (net of the

27 China is also holding more US financial instruments through foreign custodians. While we adjust data to capture holdings of Treasury securities at Euroclear in Belgium (Setser, 2023a, 2024) there may be other Chinese holdings of US securities in the residual category of unidentified investors.

28 Appendix 2 contains a more comprehensive discussion of the data adjustments implemented.

FDI attributed on the basis of partner-country data). One of the results of this exercise is to substantially reduce the weight of financial centres that host holding company affiliates of US multinational corporations (such as Luxembourg, the Netherlands, and Caribbean countries).[29]

For **FDI in the United States**, we use data published by the Bureau of Economic Analysis on inward FDI by ultimate beneficial owner (UBO). Changes involve primarily a reduction in liabilities to euro area countries and Caribbean economies, with some of these re-allocated to domestic investors and other to investors from Canada, Japan, and emerging market economies.

Finally, for **US portfolio liabilities**, we undertake adjustments for two large portfolio investors in the United States that host investment funds: the euro area and the Cayman Islands.

- For the euro area, as discussed more extensively in the next section of this chapter, we use data kindly provided by Roland Beck, Antonio Coppola, Angus Lewis, Matteo Maggiori, Martin Schmitz and Jesse Schreger (based on Beck et al., 2024), who provide a nationality-based re-statement of euro area portfolio investment using data on investment fund portfolios. In specific regard to investment in US securities, the authors are able to determine whether euro area investment funds holding US securities are held by euro area investors or by investors from the rest of the world. The holdings of US securities (both equity and debt) attributable to the latter are netted out of euro area holdings and attributed to the "unknown" category (since the statistics in question do not provide the residence of non-euro area investors).[30]

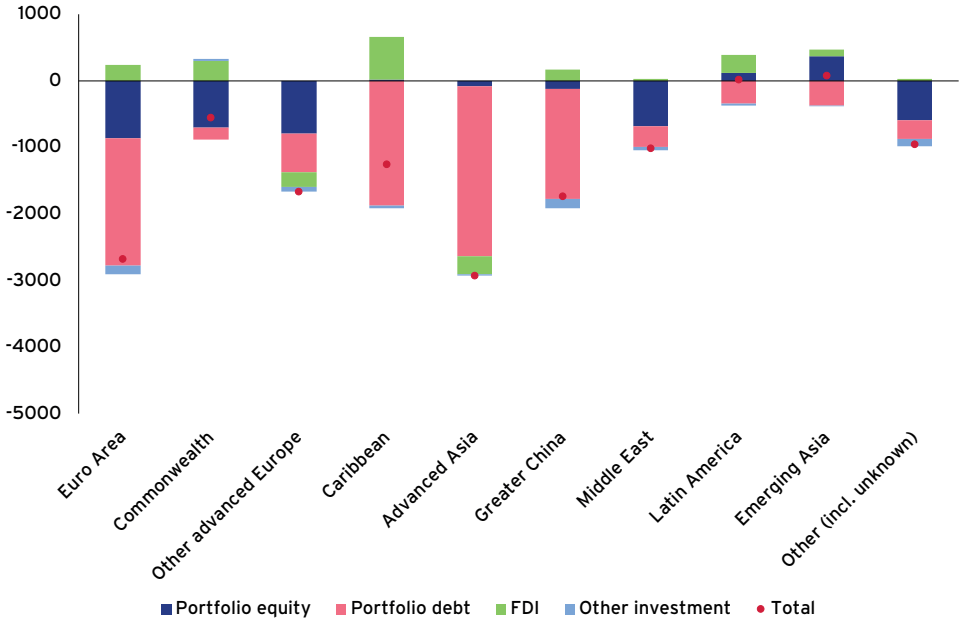
- The Cayman Islands reports data on its portfolio investment fund holdings of US securities, which were approaching $4 trillion in 2023, evenly divided between equity and debt instruments. We combine data from the Cayman Islands Monetary Authority, the IMF CPIS, and private fund statistics from the US Securities and Exchange Commission to estimate holdings of Cayman Islands investment fund shares by our country groups. We then attribute Cayman Islands portfolio holdings in the United States to the countries holding Cayman Islands shares in proportion to their estimated share holdings. This methodology attributes some 70% of the share in Cayman-domiciled funds to the United States, with advanced Asia being the second largest investor (with a share of between 15% and 20%), reflecting Japan's holdings of over $600 billion in shares of Cayman-based investment funds.

29 Brew et al. (2023) discuss a variety of methods to estimate US FDI abroad by ultimate host country, mostly relying on detailed microeconomic data on the financial linkages across US multinational parents and their foreign affiliates, as well as within these affiliates. The method adopted here is broadly in line with the 'apportionment method' discussed in the paper and has the advantage of being implementable using publicly available aggregate data.

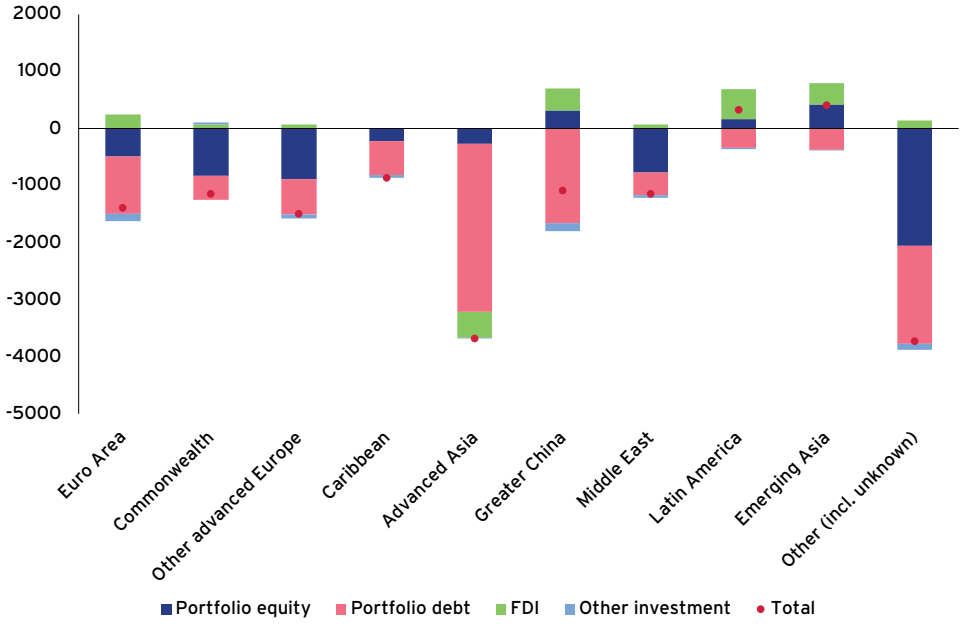
30 US holdings of Irish and Luxembourg investment fund shares are a very small compared to the outstanding amounts of such shares, and hence these securities holdings in the United States are almost entirely foreign on a nationality basis.

FIGURE 1.21 **ALTERNATIVE ESTIMATES OF US NET EXTERNAL POSITION BY REGION, 2023**

a) Baseline (residence-based)



b) Partial nationality correction



Source: Authors' calculations based on BIS, locational banking statistics; IMF Coordinated Direct Investment Survey; IMF Coordinated Portfolio Investment Survey; Treasury International Capital data; and Bertaut et al. (2019) and Beck et al. (2024) (see Appendix 2).

The results of this reallocation are presented for 2023 in Figure 1.21, which compares the net position by counterparty region according to the standard residence methodology and the partial nationality adjustment. The most notable change is in the first and the last bars, depicting the position vis-à-vis the euro area and "other countries" (mostly reflecting non-identified counterparts). Specifically, on a nationality basis, the euro area is a smaller net creditor in portfolio instruments, with a share of its holdings of US securities now attributable to investors from other (non-identified) countries. A second large change is the much smaller net debtor position vis-à-vis the Caribbean, which reflects the re-mapping of Cayman holdings of US securities to the countries investing there.[31] The debtor position vis-à-vis Japan is larger, reflecting the importance of Japanese investment in Caribbean funds which in turn invest heavily in the United States. The net liabilities vis-à-vis China are instead smaller, reflecting both higher FDI in China on an ultimate host basis and especially holdings by US residents of Chinese securities issued offshore (especially shares of VIE entities incorporated in the Cayman Islands). Net liabilities vis-à-vis Middle Eastern countries are higher on a nationality basis, reflecting the importance of their sovereign wealth funds' investments in US private funds, including those incorporated in the Cayman Islands. Finally, the US net position vis-à-vis Latin American and emerging Asian economies is larger, reflecting both higher FDI on an ultimate host basis and US holdings of portfolio securities issued offshore by these economies.

In sum, US financial linkages are predominantly vis-à-vis advanced economies, notwithstanding the sizable foreign exchange reserves by emerging markets held in US securities. Other advanced economies are the largest US net creditors, with European and Asian advanced economies playing a particularly prominent role. These creditor positions have been boosted by the rising value of US equities: advanced economies have been by far the main counterpart to the worsening of the US net external position since 2017. Despite the quality of US data and the surveys of US portfolio liabilities, information on ultimate investors in the United States is still incomplete, reflecting the routing of investment in the US through European (as well as Caribbean) financial centres.

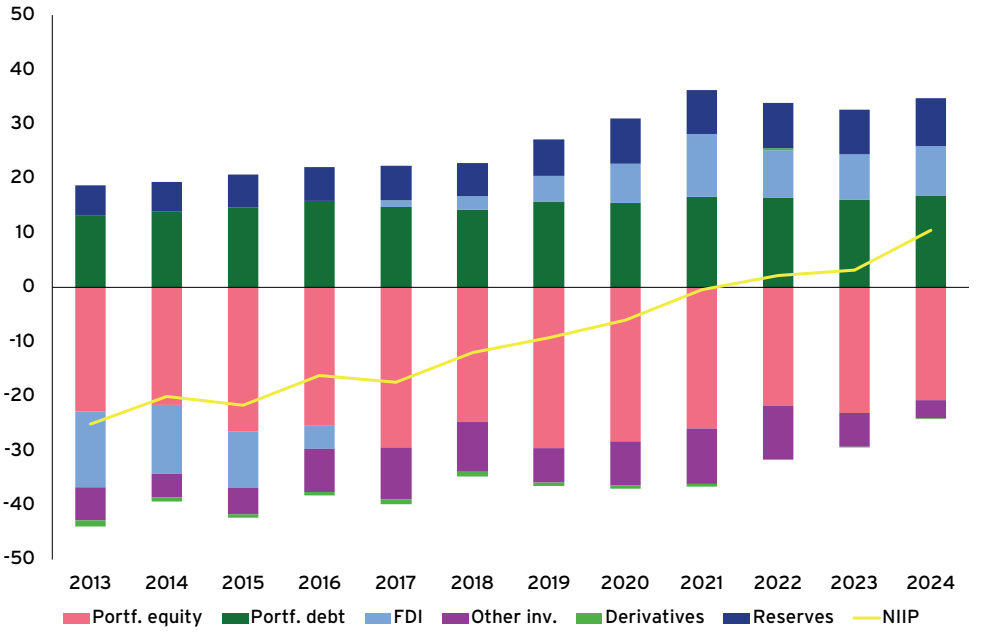
31 The remainder net debtor position vis-à-vis Caribbean financial centres reflects liabilities vis-à-vis Bermuda and the British Virgin Islands, which on a nationality basis are likely to be to an important extent domestic liabilities (for instance holdings of US debt securities by US reinsurance companies incorporated in Bermuda). The position vis-à-vis Caribbean offshore centres on a nationality basis should be close to zero given the pure intermediation role of financial activity in these economies.

Euro area

The euro area is the quintessential open economy, with strong trade and financial linkages with the rest of the world. The structure of its external balance sheet is more complex to interpret than that of the United States, given the importance of financial centres such as Ireland, Luxembourg, and the Netherlands. Investment funds in Ireland and Luxembourg, and pass-through entities in the Netherlands such as special purpose vehicles, contribute to euro area external assets and liabilities even when, for instance, an Irish fund whose shares are held by non-euro area residents invests outside the euro area, or a Netherlands-based special purpose entity intermediates funds between a US parent company and another affiliate outside the euro area.

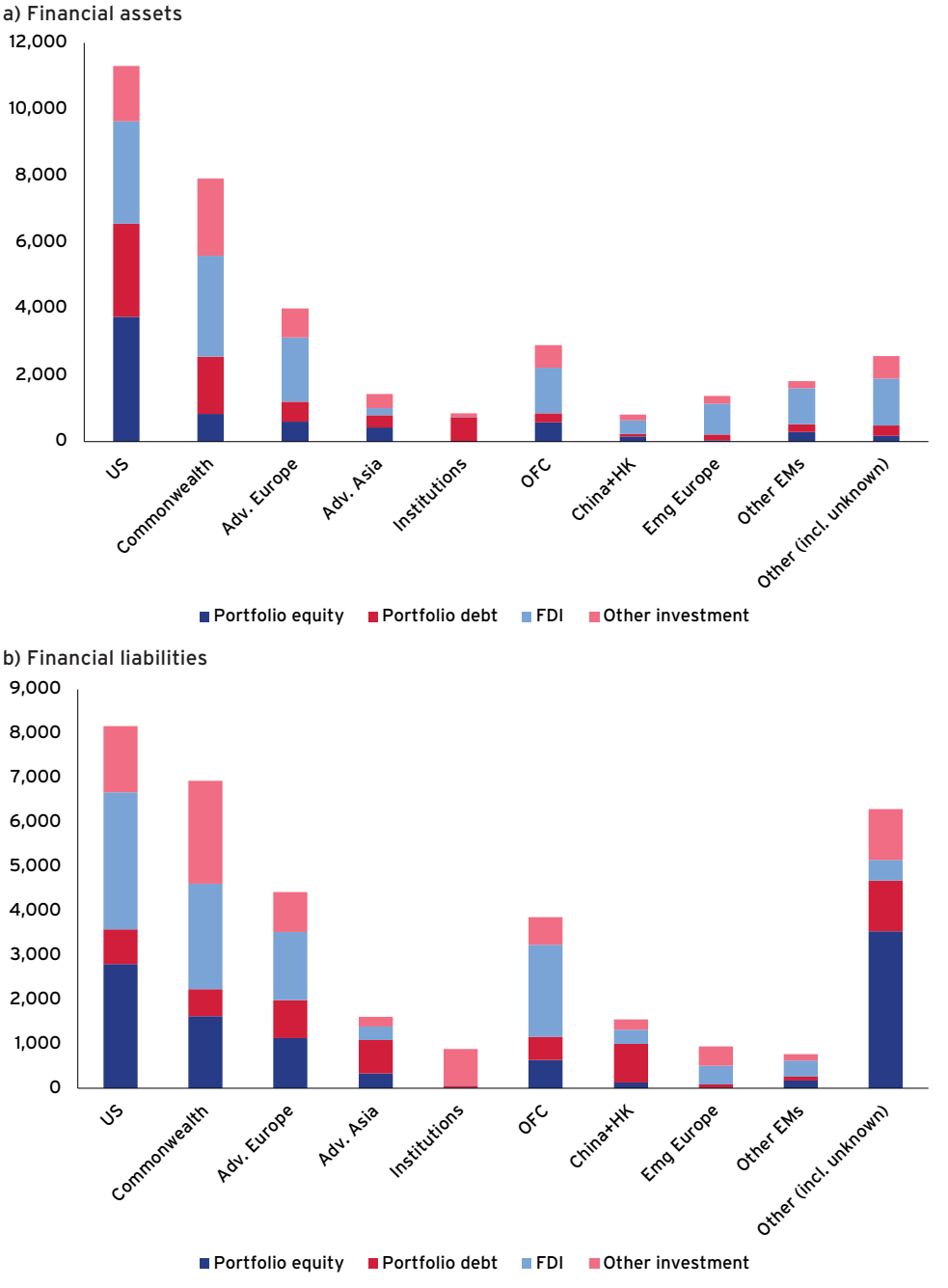
Figure 1.22 shows the net international investment position of the euro area by financial instrument, as a percentage of GDP. The position, which had been negative since its inception, has been steadily improving since 2013, thanks to sizeable current account surpluses, and turned positive in 2022. Because of the size of the investment fund industry – whose liabilities are almost entirely equity but whose assets are a combination of equity securities, debt securities, and other investments – the euro area has a negative net position in portfolio equity instruments, offset by a positive position in portfolio debt and, in recent years, FDI, in addition to hefty foreign reserves (including $900 billion in gold holdings at the end of 2024).

FIGURE 1.22 **EURO AREA: NET INTERNATIONAL INVESTMENT POSITION, 2013-24 (% OF GDP)**



Source: European Central Bank.

FIGURE 1.23 **EURO AREA FINANCIAL ASSETS AND LIABILITIES BY REGION, 2023 (US$ BILLIONS)**



Note: Estimated holdings of reserve assets in the form of debt securities are included in portfolio debt assets. The remaining foreign reserve assets (including gold and SDR holdings) are excluded.

Source: Authors' calculations based on bilateral IIP data from the European Central Bank..

Counterparty breakdown on a residence basis

Figure 1.23 provides a breakdown of the NIIP by counterparty country or region for 2023, separating out financial assets (top panel) and financial liabilities (bottom panel). Foreign exchange reserves in the form of debt securities are included in portfolio investment, with estimates on the currency composition based on data from Arslanalp et al. (2022), while holdings of gold and Special Drawing Rights are excluded.[32] The two panels show the very large size of the external balance sheet of the euro area, especially for portfolio investments and FDI, as well as the very large gross positions vis-à-vis advanced economy financial partners, especially the United States. Overall, external assets and liabilities were around two and a half times GDP.

Figure 1.24 shows the net external position by region in 2023. As we have already shown in the previous section, the euro area is a large net creditor vis-à-vis the United States, particularly in portfolio instruments. It is also a net creditor vis-à-vis Commonwealth countries, emerging Europe, and other large emerging market economies excluding China.[33] It is instead a net debtor vis-à-vis "other advanced Europe".[34] But the largest "debtor" bar reflects lack of information on the residence of international investors in euro area portfolio equity instruments, notably shares in investment funds from Ireland and Luxembourg. As discussed in Beck et al. (2024) and Milesi-Ferretti (2024b), most of those fund shares are sold in the United Kingdom, and while UK holdings of euro area shares are likely under-reported, the lion's share is likely to be held by international investors through London investment managers and financial intermediaries. [35]

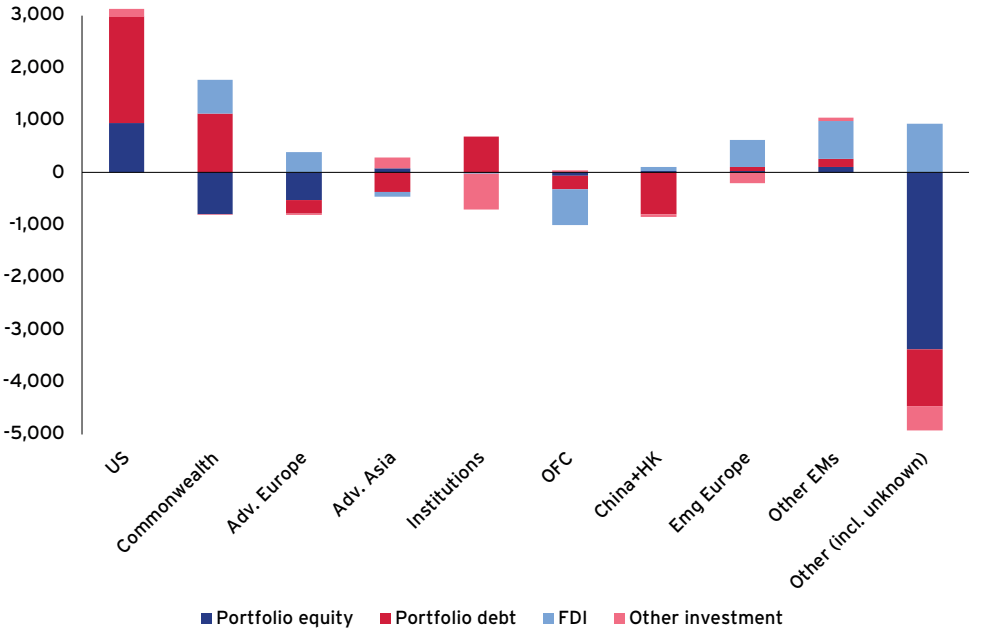
32 The choices for country group counterparts are also dictated by data availability: the European Central Bank provides bilateral IIP data by instrument for 26 countries as well as for a few groups such as offshore centres. The definition of country groups we adopt differs from the one adopted for the sections on the United States and China in a few cases. The most salient ones are Singapore, which in euro area statistics is included in offshore centres (instead of advanced Asia); Guernsey, the Isle of Man, and Jersey, also included in offshore centres (instead of "Commonwealth" together with the United Kingdom); and Taiwan, which is not identified separately and hence is included in "other countries" instead of advanced Asia.

33 Those identified in euro area bilateral data, and hence included in that aggregate, are Argentina, Brazil, Mexico, India, Indonesia, and South Africa. As we saw in Box 2.1, the euro area is a net debtor vis-à-vis Russia, but the Figure shows that it is a large net creditor vis-à-vis other countries in emerging Europe.

34 Czechia, Denmark, Norway, Sweden, and Switzerland.

35 Some of these holdings may also be on behalf of euro area investors, not recorded in the statistics of their country of residence. As noted by Beck et al. (2024), Irish and Luxembourg funds held by investors from outside the euro area have portfolios that are quite different from those funds held by euro area investors, which suggests that euro area investors are not large holders of fund shares attributed to rest of the world investors.

FIGURE 1.24 **EURO AREA: NET CREDITOR AND DEBTOR POSITIONS, 2023 (US$ BILLIONS)**



Note: Estimated holdings of reserve assets in the form of debt securities are included in portfolio debt. The remaining foreign reserve assets (including gold and SDR holdings) are excluded.

Source: Authors' calculations based on bilateral IIP data from the European Central Bank.

Counterparty breakdown on a nationality basis (portfolio instruments)

Given the importance of financial centres in the euro area (Ireland, Luxembourg, the Netherlands, as well as Cyprus and Malta), a nationality-based perspective on the euro area external balance sheet would provide useful information to better assess euro area exposures. Progress in this area can be made in particular for portfolio investment, following the work of Beck et al. (2024).[36] The authors construct estimates of euro area portfolio holdings on a nationality basis, undertaking two key adjustments to the residence-based data. The first is to determine the nationality of the issuer of a specific security and attribute the destination of the investment to that country (thereby addressing the distortions caused by offshore issuance of bonds by corporations, for instance). The second is to use data on investment funds' portfolio allocation to 'unwind' holdings in investment funds, assigning to the investor country the individual securities of funds held by their residents. For this second adjustment, the authors combine data on euro area investment funds with data on holdings of investment fund shares by euro area investors to determine residually which euro area investment funds are held by investors from the rest of the world. The assets held by such funds in the rest of the world are removed from the asset position of the euro area, since they represent claims by ROW investors on the rest of the world. The corresponding fund shares are removed

36 We are very grateful to the authors for generously sharing their data update for the years 2021-23.

from the liabilities of the euro area, since in this case the funds play a purely pass-through role. To the extent that these funds held by non-euro area investors hold euro area securities, those are included on a nationality basis as euro area liabilities (debt or equity securities).

These adjustments are especially important for investment funds domiciled in Ireland and Luxembourg, which account for well over 90% of euro area fund shares held by investors from outside the euro area and over half of total euro area portfolio investment abroad.

The results of this exercise show the importance of the portfolio intermediation role of the euro area. Specifically, at the end of 2023 over $4 trillion in portfolio assets held by euro area investment funds were ultimately held by ROW investors owning such funds' shares ($2.3 trillion for bonds and $2 trillion for portfolio equity). Furthermore, investors from the rest of the world held some $1.2 trillion in portfolio claims on euro area countries through euro area investment fund shares, two thirds of which were in bonds. Therefore, reallocating such holdings through euro area investment fund shares results in a $4.3 trillion reduction in euro area portfolio assets (now attributed to ROW investors), a massive reduction in euro area portfolio equity liabilities (over $5 trillion in 2023), and an increase in portfolio debt liabilities of around $800 billion (as some fund shares correspond to bond holdings in the euro area by ROW investors).

When we move to the geographical breakdown of portfolio assets and liabilities, we are able to adjust holdings of debt and equity instruments on the asset side with a proper breakdown by region, since the data identify the nationality of the issuer of the security and whether or not the investor is from the euro area. For instance, if an international investor holds shares in an Irish investment fund that purchases US Treasury securities, we can re-attribute the holdings of those US securities to the international investor and scale down euro area holdings by the same amount. Unfortunately, for portfolio equity and debt liabilities we only know that certain euro area securities held by euro area investment funds are held on behalf of nonresident investors, but not those investors' country of residence or nationality. To provide a rough geographical breakdown, we rely on statistics on holders of Irish and Luxembourg portfolio equity instruments reported by investor countries to the CPIS, and integrate that information with the identification of investment fund shares whose investor is not known (see the last bar in the lower panels of Figure 1.2 and Figure 1.24).[37] We then scale down portfolio equity liabilities positions for each country group in proportion to their weight in holdings of Irish and Luxembourg investment fund shares. It turns out that ROW investors whose country of residence is unknown account for some 60% of the fund shares that are being remapped, with Commonwealth and "other advanced Europe" accounting for over half

37 Ireland's portfolio equity liabilities also include a nontrivial component of common equity. US-source statistics show that a high proportion of those shares are held by US investors. The reason is that many are redomiciled US firms which moved their residence to Ireland, and hence the previously domestic US shareholdings have become claims on Irish entities. We are therefore able to use CPIS data (adjusted to remove US holdings of common equity) as a good proxy for country-specific foreign holdings of Irish investment fund shares.

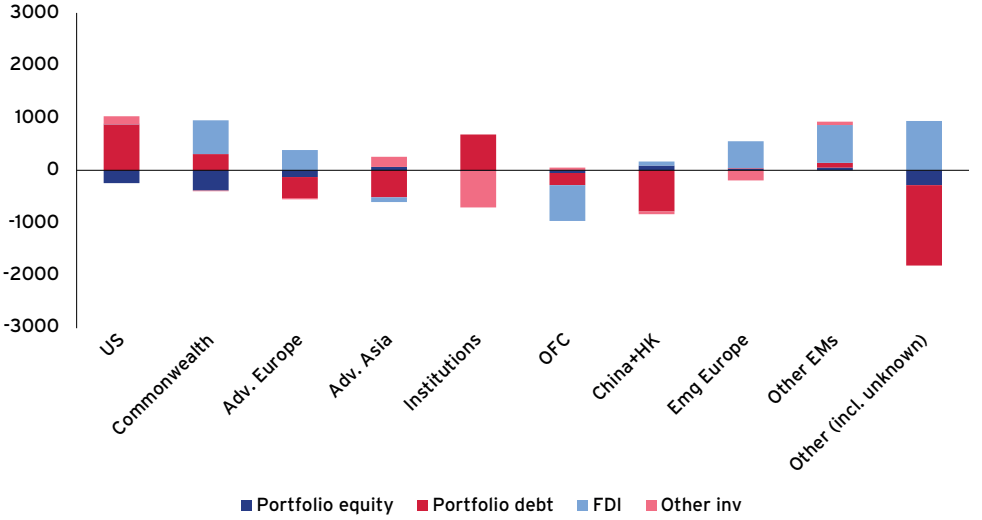
of the remainder. The same weights are used to scale up holdings of euro area debt securities by different countries and regions. Overall, as illustrated in Beck et al. (2024), this remapping exercise scales down considerably the gross portfolio positions in the euro area international investment position.

We also undertake a second adjustment for the (large) Cayman Islands holdings of portfolio assets in the euro area, analogously to what we did for the United States. Specifically, we re-attribute those holdings (except for holdings of investment fund shares in Ireland and Luxembourg, already re-allocated as described above), to the country groups holding investment fund shares in the Cayman Islands.

It would be very useful to perform a similar exercise for foreign direct investment, given the role played by financial centres in intermediating FDI flows and positions, but data limitations are even more severe than those affecting portfolio investment. An exercise along those lines is on the agenda for future research.[38] Similar considerations apply to the other investment category.

The results for 2023 of the partial nationality-based adjustment for portfolio instruments along the lines discussed above are shown in Figure 1.25, which is reproduced on the same scale as Figure 1.23 to ease comparison. A few observations are noteworthy.

FIGURE 1.25 **EURO AREA: NET CREDITOR AND DEBTOR POSITIONS, 2023 (PARTIAL NATIONALITY-BASED CORRECTION, PORTFOLIO INSTRUMENTS)**



Note: Estimated holdings of reserve assets in the form of debt securities are included in portfolio debt. The remaining foreign reserve assets (including gold and SDR holdings) are excluded.

Source: Authors' calculations, updated data based on Beck et al. (2024) and bilateral IIP data from the European Central Bank.

38 One reason is that adjusting euro area statistics in a similar fashion to US statistics (thus constructing bilateral statistics on FDI by ultimate beneficial owner for inward FDI and ultimate host country for outward FDI) would require the availability of such data for all the main countries. In practice, however, only Germany produces statistics on ultimate host country and neither Luxembourg nor the Netherlands (the largest foreign investors on a residence basis) produces statistics on inward FDI by ultimate beneficial owner.

First, euro area investment in US portfolio instruments is scaled down substantially on a nationality basis compared to a residence basis (by over $1 trillion for both shares and bonds; first bar of the figure). International investors hold substantial positions in Irish and Luxembourg investment fund shares, and fund holdings are skewed toward the United States, which is the largest market for both equity and bonds. There is also an increase in estimated US holdings of euro area portfolio equity and portfolio debt instruments (through their holdings of Cayman Islands fund shares).

Second, the position vis-à-vis Commonwealth countries shows a large decline in both net equity liabilities and net portfolio debt assets (second bar of the figure). This reflects *inter alia* the importance of euro area investment fund holdings of UK debt securities on behalf of UK pension funds. Those euro area holdings of debt securities are netted out in the nationality-corrected data (being held on behalf of nonresidents) and so are the corresponding euro area liabilities in the form of investment fund shares.

Third, there is a large decline in the role of 'unknown' ROW investors in the euro area portfolio positions (last bar of the figure), with a composition shift from equity to bonds. As discussed in Milesi-Ferretti (2024b), a large share of the gap in our knowledge on the residence of portfolio equity investors globally is related to lack of information on holders of Irish and Luxembourg investment fund shares, and those shares are primarily managed in the United Kingdom on behalf of international investors. As shown by Beck et al. (2024) and illustrated with their data in Figure 1.25, those investment fund shares – most likely held by investors from outside the euro area – are primarily invested outside the euro area. Hence, remapping portfolio holdings on a nationality basis transfers the uncertainty about the residence and nationality of investors to the recipients of the investment of these funds – including the United States.

Finally, there is a decline in holdings of euro area portfolio instruments by offshore financial centres, since Cayman holdings were re-allocated to the investors holding Cayman Islands fund shares.

In summary, the euro area has a very large external balance sheet. This reflects both the financial openness of the euro area – as reflected in large holdings of claims and liabilities vis-à-vis the rest of the world – and its important global financial intermediation role, including through investment funds domiciled in Ireland and Luxembourg. Net positions are considerably smaller than gross positions. The euro area is a large net creditor vis-à-vis the United States, but an important share of this position reflects shares and bonds held by euro area investment funds on behalf of investors from outside the euro area. This highlights the complexity of establishing precise measures of exposures across the main advanced economies, given the gaps in our knowledge on holders of investment fund shares. As is the case for the United States, the euro area's strongest financial linkages are with other advanced economies, both in gross and net

terms. The most important partners are Commonwealth countries and other countries in advanced Europe, in addition to the United States. The net position vis-à-vis China is negative and mostly reflects Chinese holdings of foreign exchange reserve assets in the form of euro area debt securities.

1.5 FINANCIAL FRAGMENTATION: MACROECONOMIC REPERCUSSIONS

The analysis conducted so far has highlighted the structure of external portfolios for the main countries in each geopolitical bloc, as well as the relative weight of different parts of the world economy in cross-border asset holdings. In our view, these are essential inputs to think about the potential ramifications of external portfolios becoming more fragmented along geopolitical lines, as well as the implications of the changes witnessed so far.

The literature on cost and benefits of international financial integration is the logical starting point for thinking about the potential repercussions of financial fragmentation. The welfare gains and costs of international financial integration have been extensively debated. On the one hand, financial openness can enhance welfare by enabling more efficient capital allocation, facilitating risk sharing, and promoting financial development and growth (Fischer, 1997, 2003; Henry, 2007; Obstfeld, 1994, 1998; Rogoff, 1999; Summers, 2000; Kose et al., 2009). Capital flows into capital-scarce countries reduce their cost of capital and increase real investment, and the resulting growth permanently raises living standards (Bekaert et al., 2005; Chari and Henry, 2004, 2008; Chari et al., 2021, 2022c). For example, access to international capital markets allows countries to smooth consumption and invest in productive opportunities that might otherwise be constrained by domestic savings. Recent work by Pellegrino et al. (2025) also estimates a high GDP cost of barriers to global capital allocation.

However, empirical studies also highlight potential costs, including increased vulnerability to external shocks, capital flow volatility, and the risk of financial crises (Bhagwati, 1998; Rodrik, 1998; Edison et al., 2002, Eichengreen, 2001, Gourinchas and Jeanne, 2006, Kose and Prasad, 2012, Kose et al., 2009). These concerns are particularly salient for emerging markets with underdeveloped financial institutions or weak macroeconomic frameworks, exposing them to shocks that originate outside their domestic economies. Sudden stops and capital flight present pressing challenges for policymakers and investors (Forbes and Warnock, 2012, 2021; Miranda-Agrippino and Rey, 2020; Rey, 2013).

Regardless of where we land on the debate on the welfare effects of financial integration, trade and financial integration are inextricably intertwined. Indeed, there is a rich literature exploring the interconnectedness and co-evolution of trade and financial integration, emphasising how the two forms of globalisation often reinforce each other (Rajan and Zingales, 2003; Kose et al., 2009; Claessens and Laeven, 2003; Beck, 2002; and many others). The fragmenting landscape of international trade will have important repercussions for international finance. Reshaping the international trading

system will inevitably affect the international financial system as well – disrupting trade relations will affect capital flows. The financial market response in the days following the 2 April 2025 tariff announcement by the US administration bears clear testimony to this fact.[39] These concerns are heightened by the multitude of factors driving the imposition of bilateral US trade restrictions in recent months, which raise the question of whether financial flows or holdings could be targeted in a similar fashion, with potentially disruptive implications for global finance given the central role played by US financial markets.

How can the macroeconomic implications of increased financial fragmentation be quantified? Large-scale global economy models have a structure better suited to quantifying repercussions occurring through trade fragmentation than those occurring through financial fragmentation. This occurs because the modelling of trade linkages is generally much more detailed than the modelling of financial linkages – and models with a more articulated portfolio structure typically have a simplified version of the underlying macroeconomic factors. Consistent with these factors, most estimates of the macroeconomic implications of global fragmentation have focused so far on trade. However, there are many channels through which financial fragmentation can impact macroeconomic performance both at the country level and globally, and these are discussed throughout this report. In this chapter, we highlight risks associated with changes in the portfolio structure of countries. Chapter 2 discusses risks associated with changes in the global role and importance of different currencies. Chapter 3 discusses the risk of fragmentation in global payment systems. Finally, Chapter 4 discusses the potential impact on global macroeconomic developments of a more fragmented global financial architecture, through changes in the global financial safety net as well as the risk of global financial crises.

If we rely on the traditional notion of geopolitical blocs, the evidence provided in this chapter makes it clear that the US-centred bloc has a much more dominant position in global finance than in global trade. One logical implication is that it is more difficult for a China-centred bloc to meaningfully reduce its financial linkages from the West, while conversely the loss of 'diversification benefits' of increased fragmentation of global portfolios for the Western bloc would arguably be less severe compared to the impact of much-reduced trade linkages. Nevertheless, a box in IMF (2023a) suggests that the costs associated with reduced portfolio diversification could be tangible even for G7 economies, particularly in scenarios when fragmentation becomes more extreme. Of course, the costs would be larger for the other bloc, given the dominance of the US-centred bloc. For countries that are not formally part of a bloc, there could still be negative implications related to potentially higher volatility and the risk that global action in response to global shocks would be more difficult to coordinate, as we discuss in Chapter 4.

39 A box in Chapter 2 discusses recent financial market developments as they relate to the theme of this report.

The category of cross-border holdings for which fragmentation could entail the most salient macroeconomic consequences is arguably foreign direct investment. FDI plays a pivotal role in the global allocation of production, technological spillovers across countries, and the control of key natural resources, and has closer ties to trade than portfolio investment or other investment.[40] Indeed, a sizable share of global trade occurs through multinational corporations, between the parent company and its foreign affiliates, or within such affiliates. Model-based estimates of the impact of increased fragmentation in FDI do not generally rely on direct modelling of the linkages being affected, but rather assume that the weakening of such linkages has consequences such as reduced productivity and imports of investment goods. These assumptions underpin the estimates of the output costs caused by FDI fragmentation reported in IMF (2023b).[41] The costs are generally larger for the China bloc, which is primarily composed of emerging markets, given their loss of access to investment from advanced economies, and meaningful for the global economy as well, with long-term global output lower by up to 2% compared to a baseline no fragmentation scenario. In reality, finance and trade are closely interlinked, as already noted above, and rising fragmentation is likely to materialise along both dimensions and hence entail larger output costs.

More detailed data-based analysis of these issues is hampered by the nature of FDI data, already noted earlier in this chapter. International statistics on bilateral linkages across countries, which are based on the immediate destination of FDI for assets, are difficult to interpret given the complex internal structure of multinational corporations which often route investment through several foreign affiliates before it reaches its ultimate destination. Furthermore, the balance of payments data on FDI, including at the bilateral level, is not limited to greenfield investment or mergers and acquisitions, but also involves purely financial operations driven by tax reasons, often conducted through special purpose entities, with no macroeconomic repercussions.

But fragmentation in other forms of cross-border holdings can entail important consequences as well, beyond losses arising from diminished diversification benefits. For instance, financial stability risks can rise, including because the impact of geopolitical tensions on financial flows can imply a more volatile global environment, with adverse macroeconomic consequences (as research on the impact of rising geopolitical uncertainty suggests). Portfolio adjustments can also be disruptive, particularly when they involve large holdings of financial instruments. And smaller countries may suffer the consequences of reduced access to global finance, as discussed in Chapter 4. All these repercussions need to be taken into account alongside the repercussions of geopolitical tensions on the global trading system and international relations more generally.

40 Unfortunately, international statistics on bilateral linkages across countries are difficult to interpret given the complex internal structure of multinational corporations that often route investment through several foreign affiliates before the investment reaches their ultimate destination.

41 One aspect these estimates do not directly take into account is the resilience of supply chains to shocks, including geopolitical ones – a factor that plays an important role in policy decisions.

One closing set of considerations concern the potential role of 'connector countries', defined as countries with trade and financial relations with partners that span a wide range of geopolitical preferences (e.g., Gopinath et al., 2025; Aiyar and Ohnsorge, 2024). As these authors note, a number of EMDEs have transactions with partners across the geopolitical spectrum and are hence more geoeconomically connected than advanced economies. These countries have contributed to increasing the resilience of trade to geopolitical shocks, as trade and FDI flows across geopolitical blocs have been re-routed through them, and may therefore benefit from (or be less affected by) increased fragmentation. However, greater connectedness for these countries is more evident in trade relations than in financial relations, reflecting the preponderant weight of advanced economies in global financial markets. Within financial relations, the role of connector countries is probably most relevant for FDI, but maintaining these connector benefits over time requires this re-routing to persist. This could occur if policymakers from the main blocs are willing to tolerate such developments, even though they will weaken efforts to reduce mutual dependence.

APPENDIX A1 COUNTRY GROUPS

Geopolitically close countries, based on UN General Assembly voting

US: Israel, *United Kingdom*, Micronesia, France, Czech Republic, Hungary, Ukraine, Canada, Lithuania, Australia, Croatia, Germany, Romania, Slovakia, Italy, Poland, Latvia, Denmark, Estonia, Bulgaria, Sweden, Monaco, Albania, Finland, *Netherlands*, *Luxembourg*, Montenegro, Spain, *Belgium*, Portugal, Slovenia, Greece, Macedonia, Iceland, Austria, Korea, Georgia, Marshall Islands, Norway, Bosnia and Herzegovina, Moldova, *Andorra*, New Zealand, *San Marino, Malta, Ireland*, Liechtenstein, Japan

China: *Bahrain*, Iraq, Libya, Sri Lanka, Mauritania, Indonesia, Turkmenistan, Nigeria, Lao People's Dem. Rep, Saudi Arabia, Uzbekistan, São Tomé and Príncipe, Brunei Darussalam, Equatorial Guinea, Lebanon, Belarus, Jordan, Somalia, Kuwait, Malaysia, Uganda, Djibouti, Niger, Guinea-Bissau, Bolivia, United Arab Emirates, Tajikistan, Qatar, Oman, Namibia, Comoros, Vietnam, Egypt, Tunisia, Azerbaijan, Algeria, Senegal, Lesotho, Bangladesh, Mongolia, Burkina Faso, Maldives, Congo, Angola, Mali, South Africa, Cambodia, Russia

Note: Italic font indicates countries classified as "financial centres" by Lane and Milesi-Ferretti (2018), as further described in Annex C.

Geographically close countries, quartiles of countries based on distance between capital cities

US: Antigua and Barbuda, Bahamas, Belize, Barbados, Canada, Colombia, Costa Rica, Cabo Verde, Cuba, Dominican Republic, Ecuador, Gambia, United Kingdom, Granada, Guatemala, Guyana, Honduras, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, Morocco, Mexico, Mauritania, Nicaragua, Panama, Peru, Senegal, El Salvador, Suriname, Trinidad and Tobago, Venezuela, St. Vincent and the Grenadines

China: Afghanistan, United Arab Emirates, Armenia, Azerbaijan, Bangladesh, Bahrain, Brunei Darussalam, Micronesia, Georgia, Indonesia, India, Iran, Iraq, Japan, Kazakhstan, Kyrgyzstan, Cambodia, Korea, Kuwait, Laos, Sri Lanka, Maldives, Myanmar, Mongolia, Malaysia, Nepal, Oman, Pakistan, Philippines, Palau, Qatar, Russia, Singapore, Thailand, Tajikistan, Turkmenistan, Uzbekistan, Vietnam

Note: The country classification as geographically close to the US or China is based on the distance between the capital cities from the CEPII database (Mayer and Zignago, 2011).

Financial centres

The classification of financial centres follows the one by Lane and Milesi-Ferretti (2018). Economies are selected on the basis of their ratios of external assets and liabilities to GDP. For advanced economies these include Belgium, Hong Kong, Ireland, Luxembourg, Netherlands, Singapore, Switzerland, UK.

Other emerging market economies with similar features and small financial centres include Bahrain, Cyprus, Macao, Malta, Andorra, Bahamas, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Curacao, Gibraltar, Guernsey, Isle of Man, Jersey, Mauritius, Netherlands Antilles, Panama, San Marino, Turks and Caicos.

Country groups for bilateral analysis of US position

Euro area: Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovak Republic, Slovenia, Spain.

Advanced Asia: Japan, Korea, Singapore, Taiwan

Commonwealth: Australia, Canada, New Zealand, United Kingdom (plus Isle of Man, Guernsey, and Jersey)

Other advanced economies: Czech Republic, Denmark, Iceland, Israel, Norway, Sweden, Switzerland

Greater China: Mainland China, Hong Kong, Macau.

The remaining groups (Caribbean, emerging Asia, Middle East, Latin America) are regional.

APPENDIX A2 US DATA ON A PARTIAL NATIONALITY BASIS

The discussion of statistics which allocate US holdings as well as US liabilities to the country of the ultimate investor or issuer of the relevant financial instrument is limited to portfolio investment on the asset side and FDI on the liabilities side, because of data availability constraints.

For **portfolio assets**, Bertaut et al. (2019) provide a re-allocation of US investment based on the nationality of the entity issuing the security held by the US investor, as opposed to the residence captured in balance of payments statistics. For portfolio equity (see Figure A2.1), the most substantial changes involve an almost complete re-allocation of the massive US holdings in the Caribbean ($2.6 trillion) to domestic holdings (e.g., US-held shares of US-based hedge funds domiciled in the Cayman Islands and investing in the US) or to claims on China (reflecting the value of VIEs based in the Caribbean). It also involves a notable reduction in US claims on the euro area (Irish and Luxembourg funds with holdings outside the euro area as well as US companies incorporated in Ireland following tax inversions). Overall, holdings in the euro area decline from $2.9 trillion to $2.1 trillion, holdings that become domestic amount to $2.5 trillion, and claims on China rise from $300 billion to $756 billion.

For **portfolio debt** (see Figure A2.2) the most notable change is once again the reclassification of portfolio debt claims on Caribbean countries as domestic claims, together with a relatively modest increase in portfolio debt claims on China as well as other emerging market economies, reflecting US holdings of bonds issued offshore by corporate entities in these countries (see Coppola et al., 2021).

FIGURE A.1 **US HOLDINGS OF PORTFOLIO EQUITY SECURITIES BY RESIDENCE VS NATIONALITY, 2023 (US$ BILLIONS)**

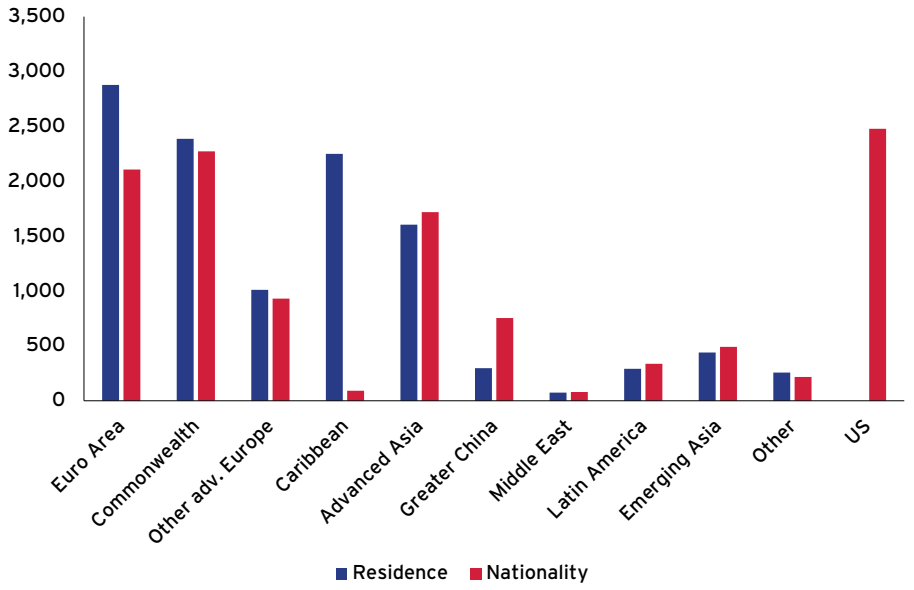
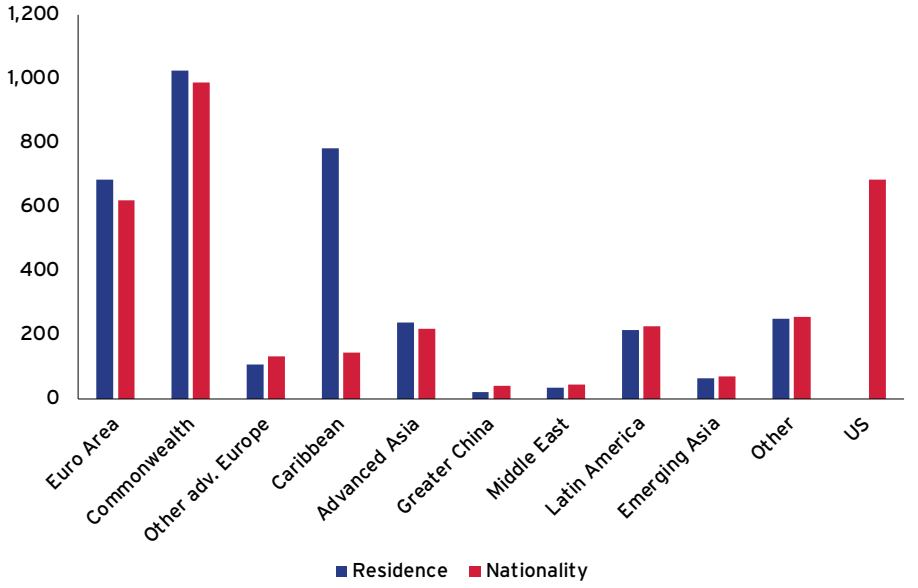


FIGURE A.2 **US HOLDINGS OF PORTFOLIO DEBT SECURITIES BY RESIDENCE VS NATIONALITY, 2023 (US$ BILLIONS)**



US FDI assets by ultimate host country

To estimate data on US FDI by ultimate host country we make use of partner-country data on inward FDI from a US ultimate beneficial owner for a few countries reporting such data, including France, Germany, Ireland, Italy, Japan, Spain, and Switzerland. For the remaining countries, we collect data published by the Bureau of Economic Analysis on the operations of majority-owned foreign affiliates of US multinational corporations by foreign countries of operation. We focus specifically on data on the following:

1. Net property, plants, and equipment
2. Compensation of employees
3. Total sales

This choice is dictated by the desire to have measures including both labour input and capital, as well as a measure of economic activity such as sales. The data are used to construct annual weights for partner countries. These weights have a correlation between 0.7 and 0.8, with weights constructed from the location of FDI by immediate host economy, and are strongly correlated across the three measures of actual economic footprint in the host country.

We use these weights to redistribute total US FDI abroad net of the holdings by the countries reporting ultimate beneficial owner statistics mentioned above. With these weights, the role of the Caribbean economies virtually disappears, and the role of European financial centres such as Luxembourg and the Netherlands is also sharply curtailed. In contrast, the weight of US investment in economies such as China and India rises substantially.

Cayman Islands investment and assets and US portfolio liabilities

Investment funds domiciled in the Cayman Islands are large international investors, reporting holdings of $5.7 trillion of portfolio instruments at the end of 2023. A significant share of US private equity funds and hedge funds are domiciled in the Cayman Islands and are large investors in the United States. Such investments are recorded as US external liabilities in US statistics, but from a nationality perspective they are not since the ultimate owner of the claims is a US resident.

To address this issue, we try to estimate the composition of holdings of Cayman Islands fund shares by country of the investor, with the aim of attributing to such countries the assets reported by Cayman Islands investment funds. Our first source of data is the IMF Coordinated Portfolio Investment Survey, from which we collect data on portfolio equity investment in the Cayman Islands by different countries. However, such data will also include holdings of common equity in addition to fund shares, since many entities (especially Variable Interest Entities from China, as discussed in the text) are domiciled in the Cayman Islands.

To estimate 'common equity' holdings in the Cayman Islands, we make use of US data compiled by Bertaut et al. (2019),[42] as well as national source data for Japan and the euro area. For other advanced economies (including Commonwealth and other advanced Europe countries), we rely on estimates of common equity holdings in the Cayman Islands until 2020 from Coppola et al. (2021), which are extrapolated to 2023. For China and Hong Kong, we assume that 90% of the holdings in the Cayman Islands reflect common equity, given the predominance of Chinese entities domiciled in that jurisdiction. For other emerging market economies reporting to CPIS, which represent a very modest fraction of total CPIS-reported investment, we assume a 50-50 split between common equity and investment fund shares.

We also estimate data on holdings of Cayman Islands shares by CPIS non-reporters using data published by the US Security and Exchange Commission (SEC) on beneficial owners of private funds reporting data to the SEC.[43] These data report the net asset value of holdings of US private funds that have "sovereign wealth funds and other foreign official institutions" as beneficial owner. We assume that the subset of these private

42 The data in question also identify "preferred and other equity", which includes limited partnerships. Given the structure of Cayman Islands funds, where private equity funds play an important role, we consider that component of equity as investment fund share.

43 These are private funds with a US manager.

funds that are domiciled in the Cayman Islands have the same proportion of foreign official ownership. We then assume that half of these official holdings are attributable to Middle Eastern sovereign wealth funds, based on data on their size and the composition of their assets, which include both hedge funds and private equity. We attribute the remaining half to unidentified investors.

Using this methodology results in holdings of equity in Cayman funds by US investors of around 50%. This estimate is very low, especially when compared with alternative data sources. For instance, the SEC data mentioned earlier report an overall share of US beneficial ownership approaching 90%. To adjust the share of US holdings, we use these data alongside data from the Cayman Islands Monetary Authority on investment funds by manager location. We assume that the proportion of US beneficial ownership from the SEC data applies to all Cayman Islands funds with a manager located in the United States or in the Caribbean, and no US beneficial ownership for funds whose investment manager is elsewhere (primarily the United Kingdom, Hong Kong, and other advanced economies). The result is a share for the United States of around 70%.

For the remaining country groups, we divide the remaining 30% using weights constructed from the CPIS-reported data mentioned earlier, augmented with the data on official holdings from the SEC.

FDI liabilities (ultimate beneficial owner)

As mentioned in the section on residence-based statistics, the US also publishes bilateral data on its FDI liabilities on an ultimate beneficial owner (UBO) basis, which takes into account the nationality of the ultimate parent company when there is a chain of control for US affiliates. Table A2.1 compares the holdings according to this measure with those based on the residence of the immediate investor.

TABLE A2.1 **FDI IN THE UNITED STATES, 2023 (US$ BILLIONS, HISTORICAL COST BASIS)**

	Immediate investor	Ultimate beneficial owner
Euro area	2,234	1,911
Commonwealth	1,416	1,505
Other advanced Europe	545	457
Advanced Asia	818	941
Caribbean	152	77
Greater China	46	62
Middle East	50	73
Latin America	62	122
Emerging Asia	14	23
United States	0	163
Other	57	60

The UBO statistics show a 15% reduction in claims by euro area countries (with a large scaling down of creditor positions in Luxembourg and the Netherlands), as well as lower claims by Caribbean economies and other advanced economies in Europe (reflecting reduced claims by Switzerland). We see instead claims by US firms as well as larger claims by Commonwealth countries (Canada), advanced Asian economies (Japan in particular), and emerging market economies.

CHAPTER 2

Continuity and change in the role of international currencies

This chapter examines the role of international currencies, highlights notable changes in that role over the past two decades, and assesses the extent to which geopolitical fragmentation has driven those changes. After summarising key insights from the theoretical literature on international currencies, the chapter examines their role in four areas of the international financial system: holdings of official foreign exchange reserves, cross-border lending, foreign exchange (FX) markets, and trade invoicing. While the focus is on developments in recent decades, we interpret those developments by drawing on the ample body of historically oriented research into the trajectory of international currencies going back to the 19th century.

The question of whether geopolitical tension affects the role of international currencies has become particularly relevant since the Trump administration's 2 April announcement that it would impose substantial tariffs on nearly all US trade partners, which sparked a risk-off event in financial markets. However, in moves starkly different from a typical risk-off episode, yields on US government bonds rose, and the US dollar depreciated against other major international currencies. These unusual asset price moves, which are discussed in more detail in Box 2.1, have led some to question whether a shift in the international role of the dollar relative to other major currencies is under way.[44] Given that such a shift would involve major changes across all four areas of the international financial system, this chapter puts recent events in perspective and provides a framework for assessing their significance.

Across the four areas analysed in this chapter, the US dollar so far remains the pre-eminent international currency.[45] Moreover, the international role of the euro has remained stable in recent years.[46] In both cases, their role far exceeds their share of global GDP and trade. Meanwhile, the international use of other currencies, such as the Chinese renminbi (RMB), has grown modestly but continues to be relatively limited. However, a key question is whether the role of currencies *other* than the traditionally dominant ones has shifted. If so, do such changes herald deeper structural changes going forward? And are they driven by geopolitical fragmentation or purely economic factors? Drawing on a wide range of recent academic research, this chapter finds that,

44 Market participants, the financial press, and academic researchers (e.g., Jiang et al., 2025) have all hypothesised that recent events may signal a shift in the international role of the dollar; see, for example, "Is the world losing faith in the almighty US dollar?", *Financial Times*, 17 April 2025.
45 For a comprehensive overview of the international role of the dollar, see Bertaut et al. (2024).
46 ECB (2025) provides a detailed analysis of the euro's international role.

so far, the shifts in the use of international currencies appear for the most part to reflect economic rather than geopolitical forces, with a few important exceptions. First, geopolitical tensions clearly motivated Russia and Turkey to reallocate their official reserves out of US dollar assets. Second, governments' stepped-up accumulation of gold in their official reserves appears driven at least in part by geopolitical concerns. And finally, recent evidence suggests that geopolitics is an increasingly important correlate of currency choice in trade invoicing.

It is notable that while this chapter focuses on recent developments, the evidence that economic factors are important drivers of shifts in the role of international currencies aligns with work analysing how the US dollar dethroned sterling as the main international currency (e.g., Chițu et al., 2014; Eichengreen and Flandreau, 2011). That said, geopolitics plays a pivotal role in shaping the international status of currencies. Through history, geopolitical factors have played a critical role in both reinforcing and challenging the international status of currencies.[47] Currency dominance is underpinned not only by size and openness, but also by the credibility of legal and institutional frameworks, by security partnerships, and by global military presence. A large and open economy with a strong policy framework provides the foundation for a currency's widespread use by fostering financial development, facilitating trade, and offering global investors stability and access to a pool of safe, deep, and liquid financial instruments. However, these economic advantages are often amplified or constrained by geopolitical considerations. For instance, a country's geopolitical influence can enhance trust in its currency and reinforce its dominance. Conversely, geopolitical fragmentation or tensions can undermine confidence in even economically significant currencies. In this way, geopolitical power and economic importance are not independent factors but mutually reinforcing forces that collectively shape the global acceptance and resilience of a currency over time.[48]

As discussed below, theoretical work on international currencies provides rich insights into the ways in which the various roles played by international currencies are mutually reinforcing. But that complementarity also implies that fragmentation in one area of the international financial system that erodes the position of international currencies can undermine their function in other parts of the system. As a result, the signs of fragmentation that this chapter identifies in patterns of currency invoicing bear watching closely, for two reasons in particular. First, history shows that a transition from a regime dominated by a single dominant international currency to one characterised by multiple international currencies of near equal standing can occur remarkably swiftly. The shift from sterling to dollar dominance, for example, took as little as a decade (Eichengreen

47 For instance, before the first world war, members of the Triple Alliance (Germany, Austria-Hungary, and Italy) and the Triple Entente (France, Britain, and Russia) held as foreign reserves the currencies of their alliance partners (Eichengreen et al., 2019); see below for more details.

48 The decline of the pound sterling's global prominence illustrates these linkages, in that it was closely tied to the decline of the British Empire, but also a weakening of its economic position (including high levels of debt and trade deficits after the two World Wars).

and Flandreau, 2011; Chițu et al., 2014). Second, however, the evolution of international currencies is far from linear, as illustrated by the trajectory of the Japanese yen, which gained international prominence in the 1980s only to retreat in the 1990s (Eichengreen et al., 2019; Rogoff, 2025).

2.1 INSIGHTS FROM THEORY

Theoretical work on international currency choice offers important insights that facilitate the interpretation of the empirical evidence that constitutes the bulk of this chapter. This section highlights four such insights and provides an overview of recent theoretical research, albeit one that is far from comprehensive.

First, papers that adopt varying approaches to modelling international currencies generally concur that strong inertial forces make changes in the relative role of international currencies very infrequent, although not impossible. Strategic complementarities in price setting and input-output linkages make it costly for firms to change the currency in which their goods are priced and for governments and firms to change the currency in which they issue debt (Mukhin, 2022; Coppola et al., 2024). The government issuing a dominant international currency has incentives to pursue policies that preserve that dominance (Coppola et al., 2024; Clayton et al., 2024), while governments that aspire to elevate their currency to a major international role must take action that is costly – often prohibitively so (Clayton et al., 2024). Moreover, the strong inertial forces at work mean that even major economic changes do not automatically translate into shifts in the roles of international currencies. Large changes in the relative size of the issuer economies are not sufficient to materially alter the roles their currencies play internationally (Mukhin, 2022; Coppola et al., 2024). Perhaps more surprisingly, quantitative modelling indicates that even dramatic financial liberalisation, whether floating the exchange rate (Mukhin, 2022) or lifting capital controls (Chahrour and Valchev, 2025), would not by itself lead to a challenger currency becoming a major international currency on par with, or surpassing, the incumbent. For this to happen, a substantial negative shock to the economy of the dominant currency issuer would be required.

Second, work that models international currencies emphasises the interdependence of currency choice across the different areas of the global economy. For example, Gopinath and Stein (2021) trace the mechanism through which exporters in countries other than the United States earn dollar revenues and thus wish to use those dollars to acquire dollar-denominated safe assets. This in turn incentivises banks to lend in dollars, with dollar loans becoming cheaper than those denominated in local currency. As a result, even firms that do not earn dollar revenues will be incentivised to borrow in dollars. Importantly, the incentive structure also runs the other way: when firms have dollar liabilities, they have an incentive to price in dollars to avoid currency mismatch (a point emphasised by Coppola et al., 2024). When imports are priced in dollars and

domestic firms issue dollar debt, the dollar will have an outsized weight in the optimal portfolio of official reserve assets. While this interdependence can reinforce the stability of a dominant currency regime, it also implies that changes in the role of international currencies in one area can spill over to other areas, amplifying the shift.

Third, recent theoretical work highlights that government policy can play an important role in either maintaining the status quo or engineering changes in the role of international currencies. Policies ranging from investing in infrastructure that builds market depth and liquidity (Coppola et al., 2024) to strategic patterns of issuance (Clayton et al., 2024) help reinforce the role of the dominant currency. By contrast, policies that incentivise the invoicing of trade in a potential challenger, for example the renminbi, have the potential to spark significant changes (Chahrour and Valchev, 2024).

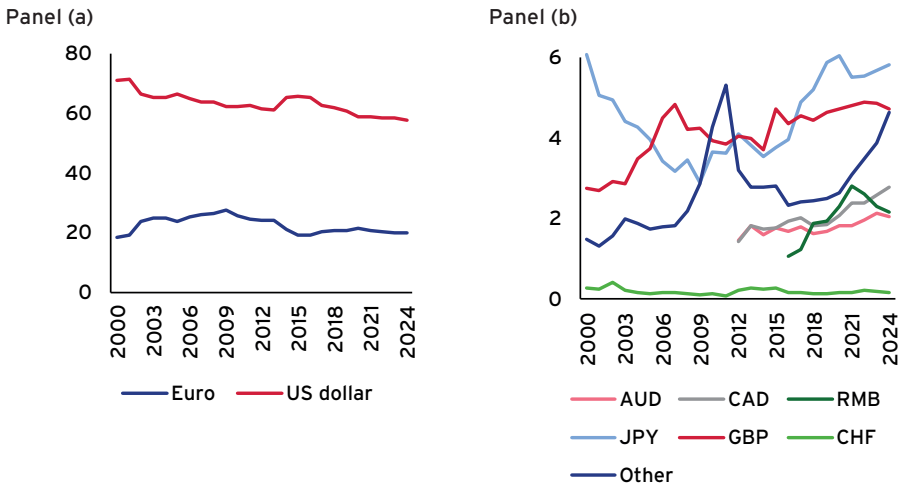
Fourth and finally, theory provides a window on what alternatives to the pre-eminent role of the US dollar in the current international monetary system are possible, and under what circumstances. For example, Chahrour and Valchev (2024) find that significantly more strict controls on trade between a US-centric bloc and a China-centric block would lead to a bifurcated system in which the dollar and the renminbi both play the role of international currency, each for its own bloc. Similarly, should emerging markets shift away from managing their currencies versus the US dollar in exchange markets, regional blocs could emerge (Mukhin, 2022).

2.2 OFFICIAL FOREIGN EXCHANGE RESERVES

Turning now to recent evidence, a key feature of international currencies is their use in official foreign exchange reserve portfolios. The share of reserves allocated to US dollar assets has declined over the past two decades. At least so far, however, this shift appears primarily driven by financial market development and diversification rather than geopolitically motivated financial fragmentation. There are two notable exceptions to this – Russia and Turkey – which undertook geopolitically driven reserve reallocations that are discussed in more detail below. This section concludes with a discussion of dollar reserves held by stablecoin issuers, which in some ways resemble official reserves and are likely to support the role of the dollar as a reserve currency going forward.

The dollar remains by far the pre-eminent currency in which official foreign exchange reserves are held, accounting for 58% of total reserves at the end of 2024 measured at market exchange rates (Figure 2.1). Euro-denominated assets are a distant second, at 20%, while the yen and pound account for 6% and 5%, respectively. At the same time, the dollar's share of world FX reserves has declined substantially from 70% 25 years ago. Indeed, the decline has been particularly notable since geopolitical tensions began to intensify in 2017, from approximately 63% in 2017 to 58% in 2024.

FIGURE 2.1 **CURRENT COMPOSITION OF OFFICIAL FOREIGN EXCHANGE RESERVES (%)**

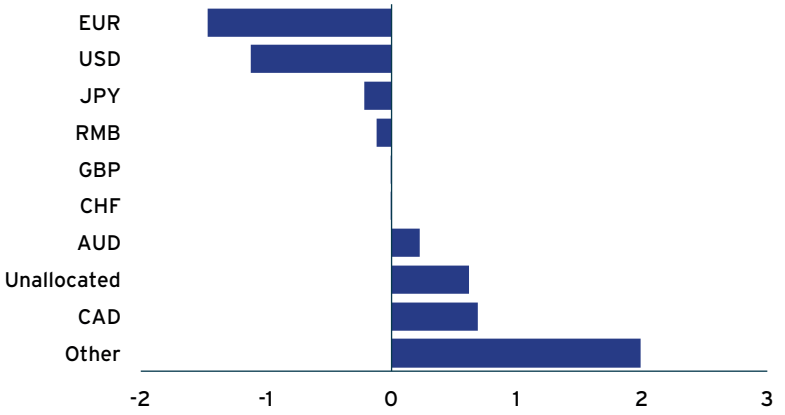


Source: IMF COFER.

Does the falling dollar share represent an early sign of financial fragmentation? Or does it reflect an endogenous response to other changes in the global economy? At least so far, the bulk of the evidence suggests that shifts appear driven by financial market development and diversification rather than geopolitically driven financial fragmentation.

A key insight into the factors behind the falling dollar share comes from a straightforward examination of which currencies' shares have increased the most. Analysing data through 2020, Arslanalp et al. (2022) present a range of evidence that the fall in the share of reserves allocated to major international currencies owes to what they call "the rise of nontraditional reserve currencies". In addition to the Chinese renminbi, the group of nontraditional currencies they identify includes the Swedish krona, Norwegian krone, Danish krone, Korean won, Singapore dollar, New Zealand dollar, and Hong Kong dollar. The pattern identified by Arslanalp et al. (2022) has continued during the last four years, as shown in Figure 2.2. The declines in the shares allocated to the US dollar and the euro (1.5 and 1.1 percentage points, respectively) are more than accounted for by increases in the Australia and Canadian dollars and the various other currencies included in the residual "other" category. By contrast, the allocation to the renminbi is little changed on net since 2020, as its share peaked in 2022 after rising for several years, and has since declined.

FIGURE 2.2 **CHANGES IN CURRENCY ALLOCATION OF RESERVES, 2020-2024 (PERCENTAGE POINTS)**



Source: IMF COFER.

Available evidence indicates that governments have boosted holdings of nontraditional currencies because they have become generally more attractive to investors. Not only did the liquidity and trading volume of these currencies increase dramatically over the past decade, but the risk-adjusted returns they offer have been far more favourable than those of traditional reserve currencies (Arslanalp et al. 2022). The reallocation away from major international currencies therefore appears to reflect the fact that reserve managers, like private sector investors, seek out assets with higher returns, taking into account the riskiness of the assets as well as their liquidity.[49] As a result, the shift in reserve allocations towards nontraditional currencies does not appear to be a harbinger of financial fragmentation; indeed, it reflects greater financial market development and integration.

The relative size of countries' reserve stockpiles is also an important driver of the changes in aggregate allocation plotted in Figure 2.2, which is not directly related to financial fragmentation. In a world in which reserve allocations vary across countries but remain completely static over time, the aggregate allocation to US dollar assets will rise if countries with higher US dollar shares accumulate reserves faster than those with lower dollar shares. Of course, individual countries' allocations do change over time, and Goldberg and Hannaoui (2024) quantify how the effects of those changes compare to those of changes due to relative speed of reserve accumulation. They find that half of the decline in the dollar share between 2015 and 2020 is due to more rapid reserve accumulation by countries with low dollar shares, in particular Russia and Switzerland. That such shifts, as opposed to a change in individual countries' dollar allocations, are a major force behind the declining share of the US dollar in official foreign exchange reserves further indicates that the decline does not reflect geopolitical fragmentation.

49 Goldberg and Hannaoui (2022) draw a distinction between the liquidity tranche and investment tranche of reserves, which is discussed in more detail below. The return-seeking behaviour discussed here is more pronounced for the investment tranche.

While there are clear signs that factors other than financial fragmentation have driven changes in the allocation of reserves to the set of traditional international currencies, evidence that fragmentation is driven by geopolitical tension or conflict is limited. Indeed, regression analysis available for the dollar generally fails to find that geopolitical alignment is significantly associated with lower dollar shares (Goldberg and Hannaoui, 2024; Chinn et al., 2024). Admittedly, the empirical evidence is based on samples that extend only up to 2022. More recent surveys, in contrast, indicate that geopolitical concerns are a significant priority for reserve managers and have the potential to influence their investment decisions going forward.[50]

Moreover, in considering the outlook for fragmentation in official reserve holdings, the core function of reserves as insurance against external shocks places potential limits on the degree of fragmentation that could result from elevated geopolitical tension or conflict. Recent work on the dollar analysing changes in the reserve allocation across international currencies emphasised the importance of distinguishing between the so-called 'liquidity tranche' of reserves, which is the level of reserves needed to self-insure against external shocks, and the 'investment tranche', or reserves held in excess of short-term liquidity needs. Geopolitical alignment affects the US dollar share only for the investment tranche, and even then, the effect is substantial only when the investment tranche is large relative to the liquidity tranche (Goldberg and Hannaoui, 2024).

This finding suggests that the near-term impact on total reserve allocations of significant shifts in geopolitical alignment could be contained, as such shifts would not alter the currency composition of the liquidity needs. It would therefore leave the allocation of the liquidity tranche in reserves unaffected. Of course, an important caveat to this logic relates to the role of international currencies in other areas of international finance. A geopolitically driven shift in the currency denomination of, for example, short-term debt issuance or trade invoicing would impact the currency composition of liquidity needs. In this way, geopolitical fragmentation could *indirectly* affect the composition of the liquidity tranche of reserves.

A detailed examination of the set of countries holding safe assets in the major currencies as official foreign exchange reserves provides further insights into potential effects of geopolitical fragmentation on reserve holdings. Nearly three-quarters of dollar-denominated FX reserves are held by countries with a formal alliance with the United States or some other significant form of military cooperation (Weiss, 2022).[51] Assuming

50 In surveys conducted in 2024, central banks pointed to geopolitics as a key factor influencing their medium-term investment decisions (ECB, 2025). For instance, about 80% of the respondents considered geopolitics as a major factor for reserve management in the next five to ten years, up from 20% in 2021. Moreover, recent research (Chinn et al., 2025) finds that US sanctions imposed between 1999 and 2022 reduced central banks' dollar reserves in targeted countries and increased holdings of other currencies and gold. Sanctions imposed by other countries, by contrast, had little measurable impact. These effects held in both periods of relative global financial stability and episodes of stress.

51 As a result, the share of non-aligned countries in foreign holdings of government debt is around one-quarter in the euro area and around one-fifth in the United States (ECB, 2025). The split is based on estimates of bilateral geopolitical distance, reflecting voting patterns at the United Nations General Assembly, where "aligned countries" refer to countries in political proximity to the United States, "non-aligned countries" excluding Russia refer to those in political proximity to China, and "connector countries" serve as bridges between the hypothetical blocs.

such countries would be unlikely to reallocate their reserves away from US dollar assets, even a major shift by a broad set of emerging markets would materially affect the aggregate share of reserves only if China and Hong Kong were among the reallocators. And even then, such a move would push the aggregate share of reserves allocated to US dollar assets only slightly below 50% (Weiss, 2022).

At the same time, this exercise draws attention to the fact that the potential size of a rebalancing in safe assets denominated in the major currencies could be much larger if geopolitical tensions prompted allies to reduce their holdings. Indeed, Eichengreen et al. (2019) show that countries that rely on the United States for their security umbrella are disproportionately inclined to hold dollar reserves. In a detailed analysis of pre-World War I data, they find that security guarantees boost a currency's share in foreign reserves by up to 30 percentage points. This large effect implies that a hypothetical scenario where the United States withdraws from the global stage would result in about a 30 percentage point reduction in the share of the dollar in the reserves of US-dependent states (assuming the level of global reserves remains unchanged). In such a scenario, 6% of US marketable public debt would be liquidated, which could boost US long-term interest rates by as much as 80 basis points.[52] The large size of the estimated effects they find suggests that geopolitical credibility and legal and institutional integrity are foundational pillars of the global role of reserve currencies.

Geopolitically driven shifts out of dollar assets

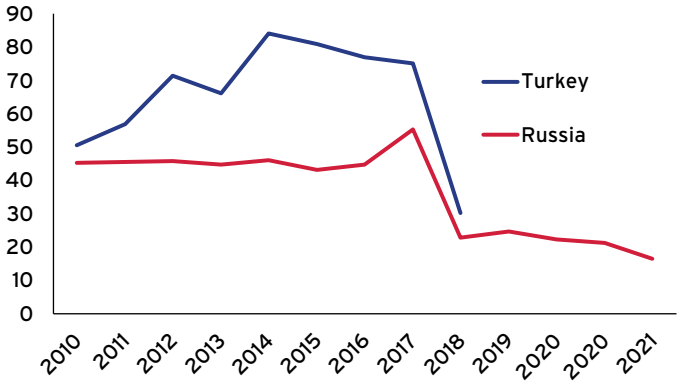
There have been at least two notable cases of geopolitically driven reallocation of official reserves away from the US dollar: Turkey and Russia. Turkey remains a formal US ally via its membership in NATO, but it sold nearly all of its dollar-denominated foreign exchange reserves beginning in late 2017. The sell-off coincided with a pronounced souring of relations with the United States. The factors behind this deterioration range from Turkey's purchase of Russian air defence systems, to the US relationship with Kurdish groups, to Turkey's treatment of American Christian missionaries (McDowell, 2022). As calls for sanctions on Turkey grew louder, the country began to sell off its dollar-denominated reserves. As shown in Figure 2.3, the share allocated to dollar assets dropped precipitously, from 77% in 2016 to 30% by the end of 2018 (Arslanalp et al., 2022).

Whereas Turkey's reserve de-dollarisation was precipitated by the threat (largely unrealised) of sanctions alone, Russia's move out of dollar assets followed the actual imposition of sanctions. The United States and the European Union first imposed sanctions immediately after the invasion in March 2015 and expanded the reach of the sanctions over the next several years. However, the United States significantly expanded the severity of its sanctions in 2018, prompting Russia dramatically reduce its holdings

52 Eichengreen et al. (2019) calculate this interest rate effect based on the elasticity of US rates with respect to official sales of Treasuries found by Warnock and Warnock (2009) but using more recent estimates (e.g., Beltran et al., 2013, Wolcott, 2020) gives similar results.

of US dollar reserve assets (McDowell, 2022). Accordingly, the share of Russia's reserves allocated to US dollar assets, which had averaged around 45% over the previous ten years, fell to around 25% (Figure 2.3). This move, complementing the shift of private sector assets and liabilities away from the euro area and the United States documented in Chapter 1, had a substantial impact on the aggregate share of reserves allocated to US dollar assets, given that Russia held more than $400 billion in reserves when it began its diversification. These two cases of geopolitically driven reserve reallocation are in some ways the exceptions to the plausible rule that fully shifting out of dollar assets is very challenging for reserve managers even in countries not geopolitically aligned with the United States. At the same time, they suggest that it is possible.

FIGURE 2.3 **US DOLLAR SHARE OF OFFICIAL RESERVES: RUSSIA AND TURKEY (%)**



Source: Arslanalp et al. (2022); Central Bank of Russia.

Stablecoins and demand for US safe assets

Stablecoins, discussed in more detail in Chapter 3 of this report, constitute a novel and rapidly growing source of US dollar reserves. While stablecoin issuers are private sector entities, their demand for dollar-denominated reserves closely resembles that of governments that maintain a peg or a managed float against the US dollar (indeed, descriptions of Tether, the largest stablecoin, frequently compare its institutional structure to that of the Hong Kong Currency Board). This is therefore a potential novel source of demand for safe assets to be held as reserves.

The market for stablecoins is dominated by currencies pegged to the US dollar (Lyons and Viswanath-Natraj, 2023; Catalini et al., 2022). Issuers of these dollar-pegged stablecoins therefore hold large quantities of dollar-denominated assets, with US Treasuries accounting for the majority of stablecoin issuers' holdings by a wide margin (Azar et al., 2024). Tether, for example, reported that it held $127 billion worth of US Treasuries at the end of March 2025. Indeed, recent research finds demand for US Treasuries by stablecoin issuers has a statistically significant (albeit not particularly

large) effect on Treasury yields (Ahmed and Aldasoro, 2025). As a result, continued growth of stablecoins will conceivably boost demand for dollar-denominated safe assets, independent of the demand from the official sector, and shore up, rather than undermine, the status of the US dollar.

2.3 CROSS-BORDER LENDING

This section turns to the role of international currencies in cross-border lending. After providing an overview of the currency composition of cross-border issuance of debt securities, an analysis of issuance by emerging market governments finds significant changes in the role of international versus local currencies. The section concludes with a discussion of offshore dollar funding markets, which highlights the persistence of dollar dominance.

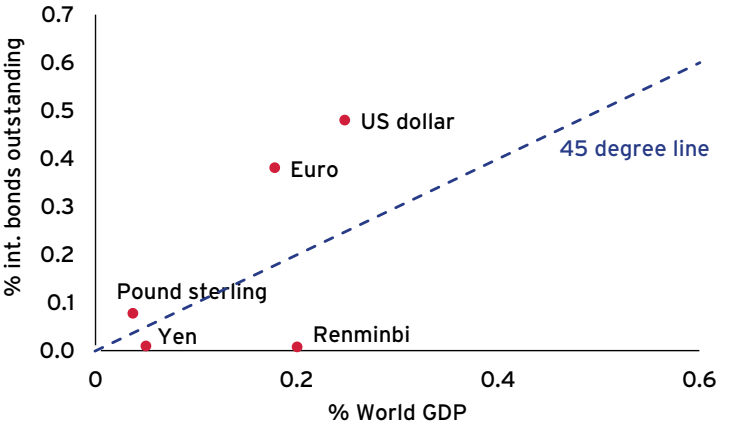
Nearly 50% of international debt securities are denominated in dollars, far higher than the 25% share of global GDP accounted for by the US economy.[53] This asymmetry is plotted in Figure 23, where the United States appears well above the 45-degree line, highlighting the US dollar's preeminent role as an international currency. As Figure 2.4 makes clear, the euro plays an outsized role in international finance, although its share of the amount of international bonds outstanding, at about 40%, is smaller. As will be discussed in detail below, the international role of the renminbi has increased somewhat over the last decade. However, its role in international finance remains comparatively small not only in absolute terms, but also relative to China's share of world output or its role in global manufacturing trade.

The preeminent role of the dollar in international financial markets in part reflects the preferences of major international investors, who are "uniquely willing" to hold US dollar assets (Maggiori et al., 2020).[54] However, that preference for dollar assets is not immutable. Rather, it is an equilibrium that depends on a range of factors, including the currency's use in other areas of international finance (Gopinath and Stein, 2021) and other factors that hinge on the ability of the main currency issuer to maintain, for example, economic resilience, institutional credibility, respect of the rule of law, and strategic leadership (Eichengreen, 2025).

53 This discussion focuses on gross cross-border debt liabilities, but statistics on the currency composition of total gross cross border portfolio debt positions (that is, the summed combined assets and liabilities for foreign direct investment, portfolio, and other assets) from Allen and Juvenal (2024) give broadly similar shares.

54 Clayton et al. (2024) propose a novel quantitative measure of international currencies' respective reputation as international safe assets; the resulting ranking resembles the rankings derived from other dimensions of international currencies.

FIGURE 2.4 **THE OUTSIZED ROLE OF INTERNATIONAL CURRENCIES, 2024**



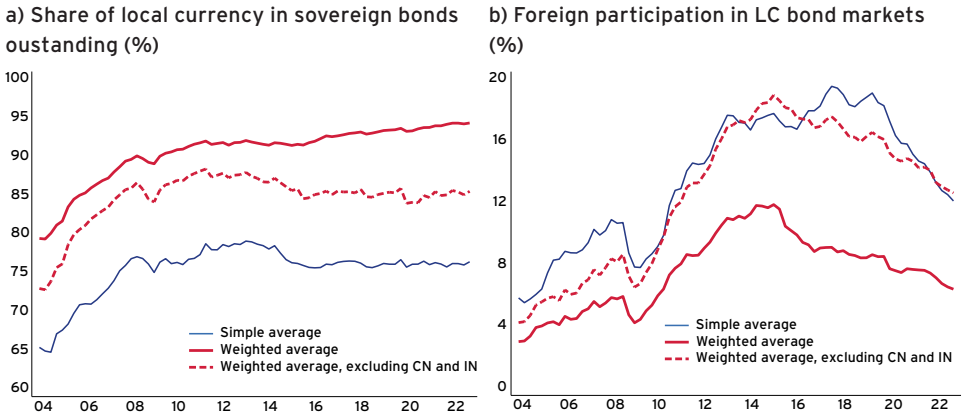
Source: BIS, WDI.

Rising local currency issuance by emerging market sovereigns

While the US dollar retains its dominant status as a currency of issuance, and the euro an important currency in international bond markets, emerging market sovereigns, which are an important subset of international issuers, have in fact shifted away from issuing debt in foreign currencies towards issuance in local currency, as shown in panel (a) of Figure 24 (Onen et al., 2025). As late as 2005, local currency debt made up only around 6% of emerging markets' total debt outstanding, but the share now stands at over 20%, not far off that of developed markets (Allen and Juvenal, 2024).

Importantly, this shift towards local currency issuance does not signal financial fragmentation, as it has coincided with increased holdings of emerging market local currency debt by foreign investors (panel b of Figure 2.5). Rather, stronger issuance in emerging market local currency debt reflects greater macroeconomic and economic policy stability in the emerging markets, advances in the development of domestic financial markets in these countries, and a desire for diversification on the part of international investors. The rise of local currency debt issuance by emerging markets further highlights the importance of distinguishing between shifts in the role of international currencies that reflect the evolution of the international financial system and changes that constitute evidence of geopolitically driven financial fragmentation.

FIGURE 2.5 **EMERGING MARKETS' LOCAL CURRENCY DEBT**



Source: Onen et al. (2025).

Echoing the change in the currency composition of emerging market borrowing via bond issuance, since 2022 the share of emerging market dollar-denominated borrowing via bank loans has also declined notably (DeMarco and Walker, 2025). This move has been driven primarily by Chinese banks shifting their lending to borrowers in other Asian emerging markets from dollars to renminbi. While presumably aligning with the Chinese government's announced policy of promoting renminbi internationalisation (for a detailed discussion, see von Beschwitz, 2024), the shift towards renminbi lending may also reflect economic motives. In 2022, evolutions in US and Chinese monetary policy stances resulted in borrowing in renminbi becoming significantly cheaper than borrowing in US dollars. In this example, changes in the role of international currencies tend to reflect economic rather than geopolitical factors. As stressed above, evidence that economic factors are important drivers of shifts in the role of international currencies aligns with work analysing the phenomenon during earlier periods (Chițu et al., 2014; Eichengreen and Flandreau, 2011).

International dollar funding markets

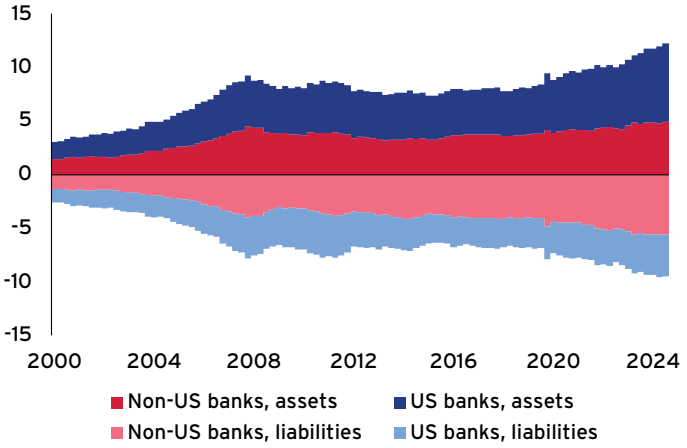
In cross-border issuance of debt securities, the dollar's role remains larger than that of other international currencies. However, there is one area in which the dollar plays a qualitatively different role than other currencies, namely, offshore dollar funding markets in which non-US firms and financial institutions obtain financing in US dollars from non-US lenders. In other words, offshore dollar funding markets involve cross-border lending denominated in US dollars despite the fact that neither party is from the United States – a configuration that sets the dollar apart from other international currencies.[55]

55 This is similar to the role of the US dollar as a vehicle invoicing currency in international trade, i.e., trade between nations invoiced in US dollars not involving the United States.

This is a long-standing phenomenon: as far back as the 1970s, the late Milton Friedman conducted a detailed analysis of the mechanisms driving dollar creation in offshore 'Eurodollar' markets – the markets for deposit liabilities denominated in US dollars held by banks outside the United States (Friedman, 1971).

Offshore dollar funding flows are large, with dollar liabilities of non-US banks exceeding $12 trillion. As Figure 2.6 illustrates, not only is this large in absolute terms, but also relative to the total liabilities of US banks (around $25 trillion). The sheer size of offshore US dollar funding markets, which is a distinctive feature of the US dollar relative to other major international currencies, highlights the centrality of the US currency in the international financial system.

FIGURE 2.6 **DOLLAR ASSETS AND LIABILITIES (US$ TRILLIONS)**



Source: BIS LBS.

2.4 TRADE INVOICING

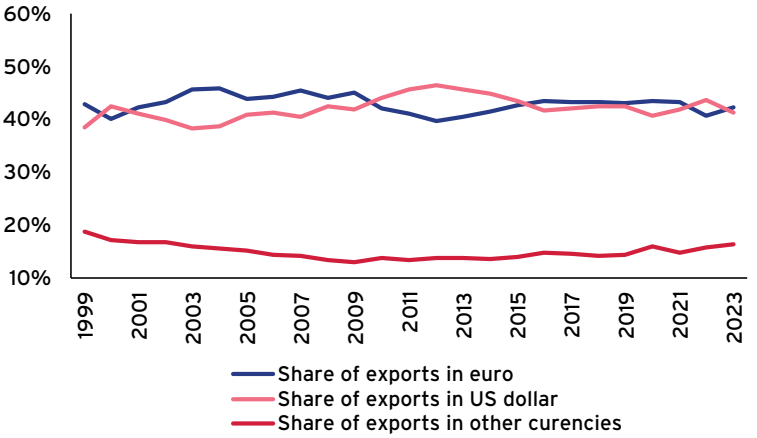
The dollar and the euro remain by far the dominant currencies of denomination of international trade transactions. Each account for around 40% of global trade invoicing (Figure 2.7), and this share has been stable over time, including since Russia's full-scale invasion of Ukraine. The euro is used less frequently than the dollar as a vehicle currency, i.e., in trade between third countries, though it is used to some extent as a vehicle for trade among certain African and European countries outside the euro area.

These aggregate shares conceal notable shifts occurring at the country level. In fact, a greater number of countries have decreased the share of their exports invoiced in dollars compared to those that have increased it (Boz et al., 2022).[56] At the same time, more countries have increased the share of their trade invoiced in euros than have decreased it. Figure 2.8 illustrates these two trends by plotting diffusion indexes for dollar and

56 This country-level reallocation away from dollar invoicing, along with the stable aggregate dollar invoicing share, suggests the countries shifting away from the dollar trade less than those moving towards the dollar.

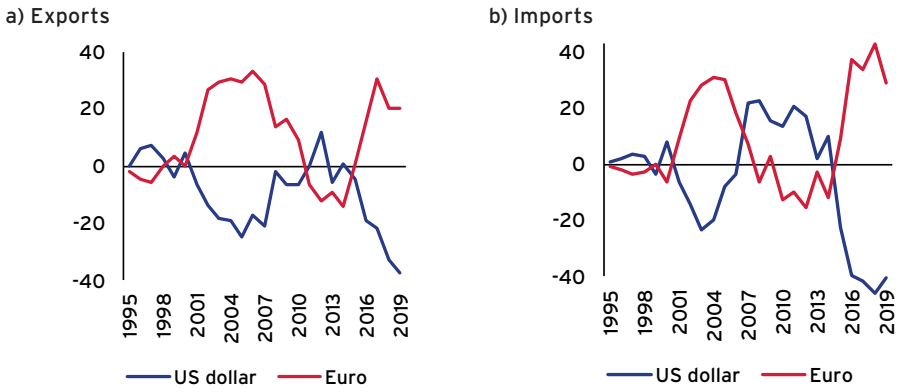
euro trade invoicing, with values above zero indicating that more countries reduced the share of their trade invoiced in the currency than reduced the invoicing share. For both imports and exports, euro invoicing has risen on net, while dollar invoicing has declined.

FIGURE 2.7 **INVOICING CURRENCY SHARES OF GLOBAL EXPORTS**



Source: Boz et al. (2025).

FIGURE 2.8 **DIFFUSION INDEXES: RISING VERSUS FALLING CURRENCY SHARES**



Note: Diffusion index = (% countries with rising US dollar share) – (% countries with falling US dollar share) during the previous five years.

Source: Boz et al. (2022); authors' calculations.

The renminbi continues to account for a modest share of global trade invoicing, at about 1-2% of global exports (Boz et al., 2025). At the same time, its role has expanded steadily since the early 2010s, in fact quite rapidly in recent years. Initially, the increase in renminbi invoicing was concentrated in Asia, but it has gradually extended across other regions of the world, especially Europe and Latin America. Moreover, the share

of China's own trade settled in renminbi increased from less than 15% prior to the pandemic to nearly 30% in 2023 (von Beschwitz, 2024), as trade between China and its non-US trading partners formerly settled in US dollars is now increasingly settled in renminbi.[57]

The rise in the share of trade settled in renminbi has certainly been supported by economic shifts, such as China's rise as the world's leading trading nation. Just as the rapid expansion of US trade with the rest of the world fuelled a rise in trade acceptances (a trade credit instrument) in dollars after World War I, as documented by Eichengreen and Flandreau (2011), China's rise as a trading nation is presumably a major factor behind the rise of renminbi settlements.

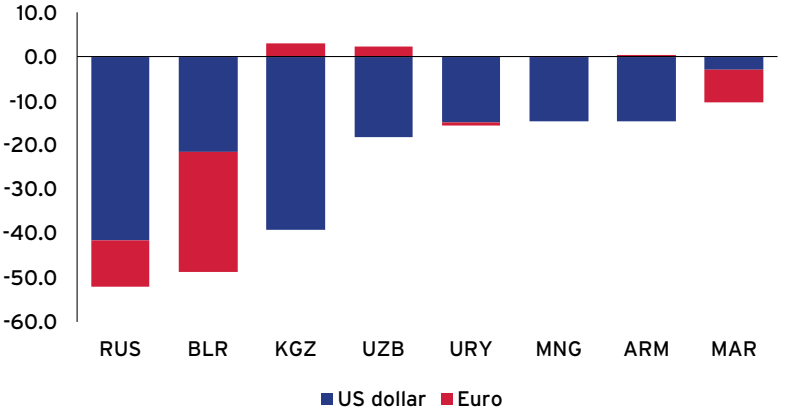
Moreover, since Russia's full-scale invasion in 2022, there is evidence that geopolitical distance is an increasingly important correlate of currency choice in trade invoicing.[58] Boz et al. (2025) find that, as countries have moved geopolitically away from the United States or the euro area, their trade invoicing has increasingly substituted the dollar and the euro with the renminbi, their own currencies, or third-country currencies. Conversely, since 2022, countries that have distanced themselves from China have shown a greater propensity to use the dollar, while reducing reliance on their own or other third-party currencies.

Relatedly, the renminbi has become a favoured currency for transactions between sanctioned countries like Russia and Iran and countries other than China, such as India and Pakistan (ECB, 2024). Prior to the imposition of sanctions, less than 1% of Russian trade with third countries was invoiced in renminbi, but that share had risen to nearly 5% by the middle of 2023 (Chupilkin et al., 2023). There is also evidence that sanctions have contributed to a shift away from US dollar invoicing and towards producer currency pricing in economies exporting to sanctioned countries. For example, Turkish firms have significantly increased the share of their exports to Russia that are invoiced in Turkish lira (Corsetti et al., 2024). In line with this, Figure 2.9 shows that Russia, Belarus, Kyrgyzstan, and Uzbekistan experienced the largest declines in the share of exports invoiced in US dollars and euros in 2023 relative to the average between 2016 and 2021. In the case of Russia, the combined invoicing share of the US dollar and euro have roughly halved. The declines in US dollar and euro invoicing shares for these countries coincided with an increase in geopolitical divergence vis-à-vis the United States (Boz et al., 2025) and the imposing of sanctions on Russia and Belarus, for both trade and financial transactions.

57 This rise in the use of the use of the renminbi is a step towards the currency assuming a more significant international role, but is far from a sufficient condition for such a shift (Eichengreen et al., 2024b).

58 Geopolitical alignment is measured as the ideal point distance derived from Voeten et al. (2009). The measure is computed using data on voting in meetings of the General Assembly of the United Nations.

FIGURE 2.9 **CHANGES IN CURRENCY INVOICING SHARES, 2016-2021 (%)**



Note: The figure shows largest declines in the combined invoicing share of the US dollar and euro between the average for 2016-21 and 2023. Country names on the chart are displayed as three-letter ISO codes.

Source: Boz et al. (2025).

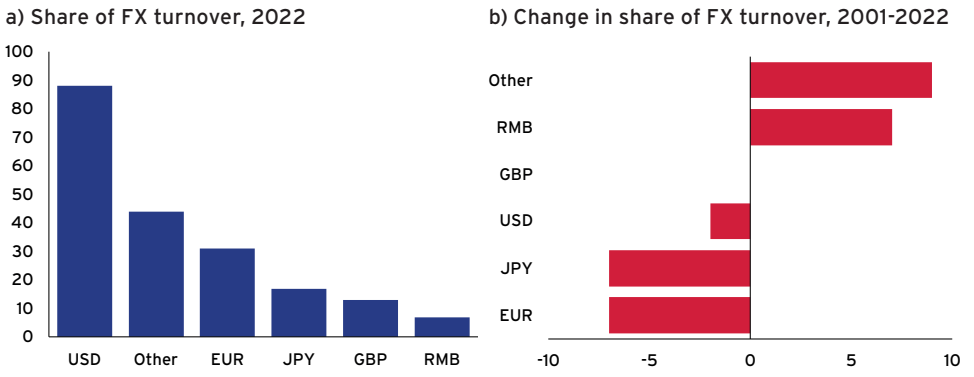
2.5 FOREIGN EXCHANGE MARKETS

As in other areas of the international financial system, transaction volume in foreign exchange markets is heavily skewed towards the major international currencies, in particular the US dollar. While the US dollar's share has eroded somewhat, a significant portion of that shift is accounted for by a rise in transactions in emerging market currencies other than the renminbi. These changes thus appear to reflect the financial development underway in these economies, rather than geopolitical fragmentation.

The dollar is involved in one leg of almost 90% of FX transactions (Figure 2.10, panel a), while the euro accounts for a further 30%.[59] In part, the dollar's dominance in FX markets is a corollary of its dominance in other areas of the international economy discussed above. Non-US firms buying goods invoiced in dollars and non-US investors buying financial instruments denominated in dollars create demand for FX transactions when the parties involved convert funds to or from their home currencies. However, the dollar's share of global FX transactions is also boosted by its role as a vehicle currency. As much as a quarter of FX transactions that involve the dollar use it as a vehicle currency. This means that market participants trade between two non-US dollar currencies by first converting to dollars as an intermediate step, as this is more cost-effective than converting the non-dollar currencies directly (Somogyi, 2022). The sheer volume of transactions in dollar pairs, in turn, helps to keep transaction costs involving the dollars lower than those of any other currency, creating a self-reinforcing dynamic (Krugman, 1980).

59 The shares of transactions involving for by each currency sum to 200%, because each transaction involves two currencies.

FIGURE 2.10 **CURRENCY SHARES IN FX MARKETS**



Source: BIS Triennial Survey.

While the US dollar remains by far the most traded currency in FX markets, the share of major international currencies, including the dollar, has fallen over the past 25 years, as shown in panel b of Figure 29. Here again, though, the evidence suggests that this erosion is not in fact a manifestation of financial fragmentation, but rather an effect of financial development in emerging markets. The share of FX transactions accounted for by the dollar has fallen by two percentage points, while the shares of the yen and the pound have declined by a more notable seven percentage points. A substantial share of this shift is accounted for by the rise of the renminbi, but it also reflects a rise in transactions involving other emerging market currencies. The share of FX transactions involving an renminbi leg rose from around 2% in 2013 to 7% in 2022 (von Beschwitz, 2024). However, the rise in the aggregate share of non-China emerging market currencies has been nearly as large (Caballero et al., 2022). This latter fact aligns with the view that shifts in the composition of global FX transactions reflect changes in the structure of the global economy rather than geopolitical fragmentation. While use of the renminbi has been a component of China's geopolitical agenda, it seems less plausible that geopolitics is behind greater transaction volume in, say, Brazilian reals or Indonesian rupiah.

2.6 CONCLUSION

This survey of the role of international currencies in recent decades finds ample continuity but also important changes underway. Across the five areas examined, the dollar remains dominant, with the international role of the euro also exhibiting stability. Many of the changes identified, particularly diversification in holdings of official reserves, shifting patterns of cross border issuance, and developments in foreign exchange markets, reflect underlying changes in the global economy. However, geopolitics has left a few notable footprints. Russia and Turkey have dramatically, albeit not completely, reallocated their reserves away from US dollar assets in response to geopolitical tension or conflict. As discussed in Box 2.2, geopolitics has played a role in increased accumulation of gold in official reserves. The imposition of sanctions has

prompted notable changes in how trade is invoiced between the sanctioned countries and their trading partners, including a pickup in the use of the renminbi as a vehicle currency. The role of geopolitics in driving changes in trade invoicing parallels the initiatives to develop alternative payments systems to those reliant on the traditional major currencies that are discussed in Chapter 3 of this report, highlighting how fragmentation in different areas of the global economy can be mutually reinforcing.

As discussed above, history shows that the role of international currencies can remain stable for long periods of time, then shift quickly. Recent theoretical research demonstrates that while government policy plays an important role in preserving the status of a dominant international currency, policy can also play a role in bringing about realignment. With the right policies, governments can elevate the international role of their currencies (Chahrour and Valchev, 2024). On the other hand, policies that generate persistently high inflation can undermine the status of the dominant currency (Mukhin, 2022), and actions that call into question the commitment of the issuer of a dominant currency to stability and the rule of law have the potential to hasten the currency's decline (Eichengreen, 2025). Recent events described in Box 2.1 bring the possibility of rapid change further into focus even though they have not resulted in notable changes in foreign holdings of US assets as of September 2025. That the announcement of a major change in trade policy could precipitate changes in the behaviour of asset prices that raise questions about that the safe-haven status of the US dollar is a noteworthy development.

BOX 2.1 INTERNATIONAL FINANCIAL MARKETS AND THE ROLE OF THE DOLLAR SINCE 2 APRIL 2025

On 2 April 2025, the US administration announced that it would impose substantial tariffs on virtually all its major trading partners. The size of the tariffs as well as their near universal coverage surprised most observers, including financial market participants, and sparked a risk-off event. The VIX index spiked, while the price of stocks and other risky assets dipped, as is typical during such episodes. While this prompted speculation that foreign investors were reallocating away from U.S. dollar assets, so far the evidence to support this view is limited.

Unusual asset price movements raise questions…

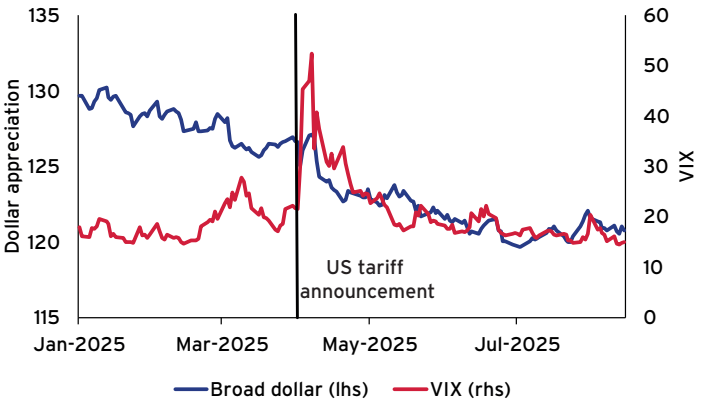
However, two key features of the market reaction to the US tariff announcement differed starkly from typical risk-off events. First, the US dollar depreciated notably albeit from a very appreciated level, as shown in the left panel of Figure 2.11. Because US assets have generally been considered a safe haven, the dollar has historically tended to appreciate when risk sentiment deteriorates. While the correlation between the VIX and the dollar does occasionally turn negative, the magnitude of the negative comovement observed following the 2 April tariff announcement was among the largest ever observed (Grothe et al., 2025).

BOX 2.1 **(CONTD.)**

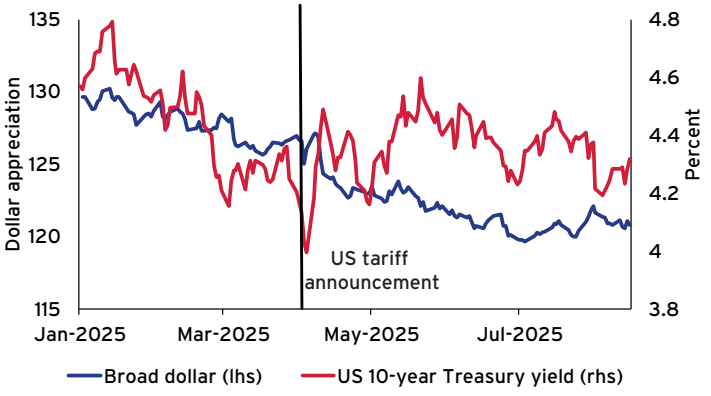
The second unusual feature of the reaction to the 2 April tariff announcement was the notable rise in yields on US Treasuries, which is plotted in the right panel of Figure 2.11. Indeed, the increase in US yields was doubly unusual because yields generally tend to fall during risk-off episodes and when the dollar depreciates.[60]

FIGURE 2.11 **MARKET REACTION TO 2 APRIL TARIFF ANNOUNCEMENT**

a) The dollar and risk sentiment



b) US yields versus the dollar



The unusual asset price moves prompted widespread speculation that the US dollar's status as the currency of the world's safe assets was diminishing (Acharya and Laarits, 2025; Hartley and Rebucci, 2025; Jiang et al., 2025). Indeed, a June poll of leading economists found that more than 90% of them thought the safe-haven status of the dollar was now a source of "concern" over the next five to ten years.[61]

60 The unusual trajectory of US Treasury yields is also present in the movement of both hedged and unhedged yield differentials between US and foreign government bonds (Jiang et al., 2025).

61 "Donald Trump's fiscal policy and Fed attacks imperil US haven status, say economists", *Financial Times*, 29 June 2025.

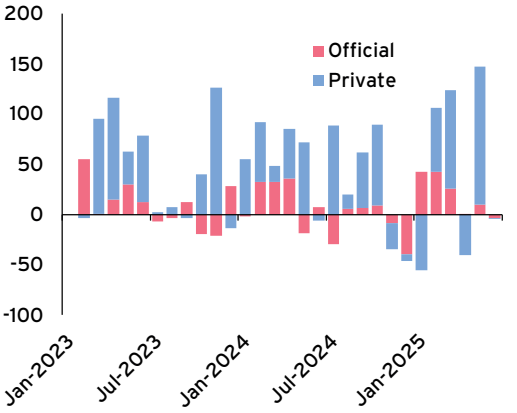
BOX 2.1 **(CONTD.)**

... but foreign appetite for dollar assets endures

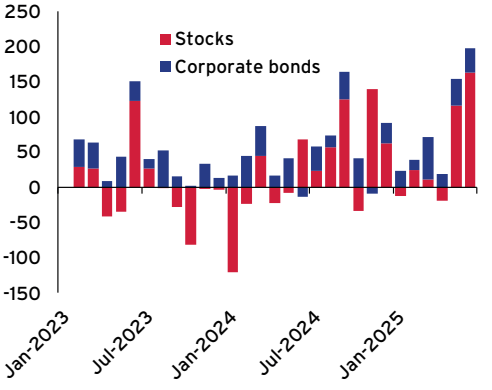
Do the unusual post-tariff announcement price moves signal that foreign investors' appetite for dollar-denominated assets has diminished? Because prices alone do not provide information on which investors are driving price movements, answering this question requires analysis of capital flows data. While foreign investors did sell US Treasuries on net in April, as shown in the left panel of Figure 2.12, the average pace of foreign purchases in the second quarter of 2025 was only slightly slower than the average during the previous year. Such a modest slowdown is not consistent with a large-scale reallocation away from dollar-denominated safe assets. Moreover, the lack of significant sales by foreign official investors (e.g., central banks and reserve managers, shown in light red) is not consistent with geopolitical considerations driving reallocation. It is also notable that foreign purchases of US stocks and corporate bonds have, in fact, accelerated dramatically since the tariff announcement (left panel of Figure 2.12). Historically, foreign purchases of US securities are correlated only weakly, if at all, with movements in the dollar exchange rate, so the lack of sales at a time of dollar depreciation is not in itself surprising. However, robust foreign demand for US financial assets in the wake of the 2 April tariff announcement is hard to square with the narrative that dollar depreciation over the period shows that foreigners have soured on US assets.

FIGURE 2.12 **FOREIGN PURCHASES OF US SECURITIES (US$ BILLIONS)**

a) Foreign purchases of US Treasuries



b) Foreign purchases of US stocks and corporate bonds



Source: TIC system; data through June 2025.

BOX 2.1 **(CONTD.)**

A rush to hedge

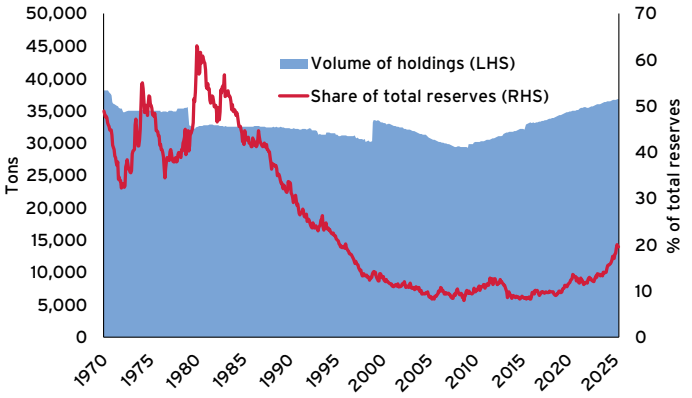
If foreign purchases of US securities have been positive on net since April, what has driven the depreciation of the US dollar? Recent BIS research suggests that a rush by foreign investors to hedge their exposure to US dollar assets may have played an important role (Shin et al., 2025). While this view is not universal, many market participants have reached similar conclusions..[62] Over the past four years, foreign investors notably reduced the share of their dollar holdings that were hedged. Not only had hedging become more expensive due to US short rates being higher than those in the rest of the world, but persistent dollar appreciation over the period reduced the perceived benefits of hedging. Consequently, foreign holders of US financial assets had reason to move to hedge their existing dollar exposures once the dollar began to depreciate. A rush to hedge can help to reconcile the moves in the dollar and the positive foreign purchases of US assets since April, while hedging via swaps and forwards puts downward pressure on the dollar without outright sales of securities.

Overall, then, financial market developments since 2 April 2025 show signs of important changes, but it remains far from clear that a significant change in the international role of the US dollar is among them.

BOX 2.2 **GEOPOLITICAL FRAGMENTATION AND CENTRAL BANK GOLD RESERVES**

Over the last 15 years, central banks have accumulated gold at a steady pace. As shown in Figure 2.13, this marks a departure from the persistent downward trend in official holdings of gold that began after the end of the Bretton Woods system in 1971. Moreover, by some measures, central bank gold purchases have accelerated over the last three years (ECB, 2025). For example, the People's Bank of China resumed gold purchases in late 2022 after a three-year hiatus and has since acquired nearly 390 additional tons of gold, an increase of almost 20% in the volume of its holdings. The Reserve Bank of India, too, has been a major buyer, acquiring more than 100 tons over the same period. As a result, global central bank gold holdings now stand at 36,000 tons, nearing the all-time high of 38,000 tons reached in 1965 during the Bretton Woods era.

FIGURE 2.13 **GOLD HELD AS OFFICIAL RESERVES (TONS)**



Source: IMF international liquidity data; gold at market value.

62 For an overview of private sector views on the role of hedging, see "It's a run to hedge the dollar, not a run on the dollar", *Financial Times*, 19 August 2025.

BOX 2.2 **(CONTD.)**

The share of official reserves allocated to gold has risen over the last five years (see the black line in Figure 2.13) to reach its highest level since the late 1990s. Indeed, by the end of 2024, the share of gold in total official reserves had surpassed that of the euro, albeit by a narrow margin (ECB, 2025). However, in addition to the purchases that have added to the volume of gold held as reserves, the doubling of the gold price over the last five years has been an important driver of the increase in gold's share in total reserves. Few, if any, governments adjust the volume of their gold reserves in order to stabilise the metal's share in the total value of their foreign official reserves, so a sustained rise in the price of gold will boost this share even without any change in preferences for gold relative to other assets.

Geopolitics does appear to have played a role in encouraging governments to accumulate gold in recent years, although the runup in the gold price have boosted economic incentives for holding gold, too. Survey data indicate that approximately 80% of central banks invested in gold for diversification and inflation hedging purposes, while around 60% did so to safeguard against geopolitical risks (World Gold Council, 2024; OMFIF, 2024). At the same time, purely economic motives have likely incentivsed governments to purchase gold over the last 15 years. The returns to gold relative to US safe assets have been a significant determinant of gold allocations in recent years, given that its price has risen dramatically (Arlsanalp et al., 2023), making it an attractive investment regardless of geopolitics.

Looking ahead, despite its growing appeal as a reserve asset, gold faces several limitations. Its value can be highly volatile, it does not generate income, it incurs significant storage costs, and its supply is inelastic. The inelastic supply of gold – meaning that production cannot quickly increase to meet rising demand for international liquidity due to the time-intensive process of finding and mining gold – is one of the key reasons why the gold standard ultimately collapsed during World War I, as well as the gold exchange standard in the 1930s (Eichengreen, 1992). These challenges explain why, so far, almost no countries have used gold to fulfil the functions of an international currency (Weiss, 2025). Gold's poor suitability as a unit of account is illustrated by the fact that only Zimbabwe has pegged the value of its currency to the price of gold, after having experienced hyperinflation. Additionally, governments generally only use gold for foreign exchange interventions when their holdings of major international currencies are depleted, further underscoring its limited role as a medium of exchange (Weiss, 2025).

Geopolitical fragmentation has likely played a role in the accumulation of gold by some official reserve holdings, including those holding very large stockpiles of foreign exchange reserves. At the same time, gold continues to face significant limitations as a viable challenger to the dominant international currencies.

CHAPTER 3

Financial fragmentation in global payments

3.1 INTRODUCTION

This chapter explores recent advancements in global payment systems and their potential impact on the fragmentation of the international financial landscape. It is organised in five sections. After this brief introduction, the second section highlights the growing prominence of payments in international economic policy debates. The third section assesses why fragmentation in payment systems matters from an economic and financial perspective. The fourth section examines recent evidence on the risks of fragmentation in global cross-border payment systems, while the fifth section investigates the potential implications of more profound changes.

3.2 GLOBAL PAYMENTS' LEAP FROM THE SHADOWS TO THE SPOTLIGHT

Payments are an essential component of our economy and financial system.[63] They constitute a crucial network, often likened to the plumbing of a house that typically goes unnoticed until something goes wrong (Kahn and Roberds, 2009). Internationally, cross-border payments have witnessed a remarkable surge in recent decades, fuelled by the globalisation of trade, capital, and migration flows. Looking ahead, the expanding influence of digital platforms and e-commerce is anticipated to further accelerate this growth, with the volume of cross-border payments projected to increase from $190 trillion in 2023 – approximately twice the value of global GDP – to an estimated $290 trillion by 2030 (Panetta, 2023). The US dollar and the euro hold prominent positions in cross-border payment transactions, as evidenced by their outsized combined share of over 80% of global export invoicing (Boz et al., 2022).

The bulk of cross-border payment flows occurs through the around 90,000 banks that operate a vast global network of correspondent banking relationships (Rice et al., 2020). Correspondent banking is an arrangement whereby one bank ('correspondent') provides payments and other services on behalf of another bank ('respondent'), typically

63 Payments can be categorised into retail and wholesale. Retail payments generally involve small transactions conducted by individuals or small businesses. Wholesale payments pertain to larger-scale transactions (typically over $10,000-$100,000) between banks, corporations, or financial institutions.

in a different country.[64] The network of correspondent banks became indispensable for processing international payments and settlements, acting as the crucial pipes and conduits that enable cross-border transactions. They rely predominantly on Western-based infrastructure, technologies, and services to send, clear, and settle international payments.

One such key infrastructure is the Society for Worldwide Interbank Financial Telecommunication (Swift). Established in 1973 in Belgium to supersede the telex, Swift provides secure financial messaging services on a global scale. As a member-owned cooperative, it connects over 11,000 banks, financial institutions, and corporations across more than 200 countries and territories. The equivalent of the world's GDP, or approximately $117 trillion, moves via the Swift network roughly every three days (Swift, 2024).[65]

An important infrastructure supporting global cross-border trade in US dollars is the Clearing House Interbank Payments System (CHIPS), a US private clearing house for large-value wire transfer transactions, with just 41 member banks.[66] As of late 2024, CHIPS settled around 500,000 payments daily, amounting to a total of $1.8 trillion. Alongside the Federal Reserve Banks' Fedwire Funds Service – a real-time gross settlement system enabling over 5,000 institutions to transfer funds in central bank money – CHIPS constitutes the "primary network for transferring and settling payments in US dollars" worldwide (Eichengreen, 2022), with a market share of around 96%. Both CHIPS and Fedwire are subject to US law.

Another key infrastructure is the New York-based Continuous Linked Settlement (CLS) system, established in 2002. CLS is a global central multicurrency cash settlement system designed to mitigate settlement risk for 18 of the world's most actively traded currencies in the foreign exchange market.[67]

64 The relationship enables the respondent bank's clients to access international financial services, such as cross-border payments, foreign exchange, and trade finance, without the need for the respondent bank to have a physical presence. Correspondent banks maintain accounts for each other, known as nostro and vostro accounts, to facilitate these transactions and settlements. The roots of correspondent banking can be traced back to medieval Italy. With the expansion of international trade during the first wave of globalisation in the late-19th century, banks across various countries began formalising relationships, leading to the emergence of an international network of correspondent banking. This network experienced substantial growth during the second wave of globalisation in the late-20th century (Schenk, 2024).

65 In annual terms, this is equivalent to almost $10 quadrillion.

66 Approximately 40% of these banks are US entities, while 30% are based in Europe and 25% in Asia.

67 The foreign exchange market is decentralized, lacking a central exchange or clearing facility. Firms using CLS can mitigate settlement risk (also known as 'Herstatt risk' after the German bank that failed in 1974). This risk arises when one counterparty fails to deliver a security or its cash value after the other party has already delivered the security or cash value. The CLS system reduces settlement risk using a payment versus payment settlement service directly connected to the real-time gross settlement systems of participating jurisdictions through accounts at each of their respective central banks.

The global dominance of major US card networks in retail payments is also noteworthy. For instance, Visa and Mastercard account for nearly two-thirds (69%) of all electronically initiated card transactions in the euro area, with 13 out of the 20 countries relying entirely on them. In addition, mobile payments, which are growing rapidly (9% of all daily transactions today compared to 1% in 2019), are dominated by private non-bank solutions such as PayPal and Apple Pay.

Throughout most of the postwar period, Western payment technologies and services remained agnostic to geopolitical developments (Klein, 2024). Until recently, governments did not impose significant restrictions on access to key global cross-border payment infrastructure, in line with the view that such infrastructure should remain geopolitically neutral.[68] For example, even though the assets of the Central Bank of Iran were immobilised in 1979 following the Iranian Revolution and the country was designated as a sponsor of terrorism by the United States in 1984, Iranian banks continued to have access to the Swift network until 2012. Similarly, several Cuban banks remain connected to the Swift network despite the US economic embargo on Cuba that has been in place since 1962.

The turning point came in 2010, when the United States passed legislation allowing for the imposition of secondary sanctions on foreign banks facilitating financial transactions with sanctioned entities. These financial institutions faced the risk of exclusion from the US payment system – with US banks being forced to close their correspondent or payable through accounts – if found to be engaging in illicit activities.[69]

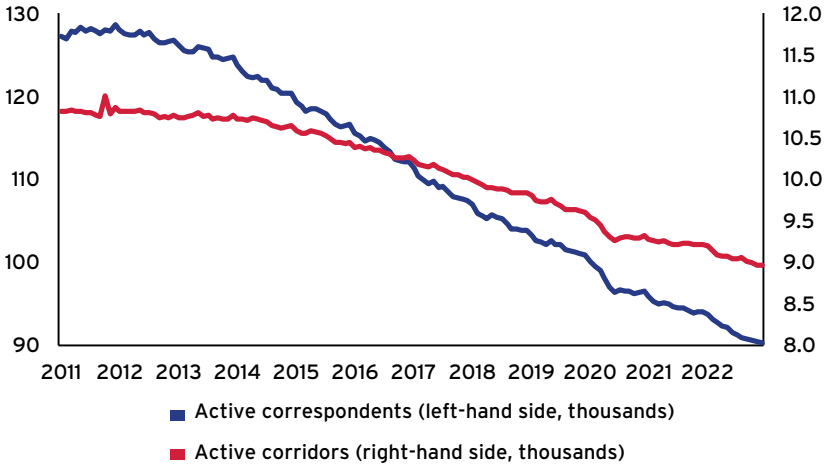
A further pivotal shift occurred when Russian financial institutions were excluded from the Swift network in response to Russia's invasion of Ukraine in March 2022. Although similar actions had been taken against Iranian banks in 2012 and North Korean banks in 2017, the imposition of such measures on banks of this size and level of global interconnectedness was unprecedented.

The correspondent banking network has contracted significantly over the past 15 years, demonstrating the trade-offs that accompany regulations and other measures adopted to rein in excessive risk taking, ensure the global banking system does not facilitate transnational crime, and sanction states and individuals involved in activities like nuclear proliferation or the invasion of Ukraine. With 90,000 active correspondents and 9,000 corridors, correspondent banking relations in 2022 were about 20-30% smaller than in 2011 (see Figure 3.1). Following the global financial crisis of 2007-09, global banks reassessed their business strategies against the backdrop of lower bank profitability, dampened risk appetite, and tighter regulation and supervision (Rice et al., 2020). In addition, growing concerns among large international banks about regulatory compliance with anti-money laundering and customer due diligence requirements

68 This stands in contrast to the extensive history of financial sanctions targeting individuals and governments' assets (e.g., Eichengreen et al., 2024a; Krahnke et al., 2024).
69 In practice this means losing access to CHIPS; see also Fishman (2025).

prompted some financial institutions to sever correspondent banking ties with smaller banks, particularly in emerging markets deemed 'high-risk', a practice known as 'de-risking' (Miller, 2022).[70] Indeed, a 2017 survey found that 22% of correspondent banks terminated active relationships due to compliance and reputational concerns (Financial Stability Board, 2017). The imposition of financial sanctions on Russia in 2014, followed by the 'de-Swifting' of Russian banks in 2022, may have further exacerbated these concerns (Cipriani et al., 2023).[71]

FIGURE 3.1 **EVOLUTION OF THE NUMBER OF CORRESPONDENT BANKS AND CORRIDORS SINCE THE GLOBAL FINANCIAL CRISIS**



Notes: The figure shows the evolution of the number of active correspondents (banks that have sent or received at least one cross-border payment message in a given year) and the number of active corridors (jurisdiction pairs that processed at least one cross-border payment message in a given year) since 2010. Corridors are unidirectional (e.g. Germany to India is one corridor and India to Germany is another corridor). The data are aggregated, hence it is not possible to identify the entire payment chain.

Source: BIS and Swift.

Moreover, the strategic use of the financial system for foreign policy objectives has raised concerns among non-Western jurisdictions about facing similar repercussions. It has encouraged them to explore and develop alternatives to traditional cross-border payment infrastructures. They see such alternatives as a way to reduce their dependence on Western currencies, correspondent banks, and clearing and payment infrastructures.[72] A notable example is the summit of BRICS nations held by Russia in Kazan in October 2024, where leaders from Brazil, Russia, India, China, South Africa,

70 As an example of stepped-up enforcement that might have prompted derisking, BNP Paribas faced a record $8.9 billion fine from US authorities in 2014 for violating sanctions against Sudan, Cuba, and Iran – the largest such fine in history. The financial institution was also prevented from clearing certain transactions in US dollars for one year.

71 Policymakers would presumably weigh the costs of sanctions in terms of fragmentation against their benefits in terms of, for example, deterring future military aggression. Such a comprehensive accounting is beyond the scope of this report.

72 See, for example, *The Economist* (2024) and Farrell and Newman (2023).

and other nations welcomed the increased use of local currencies in global financial transactions and discussed the establishment of a new cross-border settlement and depositary infrastructure, BRICS Clear (for a more detailed discussion of recent initiatives, see subsection 3.3).[73]

The development of alternative systems for cross-border payments is being facilitated by technological innovations, including the emergence of mobile payments, digital wallets, and potential uses of blockchains and central bank digital currencies.[74] For instance, fintechs – innovative technologies and solutions that improve, automate, or transform financial services – and decentralised instruments, including crypto-assets, may play a larger role in international settlements in the future (Carstens, 2022). Crypto-assets were initially conceived, among other purposes, to address challenges present in the current cross-border payment infrastructure, including the reliance on trusted third parties to process payments, high transaction costs, slow processing speeds, and limited inclusivity (Nakamoto, 2008).

However, crypto-assets face a number of limitations, including significant price volatility, which makes them ill-suited to serve as reliable stores of value or units of account (G7 Working Group, 2019). Stablecoins aim to stabilise the price of digital tokens (or 'coins') issued by their issuer by linking their value to a pool of assets.[75] Therefore, they may be better suited to serve as means of payment than other types of crypto-assets. Their role of stablecoins is discussed in more detail below.

3.3 DOES THE ARCHITECTURE OF THE GLOBAL PAYMENT SYSTEM MATTER?

From a macroeconomic standpoint, there are compelling reasons to favour an integrated payment system over a fragmented one. Payment systems are characterised by strong economies of scale – due the high entry and set-up costs, but low marginal costs – and strong first mover advantages, reflecting the importance of technical knowledge. Economies of scope may exist among various payment services supplied on a large value payment network (Bolt and Humphrey, 2005).[76] Furthermore, payment systems exhibit strong network externalities: the value of the service to a user increases as more users adopt it. Economic agents tend in turn to gravitate towards a unified financial infrastructure for clearing and settlement, as duplicating fixed costs is not socially

73 In November 2024, President-elect Trump threatened 100% tariffs on BRICS members supporting alternative currencies.

74 Blockchains in payments refer to the use of decentralized digital ledgers enabling secure, transparent, and tamper-proof payment transactions. By leveraging the decentralized and transparent nature of blockchain, payments can be processed more efficiently compared to traditional methods. Central bank digital currencies (CBDCs) are digital forms of a country's sovereign currency issued and regulated by the central bank. Such CBDCs can, but do not necessarily, use blockchain technology.

75 A stablecoin is a crypto-asset pegged to a stable asset, like fiat currency, to reduce price volatility.

76 For instance, the joint costs of providing government-related and banking industry services are lower than the stand-alone costs of providing these services separately.

desirable.[77] In a globally fragmented cross-border payment landscape, international financial transaction costs are likely to be considerably higher, and processing speeds much lower, compared to an integrated system, in the absence of interoperability across systems.

The fact that cross-border payment infrastructures lend themselves to monopolistic structures means that they can potentially serve as a source of geoeconomic power. Recent theoretical models (e.g., Clayton et al., 2023a) suggest that the dollar-based financial infrastructure for payment and clearing is a strategic asset that can be leveraged to fulfil geopolitical objectives. The infrastructure is strategic because it provides widely used inputs with high added value for targets of economic sanctions, while offering limited available substitutes. These characteristics contribute to the effectiveness of sanctions that limit access to the global payment system, while also fuelling criticisms regarding its 'weaponisation'.

Payment systems also play a crucial role for the stability and integrity of the financial system. Standardised, interoperable systems for messaging, settling, and clearing ensure that the multitude of cross-border transactions conducted daily between financial institutions worldwide are cost-efficient, secure, and meet integrity standards. It has long been recognised that the large volume and value of transactions processed by the global payment infrastructure are vital to the stability and integrity of the international financial system (e.g., White, 1998). Fragmentation of payment platforms or a shift towards platforms controlled by jurisdictions that do not prioritise the security and efficiency of the system could not only jeopardise financial stability but also hinder efforts to combat money laundering and terrorism financing. Furthermore, a more fragmented payment system could increase the risk of cyberattacks that could disrupt payment chains.

Cross-border payments rely on correspondent banks to settle in central bank money across multiple currencies. To ensure safety and efficiency, most payment systems also mostly settle in central bank money. In other words, the settlement institution is generally the central bank. The choice of settlement asset in a system – particularly in a system handling large values – is important because of the exposures that can arise between the settlement institution and the participants in the system and because of the crucial operational role the settlement institution plays in the system. The widespread use of central bank money as a settlement asset reflects its overall qualities (Committee on Payment and Settlement Systems, 2003). However, in the case of cross-border payments in foreign currencies, banks cannot solely rely on their domestic central bank and must rely on correspondent banks that have access to the central bank in the foreign

77 However, natural monopolies also present well-known risks. For example, during the initial stages of establishing a network, institutions may coordinate around what eventually proves to be a less efficient technology or suboptimal standards. Once a large installed base is established, upgrading to newer technology can be difficult and costly. Additionally, a dominant network provider might have incentives to supply incompatible services to strengthen its market position. In these instances, allocative and dynamic efficiency would be reduced. This is a key challenge in payments infrastructures. One important solution is the development of standards that allow various players to enter the market, avoid lock-in and foster innovation.

jurisdiction.[78] This explains, inter alia, the pivotal role correspondent banks play in cross-border banking. Besides being able to offer such specific services, their use for cross-border payments is also widespread as they are able to achieve economies of scale and scope.

3.4 EVIDENCE SO FAR?

While discussions about the impact of geopolitical fragmentation on cross-border transactions have recently gained prominence, how much of a role have geopolitical factors played to-date?

The role of geopolitics in the payments landscape is not new...

Ferrari Minesso et al. (2025) find that geopolitics is already a source of friction that segments cross-border payments. The authors analyse the role of economic, technical, and geopolitical factors in interlinking fast payment systems across 117 countries, using data from 2016 to 2023. Fast payment links enable (near) real-time transfer of funds between end-users across borders.[79] As depicted in Figure 3.2, the landscape of cross-border fast payment connections in 2024 reveals distinct clusters. Notably, one cluster is centred around Europe's regional platform, TIPS, which launched in 2018; another is focused on Africa's regional platforms like PAPSS, established in 2022; a third cluster is organised around BUNA, the Arab Monetary Fund platform, operational since 2023; additional clusters include bilateral links in Asia and Latin America.[80] While the connections within these clusters are often dense, a striking observation is the lack of connectivity between clusters.

Thus, the global fast payment landscape does indeed look fragmented – whether this is for economic, technical, or geopolitical reasons is the question that the study examines empirically. The authors test whether links are governed by standard variables influencing international trade patterns (such as economic size and geographical distance), technical features, or by also geopolitical factors.[81] While they find support for the role of economic factors and technical features, the most striking finding is the strength of geopolitical effects. This is illustrated in Figure 3.3, which presents the marginal effects on the log-odds of observing a fast payment link between two countries in response to a one standard deviation increase in geopolitical and geographical distances, respectively, based on their estimates.

78 The supply of central bank money and central bank services is normally confined within the area of jurisdiction of the central bank. As a result, no central bank can fully cater for the needs of these global players alone (Committee on Payment and Settlement Systems, 2003).

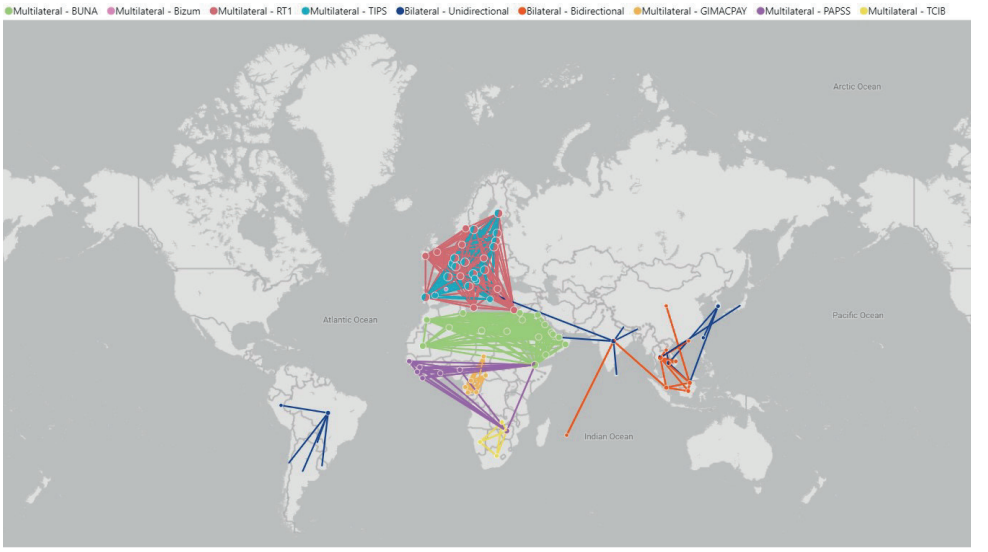
79 For instance, TIPS (TARGET Instant Payment Settlement) is fast because it settles payments in real time, using a centralised system managed by the European Central Bank. It operates 24/7, ensuring instant payment transfers. The system uses Real-Time Gross Settlement (RTGS), where transactions are settled immediately, without batching. Automated processes and the ISO 20022 standard streamline communication and transaction verification.

80 Take-up of payment services varies across platforms.

81 These factors are assessed using the ideal point distance measure proposed by Bailey et al. (2017), who quantify geopolitical distance between two nations based on their voting patterns in the United Nations General Assembly.

The reduction in the probability of payment links between geopolitically distant countries is twice as strong as for geographically distant ones. Geopolitics might influence payment links through two channels. One channel involves the alignment of preferences between countries on sensitive matters in contractual agreements related to interlinking, such as governance.[82] The other channel suggests that geopolitically aligned countries are incentivised to establish payment links to increase the opportunity cost of conflict, as severing these links would lead to a loss of trade benefits – a concept emphasised in recent theoretical models of international trade agreements (e.g., Martin et al. 2008, 2012; Thoenig, 2023). Regardless of the channel, these findings indicate that geopolitics has the potential to shape the global payment landscape, possibly leading to its segmentation into distinct blocs.

FIGURE 3.2 **CROSS-BORDER CONNECTIONS OF FAST PAYMENT SYSTEMS WORLDWIDE**



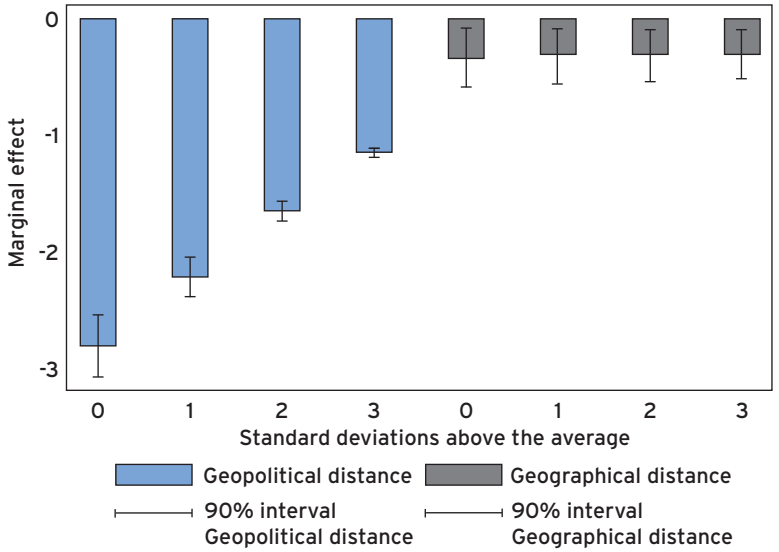
Notes: The figure shows cross-border fast payment connections in 2024. The figure shows bilateral connections, split between unidirectional and bidirectional (depending on the originating currencies enabled). Moreover, the figure shows multilateral connections, represented as dyads and coloured by regional platforms.

... and is increasing

In addition to the established findings in fast payments, there is also more recent evidence that suggests nations are increasingly striving to challenge the established infrastructure and the advantages held by incumbent countries in global payment systems. This shift reflects a growing desire among countries to assert greater control and reduce their dependence on traditional payment networks, potentially reshaping the landscape of international financial transactions.[83]

82 Participants must agree on dispute resolution mechanisms, privacy standards, cybersecurity, anti-money-laundering rules, set criteria for the inclusion of central banks over time, and ownership and voting shares (Eichengreen, 2024).
83 See, for example, "At BRICS summit, Russia to push to end dollar dominance", Reuters, 16 October 2024.

FIGURE 3.3 **MARGINAL EFFECT OF GEOPOLITICAL AND GEOGRAPHICAL DISTANCE**



Notes: The figure shows the marginal effects on the log-odds of observing a fast payment link between two countries in response to one-standard-deviation increases in geopolitical and geographical distances, respectively. Changes are computed using logit estimates of the log odds of interlinking fast payment systems within a pair of countries in a sample of 117 countries, using data on fast payment links from 2016 to 2023. The marginal effects are computed for different initial levels, i.e., from the sample average (0) up to 3 standard deviations above it. All the other variables are kept at their respective sample means. Black whiskers show 95% confidence intervals.

Source: Ferrari Minesso et al. (2025).

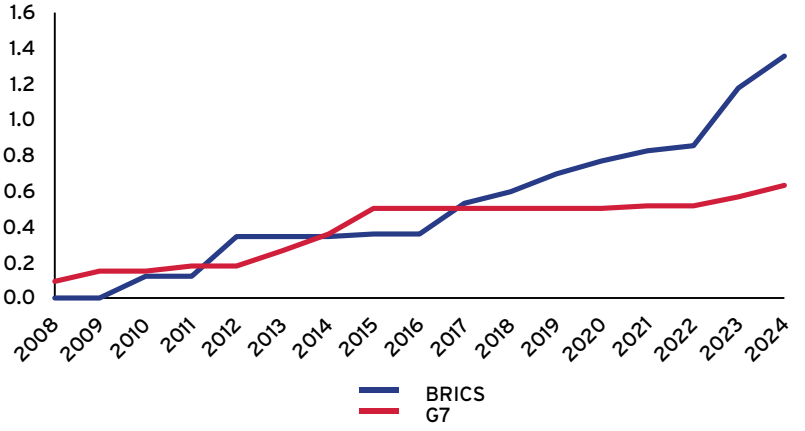
Figure 3.4 shows the evolution of an index measuring initiatives in cross-border payment systems discussed in official communiqués by G7 and BRICS leaders from 2008 to 2024. This index is derived from a large language model (LLM), specifically GPT-4o, and aims to systematically detect and quantify the extent to which payment system initiatives are addressed in these official statements. Each communiqué is broken down into paragraphs, which are then scored by the LLM on a scale from 0 (no mention of initiatives) to 10 (mention of immediate actions).[84] The model also considers specific terminology and priorities to identify initiatives more accurately.[85] The index is calculated as the weighted average of all paragraph scores for a given year, with weights determined by the relative length of each paragraph, measured by the number of sentences.[86] Notably, the figure reveals an increasing focus on payment systems by both BRICS and G7 leaders, but that BRICS leaders focused on the matter earlier on. BRICS members' interest surged following Russia's invasion of Ukraine, aligning with the view that this event marked a turning point in their ambitions to explore and develop alternatives to traditional cross-border payment infrastructures.

84 The model is trained to recognize active language cues like "implement," "commit to," and "agree to" as indicators of active initiatives, whereas terms such as "might," "may," "acknowledge," and "note" are classified as passive references. To prevent biasing the results with mere acknowledgments of existing work (e.g., the G20 Roadmap on Cross-border Payments), the LLM scores these mentions as passive allusions.

85 For instance, BRICS leaders often emphasise themes such as promoting local currency use or ensuring non-discriminatory access to global payment systems, while G7 leaders focus on reducing market fragmentation risks and supporting emerging markets and developing economies in payment system development.

86 This method assigns greater importance to longer resolutions, assuming they indicate a higher relevance of the topic in the meeting's discussions.

FIGURE 3.4 **TEXT ANALYSIS OF INITIATIVES ON CROSS-BORDER PAYMENT SYSTEMS IN THE COMMUNIQUÉS OF G7 AND BRICS LEADERS**



Source: ECB staff calculations.

The actual impact of recent initiatives remains limited

Expressing a desire to reduce reliance on Western-based payment systems and the dollar is one thing; implementing it is another. Thus far, the outcomes have been mixed.

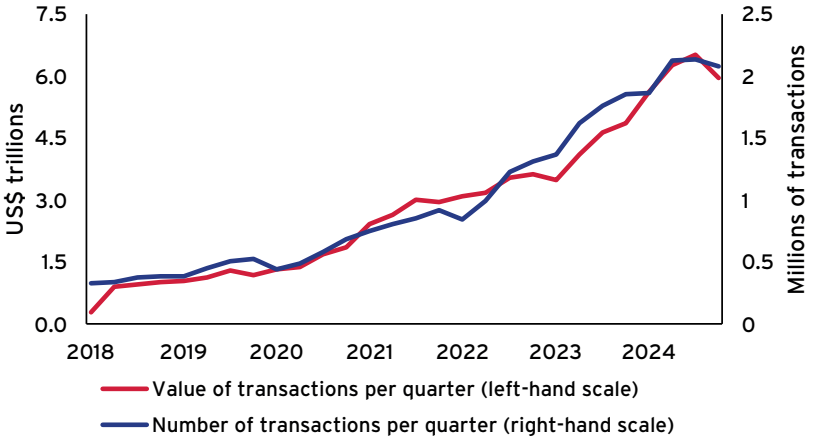
In terms of infrastructure, Iran, Russia, and China have each already operationalised alternatives to existing systems. Iran and Russia have implemented their own payment messaging services, while China has established a comprehensive system that includes messaging, clearing, and settlement capabilities. Specifically, Iran introduced the System for Electronic Payments Messaging (SEPAM) in 2013, following the exclusion of Iranian banks from Swift.[87] SEPAM now connects Iran with Russia and is also utilised by a network of central banks in Asia. Russia launched its System for Transfer of Financial Messages (SPFS) after the annexation of Crimea in 2014. According to Russian media, 557 banks and companies, including 159 non-resident entities from 20 countries, have joined SPFS.[88] Although both messaging systems have achieved some level of adoption, their overall scope remains limited.

The most successful initiative to date has been the Cross-Border Interbank Payment System (CIPS), a messaging, clearing, and settlement system launched in 2015 and backed by the People's Bank of China (PBoC). CIPS operates in renminbi rather than US dollars, aiming to increase the global use of China's national currency. As of December 2024, nearly 1,500 financial institutions were utilising CIPS, including 1,000 located outside mainland China. Although this represents only 13% of Swift's 11,500 members, the number has more than doubled since 2018. The system now connects over 160 countries, including a majority of BRICS members. In the third quarter of 2024,

87 The decision was based on EU sanctions related to concerns about Iran's nuclear programme.
88 See "Russia's analogue of Swift system shows constant growth of traffic", Pravda, 16 January 2024.

CIPS activity reached approximately $6.5 trillion, marking a sixfold increase compared to 2018 (see Figure 3.5). Concurrently, the share of the renminbi in the settlement of China's external transactions doubled between 2018 and 2024, reaching nearly 40% for goods and 50% for services (see Figure 3.6).

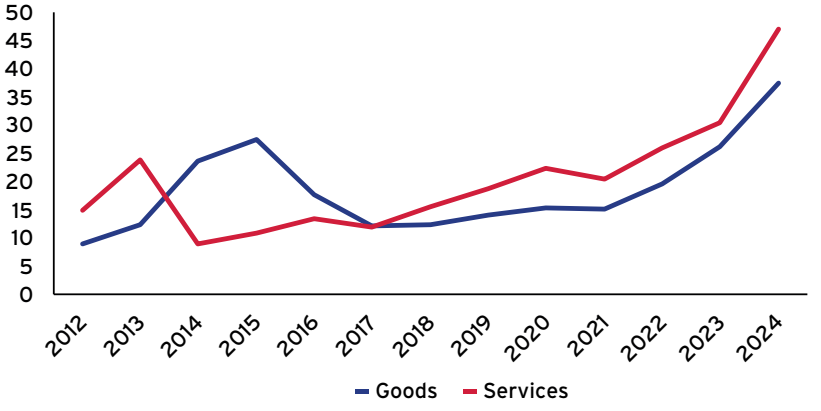
FIGURE 3.5 **ACTIVITY IN CHINA'S CROSS-BORDER INTERBANK PAYMENT SYSTEM**



Notes: The figure shows the evolution of activity in CIPS including the number of transactions in millions and the value of the transactions in question in USD trillions.

Source: People's Bank of China and authors' calculations.

FIGURE 3.6 **USE OF THE RENMINBI FOR SETTLEMENT OF CHINA'S EXTERNAL TRADE (%)**



Notes: The figure shows the evolution in the use of the renminbi for settlement of China's external transactions in goods and services, respectively as percentage shares of settlements in all currencies.

Source: People's Bank of China and authors' calculations.

TABLE 3.1 **SELECTED RECENT STATEMENTS ON GLOBAL PAYMENTS**

Date	News and statement	Source
21/04/2025	China's central bank encourages state-owned enterprises to prioritise yuan usage in payment and settlement in their overseas expansion, in what is seen as an official attempt to accelerate yuan internationalisation amid intensifying global trade tensions.	Reuters
04/03/2025	Hong Kong Exchanges and Clearing announces plans to create an Asian international settlement house envisioned to become an international securities house that could handle cross-border payments and multiple currencies.	Financial Times
27/12/2024	Finance minister Siluanov confirms that Russia is using Bitcoin and other digital currencies for trade payments as part of its efforts to avoid Western sanctions.	Regtechtimes
23/10/2024	BRICS members welcome the use of local currencies in financial transactions between BRICS countries and their trading partners…[and] agree to discuss and study the feasibility of establishment of an independent cross-border settlement and depositary infrastructure, BRICS Clear.	Kazan Declaration
27/02/2024	BRICS members meet in Brazil to discuss the BRICS Bridge payment platform.	Ledger In-sights
27/12/2023	Russia and Iran sign an agreement to trade using their national currencies, also promoting use of non-Swift interbank systems.	Reuters
23/08/2023	Brazil's Prime Minister Lula proposes a BRICS common currency for trade and investment transactions to reduce BRICS countries' vulnerabilities.	Reuters
13/04/2023	Brazil's president Luiz Inácio Lula da Silva called on BRICS countries to work towards replacing the US dollar with their own currencies in international trade.	Financial Times
04/02/2023	Indian refiners start purchasing Russian oil from Dubai-based traders using United Arab Emirates dirhams instead of US dollars.	Reuters
16/09/2022	Leaders at the Shanghai Cooperation Organisation (SCO) summit in Uzbekistan adopt a roadmap to increase the use of national currencies in mutual settlements.	Reuters
06/09/2022	Gazprom and China National Petroleum Corporation (CNPC) sign agreements to start paying for gas supplies to China in Russian rubles and Chinese yuan, instead of US dollars and euro, reflecting increased efforts to move trade out of "unfriendly" currencies.	Bloomberg

Notes: The table reports selected news and statements in emerging markets relevant to global payments since Russia's invasion of February 2022 in Ukraine.

Several initiatives are currently under discussion but have yet to come to fruition (for an overview, see Table 3.1). As these discussions advance, they hold the potential to establish new infrastructures that could reshape the landscape of international financial transactions. For instance, BRICS members are exploring initiatives to interconnect domestic payment systems (BRICS Pay) and to leverage distributed ledger technology

(DLT) for wholesale currency transactions, potentially using multicentral bank digital currencies as back-end infrastructure (BRICS Bridge).[89] In some instances, countries are adopting financial infrastructure and technology from nations closest to the technological frontier. For instance, India is offering its digital payment technologies and platforms for free to other nations.[90] These initiatives could reduce the cost of payments for some users, particularly in low-income countries. However, if these developments increase complexity and interoperability costs to users globally, they could impact the flow of capital and efficiency of the global financial system.

Russia serves as the clearest example of how geopolitical tensions and the resulting risks of fragmentation may affect cross-border payment patterns. Since the annexation of Crimea, Russia has tried to de-dollarise and de-euroise to mitigate the impact of G7 sanctions. It has encouraged the use of national currencies in bilateral trade with other BRICS economies and with countries in Asia and the Middle East to bypass the US dollar and the euro – particularly in international trade involving oil and other commodities where Russia is a major exporter.[91] Russian sources report that 20 countries have joined SPFS, as stressed above.

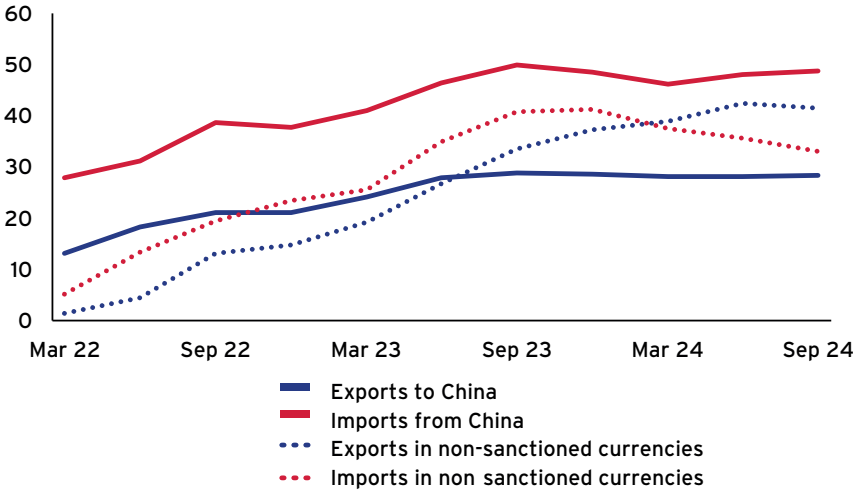
The portion of Russia's external trade invoiced in currencies such as the ruble, renminbi, and, to a lesser extent, the Indian rupee rose from virtually zero to approximately 30-40% between the invasion and mid-2024 (see Figure 3.7).[92] There is also evidence of a shift in Russia's trade towards China, which now accounts for around 50% of Russian imports and 30% of Russian exports, supporting the invoicing of transactions in non-sanctioned currencies.[93] Four Chinese banks operating in Russia are direct participants of CIPS.[94]

Other BRICS members have been less successful at severing links with the dollar and Western-based payment systems (Atlantic Council, 2025). For instance, Brazil is bolstering infrastructure to enhance the renminbi's role in its economy. The Banco Central do Brasil (BCB) has announced the creation of a renminbi clearing house in Brazil, aimed at facilitating trade in local currencies with China. However, the dollar remains entrenched in Brazil's export settlements. India has opted to expand bilateral

89 See Atlantic Council (2025) for details.
90 For instance, Unified Payments Interface – the Indian instant payment system – operates as an open-source application programming interface.
91 For example, as of March 2023, 80% of bilateral trade between Iran and Russia was settled in national currencies, according to Russia's Deputy Prime Minister.
92 The renminbi replaced the US dollar as Russia's most traded currency in 2023, while renminbi and gold have become Russia's main foreign reserve assets.
93 The use of the renminbi as a vehicle currency in Russian trade with countries other than China remains more limited (Chupilkin et al., 2023).
94 They include Industrial and Commercial Bank of China Russia RMB Clearing Bank, Bank of China Russia, China Construction Bank (Russia) LLC, and Agricultural Bank of China (Moscow) LLC.

currency agreements that support trade in rupees – unsuccessfully in some cases.[95] These efforts have focused on major trading partners, including the United Arab Emirates, Russia, and regional allies, as well as leveraging existing multilateral frameworks such as the Asian Clearing Union.

FIGURE 3.7 **RUSSIA'S TRADE WITH CHINA AND INVOICING IN CURRENCIES OF COUNTRIES NOT SANCTIONING RUSSIA (%)**



Notes: The figure shows the evolution of Russia's trade with China and invoicing in non-sanctioned currencies in percentages. The list of currencies of countries sanctioning Russia includes major currencies like the euro, US dollar, British pound, Swiss franc, Japanese yen, Canadian dollar, and Australian dollar.

Source: CEIC, IMF Direction of Trade Statistics, and authors' calculations.

The future role of stablecoins: Too early to say

Evidence on whether cross-border payments are moving to crypto-assets, and in particular stablecoins, is harder to come by. Soaring market capitalisation of stablecoins has fuelled speculation that they could grow as a medium of international payment.[96] One of their most notable features is that they cut out the middleman, being transferrable from wallet to wallet without the need for a bank or other third-party intermediary, and programmability.[97]

95 Bilateral trade between Russia and India provides an example. Initially, India attempted to promote the use of the Indian rupee for settling trade transactions with Russia. However, by mid-2023, major Indian refineries began using the Chinese renminbi to pay for imports of Russian crude oil.

96 On benefits and costs of modernising payments, see Liang (2024). Crypto-asset market capitalisation increased to almost $4 trillion by August 2025 after the GENIUS Act was passed. Bitcoin, the largest crypto-asset by capitalisation, traded close to $120,000.

97 For instance, in the case of remittances, this includes not only the money transfer operators (Western Union, MoneyGram, etc.) facilitating (and profiting from) payments, but also the software providers through which they operate.

As of August 2025, stablecoins valued at approximately $270 billion were circulating worldwide, with 99% pegged to the US dollar. As illustrated in Figure 3.8, approximately 80% of the transactions involving US dollar-backed stablecoins occur outside the United States.[98] Given the overwhelming predominance of stablecoins backed by US dollars, a significant increase in the use of stablecoins could strengthen the dollar's international role. It could also become increasingly relevant in the US Treasury market. As of September 2024, Tether's holdings of US Treasury bills had surged to $84.5 billion, making the company a notable individual holder of US Treasury securities. For context, Tether's holdings are now significantly larger than the combined holdings of all Australian residents ($62 billion).

In this regard, a central focus of the Trump administration has been to bolster US leadership in digital assets and financial technology by ensuring open access to blockchain networks for citizens and businesses and promoting the international use of the US dollar through legitimate dollar-backed stablecoins. On 23 January 2025, on his third day in office, President Trump signed an Executive Order aimed at "promoting the development of dollar-backed stablecoins worldwide", which has the potential to further stimulate growth in this sector.[99] The order includes several provisions. Domestically, it prioritises supporting the growth and use of digital assets to maintain US technological leadership by fostering innovation in digital payment technologies and ensuring the right to develop new forms of money. Internationally, the order aims to safeguard the dominance of the US dollar by promoting the use of dollar-backed stablecoins in global markets.

In line with the directive, the United States has enacted comprehensive stablecoin legislation, with a key bill known as the Guiding and Establishing National Innovation for US Stablecoins Act (or GENIUS Act).[100] The legislation establishes a regulatory framework for payment stablecoins, requiring issuers to maintain 1:1 reserves in liquid assets, undergo regular audits, and disclose relevant information to the public.[101] Provisions in the legislation could help reinforce the dominant position of US issuers and dollar-based stablecoins in the market. The Act prohibits issuers from offering yield tied to their holding or use, but it does not explicitly prohibit affiliate or third-party arrangements that might offer interest-bearing products (Latham & Watkins, 2025). The Act offers flexibility in reserve assets and does not require issuers to maintain a specific proportion in bank deposits, unlike the UK and EU regulations. It restricts the activities of stablecoin issuers to payment functions and prohibits lending. Thus, stablecoin issuers – either nonbanks or subsidiaries of banks – face lighter capital and risk management requirements than a bank, even when affiliated with banking

98 This trend is largely fueled by adoption in Europe – particularly led by Russia – as well as in India and Southeast Asian countries like Vietnam, Singapore, and Indonesia, where stablecoins are used for remittance payments and as a means to access dollars.

99 "Strengthening American Leadership in Digital Financial Technology", The White House, 23 January 2025.

100 The Act proposes a flexible federal framework that balances innovation with regulation. It was signed into law by President Trump on 17 July 2025, having met strong bipartisan support in Congress.

101 It also introduces a dual federal-state oversight system, with the Federal Reserve and the Office of the Comptroller of the Currency overseeing larger issuers (over $10 billion in market cap) and allowing state regulation for smaller ones.

groups.[102] Additionally, the framework tasks the Treasury with evaluating third-country issuers, allowing them to make stablecoins available to US residents if they are based in a country with comparable regulation, register with the Office of the Comptroller of the Currency, and maintain reserves in US banks to meet liquidity needs of US customers, even if they do not have physical presence in the country. Finally, the Act sets a higher bar for non-financial firms seeking to issue stablecoins, requiring them to secure unanimous approval from the Stablecoin Certification Review Committee.

Despite their growing appeal, stablecoins encounter several challenges in becoming viable alternatives to traditional payment systems. Blockchain networks, especially open and permission-less ones, are considerably slower than existing payment infrastructures. For instance, Bitcoin, which operates on such a blockchain, can process only seven transactions per second. In contrast, traditional payment networks like Mastercard and Visa can handle 5,000 and 24,000 transactions per second, respectively (Rodrigues, 2022). However, some blockchain platforms using alternative consensus mechanisms have significantly improved processing speeds. For instance, Solana claims to handle over almost 3,200 transaction per second using a proof-of-stake mechanism.[103]

Moreover, stablecoins are vulnerable to runs – similar to money-market mutual funds – if doubts arise about fraud, theft, or the sufficiency of their reserve coverage more broadly (Reichlin, 2025). In turn, stablecoins may trade at a discount depending on market trust in their backing, redemption mechanisms, and the transparency of their issuers.[104] If history is any guide, the risks are significant. For instance, during the Free Banking Era (1834–1863), variations in banknote backing and the costs of redeeming distant notes led to discounts, which gradually diminished with advancements in transportation and communication technologies (Gorton et al., 2022).[105]

102 For instance, capital rules are tailored to each stablecoin issuer's business model and risk profile, but only to the extent needed to ensure ongoing operations. Therefore, stablecoin issuers are not subject to Basel-style capital stack rules. Their capital is there only to support operational continuity, not to protect against full credit losses.

103 See https://solana.com/de (accessed on 23 September 2025).

104 Tether, for example, claims on its website that its stablecoins are pegged 1:1 with fiat currency and fully backed by Tether's reserves. However, Tether's reserve report from October 2024 reveals that cash and cash equivalents comprised only about 84% of its reserves. The remainder included precious metals (approximately 4%), Bitcoins (3.8%), secured loans (5.3%), corporate bonds (0.01%), and other investments. Tether lost its peg in 2022, dropping to 95 cents after TerraUSD, another stablecoin, fell below 30 cents, which sent shockwaves through the crypto markets.

105 During the pre-Civil War Free Banking Era, some US states allowed free banking, enabling banks to issue non-interest-bearing debt in the form of banknotes, which were redeemable for specie at the issuing bank. By the mid-1840s, around 1,500 distinct banknotes circulated, backed by state bonds or, in some cases, loan portfolios, with requirements varying across states. Banknotes traded at discounts depending on the perceived reliability of the issuer and the cost of redemption, with notes from distant banks facing greater discounts. Over time, advancements like railroads and telegraphs reduced these discounts by improving the speed and ease of redemption.

Stronger use of stablecoins could increase the exposure of cross-border payment systems to other risks, especially if they facilitate illicit transactions.[106] It has been argued (e.g., Rogoff, 2025), that cryptocurrencies cannot replace the dollar in the mainstream economy, but are increasingly used in the underground economy, where cash – especially US dollars – once dominated.[107] Some nations also consider crypto as a viable way to bypass Western-based payment infrastructure and the US dollar in order to avoid financial sanctions.[108] More broadly, there is evidence that crypto-assets may serve as a conduit for capital flight (e.g., Graf von Luckner et al., 2024).

3.5 POSSIBLE IMPLICATIONS OF DEEPER CHANGES

Taken together, the evidence suggests that the global cross-border payments landscape remains heavily reliant on traditional infrastructures, resulting in a high level of integration and concentration in the West. However, cracks have begun to emerge in this facade. Could these fissures become more pronounced and potentially pose risks to the stability of the international monetary system?

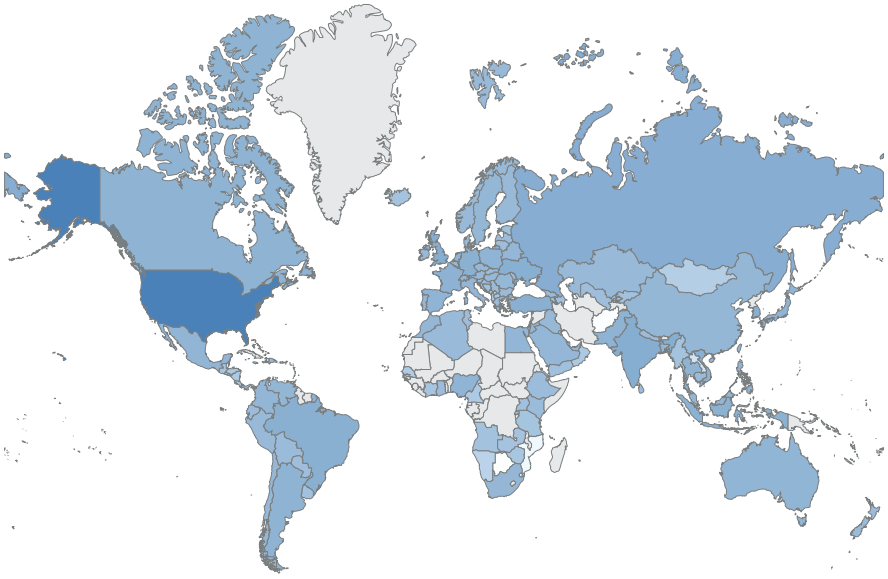
As noted in Section 3.2, payment systems naturally lend themselves to being concentrated and integrated due to their inherent characteristics, which make such structures welfare-optimal. An integrated system minimises duplication of resources and enhances efficiency, providing faster and more reliable services. By acting as the enforcer of a secure and efficient payment systems, the United States and the European Union have provided a global public good. Traditionally, G7 nations have prioritised the resilience of payment systems, ensuring they are both efficient – keeping settlement costs low to facilitate market clearing – and robust against risks, preventing them from causing or worsening financial crises (White, 1998). A more fragmented global payment landscape across geopolitical lines could have significant ramifications. Resilience may not be prioritised as highly by other countries, increasing the risk of technical flaws and cyberattacks. These vulnerabilities could threaten international financial stability by causing sudden liquidity shortages in key markets or disrupting transaction settlements. Ultimately, it could undermine trust in money, which is the foundation for a safe and efficient payment system (Kiyotaki and Moore, 2002; Bank for International Settlements, 2020).

106 Illicit cryptocurrency addresses received a total of $40.9 billion in 2024, with stablecoins now accounting for the majority (63%) of all illicit transactions, including stolen funds, darknet markets, ransomware, and sanctions evasion, among others (Chainanalysis, 2025). Stablecoin issuers often freeze funds when they become aware of their use by illicit actors. For example, Tether has frozen addresses of concern linked to scams, terrorist financing, and sanctions evasion, which can make stablecoins a less effective tool for the transfer of value by illicit actors. Stablecoins may account for a large share of illicit crypto transactions, but not necessarily a large share of all illicit transactions. Cash is still a major means for such illicit transactions.

107 A significant portion of the global economy operates outside formal regulation, and cryptocurrencies meet key transactional needs in that space. Their appeal lies in near-anonymity and the difficulty of tracing transactions. Unlike large banknotes, which are bulky and easier to detect, virtual currencies offer a more convenient tool for illicit use.

108 In December 2024, Finance Minister Anton Siluanov confirmed that Russia was using Bitcoin and other digital currencies for trade payments as part of its efforts to avoid Western sanctions (see Table 3.1).

FIGURE 3.8 **GEOGRAPHY OF STABLECOIN FLOWS**



Notes: The map visualizes proxy-based estimates of the stablecoin flow geography. These estimates leverage (1) data on the stablecoin transfer activity of the identified wallets belonging to service entities (platforms and smart contracts) with a web presence; and (2) the analysis of web traffic to the websites of these service entities.

Source: Cambridge Digital Money Dashboard (https://ccaf.io/cdmd/geography).

Payment markets are inherently multi-sided: they are characterised by the presence of distinct sides whose ultimate benefit stems from interacting through a common platform (Tirole and Rochet, 2003).[109] Further fragmentation of the cross-border payment landscape may increase the opacity and complexity of transactions, potentially causing delays. This, in turn, could affect liquidity dynamics, especially during times of stress.

Increased opacity and complexity may also facilitate illicit activities, including money laundering, terrorism financing, and the evasion of sanctions. The inability to use sanctions as a credible threat in the face of heightened geopolitical risks could undermine the rules-based global order and the inclusive values endorsed and defended by the United Nations. If sanctions lose their effectiveness as a deterrent, it could lead to increased belligerence. Recent events have demonstrated that geopolitical threats can impact the financial system and financial stability, through ripple effects on globally important markets – including energy and financial markets – as well as through global financial market infrastructures and institutions.

109 Many, if not most, markets with network externalities are two-sided or multi-sided, as Rochet and Tirole stress. For instance, buyers of video game consoles want games to play on, while game developers pick platforms that are, or will be, popular among gamers. Cardholders value credit or debit cards only to the extent that these are accepted by the merchants they patronise, while affiliated merchants benefit from a widespread diffusion of cards among consumers.

Finally, a more fragmented global payment landscape may be a harbinger of more profound changes in the international monetary system. Recent theoretical work highlights trade invoicing as central to a currency's international status (Gopinath and Stein, 2021). Trade invoicing serves as the foundational element for a currency's international role because it precedes and facilitates other aspects of international currency status, such as its use in reserves or financial markets, and it reflects real economic activity (trade) rather than purely financial or speculative factors. When a currency is widely used for trade invoicing, global demand for it increases, even among countries not directly linked to its economy. This generates network effects, where widespread adoption lowers transaction costs and encourages others to use the currency. Over time, dominance in trade invoicing extends into financial markets, as firms borrow, lend, and hold reserves in the same currency to minimise exchange rate risks. Thus, trade invoicing acts as the primary driver, promoting broader adoption and reinforcing the currency's role in global finance.

Sceptics would argue that the international role of a currency depends more on other factors, such as stable domestic macroeconomic conditions and policies, a sizable domestic economy, and, perhaps most importantly, the size, depth, and openness of the financial markets (Coppola et al., 2023). Efficient, innovative, and resilient payment system infrastructure can significantly impact financial market depth and liquidity, especially if innovations allow the three key functions of asset trading – negotiation, settlement, and custody – to occur on the same platform (Cipollone, 2024). Consequently, payment systems could still influence the prospects of major international currencies.

CHAPTER 4

The future of the international financial architecture in a geopolitically fragmented world

4.1 INTRODUCTION

The international financial architecture has weathered successive crises, including the collapse of fixed exchange rates, the Latin American debt crisis, the Asian Financial Crisis, the Global Financial Crisis, and the COVID-19 pandemic. But it now confronts profound uncertainty, as intensifying geopolitical divisions are putting the institutions that have long anchored the system under strain.

Of particular note, the current US administration is questioning the role of the U.S. in multilateral institutions and forums. For instance, on 4 February 2025, President Trump ordered a 180-day review of all international organisations to which the United States belongs and supports, as well as "all conventions and treaties to which the United States is a party" (Woods, 2025).[110] A change in the US position away from multilateralism, which the United States has fostered since World War II, could have profound implications for the global financial system. Such a shift could transform the world order from one based on shared values to one driven more by unilateralism.

Geopolitical concerns compound pre-existing vulnerabilities. Global debt levels remain high. Many emerging and developing economies face tight financing constraints and limited fiscal capacity. The sovereign debt restructuring process has become protracted and complicated. The absence of a comprehensive restructuring framework heightens systemic fragility. Institutions designed for emergency liquidity provision and financial crisis management now face new macro-critical risks, including, digitalisation, cyber threats, and financial statecraft.

This chapter explores the evolving international financial architecture and the repercussions of geopolitical fragmentation. It first analyses the structure and evolution of the global financial safety net, exploring the role played by the four main layers: foreign exchange reserves, IMF resources, regional funds, and central bank swap lines. It then considers to the role of multilateral institutions and forums and concludes by

110 While the review at the time of the completion of this report is still pending, the US Treasury has released in August 2025 its 2025 National Advisory Council Report to Congress on the topic of US engagement with international financial institutions (US Treasury, 2025). Taking the example of the IMF, the US Treasury in the report reaffirms its intention of "the leadership role of the United States at the IMF", but also notes "it will use it to build a more sustainable international economic system that better serves the American people".

examining the challenges of sovereign debt restructuring in a geopolitically fragmented creditor landscape. Throughout, the analysis highlights the potential consequences of geopolitical fragmentation, particularly if it becomes a persistent feature of the global financial landscape. In a deeply interconnected global economy, geopolitical fragmentation can reduce the resilience of the international financial architecture and hamper its ability to respond to crises.

4.2 THE GLOBAL FINANCIAL SAFETY NET

The global financial safety net (GFSN) comprises a set of institutions and mechanisms that provide insurance to mitigate the impact of crises on economies (Stanley, 2023). As a critical component of the international financial architecture, the principal purpose of the GFSN is to provide emergency liquidity support to countries experiencing economic distress, such as short-term balance of payments difficulties, currency crises, or systemic financial instability. By doing so, the GFSN helps stabilise individual economies and, by extension, the broader global financial system.

The creation of the IMF in 1944 established the foundations of the present-day GFSN. The GFSN has evolved substantially over time, transforming into a complex, multi-layered global network (Rana, 2017; Aiyar and Ilyina, 2022), with each major upheaval prompting new safeguards, increased resources, and closer international cooperation (e.g., Rhee et al., 2013). This evolution reflects the international community's ongoing efforts to adapt to the complexities of a more deeply interconnected global financial system, thereby ensuring stability in times of crisis. To date, the GFSN comprises four distinct layers: countries' foreign exchange reserves, IMF financing, financing by regional financial arrangements, and central bank bilateral swap and repo lines.

Foreign exchange reserves act as the first line of defence against liquidity shortages and speculative attacks (Obstfeld et al., 2010). While reserves provide financial stability, accumulating and maintaining them entails costs such as the opportunity costs of investing in low-yield assets (Rodrik, 2006) and the sterilisation costs associated with reserve accumulation (Ghosh et al., 2016). In contrast, regional financial arrangements and the IMF are akin to mutualised insurance (Rhee et al., 2013). They allow countries to pool resources such that in a country-specific crisis, each member can generally access more emergency assistance than they commit to lending. This means that the cost of these types of insurance is lower than for reserves (Ball et al., 2020). Additionally, central bank bilateral swap lines and repo facilities offer structured liquidity support during crises.

In the early postwar decades, the IMF served as the cornerstone of the global financial safety net (Boughton, 2001; Georgieva, 2023). Under the Bretton Woods system of fixed exchange rates, the IMF's primary role was to provide short-term financial assistance to countries struggling to maintain their pegged exchange rates. During this period, widespread capital controls and modest cross-border capital flows implied that financial

crises were generally contained. Countries maintained modest foreign exchange reserves and relied on IMF credit when necessary (e.g., Roger, 1993). While cooperation between central banks occurred occasionally,[111] such measures were infrequent and ad hoc, and formal regional financial arrangements had yet to emerge.

The collapse of the Bretton Woods system in 1971 ushered in an era of floating exchange rates and heightened volatility in global capital flows during which the role of the IMF expanded significantly, particularly in response to a wave of financial crises. The Latin American debt crisis was a pivotal moment in history. To address these challenges, the IMF introduced new lending facilities[112] and periodically increased member quotas to bolster its resources (Ams et al., 2018).

Ad-hoc cooperation among major central banks also became more common, allowing emergency liquidity interventions to stabilise markets during crises, such as the 1987 global stock market crash[113] and Mexico's 1994 peso crisis.[114] However, the global financial safety net remained limited throughout the 1980s, as neither global nor regional rescue funds had yet been established.[115]

The emerging market crises of the late 20th century further reshaped the global financial safety net, especially during the Asian Financial Crisis of 1997–1998. During these crises, the IMF played a central role, organising large-scale international rescue packages, often in collaboration with the treasuries of major economies and development banks, to stabilise currencies and banking systems. However, the stringent conditions attached to IMF programmes – perceived as painful and intrusive – led to a stigma associated with seeking IMF assistance (Andone and Scheubel, 2019).[116]

In response, many emerging market economies began prioritising self-insurance by amassing substantial foreign exchange reserves as a buffer against future economic shocks (Rhee et al., 2013). Global reserves grew from roughly $1.2 trillion in January 1995 to over $4 trillion by September 2005, with a substantial portion of that increase reflecting a rise in holdings by Asian economies (see Figure 4.1 and IRC Task Force, 2016). Regional financial safety nets also emerged during this period. In the wake of the Asian Financial Crisis, the ASEAN+3[117] countries began efforts to pool resources

111 For example, in the 1960s, the US Federal Reserve established small-scale currency swap lines with several other central banks (for details, see Federal Reserve Board, 1966). However, their purpose at the time was notably different from their modern-day objectives. These swap lines were designed as a mechanism to mitigate gold outflows under the Bretton Woods system (Bordo et al., 2014).

112 For example, the IMF created the Extended Fund Facility (established in 1974) to support longer-term structural adjustments beyond the short-term fixes of traditional stand-by loans.

113 See Carlson (2007) for details on the Federal Reserve response to the 1987 stock market crash.

114 During the 'early float' period following the collapse of the Bretton Woods system, the Federal Reserve set up swap lines with G10 countries as well as Mexico. These swap lines were intended to serve as a tool for financing foreign exchange interventions by substituting for US.

115 Europe had a modest intra-European credit mechanism under the European Monetary System, but nothing on the scale of later decades.

116 As noted for instance in Eichengreen (2012a), in the case of the Asian crisis, the Fund was seen as demanding onerous conditions poorly attuned to the circumstances of Asian countries. In addition, there was a perception that the IMF was using its leverage to pry open the markets of the crisis countries to foreign investment, in part because this was in the interest of its principal shareholders, notably the United States.

117 China, Japan and South Korea comprise the "+3".

for crisis management (Rana, 2017), culminating in 2000 in the launch of a network of bilateral swap arrangements, denoted the Chiang Mai Initiative. As a result, by the end of the 1990s, the global financial safety net had evolved beyond the IMF, with countries strengthening their self-insurance capacities and establishing regional arrangements to complement IMF support. Meanwhile, central bank liquidity lines amongst advanced economies were largely discontinued after a long period of disuse, as their traditional role in facilitating exchange rate interventions was viewed as obsolete.[118]

The Global Financial Crisis of 2008–2009 prompted unprecedented global coordination. The IMF's role expanded dramatically, with a doubling in its resources in 2009 through bilateral loans. Additionally, the Fund allocated the equivalent of $250 million in new Special Drawing Rights (SDRs) to its members and introduced new pre-emptive lending instruments, such as the Flexible Credit Line, to provide contingent support to member countries.

For the first time, central bank liquidity lines became a pillar of the global financial safety net. Central bank swap lines provide liquidity to foreign financial institutions facing short-term funding shortages, particularly during times of economic distress when access to funding liquidity becomes constrained. The agreements extended between central banks are typically bilateral and temporary, and swap lines are activated to stabilise funding markets and provide short-term liquidity, thereby mitigating market disruptions (Borio, 2021; McCauley and Schenk, 2020). By signalling the willingness of counterparty central banks to provide support during crises, bilateral swap lines may also increase market and investor confidence, stabilising global financial markets.

For example, the Federal Reserve's swap lines play an essential role in the global financial system, enabling foreign central banks to access US dollar liquidity during periods of financial stress and helping to prevent disruptions in global funding markets. As dollar liquidity dried up in global financial markets during the Global Financial Crisis, the Federal Reserve established extensive swap agreements with major central banks, peaking at over $580 billion drawn in late 2008 (Bordo et al., 2014). The swap lines helped address the US dollar funding shortages faced by foreign financial institutions (Allen and Moessner, 2019). Evidence suggests that these swap lines were crucial in reducing dollar funding pressures abroad, stabilising international money markets, and

118 In 1998, the Federal Open Market Committee (FOMC) eliminated all its standing facilities with the mutual agreement of the counterparty central banks in anticipation of the adoption of the euro. The FOMC maintained the NAFTA swap lines with Canada and Mexico but expressed a hope that these would terminate soon (FOMC Transcripts 17 November 1998, pp. 34–36). The swap lines were temporarily re-established though following the 11 September 2001 terrorist attacks, this time with the aim to provide dollar liquidity support. Concretely, the Federal Reserve set up similar swap lines with the European Central Bank and the Bank of England and expanded its existing swap with the Bank of Canada. The lines expired after 30 days (Bulletin December 2001, p. 761).

preventing further financial contagion (Goldberg et al., 2010). In addition to restoring confidence by signalling central bank cooperation, the swap lines enabled foreign central banks to preserve their dollar reserves without having to sell US Treasuries and other dollar-denominated assets when markets were in distress.[119]

Regional financial arrangements also gained prominence during this period. The Chiang Mai Initiative became multilateral in 2010, transforming it from a network of bilateral swaps into a joint regional fund. In Europe, the sovereign debt crisis led to the establishment of the European Financial Stability Facility (EFSF) and subsequently the European Stability Mechanism (ESM), which together have a combined lending capacity of over $500 billion. By the early 2010s, the global financial safety net rested on four robust pillars: self-insurance through foreign exchange reserves, central bank liquidity lines, regional financial arrangements such as the ESM and the Chiang Mai Initiative, and the IMF as the lender of last resort at the centre.

The COVID-19 pandemic put the safety net to the test, triggering mobilisation at an unprecedented scale and speed. The IMF launched new instruments, including the Rapid Financing Instrument and Rapid Credit Facility, enabling the disbursement of over $100 billion to more than 80 countries in 2020 with minimal conditionality. The Fund also temporarily eased access limits and suspended debt repayments for low-income countries. In mid-2021, it issued a fresh SDR allocation worth $650 billion, providing a broad liquidity injection into the global financial system. Some regional financial arrangements also evolved. For instance, the European Stability Mechanism introduced a Pandemic Crisis Support credit line.

Building on the facility designs and experiences gained during the Global Financial Crisis, central banks drew on standing swap lines, reactivated temporary swap agreements, and introduced new facilities. For example, in March 2020, the Federal Reserve quickly reactivated and expanded its swap lines to ensure dollar liquidity in global markets. Similarly, the Eurosystem's provision of access to euro liquidity via swap line facilities to non-euro area central banks ensured the availability of euro funding beyond the euro area. Moreover, the Federal Reserve introduced the Foreign and International Monetary Authorities (FIMA) Repo Facility, while the ECB introduced the Eurosystem's Repo facility for central banks (EUREP) as an additional liquidity tool for foreign central banks and monetary authorities.

In parallel, there has also been a rapid development of renminbi swap lines, which have resulted in the emergence of a large-scale network and a sharp increase in the amounts authorized by the People's Bank of China (Trésor-Economics, 2018). The number of renminbi-denominated swap agreements has grown to around 40 countries,

119 During this period, also the ECB activated and created temporary bilateral swap and repo lines with non-euro area central banks. In addition, but more with the aim to reduce its reliance on the US dollar, China launched its scheme of cross-border trade settlement in renminbi. To facilitate this initiative, China signed its first bilateral renminbi local currency swap agreement with the Bank of Korea in December 2008, and the second one with Hong Kong in January 2009 (Cheung et al., 2016).

with amounts authorised totalling around $450 billion of which around 10 percent has actually been drawn (Watrous and Paduano, 2025). The PBOC swap lines have often been used for balance of payments rather than liquidity support, and the circumstances under which they can be accessed can vary. Nonetheless, this trend makes clear China's aspiration to become a leading global player in central bank swap lines.

FIGURE 4.1 **FOREIGN EXCHANGE RESERVES (WORLD, IN US$ BILLION)**

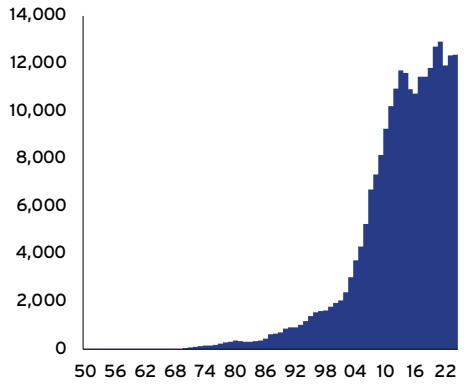
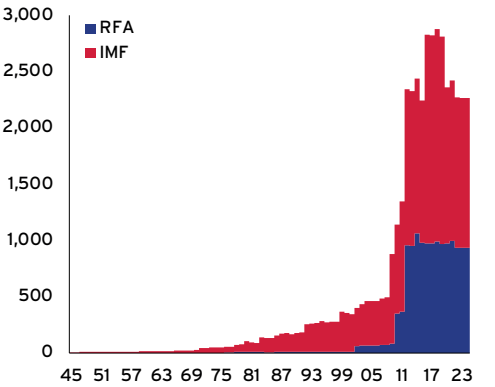


FIGURE 4.2 **REGIONAL FINANCING ARRANGEMENTS AND THE IMF (GLOBAL TOTAL, IN US$ BILLION)**



Source: IMF, annual reports of regional financing arrangements and Haver Analytics. Latest observation: 2024 (annual data).

FIGURE 4.3 **IMF RESOURCES AS A SHARE OF WORLD IMPORTS (%)**

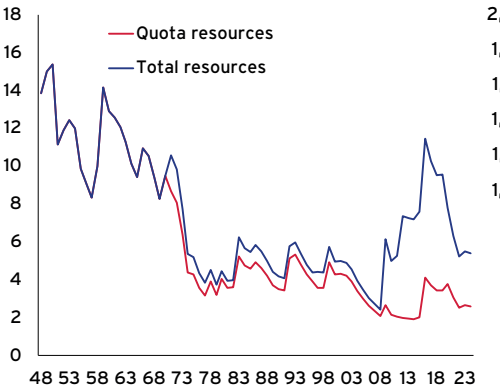
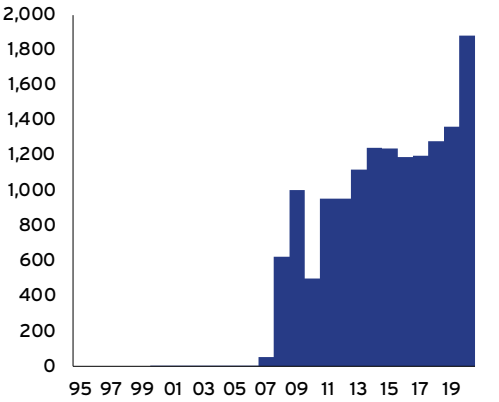


FIGURE 4.4 **EVOLUTION OF TOTAL BILATERAL SWAP LINES AVAILABLE GLOBALLY (US$ BILLIONS)**[120]



Notes: Two-way arrangements in Figure 4.4 are counted only once. Latest observation: 2024 (annual data).

Sources: IMF and Haver Analytics (Figure 4.3); Perks et al. (2021) (data originally sourced from central Bank websites; RFA annual reports; and IMF staff estimates (Figure 4.4)).

120 The data include permanent swap lines among major advanced economy central banks (Federal Reserve, European Central Bank, Bank of England, Bank of Japan, Swiss National Bank, Bank of Canada). The estimated amount is based on known past usage or, if undrawn, on average past maximum drawings of the remaining central bank members in the network, following the methodology in Denbee et al. (2016). The data also include also all arrangements with an explicit amount limit and exclude all Chiang Mai Initiative Multilateralisation (CMIM) arrangements, which are included under regional financing arrangements.

Taken together, the present-day global financial safety net has evolved to comprise a comprehensive and complex shield against financial contagion. The lending capacity of the GFSN has expanded from approximately 12% of global GDP in 2007 to almost 20% during the pandemic in 2020. The roles of regional financing arrangements and swap lines have increased from a meagre 1.75% in 2007 to approximately 17% of the global financial safety net during the pandemic (Figure 4.2). In contrast, the relative importance of the IMF has diminished over time. While the IMF comprised roughly one-third of the global financial safety net during the early post-World War II era, its share has declined to approximately 8%. As a share of world trade, the IMF quota resources represented 2.6% of world trade in 2024, nearing historic lows (Figure 4.3).

4.3 CHALLENGES TO THE CURRENT GLOBAL FINANCIAL SAFETY NET

Despite its expansion and notable successes, the global financial safety net faces several critical challenges that threaten its coherence, accessibility, and overall effectiveness.

One key challenge is the growing fragmentation within the safety net itself. Historically anchored by the IMF, the safety net has evolved significantly, as outlined earlier, into a more complex and diverse structure. While this diversification has expanded the volume of available resources, it has also introduced new challenges. In particular, the decentralisation has not been matched by effective coordination mechanisms. The result is a patchwork system in which it can be contentious to decide which institution takes the lead (Eichengreen, 2012a) or how to allocate the financing burden between the IMF and regional mechanisms. As a result, the financial capacity of the safety net, while significant, may prove insufficient and too slow to deploy in a truly systemic crisis. While progress was made in setting up pre-arranged coordination frameworks, for example, through joint test runs (Cheng et al., 2018), a more formal and structured framework is still lacking.

The global financial safety net is also plagued by uneven access and persistent coverage gaps. Not all countries benefit equally from the protections offered. For example, while robust regional financing arrangements exist in Europe and East Asia, regions such as Africa and the Middle East lack comparable mechanisms. This disparity leaves some countries and regions more reliant on the IMF or on ad hoc bilateral aid, which may not always be timely or sufficient. Furthermore, some systemic emerging market economies – key contributors of liquidity to their respective regional financing arrangements – may themselves be underinsured against region-wide shocks (IRC Task Force, 2018). This leaves vulnerable economies, particularly in emerging and developing regions, with fewer buffers in crisis times, thereby increasing the risk of deeper economic damage and contagion.

Access to emergency central bank liquidity also differs across countries. The liquidity lines of the Federal Reserve are intended to prevent tensions in international funding markets from hampering monetary policy transmission.[121] Based on this rationale, during the 2007-2008 Global Financial Crisis, the Federal Reserve extended swap lines predominantly to advanced economies to alleviate global dollar funding pressures. As the crisis deepened, emerging markets faced severe financial strains which resulted in the Federal Reserve extending also swap lines to Mexico, Brazil, South Korea, and Singapore, reflecting an approach that considered both the stability of the international financial system and the economic relevance to United States.[122] During the COVID-19 pandemic, access to liquidity was further expanded through the introduction of new repo facilities (see above). The FIMA repo facility was aimed at helping to reduce Treasury market disruptions by temporarily allowing foreign central banks to exchange and liquefy their US Treasury holdings for dollars, preventing the destabilising effects of forced sales of Treasury assets. The FIMA repo facility broadened access to US dollar liquidity by allowing foreign central banks without existing swap line agreements to secure dollars, thus enhancing financial stability in emerging markets (Acharya et al., 2021). In July 2021, the facility was made permanent. Despite the widening of access, eligibility for the repo facilities requires that foreign central banks hold sufficient US Treasury holdings in accounts at the Federal Reserve Bank of New York. The provision of swap lines and the constraints imposed by repo facilities, in turn, have implications for the coverage of the global financial safety net.

The stigma of IMF assistance makes some countries reluctant to seek help from the Fund, given concerns about policy conditionality and sovereignty (Eichengreen, 2012b, 2012c). IMF assistance is often perceived as a signal of economic distress and is typically accompanied by stringent policy conditions (Andone and Scheubel, 2019). As a result, countries may delay approaching the IMF, which in turn can allow crises to develop and escalate. This negative perception associated with seeking assistance persists despite the introduction of instruments with limited conditionality and documented evidence that IMF programmes do not trigger adverse financial market reactions (Gehring and Lang, 2020).

Concerns about the governance structure of international financial institutions may also contribute to reluctance on the part of emerging and developing economies to engage with or seek assistance from the IMF. Important EMDEs voice frustration that the quota shares that are central to the governance of the IMF have not changed to reflect their expanded role in the global economy. Such frustration can erode trust on the part of the EMDEs, discouraging them from fully engaging with the IMF (Eichengreen

121 See https://www.federalreserve.gov/monetarypolicy/bst_liquidityswaps.htm and https://www.ecb.europa.eu/mopo/international-market-operations/liquidity_lines/html/index.en.html.

122 While economic factors like market size and financial stability are important, Cassetta (2022) suggests that swap line distribution also correlates with countries' geopolitical alignment with the United States. Because geopolitical alignment may affect economic ties such as trade, reserve allocation, and use of the US dollar, even decisions made on a purely economic basis can reflect geopolitical realities. However, whether this relationship is causal remains an open question.

and Woods 2015; G24, 2024). Similar concerns extend beyond the IMF to the broader safety net; countries often prefer to rely on bilateral or regional arrangements, or even to self-insure by accumulating foreign reserves, if they feel that global mechanisms fail to adequately reflect their interests (see, for instance, Woods, 2006). The net effect is underutilisation of some safety net tools and overreliance on less efficient and more costly self-insurance through reserve accumulation

People's Bank of China swap lines provide alternative financing options, offering some countries financial support mechanisms that operate outside traditional Western-dominated frameworks. Liao and McDowell (2015) show that countries that are more economically integrated with China – measured by trade dependency, preferential trade agreements, and bilateral investment treaties – are more likely to sign bilateral swap agreements with China.

Cassetta (2022) suggests that China has also used access to its swap line network as a tool of economic statecraft to meet foreign policy objectives by strategically offering swap lines to countries unlikely to meet US criteria. The renminbi swap agreements may therefore serve as a strategic instrument to advance China's intertwined geopolitical strategies and economic objectives. Although the global status of the renminbi remains at a nascent stage, as discussed in Chapter 2, the emergence of China's renminbi-based initiatives further changes the international financial landscape, signalling a shift towards a more multipolar financial order and potentially raising questions about the repercussions of further geoeconomic fragmentation for the global financial safety net.

4.4 GEOPOLITICAL FRAGMENTATION AND THE GLOBAL FINANCIAL SAFETY NET

Many of the challenges discussed in the previous section risk being exacerbated by a broader trend of geopolitical fragmentation. As nations become increasingly polarised and trust in multilateral institutions wanes, the very foundations of the global financial safety net are at risk. These geopolitical shifts threaten to undermine its legitimacy, effectiveness, and future development, raising urgent questions about its ability to function in a less cooperative global environment.

Most importantly, geopolitical fragmentation poses a significant risk to the swift mobilisation of rescue funds during crises. In recent decades, countries have collectively strengthened institutions like the IMF and coordinated aid to address emergencies. A notable example is the 2008-2009 Global Financial Crisis, when the G20 swiftly agreed to triple the IMF's lending capacity to stabilise the global economy. However, increasing fragmentation threatens to complicate such efforts, as disagreements over burden-sharing between rival blocs could delay decisive action.

As noted earlier, differing governance structures and, at times, conflicting objectives – exacerbated by the lack of a central coordinating authority – already complicate the deployment of the global financial safety net to its full potential. Geopolitical tensions could further strain coordination, as diverging interests make collaboration increasingly contentious. Fragmentation could drive regional mechanisms to decouple further from the IMF. These tensions risk undermining the global financial safety net, as they may result in slower and smaller responses precisely during times when bold and timely measures are most needed. At a time of deep global financial interconnectedness and technological change, which enables ever faster cross-border flows, swift and coordinated responses are more urgent than ever.

A fragmented global order also threatens to widen coverage gaps, leaving numerous countries increasingly vulnerable to financial risks. An effective global financial safety net should ensure equitable access to support. Yet, as noted earlier, such coverage has long been uneven. Fragmentation risks entrenching a two-tier system, disproportionately affecting nations outside major financial blocs, such as parts of Africa and Asia, where strong regional financial arrangements are lacking. If geopolitical fragmentation weakens the responsiveness of institutions or results in more selective support, these countries could face heightened risks. However, it could also undermine the global system's ability to contain crises and increase the likelihood of localised disruptions escalating into widespread financial shocks.

In the case of the IMF, geoeconomic frictions come at a time when its lending capacity is under strain. The IMF's total resources have grown significantly, from around SDR 250 billion in 2007 to nearly SDR 1 trillion (approximately $1.3 trillion) in 2023. However, not all of these funds are readily accessible. A portion of these resources originate from member countries with weaker external positions and insufficient prudential buffers, limiting their availability for immediate use. As a result, the IMF's effective lending capacity, which represents resources that can be deployed in the short term, was estimated at SDR 695 billion out of SDR 980 billion in 2023 (Houriez et al., 2025).

Adding to these challenges, a significant share of the IMF's resources is temporary, sourced through mechanisms such as the New Arrangements to Borrow (NAB) and bilateral borrowing agreements (BBAs). Excluding these temporary resources, the IMF's lending capacity constitutes just 0.61% of global GDP, down from 0.83% in 2017. Recognising this decline, the IMF Board of Governors approved a 50% increase in member quotas in December 2023. However, the implementation of the IMF's 16th General Review of Quotas, which requires consent from member countries representing at least 85% of total voting rights, remains stalled due to a lack of consensus among

key member states.[123] To maintain its current level of resources – in the absence of implementing the IMF's 16th General Review of Quotas – the IMF's temporary funding mechanisms would need to be extended. The NAB is currently set to expire at the end of 2025, and the BBA is scheduled to expire by the end of 2027.

The implications of funding gaps could be profound. Countries that perceive themselves as inadequately covered by the global financial safety net are likely to respond by intensifying self-insurance measures, for instance by hoarding foreign exchange reserves as a precautionary buffer. This trend, which gained momentum in the 1990s, could resurface in an increasingly fragmented global landscape. Such self-insurance is both costly and inefficient compared to collective mechanisms.

Fragmentation could also lead to the emergence of parallel institutions and financing networks aligned with different geopolitical blocs. This would introduce redundancies and inefficiencies. Instead of a unified, comprehensive safety net, the world might end up with multiple smaller, disconnected safety nets that fail to optimise resource allocation on a global scale. Signs of this trend are already visible. The BRICS nations, for instance, have established the New Development Bank (NDB) and a Contingent Reserve Arrangement to provide liquidity support. Similarly, China has taken the lead in creating the Asian Infrastructure Investment Bank. At the same time, regional mechanisms such as the Eurasian Fund and the Arab Monetary Fund have sought to expand their roles. While these initiatives aim to address regional gaps, their proliferation in an increasingly fragmented system risks further undermining the cohesion and efficiency of global financial governance. While these initiatives remain nascent, they signal a shift away from the Bretton Woods-centric model.

4.5 MULTILATERAL FINANCIAL INSTITUTIONS AND FORUMS

The origins of present-day multilateralism and global governance hark back to the aftermath of World War II. The Bretton Woods agreement, signed on 22 July 1944, established the framework for the post-World War II international financial system – the "most important institution-building episode of the twentieth century" (Nye, 2025). Intended to prevent another economic and financial collapse like the Great Depression, it created two major multilateral institutions that remain central to the international financial system today. The IMF was established to promote global monetary

123 As of May 2025, only a minority of members, representing a small share of total quotas, have provided their approval. For the record, the 14th review (approved in December 2010) did not come into force until January 2016, as it was delayed by the US ratification process, which required the approval of Congress.

cooperation, assist countries facing balance-of-payments crises, and stabilise exchange rates. The International Bank for Reconstruction and Development (IBRD), originally established to help rebuild war-torn Europe, later became the core of the World Bank Group, which refocused on global economic development.[124]

The evolving nature of the global governance system

The multilateral system has continually adapted to changing economic realities and the evolving geopolitical landscape.[125] The IMF has introduced new lending instruments, strengthened its surveillance activities, increased its lending capacity, expanded its capacity development efforts, and broadened the scope of macro critical challenges under its purview.[126] It also participates in various debt relief initiatives.[127]

The G7 industrial nations supplemented the Bretton Woods institutions. At the time of its first meeting in 1975, the G7 – comprising the United States, the United Kingdom, France, Germany, Italy, Japan, and later joined by Canada – accounted for roughly two-thirds of global GDP. The group was driven by "shared beliefs" in open markets, democratic societies, and "shared responsibilities" to maintain global economic stability and prosperity.

Since its inception, the G7 finance ministers and central bank governors have played a vital role in maintaining global economic and financial stability, mitigating crises, and establishing global economic standards. G7 members have stabilised exchange markets through coordinated foreign exchange interventions and official statements.[128]

However, by the early 21st century, the global economic landscape had undergone a dramatic shift. The rise of emerging economies such as China, India, Brazil, and others has altered the distribution of global economic power. The G7, once a forum that could claim to represent most of the world's global economic activity, no longer accurately reflects the realities of the increasingly interconnected and multipolar world. This transformation became particularly evident during the 2008–2009 Global Financial Crisis, which highlighted the limitations of a narrowly composed group in addressing systemic challenges that required broader international cooperation.

124 Around the same time, other multilateral institutions were founded to address broader global challenges. The United Nations was established in 1945. Under its umbrella, specialised agencies such as the World Health Organization (WHO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the Food and Agriculture Organization (FAO) emerged. The General Agreement on Tariffs and Trade (GATT), established in 1947, laid the groundwork for the World Trade Organization (WTO) in 1995. In this chapter, we focus on the IMF and World Bank, with limited discussion of the Bank for International Settlements and the Financial Stability Board. The latter are covered in greater detail by our discussants who concentrate on global financial regulation.

125 During the Cold War era, institutions like the IMF and World Bank played a critical role in supporting development and stabilising economies in both capitalist and non-aligned countries, while regional institutions such as NATO and the Warsaw Pact reflected the ideological divides of the time. The 1970s brought new challenges, including the collapse of the Bretton Woods fixed exchange rate system and the oil shocks, which tested the adaptability of these institutions. In response, the IMF introduced new instruments, such as the Special Drawing Rights, to strengthen global liquidity.

126 As noted above, in the aftermath of the 2008 Global Financial Crisis, the IMF provided financial assistance to member countries, expanded its lending capacity, and introduced flexible lending instruments such as the Flexible Credit Line (FCL) and the Precautionary and Liquidity Line (PLL) to support countries with strong economic fundamentals.

127 One such initiative is the Heavily Indebted Poor Countries (HIPC) Initiative.

128 For instance, G7 members intervened jointly in foreign markets to weaken the yen following the Fukushima disaster in 2011 and avoided 'currency wars' in 2017 by committing not to target exchange rates for competitive purposes and refraining from competitive devaluation.

During the Global Financial Crisis, the Group of Twenty (G20) of major advanced and emerging economies replaced the G7 as the premier forum for international economic cooperation.[129] The decision to prioritise the G20 reflected the increasing economic weight and influence of emerging markets, which had become critical drivers of global growth and vital stakeholders in financial stability. The G20 demonstrated its effectiveness early on, most notably by coordinating a robust response to the Global Financial Crisis. In April 2009, G20 leaders exceeded expectations by committing $1.1 trillion in resources to address the economic fallout of the crisis. The G20 also established the Financial Stability Board (FSB) in 2009 to enhance international financial regulation and reduce systemic risks in the global economy.

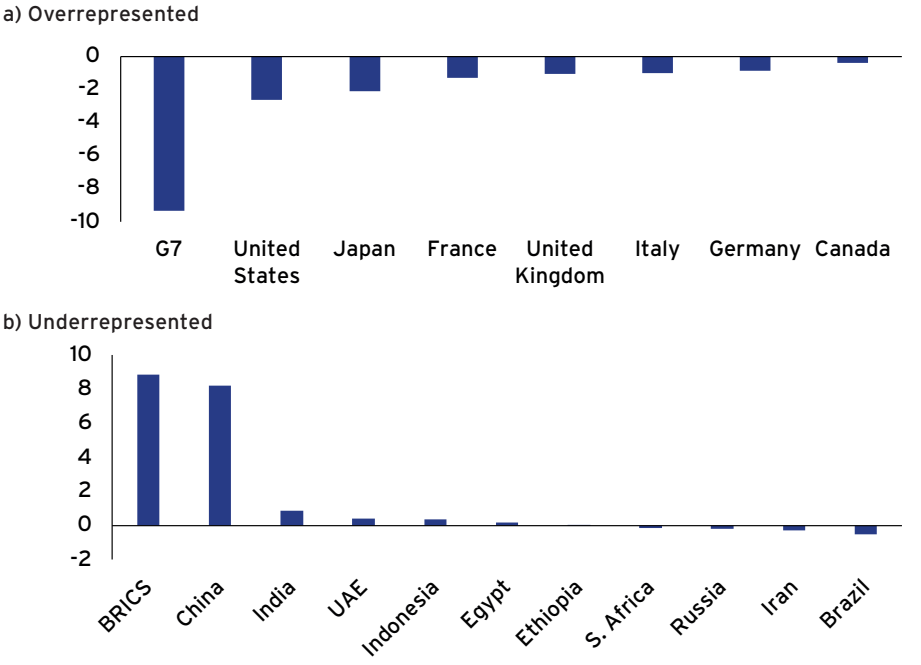
While the shift from the G7 to the G20 offers an important example of evolution in the structure of the institutions involved in making international economic policy, the structure of other institutions remains a point of contention. The IMF and World Bank face growing calls for reform, particularly to better reflect the economic weight of emerging economies such as China, India, and Brazil. Importantly, IMF quota shares underwent a significant reallocation in 2009, from advanced economies (mainly in Europe) to emerging markets. Nonetheless, current quota shares do not correspond to the allocations suggested by the agreed-upon quota formula.[130] As illustrated in Figure 4.5, many emerging economies are underweighted, while advanced economies remain overweighted. Progress in addressing such concerns is challenging. Technical issues, such as whether to measure GDP using purchasing power parity or market exchange rates, have significant impact on the implied quota shares (Colodenco et al., 2025). Additionally, a quota reallocation following the current formula would in fact increase the representation of a few large emerging market economies but reduce the allocations of many smaller emerging and developing economies (Sobel 2023).[131]

129 The joint statement issued at the September 2009 G20 Leaders meeting formalised the forum's new status. At that time, the G20 accounted for approximately 85% of global output.

130 Separate from the issue of quota allocation, the United States has always appointed the World Bank's president, approved Europe's choice to lead the IMF, and selected the Fund's deputy managing director.

131 Conversely, revising the quota formula to benefit most developing countries would result in a reduction of China's quota share (Colodenco et al., 2025). As a result, proposals to adjust the formula have been the subject of intense debate and negotiation (Tran, 2024).

FIGURE 4.5 **DEVIATION IN ACTUAL IMF QUOTAS FROM IMF QUOTA FORMULA (PERCENTAGE POINTS)**

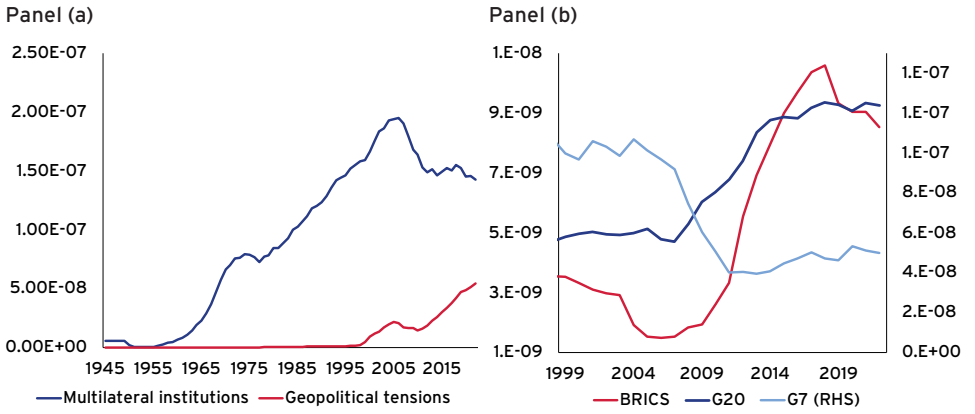


Source: IMF Finance Department and own calculations.

More recently, heightened geopolitical tensions after the first US-China trade disputes of 2018 and Russia's invasion of Ukraine in 2022 have hindered consensus-building on key issues and agreements on reforms that require broad international cooperation. These rising geopolitical tensions have led to a decline in the G20's influence, diminishing the forum's ability to address new crises effectively. For instance, the G20's role during the COVID-19 pandemic was modest. While granting the African Union permanent membership in 2023 was a step towards enhancing global representation, geopolitical tensions in recent months have further complicated decision-making.

The growing frustration among emerging economies that feel underrepresented, coupled with their growing aspirations and rising geopolitical tensions, poses a challenge to the cohesion and unity of the existing multilateral system. This shift can be observed by examining data from the Google Books Ngram Viewer, a tool that displays the frequency of specific words or phrases in a vast corpus of books dating back to the 1500s. It shows that the term "multilateral institutions" has lost prominence since the Global Financial Crisis, while the term "geopolitical tensions" has become more frequent (see Figure 4.6, left-hand side).

FIGURE 4.6 **FREQUENCY OF THE TERMS IN PRINTED SOURCES**



Source: Google Books Ngram Viewer, accessed on 5 May 2025.

Such developments have encouraged the emergence of parallel institutions or alternative multilateral forums, such as the BRICS.[132] Data from the IMF's April 2025 report show that the expanded BRICS+ comprises almost half the world's population, compared to the G7's 10%, and contributes 34.4% of global GDP, compared to the G7's 28.9% on a PPP-adjusted basis.[133] These economies are expected to be key drivers of future global growth. Additionally, with the addition of new members Iran and the United Arab Emirates, along with fellow oil producers Brazil and Russia, BRICS+ now account for over 40% of crude oil production and exports. In line with this, the term "BRICS" has gained prominence in the past 15 years (see Figure 4.6, right-hand side).

In 2015, the BRICS established the New Development Bank (NDB), an institution headquartered in China that some observers regard as a competitor to the World Bank and the IMF. The NDB is the first multilateral development bank created by emerging economies, with founding members as equal shareholders of the initial $100 billion capital. Unlike the IMF and the World Bank, where the United States holds veto power, the NDB ensures that no member has veto authority, maintaining equal voice among its members, even as more countries join.[134] In 2015, the BRICS also established the Contingent Reserve Arrangement (CRA), a network of central bank dollar swap lines with $100 billion in committed resources. This mechanism provides members with access to liquidity support to address short-term balance of payments pressures, akin to the IMF.

132 BRIC was originally a term coined by Goldman Sachs' Jim O'Neill in 2001 to designate a group of large emerging markets. The first summit in 2009 included Brazil, Russia, India, and China, establishing an informal platform for annual meetings to discuss common interests. South Africa joined in September 2010, prompting the renaming to BRICS. Earlier this year, BRICS expanded to include Egypt, Ethiopia, Iran, and the United Arab Emirates, bringing the total to nine countries. Nearly three dozen more countries have applied to join. Applicants include Indonesia, Mexico, Thailand, and Turkey. Argentina initially accepted an invitation but reversed its decision after Javier Milei's election as president in 2023, while Saudi Arabia has yet to decide on its participation.

133 At market exchange rates, on a nominal basis, the GDP account for 44.6% of world GDP, while the BRICS+ share is 27.9%. The BRICS group is dominated by China, which has the largest share of the group's GDP, with about 70%.

134 This is unlike the IMF, where the United States has veto power and holds the largest share of the votes, with 17%.

However, the BRICS group faces significant challenges, particularly in achieving cohesion and a shared purpose (O'Neill, 2024). The founding members have differing objectives. It has been argued that China and Russia aim to challenge the US-led world order, while Brazil and India prefer reforms of existing international institutions and are cautious about adopting an anti-Western stance (Chellaney, 2024). Moreover, converting shared interests into a unified action plan was challenging, even with five members. With nine members now, and potentially more, establishing a common identity and agenda will demand sustained effort.

4.6 GEOPOLITICAL FRAGMENTATION AND GLOBAL GOVERNANCE

As discussed earlier, geopolitical tensions are straining the functioning of multilateral institutions and forums. A further escalation in tensions is likely to intensify current challenges, potentially hindering decision-making processes and stalling much-needed institutional reforms. The governance structure of the IMF serves as a clear example of these difficulties. While the IMF Executive Board can approve loans and policy decisions with a simple majority vote, major decisions, such as changes to quota shares or fundamental institutional reforms, require supermajority votes of 70% or 85%. In a geopolitically fragmented world, achieving these thresholds will become increasingly difficult. Countries or blocs with competing interests may use their voting power to block reforms that they perceive as unfavourable, perpetuating imbalances in representation and undermining the legitimacy of the institution. Without governance reforms that reflect the growing economic weight of emerging market and developing economies, the IMF risks losing credibility as a representative and effective institution.

Fragmentation may also make it increasingly difficult for states to agree on the priorities that should guide international financial institutions (IFIs) and multilateral forums. Divergent national interests and competing bloc-specific agendas can lead to gridlock, preventing the adoption of cohesive strategies to address pressing global challenges. This lack of consensus can result in certain critical issues being sidelined or inadequately addressed. Three key areas where fragmentation could undermine global priority-setting include financial regulation, taxation, and addressing climate change. In a fragmented global order, these issues risk being either underfunded or deprioritized.

A critical function of IFIs, such as the IMF and the World Bank, is their ability to act as impartial 'truth-telling' institutions that provide objective economic analysis and policy advice to member states. However, geopolitical fragmentation threatens to erode this role, as political pressures from powerful member states or blocs may compromise the image of impartiality and independence of these institutions. For example, IFIs may face pressures to align their analysis or recommendations with the geopolitical agendas of influential stakeholders and could be discouraged from addressing politically sensitive issues, such as unsustainable debt levels, corruption, or fiscal mismanagement in certain countries, leading to a loss in trust.

The challenges posed by geopolitical fragmentation are not limited to IFIs but extend to broader multilateral forums, such as the G20. These platforms are designed to foster dialogue and cooperation among a diverse group of nations, but fragmentation risks turning them into arenas of confrontation rather than cooperation. The polarisation of member states can lead to a breakdown in the coordination of global economic policies, such as responses to financial crises or pandemics, thus diminishing the ability of multilateral forums to address cross-border challenges that require collective solutions.

Implications of geopolitical fragmentation for sovereign debt restructuring

Sovereign debt restructurings are a recurrent feature of the international financial landscape and are notoriously complex.[135] The difficulty of sovereign debt restructuring lies in balancing the interests of creditors and the debtor country while ensuring a sustainable economic path forward. In the absence of an internationally accepted framework for addressing sovereign insolvencies, they are typically implemented on a case-by-case basis. Over time, the approach has evolved as changes in international trade, capital flows, and geopolitics required adapting debt management and restructuring tools. Since the mid-1990s, a stable blueprint has emerged for restructuring sovereign debt issued under foreign law.[136,137] Over the years, drawing on practical experiences, the template has been refined.[138]

The effectiveness of the sovereign debt restructuring architecture was strengthened by the significant weight and cohesive view among the most important official foreign creditors, as represented in the Paris Club. In 1996, bilateral loans from Paris Club members accounted for nearly half of the external debt of low-income and lower-middle-income countries, and together with multilateral institutions, they accounted for almost 80% of external debt (see Figures 4.7 and 4.8). Their coherence and significant share enabled the Paris Club, together with multilateral institutions, to lead and drive sovereign debt restructurings credibly.

135 Reflecting this complexity, there exists a large literature on sovereign debt restructuring; see for instance Eichengreen and Portes (1995); Rogoff and Zettelmeyer (2002); Sturzenegger and Zettelmeyer (2007); Panizza et al. (2009); Buchheit et al. (2013); Buchheit et al. (2019); IMF (2020); and Meyer et al. (2022).

136 Many debt restructurings have followed this template or a variation of it. The exceptions included some debt restructurings undertaken outside IMF programmes, some 'post-default' restructurings that took place after a country had defaulted and fallen into arrears to private creditors, and the 1997-2006 HIPC and MDRI (for details, see Zettelmeyer, 2023)

137 The sequential process typically begins with a country seeking an emergency loan from IMF. The Fund then develops a comprehensive economic plan ("Program"), committing the country to a series of reforms designed to address the underlying imbalances. As part of this process, the IMF conducts a debt sustainability analysis. Should the debt be deemed unsustainable, the IMF's assistance is contingent upon two conditions: first, credible financing assurances must be provided by bilateral official creditors to undertake a sufficiently deep debt restructuring that restores sustainability; second, a credible restructuring process with private creditors must be underway. Official bilateral creditors coordinate through the Paris Club, an informal group of official creditors established in 1956 comprising 20 advanced countries along with Brazil and Russia. Private creditors are coordinated through mechanisms such as a 'take it or leave it' exchange offer. Typically, the debt of multilateral official lending institutions, including multilateral development banks and the IMF, is not subject to restructuring.

138 Key milestones include the introduction of collective action clauses (CACs) and the subsequent enhancement of CACs in bond contracts. Enhanced collective action clauses allow a restructuring if a supermajority of creditors across bonds agree, even if such a supermajority is not available at the level of each individual bond; see Gelpern (2014), IMF (2014), and IMF (2020).

FIGURE 4.7 **COMPOSITION OF EXTERNAL DEBT: LOW-INCOME COUNTRIES (%)**

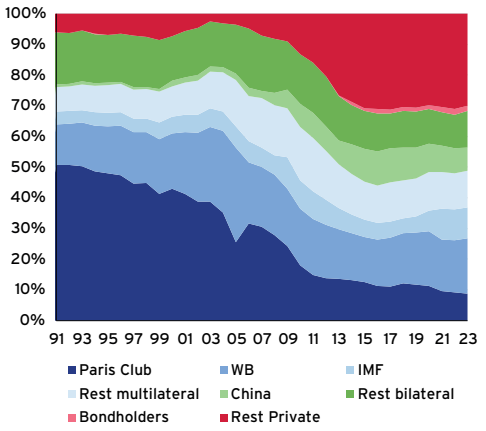
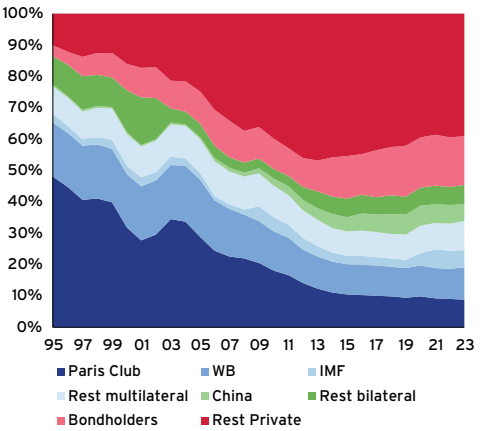


FIGURE 4.8 **COMPOSITION OF EXTERNAL DEBT: LOWER-MIDDLE-INCOME COUNTRIES**



Source: World Bank external debt statistics.

In the 2000s, however, the Paris Club's ability to dictate terms started to erode. Its role weakened as its members wound down their bilateral lending[139] while governments that were traditionally at the periphery of global finance scaled up their bilateral lending. Sovereign wealth and foreign reserve funds from surplus countries, most notably those from the Gulf states and China, have begun investing in a growing range of international assets, including sovereign debt (Gelpern, 2016). This trend accelerated after 2009, as low interest rates in major advanced countries prompted countries to seek higher-yielding assets. In the case of China, the lending boom was also part of its plan to boost its economy and geopolitical reach. In the wake of the Global Financial Crisis of 2007-2008, it was seen to secure foreign projects that would help address industrial overcapacity and protect jobs at home (Makoff et al., 2025).

As a result, China has become a prominent force in bilateral lending, particularly to low-income countries. According to the World Bank's External Debt Statistics, China's official sector lending now accounts for 8% of the total external debt in low-income countries. However, the actual scale of China's lending is far greater. First, other Chinese entities, including state-owned commercial banks, also engage in substantial overseas lending. Second, some of the lending may not be captured by official statistics. Horn et al. (2023) suggest that official data fail to capture around 50% of the total lending. Detailed project-level analyses, such as those conducted by AidData, estimate that China has extended $1.3 trillion in loans since 2000.

139 Part of this shift was triggered by the G7 favouring grants and concessional loans from multilateral institutions over loans in development aid.

While China's involvement has facilitated much-needed development in many regions, it has also sparked discussions about debt sustainability and the geopolitical implications of its expanding influence. China's foreign lending is often regarded as complex, partly due to the growing multiplicity of lenders over time. China's lending portfolio has also developed a legal complexity over the last 15 years. First, many of its loans are secured on commodity exports. Second, China has insisted on including unconventional conditions in its sovereign loans, such as confidentiality clauses, expansive cross-default clauses, preference clauses over other bilateral lenders, and reserve accounts (Lui and Chen, 2021; Gelpern et al., 2021).

The sovereign debt architecture has failed to keep up with these changes, leaving important gaps.[140] The developments have undermined the Paris Club's role as the cornerstone of coordination, as many of the largest bilateral creditors are either not members of the Paris Club or unwilling to adhere to its principles (Hagan and Setser, 2024). Consequently, debt restructurings have faced longer delays and increased unpredictability, suggesting that the framework governing sovereign debt restructurings has been severely compromised (Landau, 2024).

Several important steps have been taken to address these new challenges, including the creation of the G20 common framework for debt treatment and the launch of the Sovereign Debt Roundtable by the Indian Presidency. These initiatives aim to provide a better-coordinated approach by bringing together G20 and Paris Club creditors to work with borrowing countries on a case-by-case basis. They emphasise transparency and comparability of treatment and encourage debtor countries to implement economic reforms to restore debt sustainability. Nevertheless, agreements remain slow to reach, as was demonstrated in recent cases, such as those of Zambia, Sri Lanka, and Ghana.

The shift in the composition of official creditors highlights the risks that geopolitical fault lines pose to sovereign debt restructurings. As global alliances shift and political divides deepen, coordination among creditor nations becomes more challenging. Countries may prioritise their strategic interests over collective resolutions, leading to protracted negotiations and impasses. Fragmentation can also result in inconsistent policies and approaches to debt relief, as emerging powers and non-traditional lenders, such as China, do not necessarily adhere to established frameworks like the Paris Club. Geopolitical tensions can also exacerbate mistrust between debtor nations and their creditors, impeding constructive dialogue and delaying critical relief.

Geopolitical fragmentation risks can also spill over to the role of multilateral institutions in sovereign debt restructurings. These risks are partially fuelled by the growing frustration among some shareholders over the insufficient recognition of their increasing global influence.

140 Note that also the composition of private creditors has significantly changed, with bondholders holding a much larger share of the external debt compared to the mid-1990s. This has added an additional layer of complexity to sovereign debt restructurings, which is not covered in this chapter. For more details, see for instance Gelpern (2016), Zettelmeyer (2023), and Hagan and Setser (2024).

Fragmentation can hamper the role of multilateral institutions in debt restructurings in several ways. First, divergent interests and tensions could delay decision-making processes in these institutions. Second, fragmentation could constrain their lending capacity. For example, it might jeopardise donor financing if interest rate subsidies are paid, thereby limiting their concessional lending capacity (Mühleisen, 2023). Such concessional lending is especially crucial during times of economic distress, serving as a vital lifeline.

Furthermore, multilateral institutions may also face increasing pressure from some bilateral creditors to participate in debt restructurings. This risk is compounded by the substantial and rising share of external debt held by multilateral institutions in low- and middle-income countries. Multilateral institutions have long been the largest source of financing to low- and middle-income countries. However, their share has recently been steadily increasing again, standing at 40%.[141] This implicitly increases the potential losses for non-multilateral institutions that cannot claim preferred creditor status in the case of a debt restructuring (known as the 'killing with kindness' problem). These creditors may put pressure on multilateral institutions to forgo their preferred creditor status and start participating in debt restructurings. Such participation, however, could undermine the capacity of multilateral institutions to scale up concessional finance for all in the future.

In response to heightened geopolitical risks, the IMF has adjusted its framework to better align with current realities. Initially, it implemented the Lending into Official Arrears policy, designed to empower debtor countries by allowing them to continue functioning while negotiating in good faith with private creditors.[142] It is also an attempt to address situations where one or more bilateral creditors were uncooperative (Makoff et al., 2025). This change was prompted by geopolitical tensions following Russia's invasion of Crimea in 2014.[143] Additionally, last year, the IMF introduced several reforms aimed at ensuring a more agile approach to supporting countries undergoing debt restructuring.[144]

141 In 1996, their combined share in the external debt to low-income countries stood at 29%. It peaked in 2005 at 52% to gradually decline to 32% in 2015. It has since then been on a steady increase. The share of the IMF meanwhile is close to its historical peak, at 10.1% in 2023 (slightly below the 2009 level of 10.2%).

142 The Lending into Arrears policy requires a country to be in "good faith negotiations" with its private creditors to receive funds. This avoids that commercial creditors have veto power of Fund financing.

143 During this period, the IMF was challenged with ensuring that a dispute over an unpaid $3 billion financing between Russia and Ukraine would not hinder the approval of a new loan to Ukraine (Åslund, 2015).

144 "IMF Executive Board Endorses Reforms to Promote the IMF's Capacity to Support Countries Undertaking Debt Restructurings," IMF Press Release, 16 April 2024 (https://www.imf.org/en/News/Articles/2024/04/16/pr24119-imf-exec-board-endorses-refm-imf-cap-countries-debt-restruct).

4.7 CONCLUSION

The international monetary system stands at a critical juncture. Numerous challenges threaten its coherence and effectiveness. While the system has evolved significantly since World War II, the rise of geopolitical fragmentation threatens the principles of multilateralism upon which its architecture was built.

Geoeconomic fragmentation challenges the design of effective, coordinated global responses to systemic shocks that transcend national borders. The Global Financial Crisis and COVID-19 pandemic highlighted the urgency of cross-border coordination. However, multilateral response mechanisms, such as the G20, which have historically enabled rapid and coordinated responses to international crises, are quickly losing influence. A lack of cohesiveness threatens to fragment the global financial safety net with the emergence of parallel institutions, such as the BRICS-led New Development Bank and the Contingent Reserve Arrangement – initiatives that may address regional needs but also introduce inefficiencies into the global financial system.

At the same time, the IMF faces challenges of its own. Delayed quota reforms and funding constraints risk leaving its lending capacity insufficient to meet demands and impact the effectiveness with which the IMF can respond to future crises. The IMF relies on the continued support of its largest shareholders. Reduced support from large stakeholder economies risks stymieing the institution's role as a global backstop. A weakening of global response mechanisms may lead to an overreliance on self-insurance measures, such as the accumulation of foreign reserves by individual countries. Such developments are unlikely to constitute a global optimum and also likely to exacerbate redundancies in a geoeconomically fragmented financial system.

Well-functioning international financial institutions and the broader architecture of the international financial system fundamentally determine the effectiveness of sovereign debt restructuring mechanisms. They are also essential for financial regulation, a topic this report does not address. Bodies such as the Financial Stability Board play a crucial role in establishing standards and preventing a race to the bottom in terms of regulatory arbitrage. The role of such institutions is vital to maintaining a level playing field, particularly in a world where both banks and nonbank financial institutions operate across multiple jurisdictions.

CHAPTER 5

Policy recommendations

The international financial system stands at a crossroads. While the global economy continues to face challenges that are inherently global and likely to persist (Obstfeld, 2024) – including climate change, pandemics, technological disruption, and financial instability – geopolitical fragmentation threatens the very mechanisms designed to address them. Moreover, a fragmenting world poses significant risks to global financial stability and increases the likelihood of balance-of-payments crises. These challenges necessitate greater cooperation and coordinated approaches at a time when they are becoming more difficult to achieve.

Policy responses to the global financial crisis, as well as policies deployed to mitigate the financial stresses arising alongside events like the COVID pandemic, have demonstrated the effectiveness of multilateralism addressing global economic challenges.[145] This track record suggests that a continued commitment to multilateralism would be a key part of strategies to address risks stemming from geopolitical fragmentation, in order to foster global growth and financial stability.

Initiatives to foster openness in trade and finance, as well as to maintain a rules-based international order, have moved forward. Nations previously involved in the defunct Trans-Pacific Partnership (TPP) signed the 2018 Comprehensive and Progressive Agreement for Trans-Pacific Partnership, incorporating the components of the original proposal that they deemed worthwhile. In 2024, the European Union and four Mercosur countries (Argentina, Brazil, Paraguay, and Uruguay) reached a partnership agreement to increase bilateral trade and investment, create a stable rules-based environment, and fight climate change. Further, all BRICS members continue to participate actively in major multilateral institutions, maintaining their influence on the global agenda from within. And nations accounting for a large share of international trade continue to utilise the WTO's rules-based dispute resolution mechanisms.

However, persistent fragmentation pressures driven by geopolitical tensions and economic nationalism highlight the pressing need for pragmatic approaches to safeguard economic stability and cooperation in an increasingly divided landscape.

145 As discussed in Chapter 4, other examples include the response to the Asian financial crisis and the Fukushima earthquake.

Countries can lay a foundation for resilience in the face of fragmentation by prioritising sound domestic policies anchored in macroeconomic stability, transparency, and respect for the rule of law. These principles not only enhance national resilience but also build trust and predictability in international relations. Nations that uphold legal norms and institutional integrity are better positioned to benefit from financial integration while preserving macroeconomic stability and to engage constructively in global governance.

In addition, regional cooperation can serve as a buffer against the effects of global fragmentation. Strengthening regional institutions, trade agreements, and financial safety nets can help sustain the benefits of economic integration and policy coordination, even when global consensus falters. Importantly, such efforts should be inclusive and designed to complement multilateral frameworks rather than replace them. Economic partnership diversification is yet another critical policy mitigant. By reducing overreliance on any one geopolitical bloc, countries can better manage the risks associated with global supply chain disruptions.

However, the pursuit of avenues for global cooperation is equally important, given the deep interlinkages among economies and the enormity of the challenges, both old and new, that require collective action. Here, geopolitical divides may complicate decision-making processes within major multilateral institutions and fora, potentially leading to slower progress or to gridlock. Pragmatic and innovative solutions will need to be developed to ensure that the international financial architecture remains functional and inclusive.

5.1 POLICY MEASURES TO PROTECT THE INTERNATIONAL FINANCIAL ARCHITECTURE FROM FINANCIAL FRAGMENTATION

Enhance representativeness and preserve inclusiveness within multilateral institutions

It is critical that all countries continue to participate in multilateral institutions such as the IMF and the World Bank, and believe that their voices are adequately represented. As discussed in Chapter 4, these institutions constitute an important and effective part of the global financial safety net. As such, erosion of their legitimacy would significantly impair their ability to address the challenges arising from financial fragmentation. In the case of the IMF, legitimacy could be enhanced by confronting the complex issue of quota allocation aimed at addressing the concerns of economies that have gained significant economic weight but feel that they remain underrepresented. Such a move would help prevent the proliferation of alternative multilateral systems and mechanisms. Implementing quota and voting reforms would have the added advantage of enabling the IMF and World Bank to function effectively in a scenario where a large country withdraws its participation – provided, of course, that other countries increase

their financial commitments (Eichengreen, 2025).[146] Relatedly, there is ample scope for Europe and other nations to work to uphold international rules and commitments. However, such a role requires Europe to remain united, speak with a single voice, and reduce costly internal fragmentation.

These multilateral institutions must also retain the tools for conducting effective multilateral surveillance, including through the provision of high-quality data that allow for the monitoring of increasingly complex international financial relations. As detailed in Chapter 1, a rigorous assessment of cross-border financial linkages is hampered by the complexity of the financial structure of multinational corporations and the routing of financial transactions and holdings through financial centres. Among the steps needed to address these shortcomings, it is vital to improve the dissemination of information on third-party holdings of securities, strengthen the requirements for disclosure of ultimate beneficial owners (IMF, 2022), and facilitate the exchange of information between statistical authorities across borders more generally.

Strengthening ties with regional financial arrangements

Additionally, the IMF needs to strengthen its ties with regional financial arrangements. In an increasingly fragmented world, the IMF can act as a bridge between different regions. This could prove vital for managing financial stability risks and fostering a more cohesive global financial system. Enhanced collaboration between the IMF and regional financial arrangements can also help provide a buffer against crises while serving as a mechanism for greater regional and global coordination.

Establish coalitions of the willing

In situations where consensus within multilateral institutions proves elusive, forming narrower coalitions of the willing may provide a pragmatic solution. In the absence of universal agreement, coalitions comprising like-minded countries can drive progress on critical global issues. For instance, separate coalitions might focus on preserving trade multilateralism or implementing frameworks for international corporate taxation (Blanchard and Pisani-Ferry, 2025; Papaconstantinou and Pisani-Ferry, 2025a, 2025b).[147] Such alliances can enable meaningful action on pressing challenges not hindered by the complexities of achieving broader consensus. While these efforts may not fully replace multilateral solutions, they could serve as a crucial mechanism to keep the momentum alive on shared global priorities.

146 As Eichengreen further observes, the US financial commitments to the World Bank are relatively modest, amounting to just $2.8 billion in 2024. The World Bank primarily funds itself by issuing bonds, which are backed by its member countries. In contrast, US financial commitments to the IMF are more significant, constituting approximately one-fifth of the Fund's resources through quotas and the New Arrangements to Borrow.

147 This is analogous to discussions about the future of European integration, where, for example, models of concentric circles have been proposed in which members can choose the level of integration that corresponds to their wishes at a certain point in time (e.g., Demertzis et al., 2018).

From a global financial stability perspective, engaging the broadest possible coalition of countries to establish and uphold robust regulatory standards is essential. Avoiding a regulatory 'race to the bottom' in financial sector regulation is particularly critical to safeguarding against the kinds of systemic risks and imbalances that culminated in the 2008 Global Financial Crisis. When countries compete by weakening regulatory standards, they create an environment that enables excessive risk-taking and opaque financial practices that can generate systemic vulnerabilities. This race to the bottom fosters regulatory arbitrage, leading firms to gravitate towards jurisdictions with the weakest standards and amplifying cross-border risks that can cascade through interconnected global markets. The 2008 Global Financial Crisis highlighted how the absence of harmonised and robust oversight allows global systemic risks to build. To avoid repeating history, the greatest number of countries should continue aligning on robust regulatory standards that ensure a level playing field.

A multifaceted approach to the sovereign debt restructuring challenge

Sovereign debt restructuring presents another domain where geopolitical fragmentation poses acute risks. Addressing the challenges posed by geopolitical fragmentation will require a multifaceted approach. First, the role of multilateral institutions, such as the IMF and the World Bank, must be preserved. They can serve as a platform to mediate between diverse creditor and debtor interests. Second, greater transparency in debt contracts and negotiations is needed. Encouraging all parties, including non-traditional lenders, to fully disclose loan terms and conditions can reduce misunderstandings and align efforts towards common goals, thereby building trust among geopolitically distant parties.

Moreover, restructuring frameworks must evolve to accommodate the interests of both traditional and emerging creditors. This may involve integrating principles that reflect the distinct economic and political realities of non-Paris Club lenders.

Further progress on majority voting provisions in sovereign loans could help ensure that geopolitical fault lines do not become an insurmountable obstacle to restructuring (Georgieva, 2023).

Exercising caution in statecraft measures

Lastly, it is important to weigh both the opportunities and risks associated with statecraft measures within the financial system. Policymakers should have the authority to regulate and oversee activities in financial markets and payment networks, including the imposition of sanctions when necessary. However, it is vital to be aware of the potential unintended consequences of such actions. For example, selective taxation on foreign-owned assets could diminish the global appeal of those assets, while policy measures that disrupt payment networks could unintentionally impede efforts to lower cross-border payment costs, as outlined in the G20's "Roadmap" mentioned below.

5.2 POLICY MEASURES TO PROTECT THE GLOBAL CROSS-BORDER PAYMENTS SYSTEM FROM FINANCIAL FRAGMENTATION

The substantial risks and costs that financial fragmentation poses to the global payment system call attention to the need to establish safeguards that ensure its safe and efficient operation. Four key policy approaches could prove particularly beneficial in achieving this goal.[148]

Enhancing legacy infrastructures and leveraging new technologies to develop new ones

First, the current cross-border payment infrastructure must be improved to enhance its functioning. While operating at the highest standards, cross-border payments remain riddled with challenges that make them slow, expensive, opaque, and difficult to access. Improvements can be made where transaction costs and delays remain significant due to a lack of interoperability between national payment systems, differing time zones and clearing house operating hours, multiple intermediaries, regulatory compliance requirements, and currency conversion challenges.[149]

Such improvement efforts are part of the "Roadmap for Enhancing Cross-border Payments" agreed to by the G20 in 2020, which sets quantitative targets to lower costs and increase the speed, accessibility, and transparency of international payments by the end of 2027. It also highlights several areas to explore further, including interlinking real-time payment systems, extending operating hours, providing access to central banks' real-time gross settlement systems, and standardisation efforts like ISO 20022 (a global standard for structured financial messaging enabling data exchange across payment systems worldwide).

While the G20 proposes a list of important measures, their widespread adoption remains a challenge. A G20 priority area where progress is being made is the interlinking of domestic retail fast-payment systems. For instance, in October 2024, the Governing Council of the European Central Bank decided to continue efforts to link its TARGET Instant Payment Settlement service (TIPS) with other fast-payment systems globally, explicitly aiming to reduce fragmentation risks.

Alongside improving the existing infrastructure, jurisdictions could consider developing new infrastructure in the medium term if private sector solutions prove insufficient. While domestic payments are increasingly instant and digital, cross-border transactions have yet to fully leverage the potential of digital technologies. Project Agorá is an initiative aimed at researching next-generation cross-border wholesale

148 See also World Economic Forum (2025).

149 Cross-border payments often pass through multiple correspondent banks due to the lack of direct relationships between the sender's and receiver's banks. Variations in payment systems and formats across countries create compatibility challenges. Compliance with anti-money laundering (AML), counterterrorism financing (CTF), and know-your-customer (KYC) regulations frequently requires banks to manually review and verify transactions, leading to longer processing times, particularly for high-risk regions or large amounts. Time zone differences and limited operational hours of banks further delay payments requiring coordination. Transactions involving multiple currencies add complexity, as they may require manual intervention for currency conversion or liquidity management.

payments infrastructure, led by the BIS in collaboration with seven central banks and numerous private sector companies. This public–private partnership aims to assess the potential of a multi-currency unified ledger to enhance the correspondent banking model. Additionally, new technologies could be harnessed to combat money laundering through a data-driven approach, employing artificial intelligence, machine learning, privacy-enhancing technologies, and network analysis, as demonstrated in the BIS Innovation Hub's Project Aurora.

Ensuring interoperability amongst the payment infrastructures

Second, in parallel, policy efforts should strive to ensure interoperability among payment infrastructures to reduce transaction costs and prevent the formation of distinct financial blocs operating on separate payment rails. New systems should be compatible with both existing and emerging platforms. One way to avoid block fragmentation in the payments landscape is the development and adoption of standardised protocols, such as the ISO 20022 global messaging standard, and the harmonisation of application programming interfaces (APIs), which enable different payment software applications to interact effectively. Additionally, using the Legal Entity Identifier (LEI) – a unique alphanumeric code used to identify legally distinct entities involved in financial transactions – in cross-border payments would enhance data standardisation and facilitate know your customer (KYC) processes and sanctions screening. The G20's "Roadmap" is a key policy effort supporting this interoperability.

Sustaining global cooperation

Third, it is essential to foster collaboration in areas where there is geoeconomic consensus, such as in the fight against financial crime and terrorism financing. Intergovernmental organisations like the Financial Action Task Force (FATF) are instrumental in facilitating cooperation by setting international standards and assessing compliance. These institutions must continue to operate with integrity and independence, regardless of the influence of geopolitical factors.

Such cooperation is also essential to address the technological, legal, regulatory, and supervisory challenges posed by crypto-assets, including their oversight and monitoring. At the global level, however, the implementation of international crypto-asset standards unfortunately remains fragmented. Fragmentation increases the risk that regulatory arbitrage and cross-border contagion could undermine effective risk-mitigation efforts, even in jurisdictions with established regulatory frameworks. Implementing the G20's crypto-asset roadmap could help mitigate these risks. Such risk mitigation efforts would include the Financial Stability Board's recommendations for regulating crypto-asset markets and activities, as well as the Basel standards for banks' exposures to crypto-assets.

Discussions

PORTFOLIO STRUCTURE (CHAPTER 1)

Chaired by Tao Zhang, Bank for International Settlements

Angel Ubide, *Citadel*

Thank you for the invitation. It is always a pleasure to be here. Let me begin with a short anecdote. Last Monday, I attended a conference at DARPA, the research arm of the US Department of Defense. You might ask why the Department of Defense would host a finance-related event. The reason is that it has started to consider seriously the financial and economic implications of geopolitical conflicts.

In this context, today's chapter is timely. It offers a detailed, data-driven overview for policymakers at a time when the weaponisation of finance has become an increasingly relevant feature of geopolitical tensions. If I had to summarise the chapter's main message, it is that tracking the ownership of financial assets has become significantly more difficult. For example, comparing data from 2017 and 2023, we see a marked shift in how China's financial flows are routed, including through jurisdictions such as the Caribbean and European tax havens. This shift appears consistent with a broader effort by China to adjust to rising geopolitical risk since the first Trump administration. Rather than commenting on the data, I would like to raise several broader questions.

The first is conceptual. What does 'geopolitical distance' mean today? The chapter highlights its relevance, but defining this concept is becoming increasingly difficult. A political leader from the Global South recently told me that "the Global North is broken". This prompts reflection on who counts as a reliable ally and whether traditional indicators, such as UN voting patterns, remain meaningful. Take the example of 'Fortress North America'. Is Canada part of a broader North American bloc, or will it pursue closer alignment with the European Union? Is Mexico still classified as an emerging market, or increasingly integrated into a geopolitical unit centred on North America? It is also notable that no geopolitical swing state has joined the sanctions coalition against Russia. The sanctions were implemented by the G7, and that is where the alignment ends. These developments raise questions about how geopolitical distance should be defined and what it implies for capital flows.

The second question is whether geopolitical alignment is the key driver of observed patterns, or whether economic size plays a more fundamental role. Gian Maria Milesi-Ferretti noted that "the West trades with the West". This is unsurprising given the scale and concentration of economic activity in these economies. By contrast, smaller or emerging economies often trade more widely. As Richard Baldwin (2024) has argued, decoupling from China is complicated. Every major manufacturer sources at least 2% of its inputs from China. A recent McKinsey report supports this view. Specifically, Exhibit 2 in McKinsey (2024), which plots countries by their average geopolitical distance of trade alignment and their geopolitical position, shows that large economies tend to

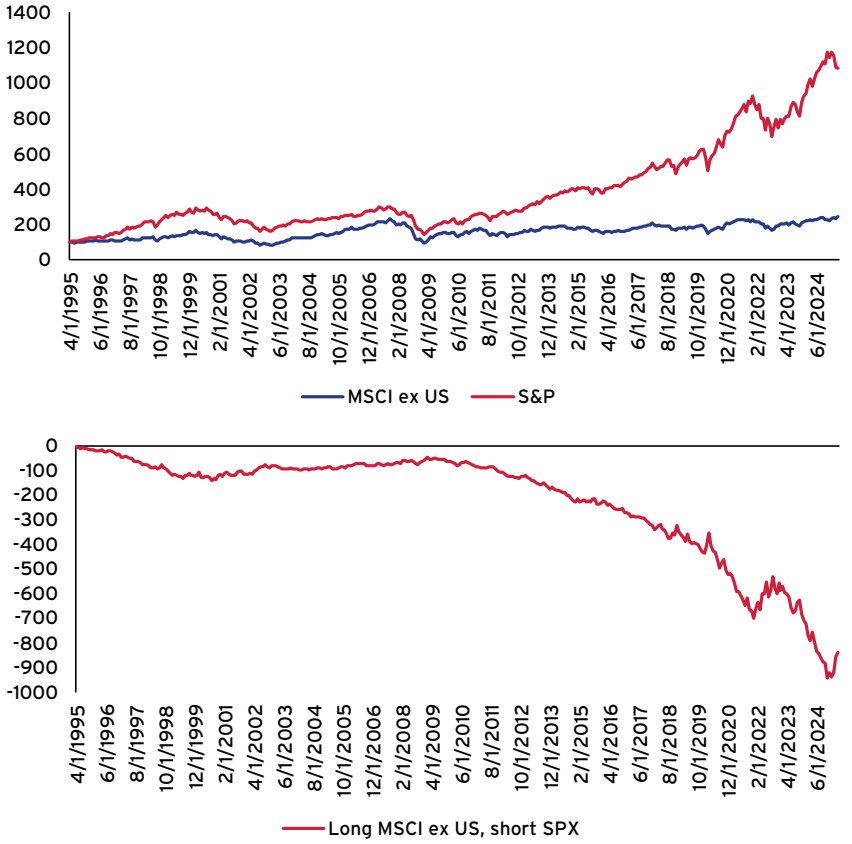
trade broadly, making realignment along geopolitical lines more difficult. The report also shows that while about 20% of trade occurs among closely aligned partners, around 40% takes place in sectors where production is highly concentrated in just a few countries (Exhibit 3 in McKinsey, 2024) . These sectors are central to the global economy. The conclusion is that while diversification is possible, realignment is constrained by both size and production concentration.

Another issue is whether the geopolitical realignment of foreign direct investment is costly. Standard economic models tend to answer yes, because they are built around the principle of static efficiency. But if resilience is included in the objective function, the outcome may change. This is the logic behind the Biden administration's 'friend-shoring' approach. Recent data suggest that China has reoriented trade towards Latin America and Asia, while the United States has shifted towards Vietnam and other Asian economies. These developments may reflect a recalibration of risk rather than a loss of efficiency. When assessing the costs of fragmentation, it is important to clarify what objective is being optimised.

Another question is how countries should respond to the weaponisation of finance. One relevant indicator is the gross international investment position, as opposed to the net position typically cited in public debates. Practitioners know that while net figures are relevant for long-term balance sheet sustainability, it is gross exposures that amplify systemic risk during periods of stress. From a geopolitical risk management perspective, it may be prudent to reduce these gross exposures. This appears to be the approach taken by China in recent years. Other major economies such as the United Kingdom, Germany, Japan, and the United States continue to maintain large gross positions, consistent with the scale of their financial systems. However, should alliances change, these positions could become more exposed.

Let me raise a couple of additional questions. I will start with the benefits of diversification. Figure 1.16 in Chapter 1 of the report shows the net international investment position (NIIP) of the United States. The top panel of Figure 1 below compares the performance of the S&P 500 (in orange) and the MSCI ex-US index (in blue); the bottom panel shows the cumulated return of a position which is long on the MSCI excluding the US and short on the S&P 500. As Gian Maria Milesi-Ferretti noted, much of the deterioration in the US NIIP is not due not to capital flows, but to relative asset performance. This leads to two reflections. First, should the analysis be valuation-adjusted? From the perspective of financial interlinkages, what may more matter are flows rather than valuations. If the performance gap between US and foreign equities were to reverse, the US NIIP could appear much more sustainable. Second, this raises the policy question of whether countries with persistent current account deficits like the United States should consider creating a sovereign wealth fund. Had the US borrowed at Treasury rates and invested externally, it could be significantly wealthier today. This is part of the rationale behind current discussions about a US sovereign wealth fund and deserves further attention.

FIGURE 1 **ECONOMIC DIVERSIFICATION BENEFITS?**



Source: Bloomberg and author calculations.

Finally, how much weight do financial markets assign to geopolitical fragmentation? So far, market pricing suggests limited concern. A 10% tariff is small compared to standard exchange rate volatility. The key issue may not be uncertainty per se, but unpredictability. Once a policy stance becomes clear, markets can adjust. It is the unpredictability (i.e., the second derivative of uncertainty) that poses the greater challenge. This distinction may help explain how and why US and non-US investors respond differently to geopolitical shocks.

To conclude, this chapter makes a valuable contribution. It provides a clear framework for understanding how geopolitics is reshaping global financial linkages and highlights important questions for future research and policy. Thank you.

Anjeza Kadili, *Haute Ecole de Gestion*

Thank you for the invitation. I am very pleased to be here. Let me also thank the authors for addressing such a topical issue, even if, as many of us would agree, recent events have taken us by surprise.

This chapter tackles the issue of financial fragmentation, which is part of the broader trend of geoeconomic fragmentation. It describes how financial and trade flows are increasingly occurring within politically aligned blocs. The chapter begins with a cross-country overview of net international investment positions as a share of GDP in 2023. As Gian Maria Milesi-Ferretti highlighted, several countries hold large positive positions including China, Germany, the Nordic countries, and Switzerland. Others, by contrast, show large negative positions, such as the United States, France, Spain, and India.

From this starting point, the chapter asks what the economic consequences of financial fragmentation triggered by geopolitical events are. It focuses in particular on recent episodes, including the Russian invasion of Ukraine, the 2014 annexation of Crimea, and the 2017 escalation in US–China tensions. I would also point to additional relevant events such as the Smoot-Hawley Tariff Act of 1930, Brexit in 2016, and the broader resurgence of trade protectionism, which all help to frame the current environment. From my reading, the chapter reaches several important conclusions. First, geopolitics is becoming more important than geography in shaping capital flows. Second, international financial integration continues to be led by the United States and its allies, but this may now be under threat. Third, China and other emerging markets remain underrepresented in global capital flows. Finally, there is growing evidence of capital flow fragmentation, mostly affecting equities and mostly concentrated in emerging and developing economies.

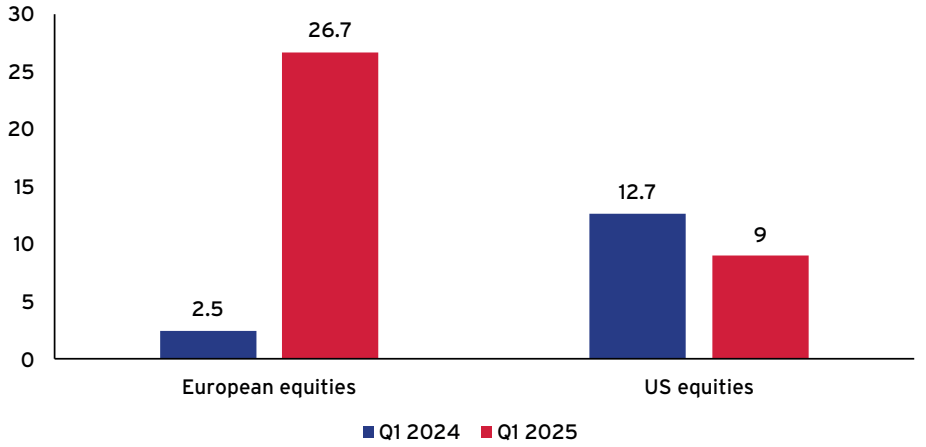
I would like to focus my remarks on three points relevant to the current environment. The first concerns the macro-financial implications of geopolitical fragmentation. The second draws on lessons from historical episodes. The third looks at the potential role of emerging markets as connector countries.

First, the chapter begins with a binary division between a US-aligned bloc and a China-aligned bloc, which may oversimplify today's more multipolar world. The chapter could benefit from a broader discussion of potential scenarios going forward. For example, the United States could increasingly weaponise capital, as it has weaponised trade. One policy proposal that has circulated is the idea of imposing tariffs on capital, which would effectively tax money flows. If implemented, this could trigger a reallocation of capital away from the United States. There is early evidence that some reallocation may already be underway. For instance, equity ETF flows shifted away from the United States and towards Europe in the first quarter of 2025 (see Figure 1).

This could represent a window of opportunity for Europe to attract more capital flows. I would be interested in hearing your thoughts on how such a shift might evolve and what it implies for the global financial architecture. The chapter also touches on the macroeconomic consequences of fragmentation, including its impact on investment, access to technology, raw materials, funding costs, and financial stability. These dimensions are all highly relevant to policymakers and market participants. While precise quantification is difficult, having a sense of the potential order of magnitude would be valuable. For example, the IMF's April 2023 *World Economic Outlook* estimates

that financial fragmentation could reduce global GDP by about 1% in the medium term and up to 2% in the longer term. The impact is projected to be larger for the China-aligned bloc, but the US-aligned bloc would also be significantly affected. Interestingly, non-aligned countries such as India and Indonesia would likely experience a smaller contraction, reinforcing the idea that geopolitical 'connectors' may be more resilient.

FIGURE 1 **ETFS: INVESTORS TURN TO EUROPEAN EQUITIES (€ BILLION)**



Source: Amundi..

Second, what can we learn from history? One instructive example is the Smoot-Hawley Tariff Act of 1930, which imposed tariffs of up to 60% on US imports, notably to protect domestic agriculture. The result was a collapse in US trade, with both exports and imports falling by around 60%. This trade contraction is widely seen as one of the contributors to the Great Depression. The policy was ultimately reversed in 1934 under the Roosevelt administration through reciprocal trade agreements. The episode is a reminder that trade restrictions can have long-lasting effects on flows and macroeconomic conditions. A second example is Brexit, which offers insights into how political uncertainty and disintegration affect financial flows. Data showed that the United Kingdom's external assets and liabilities began to decline as early as 2013 (ratification of the referendum law), before the 2016 actual referendum, with the largest contraction occurring around the vote. Between 2013 and 2016, external assets declined by about 14% and liabilities by around 17%. This episode underscores the importance of gross positions in capturing the impact of geopolitical shocks.

My third point concerns the role of emerging markets. As the chapter notes, emerging markets remain underrepresented in global finance. They account for just 13-14% of external assets and liabilities, despite representing around 40% of global GDP and trade. Moreover, their share of global financial integration has not increased significantly over the past decade, even as their economic weight has grown. However, several large emerging markets may be well positioned to serve as connector countries and absorb capital reallocated away from more politically polarized blocs. India and Indonesia are frequently cited in this context, but also Vietnam, Mexico, and several countries in Latin

America. According to Aiyar and Ohnsorge (2024), these economies could benefit from rising FDI inflows as firms and investors look to diversify risk away from geopolitical fault lines. I would be very interested in hearing the authors' views on how this role could evolve and what policy frameworks would support it.

To conclude, I fully agree with the chapter's main message. Financial fragmentation is a critical issue, with short- and long-term implications for macroeconomic outcomes and financial stability. Geopolitics is playing a growing role in shaping capital flows. The US-led financial system remains dominant, but it is increasingly under strain. Many emerging markets remain underrepresented yet may play a larger role going forward. In this uncertain environment, history can serve as a useful guide. I thank the authors for their excellent contribution and look forward to the discussion.

Floor discussions (Chapter 1)

Agnès Bénassy-Quéré (Banque de France) questioned the apparent inconsistency between tariff-jumping FDI inflows into the United States and recent ETF outflows from US equity markets. She asked whether these opposing trends can be reconciled and what they imply about the nature of capital flows under fragmentation.

Dirk Schoenmaker (Erasmus University) emphasised the need to consider the role of financial intermediaries behind capital flows. He argued that fragmentation in the euro area banking sector persists, due to the lack of centralised supervisory powers and lender-of-last-resort mechanisms. He encouraged an additional micro perspective on institutions rather than solely a macro discussion.

Belal Mohammed Khan (KS Advisory) asked whether fragmentation should be interpreted as a cyclical or structural phenomenon. He emphasised that defining fragmentation as structural implies fundamentally different capital flow responses and long-term consequences for vulnerable countries than cyclical fragmentation.

Andreas Billmeier (Brevan Howard) asked two questions. To Gian Maria Milesi-Ferretti, he asked whether the model considered scenarios with more than two global poles and how this would affect the analysis. To Angel Ubide, he questioned the emphasis on flows over valuations, suggesting that reducing imbalances might require a focus on the value of flows since stocks cannot be relied upon for adjustment.

Anusha Chari (University of North Carolina at Chapel Hill) responded to questions about the composition of capital flows. She noted that FDI announcements may not yet reflect realised investments, while ETF outflows are more reactive. She emphasised that current account and financial account balances mirror each other, implying that fragmentation in trade would inevitably reshape financial flows and potentially reserve holdings if treasuries are weaponised.

Isabel Vansteenkiste (ECB) argued that the euro area knows what reforms are needed, particularly regarding the Capital Markets Union and Banking Union, but advancing them requires renewed political momentum. She highlighted that geopolitical alignments are shifting and that data can help anticipate future realignments. On emerging markets, she noted they face even greater institutional and infrastructure hurdles before playing a stronger global role.

Arnaud Mehl (ECB) suggested historical lessons from the 1930s currency blocs might be more relevant than the Smoot-Hawley episode. On Brexit, he argued that disruption was intentionally minimised through negotiation, making it perhaps less instructive. He called for deeper reflection on comparable historical episodes to understand today's fragmentation.

Gian Maria Milesi-Ferretti (Brookings) reiterated that gross financial positions offer additional insights and are included in the chapter. He defended the chapter's focus on positions over flows to assess macroeconomic exposure. He suggested that temporary shocks may lead to permanent changes in global financial integration. He also emphasised vulnerabilities in emerging markets, particularly in the absence of robust external positions.

Angel Ubide (Citadel) distinguished between FDI and ETF flows, noting that the latter signal a potentially persistent rebalancing away from US assets. He argued that sustainability and resilience are different dimensions (i.e., macro versus flows). On geopolitical conflict, he pointed to Russia's wartime financial resilience as evidence that parallel ways can be developed to bypass sanctions.

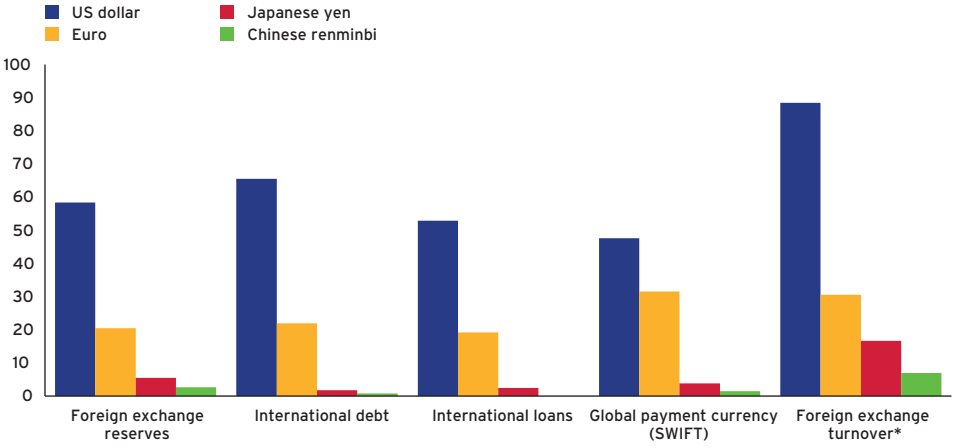
INTERNATIONAL CURRENCIES (CHAPTER 2)

Chaired by Jeffry Frieden, Columbia University

Cédric Tille, *Geneva Graduate Institute*
Thank you to the organisers for the opportunity to discuss this excellent chapter. It's a very pleasant conference to attend, with a unique mix of academic, policy, and private sector perspectives.

When I teach or speak about the international role of currencies, I often begin with a figure from the ECB's report on the international role of the euro (see Figure 1). It illustrates how dominant the dollar remains. Each bar in the figure represents a different segment of the financial market, and in each case, the dollar (in blue) is clearly dominant.

FIGURE 1 **THE INTERNATIONAL ROLE OF MAJOR CURRENCIES (%)**



Source: ECB.

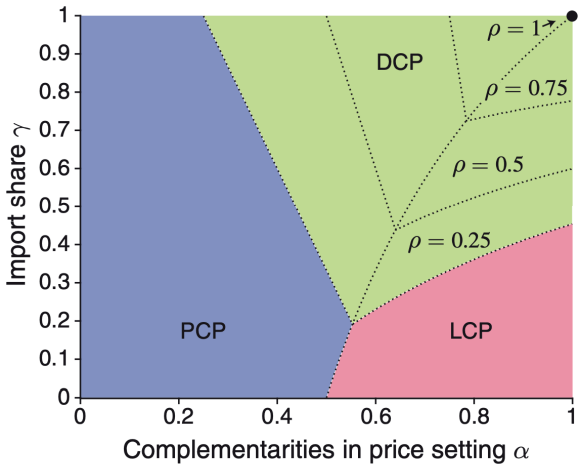
The chapter builds on this observation and asks how the international role of currencies is evolving. It surveys several dimensions of financial markets and trade. A first observation of the report is that the dollar's role in international lending is declining. However, currency dominance is always relative and depends not only on whether a currency is losing ground but also on whether others are becoming more attractive. In this case, the shift reflects the maturation and increased liquidity of local currency bond markets. A similar trend appears in foreign exchange reserves. Yet, part of the shift is compositional. For example, countries like Switzerland ,with growing reserves and a low dollar share, contribute to the decline. Another driver is the growing appeal of more liquid nontraditional reserve currencies like the Australian dollar. In this regard, the shift isn't necessarily a vote of no confidence in the dollar, but rather a reflection of broader diversification.

Trade invoicing is more subtle. While the dollar still holds a large global share, zooming in on individual countries reveals growing use of the renminbi, albeit mostly regionally between China and its non-US trading partners. In some cases, the renminbi is not chosen purely for economic reasons, but because it avoids the political risks associated with using the dollar. This is where geopolitics starts to shape outcomes. The chapter captures this well. However, a key challenge in assessing the international role of currencies is timing. As with financial crises, shifts happen more slowly than expected but once they start, they move faster than expected. Therefore, how can we assess the risk of change before it is too late? I suggest turning to history and theory.

Historically, a major shift was the transition from the British pound to the US dollar. Some date the shift to after World War II, but others such as Eichengreen et al. (2018) show signs emerging already in the 1930s. There is also evidence that geopolitical pressure played a role. Avaro (2024) shows that the persistence of the pound's role after World War II was largely driven by Commonwealth countries on which London could exert influence. It would be useful if the chapter briefly flagged what we know and what remains debated in the historical literature.

Turning to theory, a large body of the international macroeconomic literature shows that invoicing currency matters for the transmission of shocks and policy. Initially, this literature took the invoicing choice as given. More recent work, such as the paper by Dmitry Mukhin (2022), models the choice of invoicing currency explicitly (see Figure 2). Mukhin's model highlights several dimensions: strategic complementarities on the horizontal axis (firms want to mimic their competitors to avoid relative price volatility), import share on the vertical axis (the higher the number, the more important imported inputs are), country size, and monetary policy stability. The model produces multiple equilibria. The green area in the chart represents situations where dominant currency pricing (DCP) emerges. This situation happens especially when firms are highly influenced by their competitors' pricing and when imported inputs matter a lot.

FIGURE 2 **AN EQUILIBRIUM MODEL OF THE INTERNATIONAL PRICE SYSTEM**



Source: Mukhin (2022).

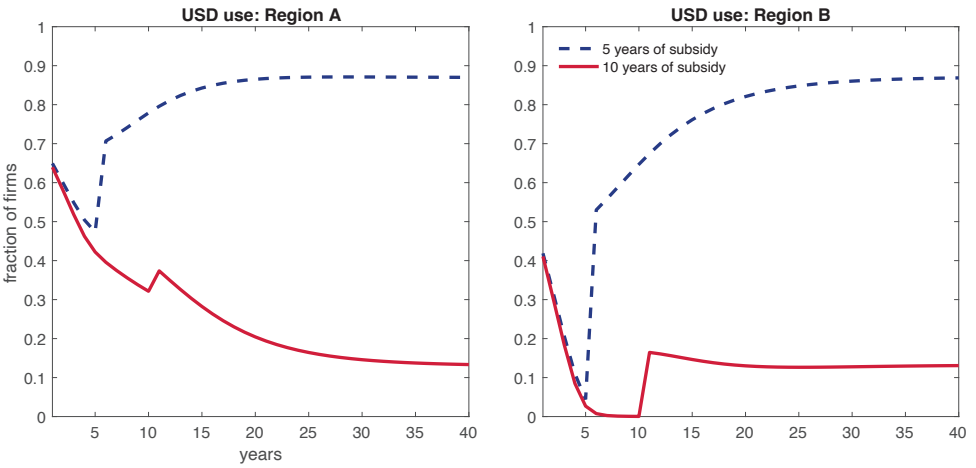
Another key finding is that the US dollar can serve as an invoicing currency between non-US countries, but only when US monetary policy is perceived as stable. In the model, a lower ρ reflects more stable US policy and expands the green area where the dollar remains dominant.

The model assumes one dominant currency, but more recent research considers competition especially between the dollar and the renminbi. For example, Chahrour and Valchev (2024) model complementarities between the currency used for saving (buying bonds) and the one used for trade finance. They divide the world into three blocs: the United States; China; and the rest of the world, which can be further grouped into US-aligned and China-aligned sub-blocs.

The key result is that the dollar's role is resilient. Tariffs alone are insufficient to shift the equilibrium. However, financial sanctions imposed by the United States, or subsidies by China promoting the use of renminbi assets, can make a difference but only if sustained over time.

Figure 3 illustrates this. The left panel shows the dollar's usage in countries aligned with the United States (excluding the United States itself) and the right panel shows usage in the China-aligned bloc. In the experiment, China subsidises renminbi use for five years. Dollar usage declines during this period, especially in the China bloc. But once the subsidy ends, countries revert back to using the dollar. However, in the ten-year subsidy scenario (the red lines), renminbi use persists even after the policy ends. The model shows that shifting equilibrium requires not just bold policies but sustained ones.

FIGURE 3 **THE DOLLAR IN AN ERA OF INTERNATIONAL RETRENCHMENT**



Source: Chahrour and Valchev (2024).

The key takeaway is that theory is still evolving and there is no consensus yet. I am not suggesting that the authors build a model, but the chapter summarise where the theory stands. Structural changes are slow and hard to track in real time. Therefore, understanding the mechanisms is essential.

To conclude, the chapter does an excellent job laying out the current landscape. To complement this, a forward-looking section could outline what history suggests, what theory predicts, and which research questions should be prioritised to track how this story evolves. Thank you.

Huw Pill, *Bank of England*

Good morning, everyone. Let me begin by thanking the organisers for inviting me to this excellent conference.

The issues raised over the past few weeks are highly relevant, not only in central banks and international institutions, but in financial markets as well. The de-dollarisation narrative is very much alive. It is useful to distinguish between long-term structural shifts in the global economy (i.e., slow-moving forces that occasionally produce sharp turning points) and short-term disruptions. We may find historical parallels in the 1930s and 1950s, but I would caution against simplistic analogies. Drawing a straight line from today's tariff increases to the Smoot-Hawley episode risks confusing correlation with causation. Geopolitical tensions certainly played a role, but so did fragmentation of the financial sector and financial crises. These factors likely interacted endogenously, which gives me hope that today's trade tensions won't necessarily trigger a crisis like in the 1930s. Another useful historical comparison is the 1950s. Eichengreen (1995) discusses the European Payments Union, where the dollar was not convertible for trade between the United States and Europe, but was for trade within Europe. This allowed for multilateral settlement of intra-European trade. We often overlook the importance of current account convertibility for economic performance because we have taken it for granted for decades. Most debates have focused on the capital account rather than current account convertibility. However, it would be useful to explore current account convertibility from a historical perspective.

On de-dollarisation, let me just flag a few initial considerations. First, the alternative remains unclear. There are challenges – different challenges in each case – for the euro, for the renimbi, or for crypt assets to assume an international role. Second, geopolitical changes are happening alongside technological ones. Innovations like CBDCs and stablecoins could shape future currency use, much as the transatlantic cable once supported the rise of the dollar.

With that preamble, let me turn to the chapter. I would like to raise three main points. First, if we want to understand how geopolitics affects the international role of currencies, we need a theory of what drives currency internationalisation. Peter Kenen's framework from the 1960s distinguishes among several roles – unit of account, means of exchange, and store of value – distinguishing in each case between official and private use. The chapter reflects these dimensions and sensibly focuses on a subset. However, each role may respond differently to economic or geopolitical forces. If we think about the dollar as a numeraire, it has the properties of a public good. It is non-rival. In the past, countries linked into US economic stability through fixed exchange rates. Today, many countries follow inflation-targeting regimes with floating exchange rates, which implies that the use of the dollar in the official sector as a numeraire is diminishing. However, in private markets, the dollar remains a key numeraire and this role has proved very robust so far. In this context, a key question is whether the use of the dollar to denominate transactions simply reflects pricing conventions or whether it influences the determination of international transactions. This is a subtle but important

distinction. In sectors involving complex supply chains, the choice of invoicing currency can affect behaviour. In those cases, currency use may go beyond labelling and become a determinant of how transactions are structured. Therefore, if we want to assess the impact of geopolitics on currency use, we need to disentangle these mechanisms.

Second, to improve identification it may help to focus on changes rather than levels. A difference-in-differences approach is likely more meaningful than simple correlations. Defining geopolitical alignment is difficult, but the deeper challenge lies in accounting for anticipation and insurance motives. For example, China's reserve accumulation after the 1990s Asian crises shapes how it reacts to future shocks. Linking reserve changes to alignment may miss this strategic behaviour.

Third, the chapter discusses financial flows and currency roles separately. However, I wonder if this separation can be sustained. Looking at currencies alone assumes currency risk can be isolated from broader country risk. Currencies are tied to infrastructure, and infrastructure reflects deeper institutional features such as the rule of law, legal stability, and property rights. These matter not only for domestic economic behaviour but also for the international financial system. In short, understanding currency internationalisation requires thinking not only about shocks, but also about how those shocks interact with institutions, infrastructure, and legal regimes. Thank you.

Floor discussions (Chapter 2)

Nathan Converse (Federal Reserve Board) noted that while historical parallels are sometimes difficult to apply as a macroeconomist, the discussion provided useful avenues for further exploration. He agreed that technological developments, such as CBDCs and stablecoins, are relevant for currency roles and noted that these trends often reinforce dollar dominance due to the need for US Treasuries as backing.

Arnaud Mehl (ECB) argued that history provides key lessons for understanding currency dominance. He highlighted three conditions historically associated with a strong global currency: a credible lender of last resort, supportive economic fundamentals, and the avoidance of major policy mistakes. He suggested these remain relevant today.

Anthony Smouha (Atlanticomnium SA) questioned the sustainability of US dollar dominance given rising trade and fiscal deficits and the tension between national priorities and maintaining a stable global currency.

Claudio Borio (formerly BIS) pointed out that the role of the dollar is underestimated in current datasets, especially due to the exclusion of off-balance sheet instruments such as FX swaps and forwards. As highlighted in two *BIS Quarterly Review* articles with co-authors, the amounts dwarf those recorded on the balance sheets of both banks and non-banks. Critically, in contrast to other derivatives exposures, these need to be funded and the whole nominal (face) value repaid – they amount to a form of 'hidden debt'. The exposures had grown exponentially, thanks also to their favourable regulatory

treatment, in turn the result of accounting quirks. He argued that this helps explain why the FX swap market becomes so central during crises and liquidity squeezes. While the chapter touches on official FX swap lines, he emphasised that the role of the dollar in private contracts is much more relevant for assessing its dominant global footprint.

Elu Von Thadden (University of Mannheim) stressed the need to integrate international payment systems into discussions on currency roles. He referred to the expansion of China's CIPS platform and other platforms, emphasising the potential for rapid change in global payment infrastructure.

Nicolas Véron (Bruegel and Peterson Institute) raised two questions. First, he asked for clarification on the recent decline in local currency issuance in emerging markets. Second, he questioned whether the ECB has shifted its stance on promoting the euro's international role.

Jeffry Frieden (Columbia University) acknowledged the importance of US deficits in sustaining dollar dominance via the supply of safe assets. He agreed that deeper exploration of BIS data on dollar funding is warranted. He suggested that the plateau in local currency debt share may reflect post-pandemic interest rate changes.

Anusha Chari (University of North Carolina at Chapel Hill) highlighted research by Chen et al. (2022) on how exorbitant privilege can relax fiscal constraints. She argued that the international role of the dollar is tightly linked to US fiscal dynamics and that erosion of this privilege could raise borrowing costs.

Arnaud Mehl responded to questions on payments by stating that international currency use cannot be separated from payment infrastructure. Regarding the role of the euro, he recalled that since 2019, the ECB has supported broad EU/euro area reforms which could, ultimately, strengthen the global appeal of the euro. However, he stressed that price stability remains the ECB's primary mandate.

Gian Maria Milesi-Ferretti (Brookings) welcomed the feedback and acknowledged the complexity of integrating currency and portfolio structures. He raised concerns about high interest rates turning the investment income balance negative and noted this structural shift could undermine the current account.

Agnès Bénassy-Quéré (Banque de France) questioned the limits of renminbi internationalisation given China's capital controls combined with its external surplus. She suggested that euro invoicing could be expanded more easily due to capital mobility and questioned whether euro area debates place too much emphasis on safe assets over trade invoicing.

Nicolas Stoffels (Swiss National Bank) asked about non-economic drivers of currency dominance, including military and geopolitical power. He emphasised the historical link between geopolitical reach and currency status.

Jean-Pierre Landau (Sciences Po) proposed considering a scenario of global financial fragmentation. He argued that erosion of the dollar's safe asset role could lead countries to close their capital accounts, with significant consequences for capital importers.

Jeffry Frieden reiterated the importance of theory and history in anticipating future shifts. He outlined traditional supply- and demand-side factors behind currency dominance and noted that both may be weakening. He cautioned against projecting past trends into the future, referencing a potential shift in US willingness to provide global public goods.

Nathan Converse responded by emphasising that capital account openness remains a ceiling on renminbi internationalisation. He acknowledged that multiple necessary conditions are required for currency expansion, noting that invoicing alone is not sufficient without a broader supply of euro-denominated safe assets.

Arnaud Mehl distinguished between finance-driven and trade-driven approaches to currency internationalisation. He suggested that trade agreements might be one practical avenue for Europe to expand the euro's global role. He also referenced past research from Eichengreen et al. (2018) linking security ties to currency status, estimating that security relationships explain a significant share of the dollar's global reserve role.

PAYMENT SYSTEMS (CHAPTER 3)

Chaired by Attilio Zanetti (Swiss National Bank)

Tara Rice, *Bank for International Settlements*
Good afternoon. Thank you for inviting me to this session. Let me begin by commending the authors of this report. It is an excellent piece of work, combining robust empirical analysis with a comprehensive review of the current payments landscape – covering the historical context, the development of fast payment systems, regional approaches, and the increasing importance of interlinkages.

A brief but important point: while geopolitics shapes cross-border payments, other challenges also matter – including financial integrity, data sharing, legal and regulatory harmonisation, sanctions screening, governance, and oversight frameworks. Even with less geopolitical tension, the technical and regulatory complexity remains. With that in mind, I now turn to the policy recommendations. The paper identifies six ways forward. First, strengthen current cross-border payment infrastructures. Second, leverage digital technologies to enhance cross-border payments. Third, prioritise interoperability across systems and jurisdictions. Fourth, sustain collaboration in areas where geopolitical consensus exists. Fifth, ensure that joint efforts also address the risks associated to crypto-assets. Sixth and last, encourage policymakers to carefully consider the implications of using financial infrastructure as a tool of statecraft.

Two overarching points merit emphasis. First, before advancing cross-border solutions, jurisdictions must reinforce their domestic payment infrastructure – the essential first and last mile of any cross-border transaction. Second, no country needs to act in isolation. Platforms like the Committee on Payments and Market Infrastructures (CPMI), along with institutions such as the IMF and World Bank, play a key role in supporting payment system upgrades and capacity building. A strong example is the recent three-year agreement between the IMF and the World Bank to support sub-Saharan African countries in upgrading their domestic payment systems – a promising step with encouraging traction. While certain areas – particularly legal, political, or strategic decisions at the national level – remain outside the remit of central banks, the private sector, or the CPMI itself, there is still much within our collective sphere of influence. The CPMI has developed recommendations and issued practical guidelines; as Isabel rightly noted, implementation now rests with national authorities.

Reverting to the recommendations, I would like to highlight three areas of tangible progress we have made. First, significant strides have been made in extending the operating hours and accessibility of domestic payment systems. Limited or misaligned operating schedules across jurisdictions constrain real-time settlement by reducing overlap in system availability. Expanding to 24/7 operations mitigates this issue and enhances the potential for synchronous cross-border settlement. Many jurisdictions have already implemented, or are in the process of implementing, such extensions. Parallel efforts to broaden system access to non-bank participants are equally important – fostering competition, driving innovation, and enabling a more diverse range of payment services for end users.

Second, the interlinking of fast payment systems (FPSs) – a topic rightly emphasised today – is widely recognised, including by the G20, as one of the most promising pathways to enhance cross-border payment efficiency. While not a standalone solution, progress to date has been encouraging, particularly with the emergence of regional payment hubs. Today, around 100 FPSs are live worldwide, with approximately 30 more in development. This rapid expansion presents valuable opportunities for cross-border interlinking, contingent on the robustness, efficiency, and security of underlying domestic infrastructures.

Third, the adoption of ISO 20022 constitutes a foundational enabler for enhancing cross-border payments. Unlike earlier systems that relied on proprietary formats applied inconsistently across jurisdictions, ISO 20022 offers a standardised, data-rich messaging framework. This is particularly important for meeting regulatory requirements such as FATF Recommendation 16, the "travel rule". However, implementation across countries has not been uniform. Some jurisdictions, for example, omit key data elements like the end beneficiary, which can hinder interoperability. To support consistent adoption, the CPMI has issued practical guidance aimed at ensuring harmonised implementation of ISO 20022 and seamless end-to-end processing across interconnected systems. The goal is to ensure that, when systems are interlinked, a payment can actually travel end-to-end across the entire chain without data loss or friction. In terms of adoption, we are seeing

encouraging numbers. Adoption is advancing steadily: 76% of fast payment systems (FPS) and 43% of real-time gross settlement systems (RTGS) now process ISO 20022 messages, with RTGS usage expected to reach 83% by 2026. These reforms establish critical infrastructure, though the full benefits – in cost, speed, and transparency – will take time to be fully realised.

Looking ahead, jurisdictions should continue to pursue improvements in both existing payment arrangements and the development of new systems. In practice, most jurisdictions are already doing both. The strategic approach is clear: consolidate and strengthen current systems, while at the same time preparing for future innovations in cross-border payments.

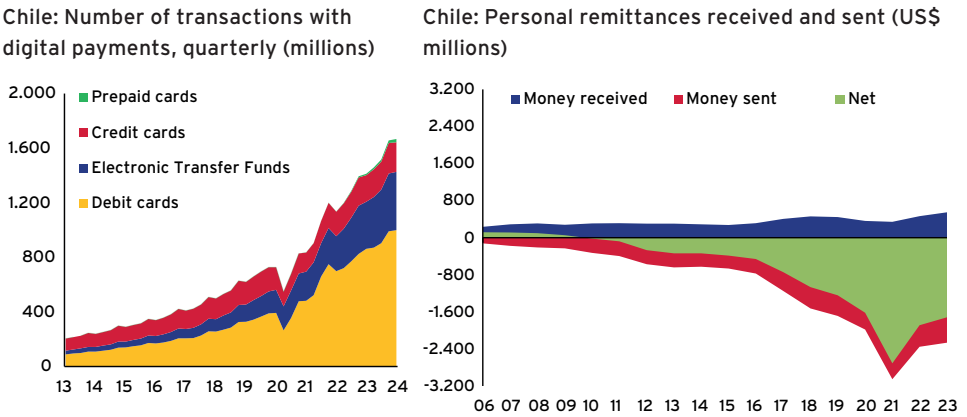
Luis Felipe Céspedes, *Central Bank of Chile*
Thank you very much to the organisers for inviting me to comment on this excellent chapter of an excellent report. I will go straight to my reflections and highlight six key points I believe are particularly important.

First, the rising prominence of payments in economic and policy discussions. Once a peripheral topic, payments have gained significant attention over the past decade. Speaking in a personal capacity, at the Central Bank of Chile we have, for example, deepened our focus, publishing reports and engaging more actively in policy debates on payment systems. Second, geopolitical tensions have prompted banks to pull back from some cross-border relationships, often due to sanctions, regulatory pressure, or perceived risk – a process commonly referred to as de-risking. In response, some countries and blocs, such as the BRICS, have begun to explore and develop alternatives to traditional payment infrastructures. Third, the global payment system plays a critical role in both economic efficiency and financial stability, making it key to central bank mandates. Fragmentation of payment platforms could significantly affect these objectives, providing a strong rationale for greater coordination and vigilance among public authorities. In recent years, some central banks have also taken on the goal of fostering competition in domestic payment systems. For example, Brazil has built retail payment infrastructure (Pix) to make payments faster, cheaper, and more inclusive. Others countries have foster competition among private actors. Fourth, the architecture of the global payment system is increasingly seen as a strategic asset that can be weaponised to fulfil geopolitical objectives. Fifth, the landscape of cross-border payments is becoming more fragmented along geopolitical lines, with the emergence of clusters or regional blocs. Sixth, despite the previous elements, the evidence suggests that the global cross-border payments landscape remains heavily reliant on traditional infrastructures, resulting in a high level of integration and concentration in the West. There isn't yet a clear fragmentation or shift away from the existing system.

To further illustrate the growing relevance of payments in policy debates, let me share a couple figures with you from the case of Chile, though this trend is observable globally. Historically, central banks have focused primarily on wholesale payment systems, ensuring that large-value payments could be settled safely and efficiently. That has long

been our core function. But recently, there has been an explosion in digital payments at the retail level. The left panel of Figure 1 shows the number of domestic transactions with digital retail payments (in millions) since 2013. The number of transactions has risen dramatically, and as these systems gain importance, central banks are compelled to consider their implications for financial stability.

FIGURE 1 **CHANGES IN DOMESTIC AND CROSS-BORDER RETAIL PAYMENTS**



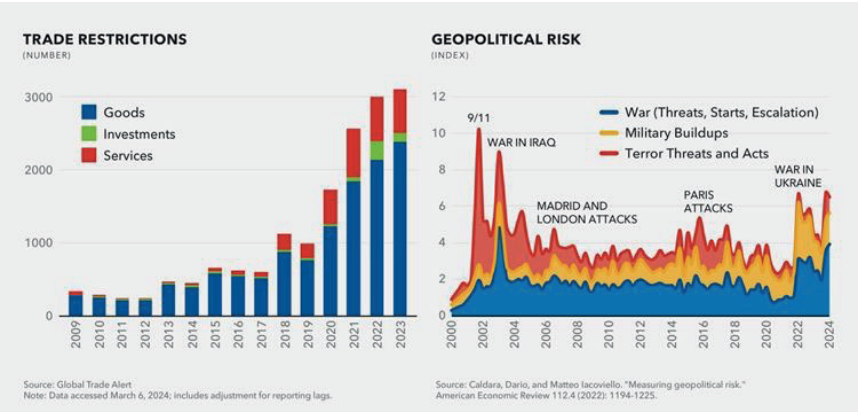
Source: Central Bank of Chile

The right panel of Figure 1 shows the increasing volume of cross-border payments, particularly personal remittances. In the case of Chile, remittance inflows and outflows have grown rapidly, now representing close to 1% of GDP, a substantial increase from virtually zero. This trend, often linked to immigration, has placed remittances squarely on the policy agenda. This expansion of retail payment systems has prompted central banks to broaden their focus beyond financial stability, placing greater emphasis on efficiency and financial inclusion. Although these objectives may fall outside their formal mandates, they have increasingly become areas of active policy engagement and institutional interest.

The key driver of these transformations is technological innovation, by enabling faster, more accessible, and more secure transactions. Unlike many other innovations that take years to spread across borders and industries, new payment systems are being quickly adopted globally. As the chapter rightly highlights, the welfare gains from modern payment systems are substantial. However, a growing body of research – including Alvarez et al. (2025), Higgins (2024), and Crouzet et al. (2023) – emphasises how these gains are contingent on overcoming strategic complementarities and coordination frictions, both of which clearly underscore the need for policy intervention to enhance adoption and maximize welfare.

Now a few remarks on geopolitical risk, which, as Tara said, is at the core of the chapter's analysis. Figure 2, taken from Gopinath (2024), shows a marked increase in real geopolitical risk (right panel), but it also reveals a parallel rise in trade restrictions (left panel), suggesting an instrumental use of trade policy to pursue strategic goals. This shift has direct implications for payment systems, which are deeply interconnected with trade.

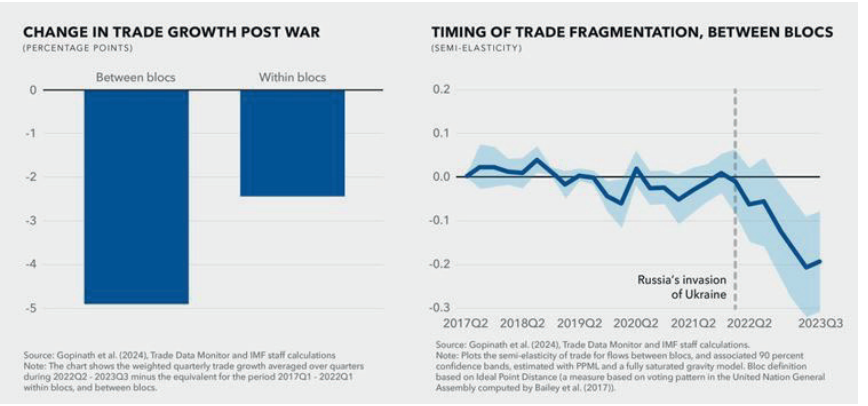
FIGURE 2 **TRADE RESTRICTIONS AND GEOPOLITICAL RISK**



Source: Gopinath (2024).

Figure 3, also from Gopinath et al. (2024), shows evidence of trade decoupling points to a growing separation between global blocs, reinforcing the idea that fragmentation in trade and payments are closely linked and must be addressed together.

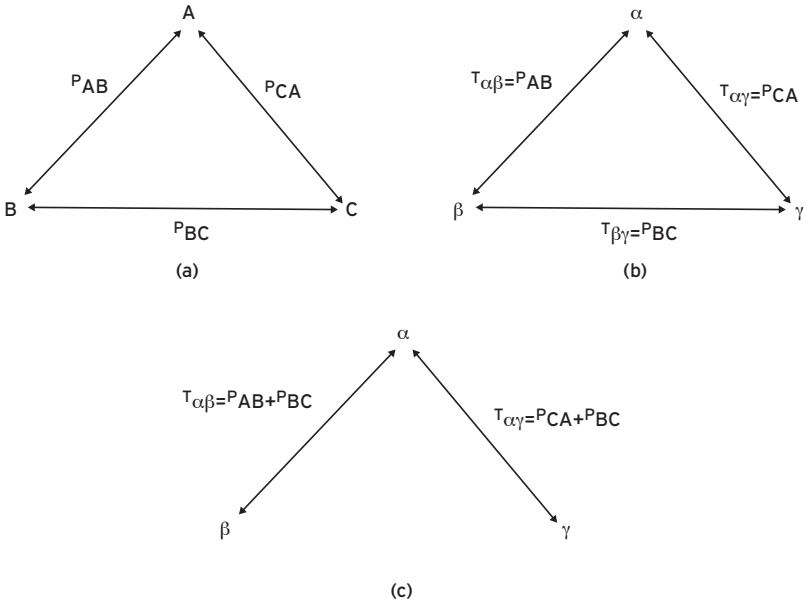
FIGURE 3 **TRADE FRAGMENTATION BETWEEN BLOCS**



Source: Gopinath (2024).

Now turning to theory, let me briefly highlight an idea originally developed by Paul Krugman in the early 1980s and which is relevant to this chapter. Imagine a world with three countries trading among themselves, as illustrated in Figure 4. Each of them needs to settle payments for trade and investment, and that is what Krugman calls the structure of payments: a matrix of final demands for foreign exchange (top-left panel). But here is the key insight: the structure of actual foreign exchange transactions, meaning which currencies are actually used to make those payments, can look very different from that demand matrix. That is what the panels on the right and bottom, respectively, capture. What determines the structure of exchange, as Krugman shows, is the distribution of transaction costs across currencies. If one currency has particularly low transaction costs – due to cheaper conversion, deeper financial markets, stronger infrastructure – it will tend to dominate the system, even if it doesn't reflect the underlying trade flows. This explains the global role of the US dollar.

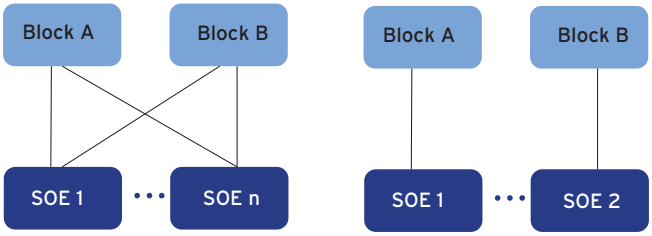
FIGURE 4 **STRUCTURE OF PAYMENTS (TOP-LEFT) AND STRUCTURE OF DIRECT (TOP-RIGHT) AND INDIRECT (BOTTOM) EXCHANGE (KRUGMAN, 1980; 1984)**



However, the chapter notes this could change if the world fragments into separate economic blocs. As someone from an emerging market, I am personally less concerned about which bloc dominates and more about the small economies caught in between. Fragmentation could raise transaction costs, reduce cross-border capital flows, weaken risk-sharing, and ultimately harm growth and stability. If countries are forced to operate across multiple, non-interoperable payment systems, costs rise further. This is especially problematic for emerging markets that depend on multiple partners, as illustrated in the left-hand side panel of Figure 5. Taking that one step further, there is a scenario, addressed in a beautiful paper by Kiyotaki and Wright (1993) in which fragmentation becomes so pronounced that it leads to specialisation in trade by bloc.

In other words, countries may stop trading across blocs altogether, as illustrated in the right-hand panel. This is why I believe policymakers need to pay close attention to these dynamics. Not only because of the potential welfare gains from efficiency and integration, but also because of the risks that can emerge if we move toward a world of isolated payment blocs.

FIGURE 5 **STRUCTURE OF PAYMENTS AND STRUCTURE OF EXCHANGE (FINANCIAL FRAGMENTATION)**



Floor discussions (Chapter 3)

Elu Von Thadden (University of Manheim) challenged the conventional distinction between retail and wholesale payment systems. He noted that retail payments are what most people – and many firms – interact with directly, making them highly visible and potentially vulnerable to political disruption. For example, he imagined a scenario where the United States imposes tariffs on the two leading American retail payment providers, Visa and Mastercard, which could severely impact European consumers. His question was whether this kind of retail service is truly distinct, conceptually, from wholesale systems.

Arnaud Mehl (ECB) acknowledged that the wholesale/retail distinction can be blurry.

Isabel Vansteenkiste (ECB) made three interrelated points in response. First, she clarified that while Visa has developed its own payment infrastructure, Mastercard remains more dependent on traditional wholesale system. This illustrates that even large retail providers vary in how much they rely on 'deep' financial infrastructure. Second, she questioned the idea of selectively sanctioning individual companies (retail), arguing that meaningful financial restrictions typically target entire systems (wholesale) – as in denying access to SWIFT, which is far more impactful. Third, she highlighted that technological innovation doesn't eliminate older problems. While fast payment systems may bypass legacy structures, governance and operational constraints – such as RTGS opening hours – still persist. She agreed with Tara Rice that beyond geopolitics, the structural inefficiencies of the current cross-border system must be addressed. Otherwise, fragmentation will accelerate, driven not just by politics but by user demand for better solutions, even from actors outside traditional alliances. For example, in regions like Africa, where remittance fees can reach 12%, users will naturally adopt faster, cheaper alternatives – regardless of their geopolitical alignment.

Patrick Honohan (Trinity College Dublin) asked whether technological advances could reduce the need for foreign exchange transactions to flow through the US dollar. He noted that fintech providers already offer direct multi-currency exchanges at the retail level, and wondered if similar innovations could extend to the wholesale space, potentially undermining a core pillar of dollar dominance. He also linked this to Claudio Borio's earlier point on swaps and derivatives largely being dollar-denominated, suggesting that technology might enable multi-currency markets in these instruments as well – possibly without us fully realising the shift is underway.

Arnaud Mehl answered by acknowledging that technology has improved counterparty risk, notably through systems like CLS, which use payment-versus-payment to reduce settlement risk in FX transactions. However, when it comes to illiquid and costly currency pairs – like Turkish lira to Thai baht – technology hasn't eliminated the core issue of low trading volume. That illiquidity is what drives high costs. He noted that the upcoming BIS Triennial Survey may shed light on this, but his guess is that such pairs remain illiquid. He then questioned whether technology alone can boost volume, concluding that it is a difficult and unresolved question.

Isabel Vansteenkiste circled back to the discussants. She agreed fully with Tara Rice's comments, particularly on the lack of attention to domestic payment systems in the text. She acknowledged the importance of operational and cyber resilience, especially in a fragmenting system where not all players may meet the same standards. Drawing from discussions with payment experts, she also noted that innovation in payments often meets resistance – not out of inertia, but because those operating the systems prioritise stability above all else. Finally, she welcomed Luis Céspedes's point about the two-way link between payments and trade flows: while fragmented payments can affect trade invoicing, shifts in invoicing practices can also reshape payment patterns.

Luis Felipe Céspedes (Central Bank of Chile) emphasised that technology has been the key driver behind the rapid growth of electronic retail payments, which is why central banks now see them as potentially relevant for financial stability. In contrast, wholesale cross-border payments have seen less technological change, largely due to governance, legal, and interoperability challenges. Still, technology could improve their efficiency over time. He noted that cross-border retail payments remain far more expensive than wholesale ones, prompting central banks – like that of Brazil and the ECB – to get involved, especially where their mandates include efficiency and financial inclusion. Finally, he added that this has increasingly become a topic discussed and central banks are now actively sharing experiences and learning from one another to guide domestic implementation.

Tara Rice (BIS) highlighted a key distinction between geopolitical risks in wholesale and retail payment systems. In the wholesale domain, risks typically manifest through actions such as the exclusion of countries from systems like Swift. In contrast, the retail space – particularly in the context of emerging interlinked fast payment systems – faces growing concerns related to cybersecurity and increased fraud, owing to the relative novelty of these infrastructures and the fact that safeguards are not yet fully established.

Daniela Prates (UNCTAD) asked about the role of central bank digital currencies, noting that different countries are taking divergent approaches, with China advancing rapidly, the United States stepping back, and the ECB moving cautiously. She wondered whether these differences could contribute to further global financial fragmentation.

Isabel Vansteenkiste replied that countries are pursuing different CBDC paths based on their domestic needs. She noted that a key motivation in the Eurosystem is to reduce internal payment fragmentation by offering digital access to central bank money. She emphasised that for cross-border fragmentation, a domestic CBDC is not a problem in itself. The risk arises if countries design systems that are not technologically compatible from the outset. Retrofitting them later for interoperability would be more expensive and complex. Finally, while technical challenges exist, she emphasised that political and governance issues often pose the greater obstacles to cross-border interlinking of CBDCs.

Attilio Zanetti (Swiss National Bank) began with a comment on one of Isabelle's charts showing the decline in US dollar invoicing in Russia and neighbouring Central Asian countries. While the chart suggests these countries moved in sync with Russia, he argued that many likely reduced dollar invoicing not by choice, but due to the loss of correspondent banking relationships – an unintended consequence of sanctions.

Tara Rice emphasised that cross-border payment reforms are advancing along three main tracks: wholesale, retail, and remittances. She noted strong progress in wholesale payments, particularly in major corridors, where transactions are becoming faster and more cost-effective. In the retail space, she identified transparency – especially around foreign exchange costs – as the main challenge, and highlighted the importance of tools like Wise that make such costs visible to users. The most difficult area, she said, is remittances, where fees can reach as high as 25% in certain sub-Saharan African corridors, disproportionately affecting vulnerable populations. In this light, she explained that CPMI is focusing on regional work in sub-Saharan Africa this year to identify and reduce these excessive fees. While near-term progress is expected in less complex areas, the greatest welfare gains lie in addressing high-cost remittance corridors – though this will take more time and sustained effort.

INTERNATIONAL FINANCIAL ARCHITECTURE (CHAPTER 4)

Chaired by Markus Ronner (UBS Group AG)

Pablo Hernández de Cos, *Banco de España*

Thank you very much for the kind introduction. I have had the pleasure of participating in this conference many times in the past, though I have not been able to attend over the last six years, so it is a real pleasure to be back. My sincere congratulations to the team for this excellent report. I agree with both the diagnosis, particularly the emphasis on the risks posed by geopolitical fragmentation to the global economy, and many of the recommendations put forward.

Before starting, allow me to briefly frame the broader issue. The current international financial architecture was developed primarily to ensure financial stability at the global level. Yet recent developments, including rising uncertainty and intensifying geopolitical tensions, have increased systemic financial stability risks. As noted in the IMF's latest 2024 *Global Financial Stability Report*, the probability of negative tail-risk scenarios has risen. While the channels are well known – credit, funding, and operational risks – what is particularly concerning from a medium-term perspective is that these risks may become more structural if geopolitical tensions materialize in specific ways. I see three main risk channels. First, a lack of cooperation during episodes of acute financial stress. Second, financial fragmentation reduces structurally the capacity to diversify risks. As noted in the report, self-insurance is an inefficient substitute. Third, the risk of entering a race to the bottom in terms of financial deregulation – though this has not yet materialised, it must be actively prevented. I will focus my comments on this important area.

Financial stability is a global public good. It requires international coordination and the establishment of common minimum prudential standards for internationally active banks. In the absence of these, we risk regulatory arbitrage, fragmentation, and ultimately a race to the bottom in supervisory practices, undermining bank resilience. The report suggests a possible response to deregulation could be a 'coalition of the willing' through ad hoc groupings focused on shared goals and practical solutions as a viable approach to achieving regulatory consistency and minimising systemic risk. I am wary of such an approach. While it may appear pragmatic, it risks normalising fragmentation and lowering global ambitions. Instead, I would argue for preserving and strengthening existing multilateral mechanisms and emphasising the benefits to everyone of such arrangements.

This brings me to the Basel Committee on Banking Supervision (BCBS), which I chaired for six years. The BCBS has been driven by the objective of safeguarding global financial stability by strengthening the regulation, supervision, and practices of banks worldwide, with tangible benefits. The reforms have clearly strengthened banks resilience, which

in turn have helped reduce the likelihood and impact of future banking crises. Let me highlight several principles that have been central to its success and should remain a guide for the future. These lessons also apply to other bodies such as the FSB, CPMI, IOSCO, and other international standard-setting fora.

The first principle is the importance of a focused mandate. The Committee has focused on regulatory issues that are both prudential in nature and global in scope. Attempts to broaden the mandate beyond such core areas are risky and potentially counterproductive.

Second, the Committee's work has been underpinned by rigorous technical analysis and impact analysis, beginning with the identification of first-best policy solutions before addressing jurisdictional specificities. Public consultation processes are accompanied by quantitative impact studies, which are supplemented with periodic monitoring exercise. Member jurisdictions complement this with their own domestic analyses during implementation. The Committee also conducts a Regulatory Consistency Assessment Programme (RCAP) to ensure accurate implementation and to assist countries in navigating regulatory complexity. And since 2019, an ex-post evaluation programme has reviewed whether reforms implemented to date achieve their goals and if they result in any unintended consequences, enhancing both legitimacy and effectiveness.

Third, broad cooperation beyond the Committee itself has been vital. The Committee has perhaps one of the most extensive outreach programmes, where it regularly seeks the views of a wide range of stakeholders, including academics, civil society, global forums and international organisations, legislators, market participants, public authorities and the general public. For example, the development of the final set Basel III reforms involved no fewer than ten public consultation papers over nearly three years, with meaningful revisions made in response to stakeholder feedback. This has enhanced both legitimacy and effectiveness.

Another essential principle is consensus-based decision-making. While sometimes seen as a weakness, consensus is essential for ensuring that all jurisdictions can commit to and implement agreed standards. Moving to majority voting would likely undermine domestic buy-in, especially where standards are politically sensitive.

Fifth, it is important to recognise that cooperation does not mean full harmonisation. The Basel framework sets minimum standards for internationally active banks. Jurisdictions can and should go beyond this to reflect additional risk features of their banking systems and their own risk tolerance. Importantly, the Basel Framework also provides flexibility through the principle of proportionality, enabling authorities to tailor their regulatory regimes. For example, countries may adopt simplified, proportionate rules for non-internationally active banks, which pose fewer systemic risks.

Finally, the Committee has progressively broadened its membership to reflect the global nature of finance. It now includes 45 members from 28 jurisdictions, along with nine observers. This expansion has enhanced legitimacy and ensured broader relevance of the standards.

Going forward, I see several areas requiring further attention. One is the issue of implementation delays. Some jurisdictions have yet to implement Basel III, creating potential spillovers. Delays in one country can undermine confidence and lead others to postpone or alter their own implementation. A second area is the need for broader coordination. Given the increasingly cross-sectoral and cross-cutting nature of developments affecting the global financial system, as highlighted in Chapter 3 of the report, there is a need to liaise with a wide range of authorities beyond bank supervisors, including with bodies responsible for resolution, deposit insurance, payments, data, privacy, and competition. For example, many of the risks related to the digitalisation of payments indeed cut across traditional regulatory mandates and demand collaborative responses. Third, forward-looking supervision. This is already being undertaken by institutions such as the European Single Supervisory Mechanism (SSM), which is incorporating geopolitical risk into its supervisory outlook. However, this forward-looking orientation must not come at the expense of monitoring traditional sources of financial instability. The events of March 2023 in the United States and Switzerland demonstrated that seemingly familiar risks – such as credit, interest rate, and liquidity risks – can still trigger major disruptions. Fourth, we need a stronger emphasis on supervision itself. Regulation alone is insufficient. The Basel III reforms will only truly be successful if supervisors ensure that banks are complying with both the letter and spirit of the standards. Lastly, we should strive for simplification without weakening the framework. The Basel regulatory framework is indeed very complex. This is partly because it had to respond to the increasing sophistication of the banking sector, and particularly the widespread adoption of internal models. But while simplification of the framework is a worthwhile goal, it must not come at the cost of prudential safeguards. As I often say: offer me a system that is simpler but provides the same level of protection against financial instability, and I'll take it.

I'll stop here, thank you.

Nicolas Véron, *Bruegel and Peterson Institute*
Let me begin by joining others in congratulating the authors. The choice of topic could not have been more timely or relevant. I will focus my remarks on the 'current moment', echoing many of the points raised earlier by Jeffry, Nathan, and others.

The report is appropriately retrospective – what Nathan this morning called a look at "the world of yesterday". That's fitting, but I believe the final chapter should more fully reflect the world of today. This moment feels fundamentally different from just a year ago. The forward-looking slides in Anusha's presentation move in that direction, and I encourage you to go further in the text to capture that shift.

Let me now raise a few of the 'elephants in the room' in the report. There are a lot of contentious topics in the area you cover. I'll name three: mBridge, the question of Russia's immobilised reserves, and the digital euro as a hedge against the possible withdrawal of US payment firms like Visa and Mastercard. I fully understand that

institutional constraints apply – three of the authors are central bankers, after all. I am not calling for journalistic treatment. However, I do believe the report would benefit from acknowledging these sensitive issues more directly.

Section four of the draft, which was still at a very early stage at the time of circulation, presents an opportunity. Pablo made a strong case for learning from the Basel Committee's success. One thing that I find particularly fascinating is the Regulatory Consistency Assessment Programme (RCAP). Although it predates Pablo's tenure, it has remained a central part of the Committee's work and is now entering a new phase – the so-called Level 2 assessments. These assessments go beyond verifying whether jurisdictions have adopted the standards; they examine whether the detailed, granular implementation aligns with the substance and spirit of the standards themselves. This is, in my view, an extraordinary best practice in global standard setting – one that should not be taken for granted. Its endurance over more than a decade is a significant achievement and deserves to be recognised.

So now, what are my suggestions? I believe we should broaden our thinking beyond Basel, to the entire cluster of global standard-setting bodies, including IOSCO and IFIAR. These institutions may seem niche or technocratic, but they play an important role in the global financial system – and they are not immune to today's geopolitical pressures.

The threats are clear, especially around US participation. What if the United States disengages from Basel? Or worse, what if it stays in but seeks to undermine consensus from within? These are not far-fetched scenarios. While I understand the report may wish to avoid stating them explicitly, you can still gesture towards them in a way that signals their significance. Yet there are also opportunities. Although the instinct today is often one of damage control, I would encourage a bolder stance. This moment, paradoxically, may open space for constructive change. There are precedents for global initiatives succeeding without full US alignment. The most compelling, in my view, is the International Financial Reporting Standards (IFRS) – adopted widely around the world, they function effectively even without US adoption. The Legal Entity Identifier, another innovation born of the global financial crisis, is one such idea that deserves renewed attention. We should study these successes. At the same time, we should study failures. Let me cite one from personal experience. I have long served as an independent non-executive director of the trade repository arm of the Depository Trust & Clearing Corporation (DTCC), a US-based financial market infrastructure firm that, despite its American roots, operates globally. Its main legal entity is located in London, and it provides services across multiple jurisdictions, including the European Union, the United Kingdom, the United States, Japan, Singapore, and others. My point is this: despite the G20's post-crisis commitment that all OTC derivatives trades should be reported to trade repositories, the broader initiative to use trade data for financial stability purposes has largely failed. Instead, it is fundamentally a governance failure and that distinction matters.

I'll end with two open questions for your final chapter – ones I believe will resonate with readers across this room. First, in the event of a hypothetical, but not inconceivable, dollar crisis, can the global financial safety net provide effective support? I believe this is too salient a scenario to sidestep, and addressing it would enhance the relevance of the report. Second, and this might be a bit controversial, if we are, as some suggest, in a Kindleberger moment where the United States is no longer willing or able to lead, can the euro area or European Union fill that void, given its position as the only other issuer of a convertible global currency?

With that, let me conclude by once again congratulating the team for an excellent edition of the Geneva Report.

Thank you.

Floor discussions (Chapter 4)

Kathleen Tyson (Granularity Ltd) noted recent policy uncertainties introduced by US officials such as Stephen Miran, Chief Economic Advisor, and Scott Bessent, US Treasury Secretary, which have clouded expectations about the availability, scope, and collateral eligibility of future US dollar swap lines. Turning to repo facilities, she argued that official initiatives such as the Foreign and International Monetary Authorities (FIMA) and European facilities have been largely ineffective. Compared to the vast scale of private global repo markets, which process $5 to $8 trillion daily, transactions through these official facilities in 2023–24 were negligible. Looking forward, she emphasised that 'currency optionality', the ability to transact in diverse currencies, is now recognised as a matter of economic and national security. Between 2022 and 2025, she observed a growing shift among UK and EU policymakers towards reducing reliance on the dollar. She called for systemic reform to build a more resilient and inclusive global liquidity infrastructure. Key proposals included broader participation by sovereigns; expanded use of multiple currencies; decentralised access to state liquidity facilities, modelled after the interbank repo market; 24/7/365 availability; and wider collateral eligibility beyond traditional assets. She cited new infrastructure initiatives like BRICS Clear, and OmniClear as promising steps towards that vision.

Kartsen Junius (Bank J. Safra Sarasin) raised a forward-looking concern about the potential 'weaponisation' of dollar swap lines by the United States. He asked whether a viable alternative to the current US-centric swap framework could be developed.

Angel Ubide (Citadel) concluded with three forward-looking recommendations. First, he suggested the report address what countries should do if dollar swap lines become unavailable – should they raise reserves, reduce dollar exposures, or take other steps? Second, he asked whether central bank digital currencies, including the digital euro, should be redesigned in light of the growing global role of US dollar-backed stablecoins. Third, he flagged concerns about possible US deregulation, citing Scott Besant's claim that banks are overcapitalised, and asked whether the report should recommend responses in line with or beyond Pablo's proposals on the Basel framework.

Andreas Billmeier (Brevan Howard) questioned the feasibility of recommending greater representation for emerging market economies within international financial institutions, particularly the IMF. He noted that key decisions – including quota reform – require an 85% majority vote, effectively granting the United States, with its 17% share, a de facto veto. As such, he argued that any recommendation implying that the United States would voluntarily relinquish this power is unrealistic. While marginal adjustments to European quotas may be possible, he contended that meaningful change is unlikely and that the report should acknowledge these structural constraints more explicitly.

Kai Loon Loh (BIS) raised two points. First, he inquired whether the report considers the role of geopolitics in the functioning of the Federal Reserve's FIMA repo facility. While the facility is technically open to any foreign central bank with an account at the New York Fed, he emphasised that the Federal Reserve has the right to approve or deny requests by foreign central banks to use the facility, and geopolitical risks could affect the standing status of the facility. Second, he asked which regional financing arrangements the authors had in mind when characterising such arrangements as "nascent", pointing out that some – such as the Chiang Mai Initiative – have existed for years.

Alexander Swoboda (Geneva Graduate Institute) argued that the report focused too much on how to prevent fragmentation and not enough on how to manage it. He called for more discussion of contingency strategies – such as responses to Fed withdrawal from swap arrangements – should these risks materialise.

Jean-Pierre Landau (Sciences Po) suggested investigating the reverse causal framing. Rather than fragmentation threatening the global financial safety net, the undermining of that safety net – through the weaponisation of swap lines or the erosion of reserve safety – could itself accelerate fragmentation. He warned this dynamic may become a defining challenge in the years ahead.

Martin Kessler (Finance for Development Lab) raised concerns about risks to the legitimacy of the global financial safety net stemming both from within and outside the IMF. Internally, he warned that if the United States were to push for overly large, geopolitically driven loans it could undermine the Fund's credibility. Externally, he highlighted China's growing role in emergency lending, including through bilateral swaps or liquidity lines from institutions like the China Development Bank. He also pointed to Gulf countries as significant but underexamined sources of liquidity – citing large, politically influenced inflows into countries like Egypt and Pakistan – and stressed the importance of considering how such flows interact with IMF assessments of liquidity and solvency.

Jeffry Frieden (Columbia University) noted that the present US administration is explicitly sceptical, if not openly hostile, towards multilateralism, and argued this could manifest in two distinct ways: a desire to abandon multilateral institutions altogether, or a push to reshape them to more overtly reflect US strategic preferences. Both scenarios, he argued, warrant deeper treatment in the report's forward-looking discussion. He

drew a historical parallel to the founding of the BIS in 1930, when the US government – then in a period of isolationism – did not participate officially. Instead, the BIS was established with the involvement of major European central banks and J.P. Morgan & Co., filling the void left by the absent US state. He suggested a similar dynamic could emerge again, with private or informal actors stepping in where US governmental participation wanes.

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CENTRE FOR ECONOMIC POLICY RESEARCH

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The recent resurgence of geopolitical tensions threatens to unravel the unprecedented economic and financial integration that has prevailed since the mid-20th century. This report examines the impact on international finance.

The authors show how developed countries remain dominant in international finance, with rising financial ties among them. In contrast, China's external balance sheet shows diversification away from US assets, with more lending to emerging and developing economies, and increased use of offshore financial centres. The dollar continues to play a disproportionate role: it accounts for 58% of foreign exchange reserves, is used in 90% of FX transactions, and is the main currency for trade invoicing. Despite China's growing economic weight and policies to reduce reliance on the dollar and promote the international use of the renminbi, compared to China's share of global GDP, the international role of the renminbi remains limited.

The authors also highlight how recent innovations in global payment systems have also been affected by geopolitical tensions, as well as technological advances. Western correspondent banking relationships have declined. Russia, China, and Iran have developed alternative payment arrangements to reduce dependence on Western-dominated systems, though their adoption remains uneven. Technological innovation is facilitating changes in international payments, particularly through the adoption of distributed ledger technology and the emergence of crypto assets, stablecoins, and central bank digital currencies as alternatives to traditional payment systems. Widespread viability of private-led solutions, however, remains uncertain.

At the same time, rising geopolitical tensions and financial fragmentation are reshaping the international financial architecture and the institutional mechanisms that govern global economic interactions and manage crises. The authors examine the evolution of the global financial safety net, the role of multilateral institutions, and implications for sovereign debt restructuring.

The report concludes with a discussion of policies that could avert or mitigate the economic consequences of geopolitical fragmentation.

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