

International Monetary System: Currencies in a Changing World

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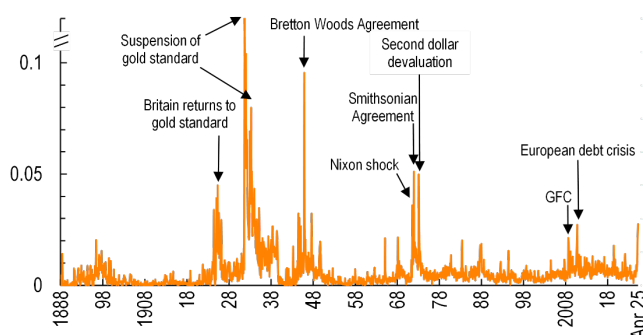
Over several decades, the international monetary system (IMS) has remained broadly stable and centered on the US dollar, despite momentous global changes. This stability has been accompanied by rising asymmetries between the global economic and monetary system as economies deepened specialization in trade or finance, while the US dollar is used as the primary global currency across various areas. However, recent geopolitical and economic developments could weaken this stability, warranting a recurrent monitoring of the evolving system. This chapter—the first of periodic monitoring of the IMS—documents historical developments, provides some conceptual foundations, and proposes indices to track key trends in the IMS.

Introduction

The IMS is a critical foundation of the global economy. A stable IMS provides the orderly underlying conditions that are necessary for financial and economic stability (IMF 2016). Since at least the late 19th century, the country at the center has contributed to its stability by providing various global public goods (Kindleberger 1973, 1976, 1981; Koehn 1980). These include promoting open trade and a steady flow of capital, coordinating macroeconomic policies, and last resort lending. From the 1940s onwards, that country has been the United States (Kindleberger 1976; Irwin and Obstfeld 2024), with the US dollar playing a critical role in each of these functions—serving as the vehicle for international trade and finance, the benchmark for exchange rate stabilization, and the global safe asset (Gourinchas 2019; Rey 2024).

The central role of the US dollar has been resilient, or even strengthened, despite profound transformations over the past several decades. These have included the collapse of the Bretton Woods system of fixed exchange rates, the end of the Cold War, and the creation of the euro. Such developments have repeatedly reignited public discussion over the IMS and speculation about reforms (Figure 2.1). Yet, the dollar dominance has endured—transitioning from de jure to de facto anchor of the system after 1971—underpinned by complementarities among various uses and network externalities—as all users benefit from using the same currency as others. In addition, the unparalleled depth and liquidity of US financial markets and the safe asset status of US Treasuries have further reinforced its dominance.¹ The dollar-centric IMS has in turn supported global financial and

Figure 2.1. Keyword Occurrences in FT Articles over 1888–2025
(Share of total number of articles)



Sources: Financial Times; and IMF staff calculations.

Note: Keywords include Triffin dilemma, Bretton Woods, international monetary system, dollar dominance, international financial system, global monetary order, gold standard, gold parity, Plaza Accord, Louvre Accord, and Smithsonian Accord (see Online Annex 2.5 for the full list). FT = Financial Times; GFC = global financial crisis.

¹ See among others Krugman (1980, 1984); Kindleberger (1981); Matsuyama, Kiyotaki, and Matsui (1993); Rey (2001); Chinn and Frankel (2007); Frankel (2012); Maggiori (2013); Maggiori (2017); Farhi and Maggiori (2018); Gourinchas (2019); Gopinath and Itskhoki (2022); Gopinath and Stein (2021); Chahrour and Valchev (2022).

economic stability and trade and financial liberalization in the 21st century, not least by lowering transaction costs and reducing exchange risks.

Nonetheless, recent geopolitical and economic shifts could weaken network externalities, creating potential vulnerabilities in the system. These developments include rising geopolitical fragmentation concerns, the rise of new trade or financial centers including China, the changing role of the United States as world banker and insurer, and rapid advances in digital payment technologies. Albeit gradual so far, these changes could lead to some reshaping of the IMS, with potential far-reaching implications for the global economy (Nurkse 1944; Farhi, Gourinchas, and Rey 2011; Eichengreen 2011a; Rey 2024; Rogoff 2025). Incidentally, the public discussion of the IMS in recent months has reached the highest level since the end of the Bretton Woods fixed exchange rate system in early 1973 (Figure 2.1).

Given these considerations and the IMF's mandate to ensure an effectively operating IMS (IMF 2011, 2012, 2016), this chapter takes stock of key trends of the IMS and, critically, proposes new indices, with a view to monitoring them periodically. While the definition of the IMS is very broad, this chapter and its sequel will focus on one aspect of it, centered around international currencies and payment systems.² This narrower focus reflects the critical role played by the center country and its currency in ensuring global economic and financial stability, as discussed earlier. An appreciable change in the role of international currencies will also constitute an early signal of significant shifts in the IMS in its broad sense. Moreover, the IMF will continue to occasionally update its comprehensive analysis of the IMS, including broader aspects of the IMS and vast policy issues that are excluded from this monitoring chapter.

This chapter asks three main questions. (1) What were the salient features behind the rise of the US dollar's dominance and what is its current state? (2) What have been the economic transformations that lay behind the dollar-centered IMS and how have they been interacting with the use of international currencies? (3) What are the ongoing evolutions of the IMS? These questions are answered in the following key points:

- The dollar's dominance in the IMS has come about gradually and once established, has been remarkably resilient, underpinned by the strength of the US economy and the depth of its financial markets. Geopolitical developments—such as the collapse of the Soviet Union—further entrenched its *de facto* central role.
- The dollar plays a central role across various areas, over and above the US economic weight. A new composite index of international currency usage underscores the stability of its global role, attesting to network externalities and strategic complementarities across the dollar's various international functions.
- Supported by the stable dollar-centered IMS, global trade and finance have achieved a remarkable integration in the 21st century. In the process, economies have become increasingly specialized, leading to shifts in the centrality of the largest economies in global trade and finance networks. This has contributed to growing asymmetry among economies' centrality in these networks and the international use of their currencies. Both the centrality and asymmetry are measured by new indices proposed in this chapter.
- Against the backdrop of stable dollar dominance, the rise in the asymmetry index suggests that network externalities remain strong, reinforcing the stability of the dollar-centric IMS and facilitating economic specialization. Most recently, however, geopolitical and economic developments could weaken network externalities down the road, signaling potential changes in the IMS. These developments underscore the need to closely monitor current developments that could ultimately affect the IMS.

² The IMS comprises: (1) the rules governing exchange arrangements between countries and the rates at which foreign exchange is purchased and sold; (2) the rules governing the making of payments and transfers for current international transactions between countries; (3) the rules governing the regulation of international capital movements; and (4) the arrangements under which international reserves are held, including official arrangements through which countries have access to liquidity through purchases from the Fund or under official currency swap arrangements (IMF 2012).

- Four such developments are explored in more detail:
 - First, *rising geopolitical fragmentation concerns* have reoriented trade flows to take place within geopolitical groups of countries rather than between them. Trade fragmentation has also led to reallocation of investment flows across countries (Gopinath and others 2025).
 - Second, *the growing use of the renminbi (RMB) in international trade and finance*. The motives for currency invoicing choice by firms in China are examined using a large language model analysis of Chinese data. Policy initiatives and, more recently, geopolitical factors are found to have been among key motives.
 - Third, *potential changes in the US role as a global banker and insurer*. Several indicators, including the US treasury premium, the US excess return on external assets, and the demand for gold, provide tentative signs of relative softening in the US global banker and insurer role, although the United States remains the dominant provider.
 - Fourth, *the role of technological innovation in creating new rails for cross-border payments*. While central bank digital currencies (CBDCs) are still in the experimental stage for cross-border use, the international use of private crypto assets, especially stablecoins backed by US dollars, has been increasing. This is confirmed by several indicators of their growing presence. The rising popularity of US-dollar-backed stablecoins could reinforce the dollar's dominant role in the IMS, though their scale remains modest compared to traditional dollar-denominated assets. Moreover, broader retail adoption could bring about financial stability risks.

The rest of the chapter is organized as follows. After providing a very brief history on the rise of US dollar dominance, this chapter presents indicators that show the continued dominance of the US dollar. It next discusses the major global transformations of international trade and finance in the 21st century. The chapter then discusses four main currents that lead the ongoing evolution of the IMS and ends with a brief conclusion.

The Rise of US Dollar Dominance

The US dollar dominance emerged through a gradual process, shaped by economic and geopolitical forces, and has endured through major global events.

The US dollar's ascent to being the dominant global reserve currency was a gradual and multifaceted process shaped by economic, financial, and geopolitical dynamics throughout the 20th century (Eichengreen 2011a). In the late 19th and early 20th centuries, the pound sterling was the global reserve currency, although other currencies such as the French franc also played an important role in certain regions (Figure 2.2).³ However, sterling dominance started to wane after World War I as the United Kingdom faced mounting fiscal pressures, weakening competitiveness, and significant war-related debt. At the same time, the United States had already emerged as the world's largest economy and the US dollar had overtaken the sterling as the leading form of trade credit (Chitu, Eichengreen, and Mehl 2014), laying the foundation for the dollar to gain traction as the global reserve currency. In addition, the establishment of the Federal Reserve in 1913 and the development of deep and liquid financial markets made the dollar even more attractive for international transactions and reserves. Although the dollar was gaining prominence, sterling remained significant, especially among Commonwealth countries.

³ During the interwar period, gold was the most important reserve asset, accounting for at least 80 percent of reserves, so the choice between the US dollar and sterling was a more marginal decision than today (Ghosh, Ostry, and Tsangarides 2011).

Their coexistence reflects the inertia in the reserve currency use, as the shift away from sterling was delayed by historical ties and the incumbent advantage resulting from network externalities.

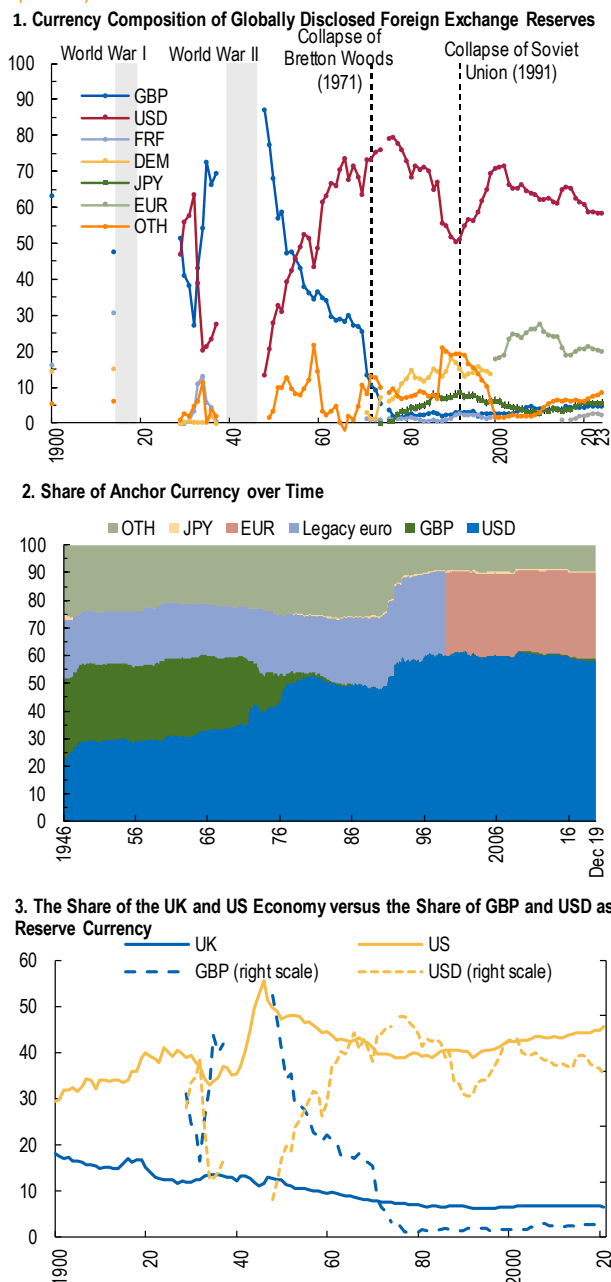
After World War II, the prominence of the dollar increased further. Early on, the establishment of the Bretton Woods system institutionalized the dollar's role as the *de jure* anchor currency for global exchange rates (Figure 2.2). The development of the Eurodollar market, which was in response to the exchange controls under the Bretton Woods system in the late-1960s and 1970s and facilitated by the Federal Reserve's swap lines with the Bank for International Settlements (BIS), also played a key role (McCauley and Schenk 2020). Remarkably, even after the collapse of the Bretton Woods system of fixed exchange rates, the dollar remained front and center, now as the *de facto* anchor currency.⁴ In the late 1980s and 1990s, the collapse of the Soviet Union and the subsequent integration of former Eastern bloc economies further cemented the dominance of the dollar. Despite major geopolitical shifts, dollar dominance prevailed and the dollar-centered IMS provided global public goods, which helped bring in a new era of geoeconomic integration via trade and finance.

Current State: The US Dollar at the Center

Today, the US dollar remains widely used across a broad range of areas, with its role showing remarkable stability over time.

As of 2023, the US dollar was dominant across various areas: trade, foreign exchange reserves, international loans, international debt, foreign exchange turnover, and global payment. The share of the US dollar in these areas considerably exceeds the US economic weight in global GDP, trade, and finance (Figure 2.3). The euro—a regional dominant currency whose share also exceeds the economic footprint—is a distant second, ahead of the Japanese

Figure 2.2. The Rise of US Dollar Dominance (Percent)

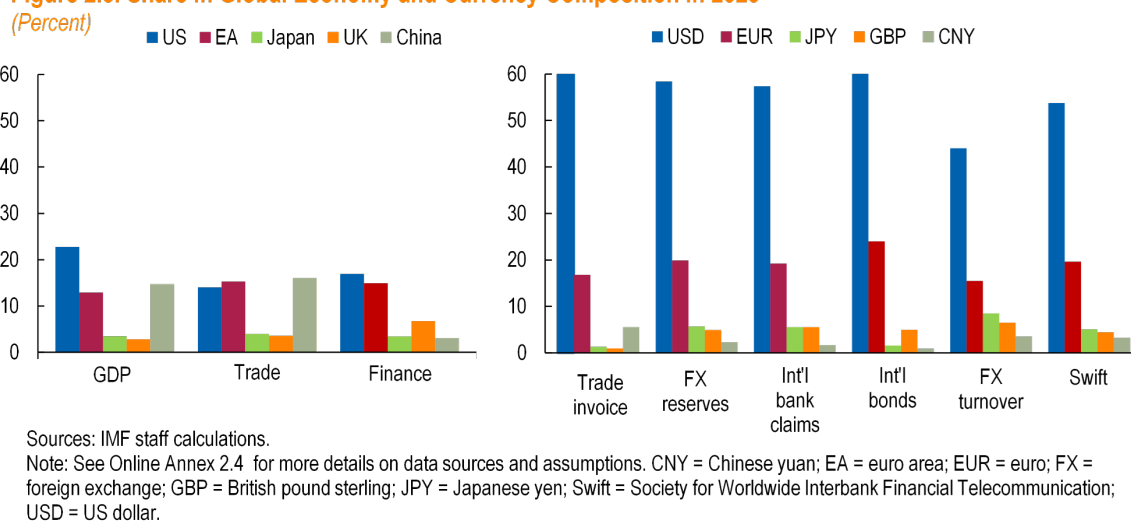


Sources: Extension of Eichengreen, Chitu, and Mehl (2016) using Currency Composition of Official Foreign Exchange Reserves data set; Jordà, Schularick, and Taylor (2017); Ilzetzki, Reinhart, and Rogoff (2019); and IMF staff calculations. Note: In panel 2, other currencies include the currencies of Australia, Brazil, Canada, Egypt, India, Mexico, New Zealand, the Russian Federation, Singapore, South Africa, Switzerland, and Türkiye, and also special drawing rights. DEM = Deutsche mark; EUR = euro; FRF = French franc; GBP = British pound sterling; JPY = Japanese yen; OTH = other currencies; USD = US dollar.

⁴ A number of observers at the time raised concerns over weakening confidence in the US dollar's international role, driven by geopolitical developments, such as the oil crisis in 1973, and economic factors, such as the sharp dollar depreciation in the early 1970s and the declining share of the United States in world output (Rueff 1971; Aliber 1973; McKinnon 1974). Amid declining confidence in the US dollar, a Substitution Account was proposed that would have allowed central banks to convert the dollar into the IMF's special drawing right. However, the proposal has never emerged as a viable alternative, in part due to the various political, economic, and technical constraints to operationalize the Substitution Account (McCauley and Schenk 2015).

yen and the British pound, while the RMB share in international markets remains smaller than China's economic footprint.

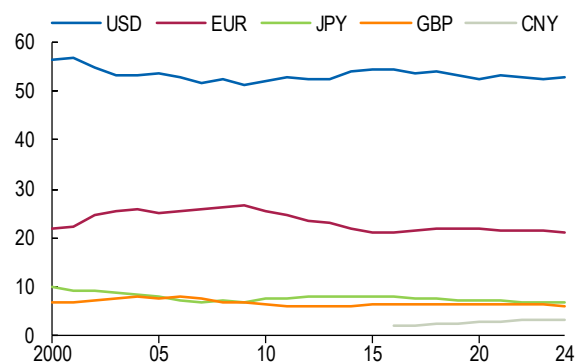
Figure 2.3. Share in Global Economy and Currency Composition in 2023



The dollar has held this dominant position for a long time (Figure 2.4). The index of international currency usage summarizes the use of currencies across various functions and helps compare the role of international currencies and monitor their changes over time.⁵ The dollar has maintained its dominant role, followed by the euro, the Japanese yen, the British pound, and the RMB. The dollar share has remained broadly stable in the 2000s, although with a moderate decrease since 2015, reflecting a declining share of the dollar in global reserves (Arslanalp, Eichengreen, and Simpson-Bell 2022). The euro share was increasing in the run-up to the global financial crisis (GFC) but has since declined.⁶

This stability of the dollar's dominant status has been underpinned by strategic complementarities across its various functions (Krugman 1984; Gopinath and Stein 2021; Chahrour and Valchev 2022; Mukhin 2022). For instance, the dollar is widely used to invoice and settle cross-border trade, reflecting the dominance of the US economy, the prevalence of dollar pegs, and complementarities in price setting at the firm-level. Greater use of the dollar in trade, in turn, can incentivize households and firms to hold dollar-denominated assets to finance future consumption or as a store of value and to issue liabilities in dollars, as the demand for dollar deposits lowers interest rates which facilitates dollar

Figure 2.4. An Index of International Currency Usage



Sources: Allen and Juvenal (2025); IMF staff calculations based on analysis in Boz and others (2025) and expanded and updated data from Boz and others (2022); Currency Composition of Official Foreign Exchange Reserves data set; External Wealth of Nations database (2025); Eurostat; and HM Revenue & Customs.
 Note: Excludes intra-euro area holdings. Index is a simple average of each currency's share of global disclosed foreign exchange reserves (25 percent weight), trade invoicing (25 percent weight), foreign exchange turnover (25 percent) and global balance sheets (25 percent weight). Global balance sheets represent the sum of foreign assets and liabilities (excluding reserves) in each currency over total foreign assets and foreign liabilities. CNY = Chinese yuan; EUR = euro; GBP = British pound sterling; JPY = Japanese yen; USD = US dollar.

⁵ For other examples of a composite index of currency use, see Bertaut, von Beschwitz, and Curcuru (2023), ECB (2025), and PBoC (2023). Other indices can also capture specific aspects of the IMS, such as the currency composition of external balance sheets or exchange rate centrality using co-movement of currencies (Frankel and Wei 1994) (see Online Annex 2.1).

⁶ For further details on the drivers of the moderate decline in the US dollar share in global reserves see Arslanalp, Eichengreen, and Simpson-Bell (2022); Iancu and others (2022); Chinn, Frankel, and Ito (2024), and Goldberg and Hannaoui (2024). For more details on currency shares in international banking, bonds and derivatives markets, see McGuire, von Peter, and Zhu (2024).

borrowing. This prevalent use in trade and finance strengthens incentives for central banks to monitor the dollar exchange rate, intervene in currency markets in dollars, or accumulate more dollar reserves. Conversely, a more stable dollar exchange rate and a larger stock of dollar reserves can make it more appealing to invoice or to borrow in dollars for banks or nonbanks. These mutually reinforcing dynamics between trade and finance are facilitated by the unparalleled depth and liquidity of US financial markets (enabling large transactions with minimal market impact) as well as the US Treasuries' distinguished property as safe assets (anchored in trust and purchasing power stability) (Figure 2.5). All these factors create a strong inertia in favor of the incumbent currency that is hard to displace.

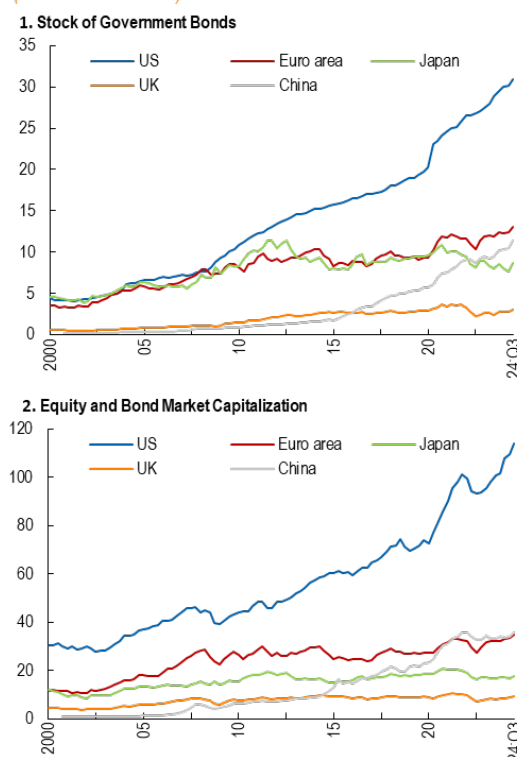
Global Transformations in the 21st Century: Trade and Financial Liberalization and Globalization

The steady dollar dominance over the past several decades has cut a contrast with transformative developments in global trade and finance, giving rise to certain asymmetries.

The stability of dollar-centered IMS has underpinned international integration of trade and finance in the 21st century. The widespread use of the US dollar has helped lower transaction costs and reduce exchange risks, thereby supporting greater cross-border trade and financial integration, while economies have become increasingly specialized in trade or finance (Goldberg and Tille 2008; Gopinath and others 2020). In turn, this globalization in trade and finance strengthened the international role of the dollar and sustained its dominance through network externalities (Krugman 1980; Matsuyama, Kiyotaki, and Matsui 1993). At the same time, however, the resulting transformation in the landscape of cross-border trade and financial flows sowed the seeds for potential evolution in the dollar-centered IMS itself.

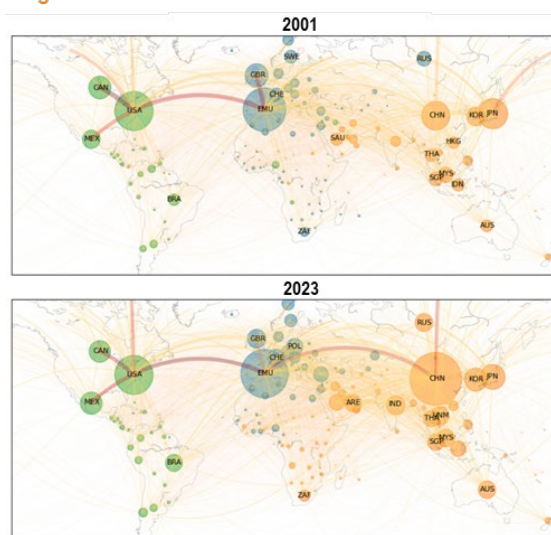
Between 2001 and the GFC in 2008, the pace of trade integration gathered momentum with global cross-border trade of goods and services rising by about 15 percentage points of global GDP in the lead up to the GFC in 2008 (Online Annex Figure 2.3.1). Since then, however, global trade has largely plateaued. Over this period, China has become a key participant in global trade, along with the United States and the euro area (Figure 2.6). Other emerging market economies in Asia—notably India—have also gained in prominence.⁷

Figure 2.5. Depth of US Financial Market
(Trillions of US dollars)



Sources: Bank for International Settlements Debt Statistics; CEIC Data; Thomson Reuters Datastream; Haver Analytics; and IMF staff calculations. Note: Panel 1 reports debt securities issued by the general government in all markets, at all maturities, denominated in all currencies at nominal value stocks (except UK, which uses market value stocks due to data availability).

Figure 2.6. Trade Network in 2001 and 2023



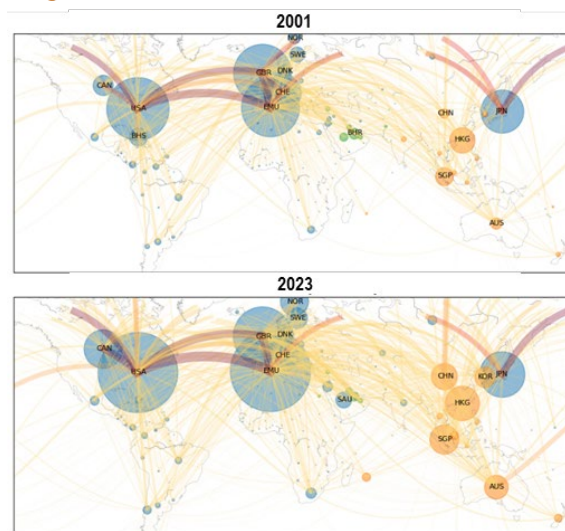
Sources: Gaulier and Zignago (2010); and IMF staff calculations. Note: Merchandise exports in percent of world GDP. Only values exceeding US\$10 billion are displayed. Data labels in the figure use International Organization for Standardization codes. Color coding denotes clusters of economies that are identified following Clauset, Newman, and Moore (2004). The figure builds on Miranda-Agrippino, Nenova, and Rey (2025), who describe the evolution of these networks and explore the implications of the changes in network for the international transmission of monetary policies. EMU = European Monetary Union.

⁷ Trade is defined as merchandise trade. Including services may change the relative importances of the main economies.

Cross-border holdings of financial assets also rose significantly in the run-up to the GFC, almost doubling as a share of global GDP, before flattening in the aftermath (Online Annex Figure 2.3.2). Advanced economies, particularly the United States, the euro area, and the United Kingdom, continue to account for the bulk of cross-border holdings of portfolio and banking assets (Figure 2.7).^{8, 9} Looking at deposit and loan claims of banks, the United Kingdom accounts for the largest share with one-fifth of total holdings, followed closely by the United States and the euro area. These economies also hold more than one half of global foreign direct investment (FDI) assets. At the same time, China has become an increasingly important source of FDI, with large exposure intermediated through Hong Kong Special Administrative Region (Online Annex Figure 2.3.3). Bilateral gross financial exposures between advanced and emerging market economies have remained broadly stable (Online Annex Figures 2.3.4 and 2.3.5), although there are early indications that rising geopolitical tensions have shifted investment patterns across countries (Gopinath and others 2025).

Two other notable financial developments are the rising role of offshore financial centers (OFCs) and non-bank financial institutions in intermediating cross-border flows. The share of OFCs in global cross-border holdings has doubled over the past 30 years (Figure 2.8 and Online Annex Figure 2.3.6). This pattern is linked to the increased complexity of the corporate structures of multinational firms, which can considerably complicate the attribution of bilateral financial holdings data (Coppola and others 2021; Damgaard, Elkjaer, and Johannesen 2024). Reallocating security holdings channeled through offshore financial centers does not only change the bilateral exposure between economies, but it can also change aggregate foreign holdings. For instance, when looking through these centers, total foreign holdings of the United States decrease, as foreign investment is reclassified as domestic investment, whereas overall foreign holdings increase in the euro area and the United Kingdom. At the same time, cross-border borrowing by non-bank financial institutions has expanded, reflecting their rising role in intermediating global capital flows (Figure 2.9).

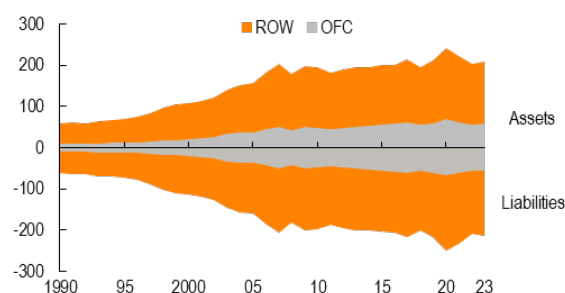
Figure 2.7. Financial Network in 2001 and 2023



Sources: Bank for International Settlements Locational Banking Statistics; Portfolio Investment Positions by Counterpart Economy data set; Coppola and others (2021); and IMF staff calculations.

Note: The sum of total portfolio assets and banks' loans and deposit claims is in percent of world GDP. Mirror data are used to fill missing data whenever available. Portfolio holdings are corrected for the role of offshore financial centers using the rescaling matrix of Coppola and others (2021). Data labels in the figure use International Organization for Standardization codes. Color coding denotes clusters of economies that are identified following Clauset, Newman, and Moore (2004). Intra-EMU holdings are excluded. The figure builds on Miranda-Agrippino, Nenova, and Rey (2025), who describe the evolution of these networks and explore the implications of the changes in network for the international transmission of monetary policies. EMU = European Monetary Union.

Figure 2.8. Increase in Share of Offshore Financial Centers in Global Finance



Sources: External Wealth of Nations database; and Maggiori, Neiman, and Schreger (2020).

Note: The sum of total assets and liabilities (liabilities are shown on reverse scale) is by group. "Offshore financial centers" is defined following Maggiori, Neiman, and Schreger (2020), and includes Aruba, Bahrain, Barbados, Belize, Bermuda, the Cayman Islands, Costa Rica, Curaçao, Cyprus, Djibouti, Gibraltar, Grenada, Hong Kong SAR, Ireland, Jordan, Lebanon, Liberia, Liechtenstein, Luxembourg, Macao SAR, Maldives, Malta, the Marshall Islands, Mauritius, Nauru, The Netherlands, Panama, Seychelles, Singapore, The Bahamas, and Turks and Caicos Islands. OFC = offshore financial centers; ROW = rest of the world.

⁸ Portfolio holdings are adjusted using the rescaling matrix of Coppola and others (2021) for nine economies (the United States, the euro area, the United Kingdom, Canada, Switzerland, Sweden, Denmark, Norway, and Australia). Other economies are not adjusted. Despite large differences in financial market depth (Figure 2.5), the United States and the euro area each account for a similar share of global cross-border portfolio holdings, at just over 30 percent after adjusting for offshore financial centers, followed by Japan and the United Kingdom, which each represent about 10 percent.

⁹ Figure 2.6 and Figure 2.7 depict directed networks using exports (for trade) and portfolio and bank assets (for finance). For the undirected networks using the sum of bilateral exports and imports (for trade) and the sum financial assets and liabilities (for finance), see Online Annex 2.6.

Although trade and financial networks are still organized around a few key hubs, new centers have emerged and the overall degree of global interconnectedness has remained stable in the last 25 years. In 2001, the global trade network was organized around three main hubs: the United States, the euro area, and Japan.¹⁰ In recent years, China has emerged as the center of the Asian trading hub, resulting in a more concentrated network structure anchored around a few large poles. By contrast, the global financial network has continued to be centered around advanced economies—notably the United States, the euro area, the United Kingdom, and Hong Kong Special Administrative Region—although several other Asian economies have gained importance. Over time, trade flows and financial holdings have increased within country clusters but remained broadly unchanged across clusters (Online Annex Figure 2.3.7).

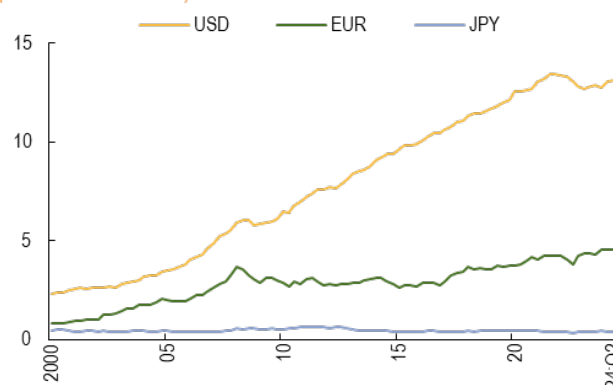
The role of major economies within trade and financial networks evolved as shown by the centrality index (see Text Box 2.1 and Figure 2.10).¹¹ The United States has become more central in the financial network, reflecting larger foreign holdings of US portfolio and banking assets, whereas its dominance in the trade network has declined.¹²

Text Box 2.1. Network Analysis of World Trade and Cross-Border Financial Holdings

Network analysis offers a lens through which to study how economies are structurally interconnected through global trade and finance. Unlike traditional bilateral approaches, network analysis captures both direct and indirect linkages—revealing the broader web of interdependencies that shape international spillovers.

The centrality index quantifies the importance of each economy (“node”) in the network, not only reflecting both direct and indirect linkages but also giving higher weights to linkages with other economies of importance in the network (see the Online Annex 2.2 for mathematical details).

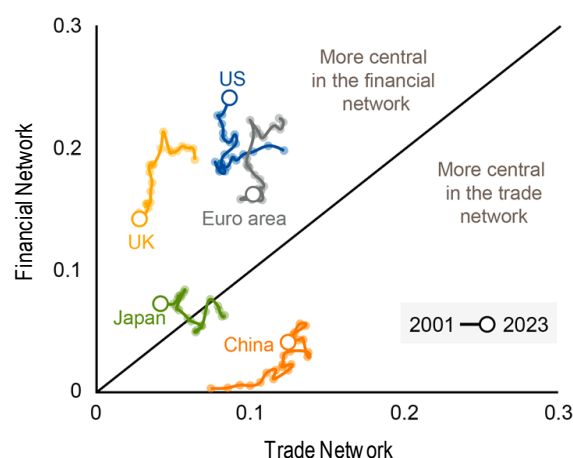
Figure 2.9. Foreign Currency Credit to Nonbank Borrowers by Currency
(Trillions of US dollars)



Source: Bank for International Settlements Global Liquidity Indicators; and IMF staff calculations.

Notes: Foreign currency credit is by currency of denomination to nonbank borrowers (includes loans extended by banks and funding from global bond markets through the issuance of international debt securities). EUR = euro, JPY = Japanese yen, USD = US dollar.

Figure 2.10. Country Centrality in Trade and Financial Network over 2001–23¹



Sources: Bank for International Settlements Locational Banking Statistics; Portfolio Investment Positions by Counterpart Economy data set; Coppola and others (2021); Gaulier and Zignago (2010); and IMF staff calculations.

¹Each dot represents the annual value of the centrality measure of a country in the trade and financial network (see Text Box 2.1). “Financial network” represents the sum of cross-border holdings of portfolio assets and banks’ loans and deposit claims. Mirror data are used to fill missing data whenever available. Portfolio holdings are corrected for the role of offshore financial centers using the rescaling matrix of Coppola and others (2021). Intra-European Monetary Union holdings and trade are excluded.

¹⁰ See Clauset, Newman, and Moore (2004) for the detailed methodology to identify clusters of economies.

¹¹ Recent work, such as Miranda-Agrippino, Nenova, and Rey (2025), uses network methods to trace the evolving structure of global trade and financial networks and assess their role in the transmission of monetary policy. Earlier applications focused on characterizing the topology of these networks themselves (for example, De Benedictis and others 2013; Glasserman and Young 2016).

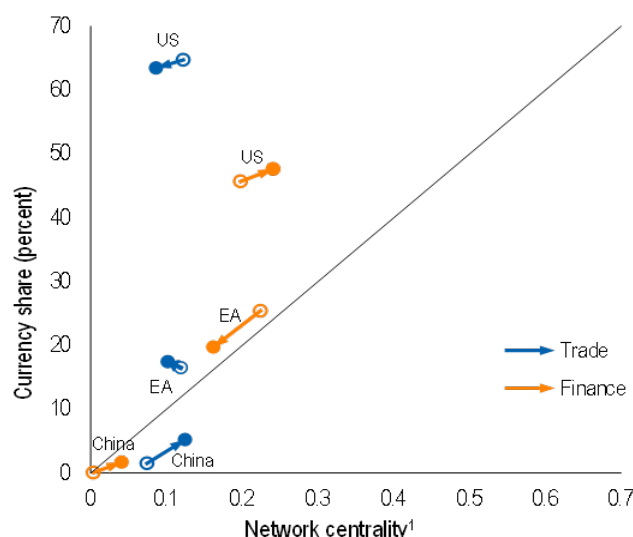
¹² Despite having a much larger financial market, the United States accounts for a similar share of global cross-border portfolio holdings as the euro area. As such, the centrality of the United States in the financial network is slightly above the euro area.

Similarly, Japan has become more central in the financial network, driven by an increase in foreign investment in the Japanese banking sector, while its centrality in the trade network has declined. The euro area and the United Kingdom, on the other hand, have experienced a decline in their centrality in both trade and financial networks. Meanwhile, China has substantially increased its role in the global trade network, though its role in the financial network remains limited.

This chapter proposes an asymmetry index to measure the difference from a symmetric configuration among the roles of major economies and their currencies in the global economy. The main source of asymmetry is the fact that currency shares have remained broadly stable while the centrality of major economies has evolved as they become increasingly specialized in trade or finance. Figure 2.11 illustrates this point, that is, how currency shares and network centrality differ from each other and have changed between 2001 and 2023. For instance, the decreased centrality of the United States and the euro area in trade has increased asymmetry with its currency share as the latter remained broadly stable—as illustrated by the growing divergence from the 45-degree line. Another example is the rise in China's centrality in trade and finance, which has outpaced the increase in the use of RMB. These asymmetries are aggregated over major economies of the world to generate a global measure of asymmetry between economic centrality and currency use. Figure 2.12.1 shows these indices for trade and finance, illustrating the steady increase in asymmetry in trade but stability in finance. This movement in turn reflects a greater change in economic centralities than in the patterns of currency use over the past two decades, especially in trade. Figure 2.12.2 shows increasing asymmetry between trade and finance centralities that contrasts with a near constant asymmetry between currency use in trade and finance. This rise in asymmetry between trade and financial networks reflects an increasing specialization in trade or finance.

A natural benchmark for overall asymmetry is a fully symmetrical equilibrium, in which a country can be expected to have an equal degree of centrality in international trade and finance networks, with its currency used proportionally in cross-border transactions.

Figure 2.11. Country Centrality and Currency Use in Trade and Financial Network in 2001 → 2023
(Percent)



Sources: Bank for International Settlements Locational Banking Statistics; Portfolio Investment Positions by Counterpart Economy data set; Coppola and others (2021); Gaulier and Zignago (2010); Allen and Juvenal (2025); IMF staff calculations based on analysis in Boz and others (2025) and expanded and updated data from Boz and others (2022); and Eurostat.
¹Measured by eigenvector centrality (see Text Box 2.1). Intra-EMU holdings and trade are excluded. EA = euro area; US = United States.

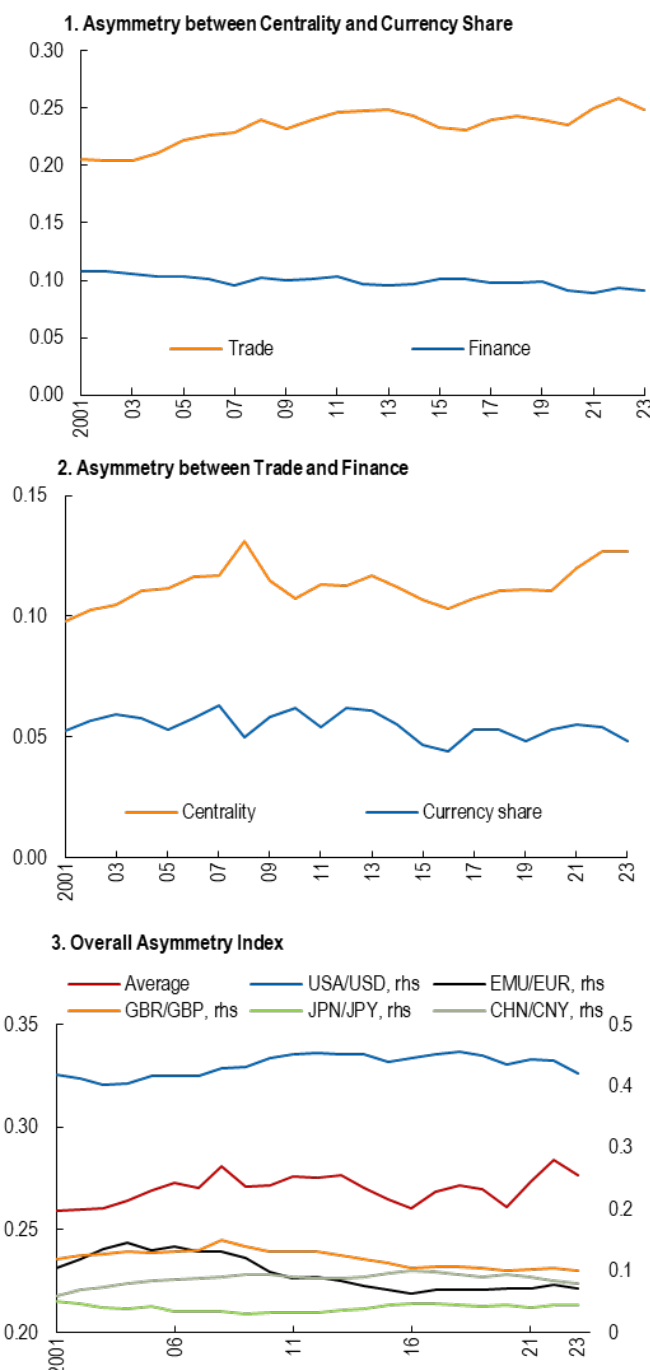
Text Box 2.2. Overall Asymmetry Index Algebra

Let $b_{i,t}^T$ and $b_{i,t}^F$ denote the centrality of country i in trade (T) or financial (F) network, respectively and $c_{i,t}^T$ and $c_{i,t}^F$ denote the share of country i 's currency in trade (T) or finance (F) at time t , where i = United States, euro area, United Kingdom, China, Japan, and Rest of the World. Each centrality ($b_{i,t}^{T,F}$) and currency share ($c_{i,t}^{T,F}$) is bounded between 0 and 1 and sum to 1 across the six economies. Let $X_t = (x_{i,t}) = (b_{i,t}^T, b_{i,t}^F, c_{i,t}^T, c_{i,t}^F)$ denote a vector of centrality measures and currency shares and $\bar{x}_t = \frac{1}{4}(b_{i,t}^T + b_{i,t}^F + c_{i,t}^T + c_{i,t}^F)$. For each country/currency, let $y_{i,t} = \left(\sum_{i=1}^4 (x_{i,t} - \bar{x}_t)^2 \right)^{1/2}$, which measures the distance from the main diagonal (in the 4-dimensional space). Then the overall asymmetry index is $Y_t = \sum_{i=1}^6 \omega_{i,t} y_{i,t}$, where $\omega_{i,t}$ is the average of an economy's share in global trade and finance (See Online Annex 2.7 for further details).

Deviations from this full symmetry can be measured by the overall asymmetry index (Text Box 2.2), which is illustrated in Figure 2.12.3. Over much of the sample period, the index indicates a modest increase in asymmetry, reflecting in part China's increasing centrality in trade, alongside a relatively limited use of the RMB in trade. Were network externalities strong enough, a natural monopoly in currency use—one vehicle currency—would result. More generally, the asymmetry index would tend to increase with the strengthening of dominance of one or a few currencies over and above their issuers' economic weights, while tending to decline with the weakening of such dominance.

The extent of asymmetry is related to the contrast between a unipolar and multipolar IMS configuration. A high asymmetry index—a unipolar world characterized by the dominant use of a currency exceeding its issuer's weight in trade or finance—may reflect strong network externalities and the center country continues to play the role of world banker and insurer (Kindleberger 1965; Mendoza, Quadrini, Rios-Rull 2009). However, this configuration can change if the network externalities weaken—whether due to increasing geopolitical fragmentation or a diminished capacity of the center country to backstop the supply of safe assets (Triffin 1966; Farhi, Gourinchas, and Rey 2011). In such a case, the IMS could gradually transition toward a more symmetric—multipolar—configuration of currency use and economic centralities, with an attendant decline in the asymmetry index. A multipolar system could increase the global supply of safe assets by resorting to multiple suppliers, enhancing stability for the global system (Eichengreen 2011a, 2019, 2023). But the multiplicity of safe assets could bring about fragilities by increasing the risk of volatile capital flows or exchange rate movements among them, induced by small shifts in fundamentals or self-fulfilling capital flight (Farhi, Gourinchas, and Rey 2011; Farhi and Maggiori 2018; He, Krishnamurthy, and Milbradt 2019). The relative stability of a unipolar or multipolar configuration thus depends on the underlying shocks and institutional frameworks. When the single reserve currency issuer retains a robust framework that supports a deep and liquid capital market, ensures price stability, and maintains strong fiscal capacity to meet the global safe-asset demand, a unipolar system will likely remain stable, free from the risk of inter-currency volatility of the multipolar system. Both unipolar and multipolar configurations can thus serve as a stable backstop for the global economy. However, risks of volatility and potential instability would rise during the transition between

Figure 2.12. Asymmetry Indexes



Sources: IMF staff calculations.

Note: See Text Box 2.2 for the methodology. Data labels in the figure use International Organization for Standardization (ISO) country codes. EMU = European Monetary Union. USD = US dollar, EUR = euro, JPY = Japanese yen, GBP = British pound sterling, CNY = Chinese yuan.

configurations, even when they would each be stable once the transition has been completed. The asymmetry index can help monitor signs of such transitions.

The increase in asymmetry over the past decade, however, does not offer a definitive signal on the stability of the current IMS on its own and additional information should be considered. In the past, forces such as declining trade costs, increased financial integration, the collapse of the Soviet Union, and China's accession to the World Trade Organization supported deeper global integration and strengthened network externalities, reinforcing a stable near-unipolar structure centered on the dollar. Driven by these forces, the rising asymmetry was consistent with a strengthening of network externality and dollar dominance. Recently, however, new dynamics—including geopolitical fragmentation—could work in the opposite direction, with possible shifts in the relative importance of international currencies, if complementary factors such as a deep and liquid capital market were to develop for other currencies. The chapter now turns to four developments that could influence such a change including one outside the legacy monetary system.

Ongoing Developments in the IMS

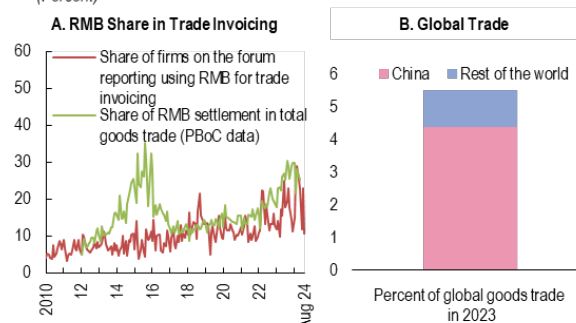
Although the dollar-centric IMS has prevailed over several transformative changes in the past, newly rising trends warrant attentive monitoring for their potential effects on the IMS. Of various economic, technological, and geopolitical shifts, this section discusses four currents that could materially affect the IMS configuration, if sustained.

Rising Concerns on Geopolitical Fragmentation

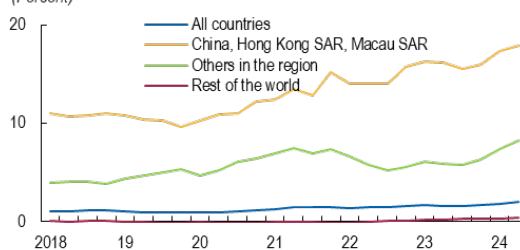
Brexit, rising trade tensions, and Russia's invasion of Ukraine have intensified geopolitical tensions. There has been a considerable increase in barriers to trade, including trade-restrictive measures and distortive subsidies. Increasingly, global trade is taking place within geopolitical groups of countries rather than between them (IMF 2025). Similarly, recent research has highlighted a reallocation of investment flows across countries—in particular FDI—in response to increasing trade barriers (Gopinath and others 2024, 2025).^{13, 14} The rising geopolitical fragmentation has entrenched the ongoing retreat from cross-border economic integration that began more than a decade ago after the GFC (Gopinath and others 2025). Moreover, there are already signs that geopolitical factors are affecting currency choices for trade, cross-border payments and central bank demand for gold (see discussions below and ECB 2025). Were geopolitical tensions to rise further and deepen trade and financial fragmentation, networks would shrink in size and network externalities could weaken, bringing about relative shifts in the usage of international currencies.

Figure 2.13. International Role of RMB

1. Use of Renminbi in International Trade
(Percent)



2. The Use of Renminbi in International Credit
(Percent)



Sources: IMF staff calculations based on analysis in Boz and others (2025) and expanded and updated data from Boz and others (2022); People's Bank of China accessed via Haver Analytics; Bank for International Settlements Locational Banking Statistics; People's Bank of China; and IMF staff calculation.
Note: In panel 1, right panel looks at the use of RMB in global trade. See Online Annex 2.4 for more details. In panel 2, "Others in the region" includes Brunei, Cambodia, Democratic People's Republic of Korea, Indonesia, Japan, Korea, Lao P.D.R., Malaysia, Mongolia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. PBoC = People's Bank of China; RMB = renminbi.

¹³ In more comprehensive bilateral balance-of-payments data, similar evidence was documented in Box 1.1 of the 2024 *External Sector Report*. However, the interpretation of these flows remains challenging as a significant share of FDI flows to financial centers and hence cannot be allocated to its ultimate destination.

¹⁴ Despite the decline in inter-bloc trade, aggregate trade as a share of global GDP remained constant. Moreover, bilateral gross financial holdings have so far remained broadly stable and net international investment positions between large creditor and debtor economies has changed little so far (Online Annex Figures 2.3.8 and 2.3.9).

Increasing RMB Use in China's Trade and Finance

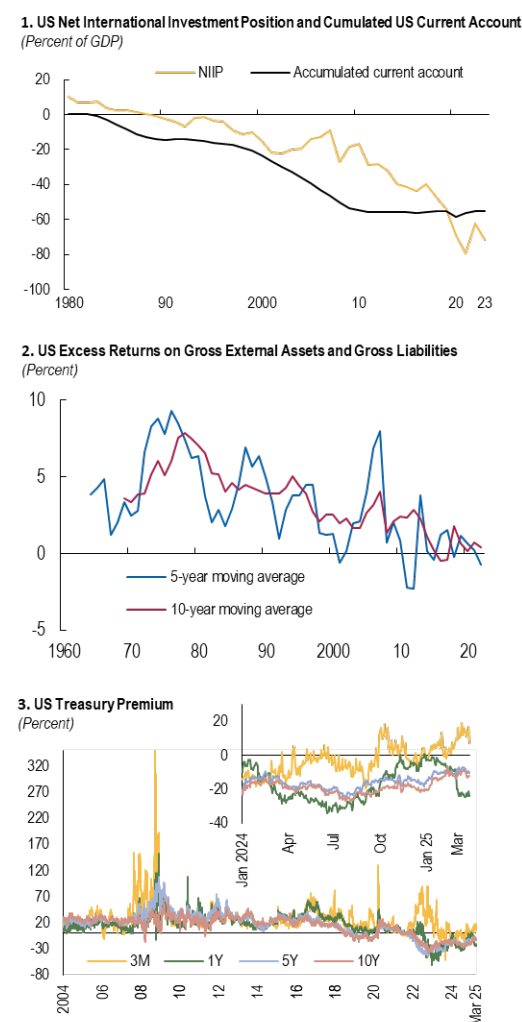
The international use of RMB has more than doubled since 2012, though it remains geographically concentrated in China's trading partners and only accounts for a small share of global trade (Figure 2.13.1). The use share that was estimated from online forum data has shown a steady increase since 2012, consistent with the official data except for the mid-2010s, and reached just over one-quarter of China's goods trade in 2023 (Box 2.1). Policies introduced by the Chinese authorities since 2009 have promoted the use of the RMB for trade invoicing and settlement. Initially, the 2009 pilot program allowed designated foreign banks to access the onshore RMB, thereby reducing the cost of using the RMB for trade. Later on, a new Cross-border Interbank Payment System and swap lines with the People's Bank of China were introduced. More recently, geopolitical factors, including escalating trade tensions, have been frequently cited by Chinese firms as the key reasons for their shift to the RMB in trade.

The RMB has also seen broader adoption in international bank credit, with Chinese banks increasingly playing a prominent role in global financing (Figure 2.13.2). However, unlike the US dollar, the RMB's use among third parties outside China remains limited in part due to China's capital account restrictions as well as its lack of a large and liquid domestic bond market. The share of RMB in global allocated reserve assets has also remained relatively low and stable (Arslanalp, Eichengreen and Simpson-Bell 2022).

The US Dollar as Global Safe Asset

The global provision of dollar-denominated safe assets has been a key building block of the current IMS. These securities, mostly in the form of debt claims, deliver relatively higher returns during global downturns, providing a secure store of value for international official and private sector investors (Jiang, Krishnamurthy, and Lustig 2024). The consequent demand for US assets has relaxed the US external constraint ("exorbitant privilege"), as reflected in consistent positive valuation gains on its net external assets, an excess return of its foreign assets over its foreign liabilities, and a convenience yield for Treasury securities until recently (Figure 2.14).^{15,16} The structure of the external balance sheet also exposes the United States to valuation losses during periods of market stress

Figure 2.14. The United States' Exorbitant Privilege



Sources: U.S. Bureau of Economic Analysis, Table 1.1 U.S. International Transactions; US Integrated Macroeconomic Accounts; Bloomberg Finance L.P.; Thomson Reuters Datastream; Du and Schreger (2016); Du and others (2018); and IMF staff calculations.

Note: In panel 1, the difference between the two series is a measure of the cumulated valuation gains and losses on the US external balance sheet. Panel 2 reports the difference between the implicit return on gross external assets and gross external liabilities. Five-year and 10-year moving average, centered on end point.

¹⁵ There are many definitions of the "exorbitant privilege," a term coined by the French Finance Minister Valéry Giscard d'Estaing in 1965, when he summarized the United States' ability to finance current account deficits by issuing securities that are always in high demand by the rest of the world. Different aspects of this exorbitant privilege have been characterized in the literature. For instance, exorbitant privilege refers to the United States' positive return differential on its foreign assets relative to liabilities and the associated valuation channel of adjustment in Gourinchas and Rey (2007a,b); the insurance fee being paid in normal times in exchange for insurance transfers during crisis times in Gourinchas and others (2012); a monopoly rent that the United States can extract as the sole issuer of international currency in Farhi and Maggiori (2018); and the convenience yield for US Treasury securities in Jiang, Krishnamurthy, and Lustig (2021).

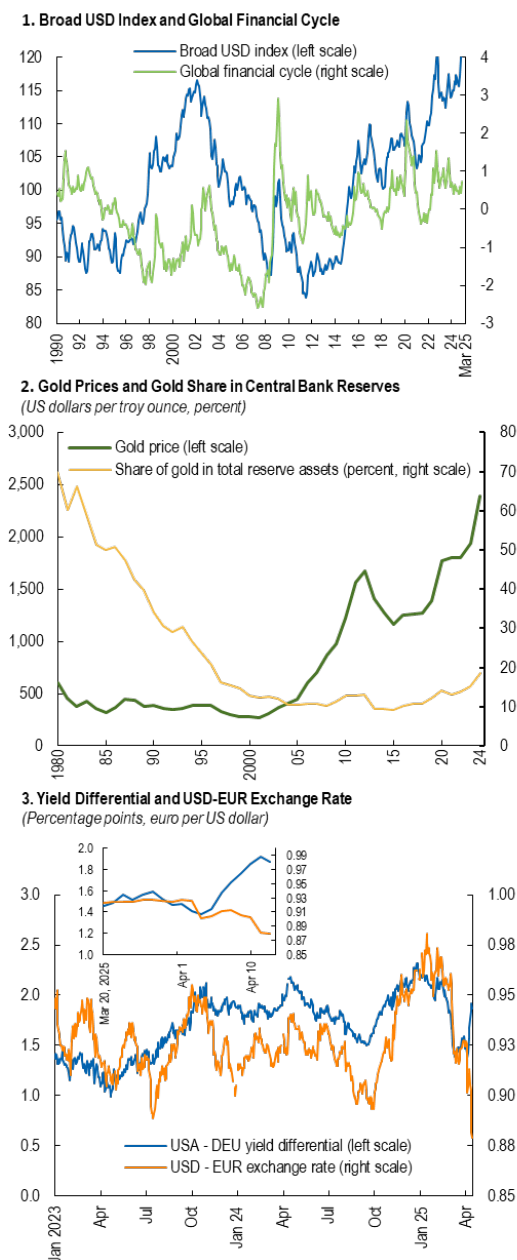
¹⁶ Typically, convenience yield is estimated for a given level of debt issuance. But recent studies suggest that convenience yield declines with more debt issuance in equilibrium (Choi and others 2024; Jiang and others 2025).

or financial crises when the value of its foreign assets may decline, thereby fulfilling what has been described as its “exorbitant duty.”¹⁷ As consequence, the US external balance sheet exhibits characteristics of a world banker and insurer, namely a long position in risky foreign claims and a short position in safe dollar debt claims (Gourinchas and Rey 2007b; Gourinchas, Rey, and Andreolli 2025).

However, recent developments signaled some weakening of the United States’ exorbitant privileges and duties, suggesting potential changes in the global insurer role of the United States. First, the net international investment position (NIIP) has sharply deteriorated in the past decade, due to accumulated valuation losses that can be partly explained by the strong performance of US equities, of which foreigners hold a sizable share (Atkeson, Heathcote, and Perri, forthcoming). Second, the return differential between overall foreign assets and liabilities has decreased markedly over recent years. While the strong relative performance of the US equity market in recent years can again be part of the story, returns on the US external balance sheet have been on a low-frequency downward trend for a couple of decades, pre-dating the stock market boom (Gourinchas 2023).¹⁸ Third, the convenience yield on Treasury securities, proxied by the US Treasury premium, has declined markedly in recent years, turning negative across different maturities. Potential explanations include the large increase in debt issuances (Jiang and others 2025) or more structural factors resulting from regulatory changes since the GFC (Du and others 2018). This comes as the US government debt has risen to a historically high level and is projected to increase further (IMF 2025).¹⁹

The safe-haven effects on US assets have also shown somewhat anomalous movements in 2025. Typically, during times of global market distress, demand for safe assets rises, leading the price of Treasuries to increase and the US dollar to appreciate (Figure 2.15). This typical pattern also arose when geopolitical uncertainty surged after Russia’s invasion of Ukraine. Gold prices have also increased, reflecting a shift by some investors toward gold as a safe store of value. Central banks further increased their gold holdings, elevating gold to the second largest global reserve asset at market value in 2024, after the US dollar (ECB 2025). However, in the most recent episode of heightened global uncertainty and market

Figure 2.15. Safe-Haven Effects on US Assets



Sources: Board of Governors of the Federal Reserve System (US); Miranda-Agrippino, Nenova, and Rey (2020); Bloomberg Finance L.P.; Tullett Prebon Information Ltd. via Haver Analytics; European Central Bank; and IMF staff calculations.

Note: In panel 1, the global financial cycle correlates with global risk appetite. The measure is inverted from the original series such that an increase denotes decreasing investor risk appetite. In panel 3, “USA - DEU yield differential” refers to the difference in 10-year government bond yields between the United States and Germany. EUR = euro; USD = US dollar.

¹⁷ In addition, the global financial safety net continues to be a critical component of the IMS, providing countries with insurance against shocks (see Box 2.2).

¹⁸ Estimates of the return differential using macro data can be imprecise and suffer from well-documented measurement issues (Curcuro, Dvorak, and Warnock 2008; Bertaut, von Beschwitz, and Curcuro 2023). More precise “bottom-up” estimates based on confidential high-quality, security-level data show an excess return that is large and positive in normal times but large and negative during global crises (Bertaut and others 2024).

¹⁹ These dynamics have also been linked to the well-known Triffin dilemma (Farhi, Gourinchas and Rey 2011, Farhi and Maggiori 2018).

distress in early April 2025, marked by a surge in trade policy uncertainty, a somewhat different pattern emerged in the prices of US assets. The spread between US Treasuries and the sovereign bonds of other major advanced economies widened and the US dollar depreciated (Figure 2.15), suggesting that the demand for US Treasuries had weakened. The observed weaker demand could reflect concerns about the US fiscal trajectory, rising risk premium on heightened policy uncertainty in the United States, or, more broadly, investors seeking to diversify their portfolios. Nonetheless, developments so far suggest that these concerns may prove transient. The depreciation of the dollar has been smooth and moderate, still only partially reversing the strong appreciation since 2021, and the yields on US Treasuries remain relatively low by historical standards.

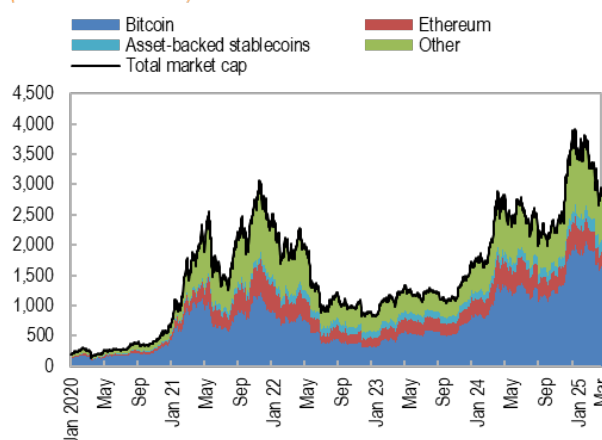
Cross-Border Payments and Digital Innovation

Cross-border payments are a critical pillar of the IMS, providing the key infrastructure and mechanisms that enable the smooth and secure flow of funds for international trade and finance. The system includes links among correspondent banks, messaging systems, money transfer operators and credit card networks, as well as foreign exchange markets and arrangements between central banks. Messaging systems, including the most-used Society for Worldwide Interbank Financial Telecommunication (Swift) network, relay the information related to international payments (Box 2.3). Currently, most of cross-border payments are settled through a network of correspondent banks, resulting in high transaction costs and lengthy processing times especially for countries that are not well integrated into the international financial system (BIS 2018; FSB 2020).

Technological advances have long influenced the evolution of cross-border payments. For instance, the advent of the telegraph in the late 19th century and innovations in computing—originating in part from wartime code-breaking efforts—have enabled faster transmission of cross-border financial information and flows. More recently, advances in digital technology, such as tokenization, encryption, and programmability have enabled alternative means of cross-border payment arrangements. These include public options such as CBDCs, a digital version of central bank money, and private ones such as stablecoins. While they both offer potential to facilitate cross-border payments outside the traditional systems, currently no existing CBDC can be used for cross-border payments, but explorative projects are ongoing.²⁰

In contrast, privately issued crypto assets can be used for cross-border payments without separate design enhancements. They are secured by cryptography and deployed using distributed ledger technology without the backing by a central bank. And they comprise unbacked and backed crypto assets. Unbacked crypto assets represent the majority of the private crypto market capitalization with the two largest being Bitcoin and Ether (Figure 2.16). Despite being highly volatile in value and thus a poor form of money, unbacked crypto assets have been used widely, by about 90 countries, for cross-border transactions (Cerutti, Chen, and Hengge 2024). While the amounts are sizable in some countries (Cardozo and others, 2024), there is limited evidence of substitution between fiat money-based and crypto-based cross-border flows (Cerutti, Chen, and Hengge 2024), in part because unbacked crypto

Figure 2.16. Market Capitalization of Crypto Assets
(Billions of US dollars)



Sources: CoinGecko; and IMF staff calculations.

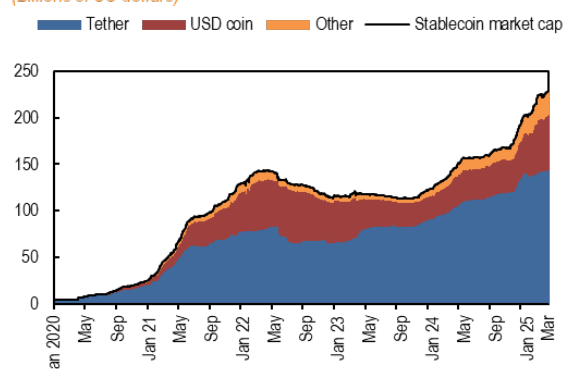
²⁰ According to Di Lorio, Kosse, and Mattei (2024), 81 out of 86 surveyed central banks are exploring or piloting CBDC, either retail or wholesale, or both (see Online Annex Table 2.3.2).

assets tend to be used for noneconomic reasons, such as to circumvent capital flow management measures (Graf von Luckner, Koepke, and Sgherri 2024).²¹

Stablecoins (backed crypto assets) have gained popularity, including for cross-border transactions. They aim to anchor their value to a specific currency denomination by holding reserves—an amount of financial assets on their balance sheet equal to the value of stablecoins issued.²² The market capitalization of the major stablecoins has increased almost tenfold since the beginning of 2021, with US-dollar-backed stablecoins accounting for the largest share (Figure 2.17). US-dollar-backed stablecoins could perform many of the functions of the US dollar as international currency, namely means of payment, store of value, and unit of account. Indeed, there is emerging evidence for their increasing use for cross-border transactions by private businesses and individuals (Box 2.4). Furthermore, preliminary evidence points to foreign demand for US-dollar-backed stablecoins broadly mirroring the traditional drivers of demand for US dollar-denominated assets (Reuter, 2025).

US-dollar-backed stablecoins share several qualitative features of the Eurodollar deposits. Both offer dollar deposits—that is, a promise to pay a fixed amount of dollars—to offshore non-US residents, which can function as a means of settlement without directly accessing “onshore” dollars. Increased use of US-dollar-backed stablecoins could reinforce the US dollar’s dominant role in the IMS and increase the demand for US Treasuries, unless stablecoins based on other international currencies were to expand at a faster pace. Indeed, the volume of US Treasuries held by the two largest stablecoin issuers, Circle and Tether, is comparable to that of large countries, ranking collectively as the 17th largest holder of US Treasuries globally (Figure 2.18). However, their market capitalization remains significantly smaller than that of other dollar-denominated assets, including the size of the Eurodollar deposit (Figure 2.5 and Figure 2.19). A broader adoption of US-dollar-backed stablecoins can also present risks. Unlike Eurodollar deposits, stablecoins do not travel through financial intermediaries, and their issuers currently operate without access to central bank liquidity or regulatory oversight in many countries—though regulatory standards are emerging. Were it to grow larger

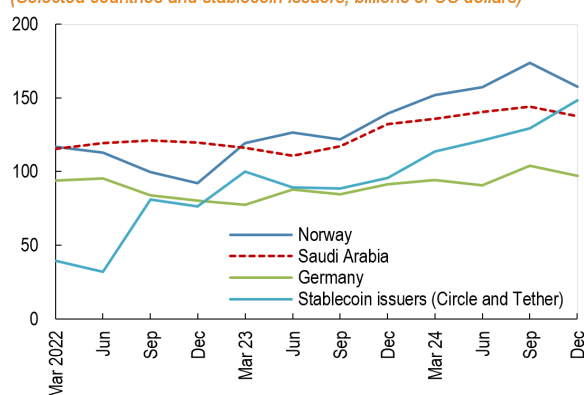
Figure 2.17. Stablecoin Market Capitalization
(Billions of US dollars)



Sources: CoinGecko; and IMF staff calculations.

Note: Asset-backed stablecoin only. “Other” includes euro-backed and denominated stablecoins which have a market capitalization of \$415 million as of April 2025, amounting to 0.2 percent of total market capitalization. The largest euro stablecoin is Euro Coin which was launched in 2022 with a market capitalization of \$186 million as of April 1, 2025. USD = US dollar.

Figure 2.18. Holdings of US Treasuries
(Selected countries and stablecoin issuers, billions of US dollars)



Sources: US Treasury; Circle; Tether; and IMF staff calculations.

Note: For stablecoin issuers, the chart includes outright holdings of US Treasuries and repos with US Treasuries, which are loans to financial institutions collateralized with US Treasuries.

²¹ Unbacked crypto assets are pseudo-anonymous. Determining the nationality of their holders, and thus the flows between countries, in publicly available information on transactions can only be done heuristically. Data collection frameworks by country authorities on crypto are only in their infancy. The recently released *Balance of Payments Manual (BPM7)* provides a framework for collecting data on the cross-border positions and flows of crypto assets, but it could take several years until a full-fledged view on the use of crypto assets emerges. Further, as part of the G20 Data Gaps Initiative, efforts are underway to develop data reporting templates to meet the needs of both Balance of Payments as well as Monetary and Financial statistics of these countries.

²² Stablecoins backed by non-financial assets exist, such as those backed by crypto assets, or that rely on algorithms to calibrate supply and try to maintain a stable value. They are usually less successful in providing a stable value. Indeed, some of these types of stablecoins have not been able to maintain their stable value and have collapsed (for example, TerraUSD).

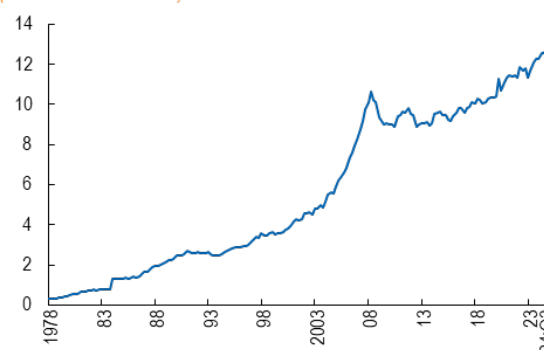
and without proper regulation, it can appreciably increase the likelihood of dollarization and currency substitution for vulnerable countries, and of financial integrity risks.

Conclusion

Over recent decades, the dominance of the US dollar in trade, finance, reserve currency, and global payments has characterized the IMS. The share of the US dollar in these areas had considerably exceeded the US economic weight in global GDP, trade, and finance. Its dominance has endured through major shifts in the global economy, including the end of the Bretton Woods era that was triggered by a run on the dollar. The continued dollar dominance was underpinned by network externalities, complementarities among various uses of the dollar, and its safe asset status, which are hard to displace.

At the same time, emerging trends are impacting the IMS, with possible implications for the use of international currencies. Prominent among them are increasing geopolitical fragmentation concerns, a greater use of RMB in international trade and finance, a softening in the United States' role as world banker and insurer, and the emergence of alternative payment systems and private digital assets. While none seem set to alter the central role of the US dollar, not least due to the lack of a viable alternative given the unmatched depth of US financial markets, a fragmented capital, banking and broader EU single market, and the presence of capital account restrictions in China, they could eventually catalyze a gradual reconfiguration of the use of international currencies. As such, this chapter lays the groundwork for a continued monitoring of the IMS, including by proposing new indexes of international currency usage and of the asymmetry among centralities and currency use. The latter, combined with economic and geopolitical developments, could signal potential changes in the system. Meanwhile, countries can enhance resilience by strengthening macroeconomic fundamentals, including building fiscal space, maintaining credible monetary and exchange rate frameworks, and bolstering external buffers—such as maintaining adequate international reserves and access to financing arrangements available under the global financial safety net.

Figure 2.19 US Dollar Liabilities of Non-US Banks Outside the United States
(Trillions of US dollars)



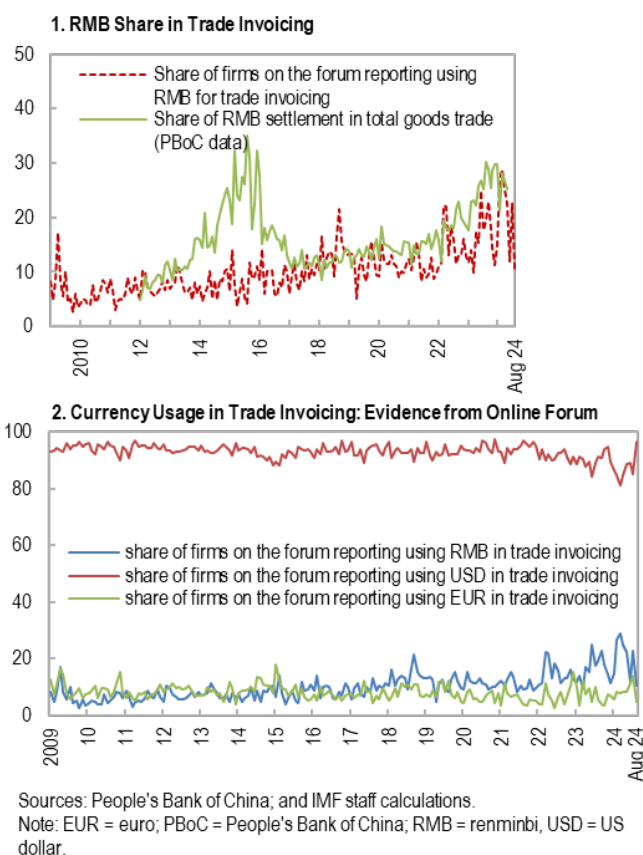
Sources: Bank for International Settlements Locational Banking Statistics; and IMF staff calculations.

Box 2.1. Rising RMB Use in Trade Invoicing and Its Drivers

Despite growth in the use of RMB in trade invoicing, little is known about the motivations behind firms' currency choice. This gap is notable, as trade invoicing is often regarded as an early step toward the broader international adoption of a currency (Eichengreen, 2011b).¹ Understanding firms' invoicing decisions is therefore essential for considering the potential trajectory of the RMB's international role. This box presents new evidence on the drivers behind firms' adoption of RMB invoicing, leveraging a novel data set on Chinese firms' currency invoicing decisions, firm characteristics, trade activity, as well as their motivation for using the RMB. The analysis points to the significant role of geopolitical considerations in the choice of invoicing currency.

The main data set consists of textual data collected from one of the largest online forums on international trade in China, which is actively used by Chinese firms to discuss their business experiences and policy initiatives related to international trade. The industry distribution of the firms participating in the forum aligns closely with that of Chinese customs data, suggesting that the forum participants form a representative sample of Chinese exporters and importers.² The analysis uses natural language processing (NLP) models to distill essential economic insights from the textual data, to extract data pertaining to trade payments and to summarize reasons for invoicing in RMB.

Figure 2.1.1. Renminbi in Trade Invoicing (Percent)



The aggregate pattern of RMB invoicing extracted from the online forum broadly aligns with the official statistics. Since 2009, the share of firms on the platform reporting the RMB invoicing for trade has shown a steady upward trend (Figure 2.1.1.1).³ This trend mirrors the official statistics, except for a short-lived peak in the official statistics during the 2014–16 period,⁴ and reached approximately 25 percent by mid-2024. Nonetheless, the US dollar remains the most used currency by Chinese firms for trade invoicing and the use of the euro remained relatively moderate (Figure 2.1.1.2).

Drivers of the Use of RMB in Trade Invoicing

Figure 2.1.2 presents a breakdown of firms' reasons for RMB invoicing in trade. The initial increases in RMB adoption between 2009 and 2012 were largely policy-driven—a pilot program introduced in 2009 led a large number of exporting firms to invoice in RMB. The program significantly reduced transaction costs for RMB settlement in trade, for instance, by allowing designated foreign banks to have access to onshore RMB. State-owned firms were the early adopters as they tend to be more responsive to policies. These programs continued to expand after 2012, although their direct effect on RMB adoption appears to have diminished.

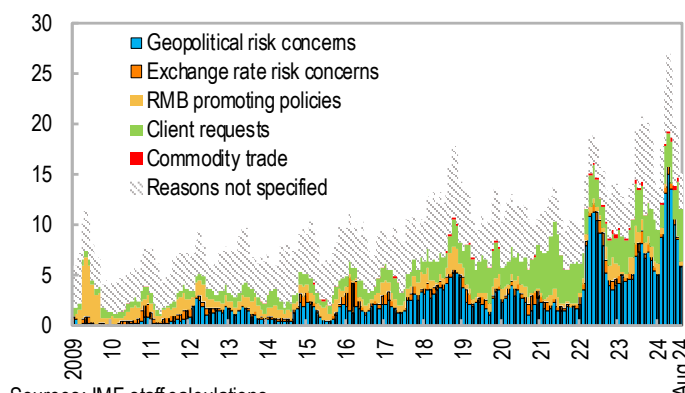
Box 2.1 (continued)

By late 2015 and early 2016, concerns about exchange rate volatility emerged as a major reason for the increasing use of RMB. In 2015, the Chinese authorities introduced a new exchange rate mechanism that allowed greater exchange rate movement. Many firms on the forum at the time reported that limiting exchange rate risks was a primary reason for adopting RMB. Given that a substantial proportion of Chinese exporters rely predominantly on domestic inputs (with limited exposure to foreign inputs), invoicing in RMB became a natural choice to mitigate the uncertainties associated with exchange rate fluctuations.

Between 2018 and 2022, a major driver for the increase in RMB invoicing was geopolitical concerns, primarily the escalation of US-China trade tension since 2018.⁵ To mitigate the impact of high US tariffs, many Chinese exporting firms chose to reroute their trade with the United States via third countries. Forum data indicate that the share of Chinese exporters engaged in rerouting increased from 6 percent during 2014-2017 to about 10 percent by the end of 2019. In addition, the data suggest that rerouting firms are more likely to use RMB for trade invoicing, especially those rerouting trade through Asia. During this period, the share of RMB invoicing increased from 6 percent to 17 percent, while the share remained broadly unchanged for the other firms. Among Chinese exporting firms engaging in rerouting between 2018 and 2019, RMB adopters tended to have stronger trade links with Asian countries than firms that invoice in other currencies.

In 2022, Russia's invasion of Ukraine introduced new geopolitical tensions. Western sanctions on Russia, including the exclusion of Russian banks from the Swift system, positioned the RMB as a viable alternative currency for Chinese firms trading with Russia. This shift was accompanied by a substantial surge in Chinese exports to and imports from Russia. The forum data indicate that Chinese firms engaging in trade with Russia have adopted or switched to the RMB for trade invoicing.

Figure 2.1.2. Firms' Reasons for Using Renminbi in Trade
(Percent of firms reporting RMB use for trade invoicing)



This box was prepared by Jiaqian Chen, Ting Lan, Yang Liu and Ran Pan, with support from George Cui and Kailin Gao (external consultant).

¹ Eichengreen (2011b), from a historical perspective, outlines a typical sequence in currency internationalization: first through trade invoicing and settlement, then private financial transactions, and finally as official reserves held by central banks and government.

² The forum data were merged with Chinese customs data, following Cui and Gao (2024), to obtain additional characteristics about the firms participating in the online forum.

³ The data allow only inference of whether a Chinese exporting or importing firm uses RMB in trade invoicing; it cannot determine whether RMB is the sole invoicing currency and, therefore, cannot rule out the possibility that these firms also use other currencies.

⁴ The forum data also lack information on the value of exports denominated in RMB, which could be one possible reason for the discrepancy with official statistics.

⁵ Another driver was "client request" for which information on the underlying reasons was lacking.

Box 2.2. Global Financial Safety Net

The global financial safety net (GFSN) plays a critical role in underpinning the stability and resilience of the IMS by providing insurance for countries against a crisis and supplying financing when crises hit (IMF 2016). GFSN has expanded significantly over the last two decades. It comprises four main layers: international reserves, bilateral swap arrangements, regional financial arrangements, and the IMF. Since 2000, the total stock of international reserve holdings has increased more than six times, reaching \$14.5 trillion at the end of 2023, while the size of other GFSN layers grew nearly 20 times, to about \$4.5 trillion. The latter reflects the expansion of bilateral swap lines (BSAs), the expansion of Chinese BSAs, and the large scaling-up of the IMF's lending capacity and Regional Financial Arrangements (RFAs) during the GFC and the European debt crisis. Specifically, the global network of BSAs expanded from six swap lines opened among advanced economy central banks in the early 2000s to more than 180 lines by 2021. While some temporary pandemic-related lines have expired, there are currently 150 swap lines in existence totaling \$2 trillion. Since 2009, there has been a rapid expansion of Chinese BSAs. This partly reflects China's efforts to promote the internationalization of the RMB, particularly its use in cross-border trade and direct investment.

The IMF is at the center of the GFSN. Unlike other layers, the IMF has a near-universal membership. Its total lending capacity has risen significantly since the GFC and now stands at almost \$1 trillion. Once implemented, the recently approved 16th General Review of Quotas boosting IMF members quotas by 50 percent will restore the primacy of IMF's permanent resources, reducing its reliance on borrowed funds. As a share of global external liabilities, however, the IMF's lending capacity has diminished considerably over the past decades, from about 1 percent in early 2000 to about ½ percent today.

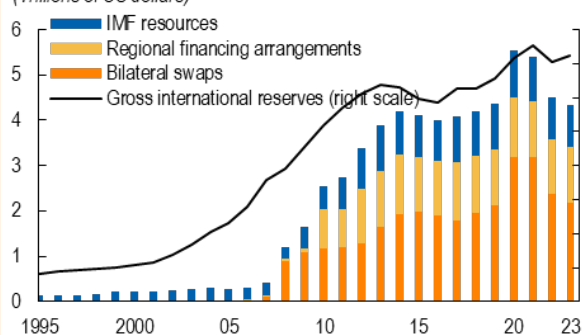
The GFSN played a significant role during the COVID-19 crisis, with the patterns of usage displaying a number of commonalities with previous crises. As in previous crisis episodes, drawdown of US dollar swap lines played an important role in the early stages of the COVID-19 crisis, helping advanced economies respond quickly to emerging threats to financial stability. Demand for IMF lending has remained consistently high since the height of the pandemic. By contrast, during the more regionally concentrated euro area crisis, RFAs (in this case the European Stability Mechanism) took on more of the heavy lifting, although this was complemented in a number of cases by significant IMF lending. Finally, during the pandemic, countries were unwilling or did not deem it necessary to make significant drawdowns of FX reserves prior to 2022, in part reflecting the unwinding of monetary and other forms of support extended at the beginning of the crisis, including the more extensive swap line availability.

Box 2.2 (continued)

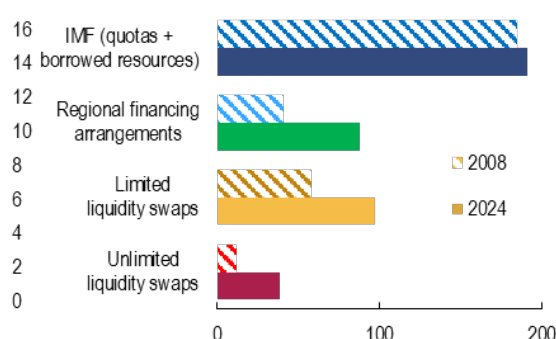
Figure 2.2.1. Evolution and Performance of the Global Financial Safety Net

1. GFSN Size and Composition, 1995–2023

(Trillions of US dollars)



2. Participation in the GFSN, 2008 versus 2024



3. Global Network of Liquidity Lines, 2010

(Billions of US dollars)



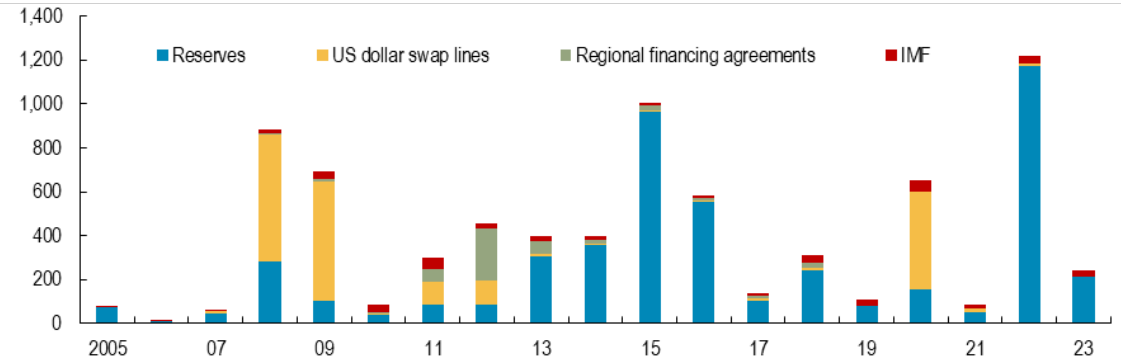
4. Global Network of Liquidity Lines, 2023

(Billions of US dollars)



5. Drawdown of the GFSN by Layer, 2005–23

(Billions of US dollars)



Sources: Central bank websites; regional financing agreement annual reports; central banks; annual reports of regional financial arrangements; Bahaj, Fuchs, and Reis (2024); Board of Governors of the Federal Reserve System (US) via FRED; IMF International Financing Statistics Database; and IMF staff calculations.

Note: In panel 1, Bilateral swaps data correspond to permanent-unlimited swap lines and limited-amount swap lines with an explicit withdrawal limit. Unlimited swaps figures are based on past usage or, if undrawn, on the average past maximum drawings of the remaining central bank members in the swap network. For regional financial agreements, data correspond to explicit lending capacity or limit where available, committed resources, or estimated lending capacity based on country access limits and paid-in capital; for the IMF, data correspond to lending capacity (quota and borrowing resources for countries in the Financial Transaction Plan less prudential balances). Two-way arrangements are counted only once. In panel 2, 2024 data is preliminary. In panel 5, IMF lending reflects gross disbursements (converted to US dollars at the prevailing exchange rate at the time of transaction). US Federal Reserve swap lines use is calculated as the maximum aggregate weekly drawdown in a given year. The use of swap lines in other currencies is excluded, given data limitations. Regional financial arrangements use reflects gross disbursements (converted to US dollars at the end-of-year rate, given data limitations). Foreign exchange reserves use is calculated as the aggregate year-over-year change in reserves for countries in which reserves declined (that is, stripping out those countries in which reserves increased). GFSN = global financial safety net.

This box was prepared by Ernesto Crivelli. See forthcoming Board paper entitled “The Global Financial Safety Net in an Evolving World—A Stocktaking” for further analysis of the GFSN.

Box 2.3. Unveiling Patterns in Cross-Border Payments via Swift

The Society for Worldwide Interbank Financial Telecommunication (Swift) network is the most widely used messaging system among banks and other financial institutions, which mediates the bulk of cross-border financial institution and customer-related payments. Drawing on a data set of cross-border payments recorded on the Swift network, this box presents new empirical evidence on the patterns and determinants of cross-border payment flows.¹ Three key stylized facts emerge.

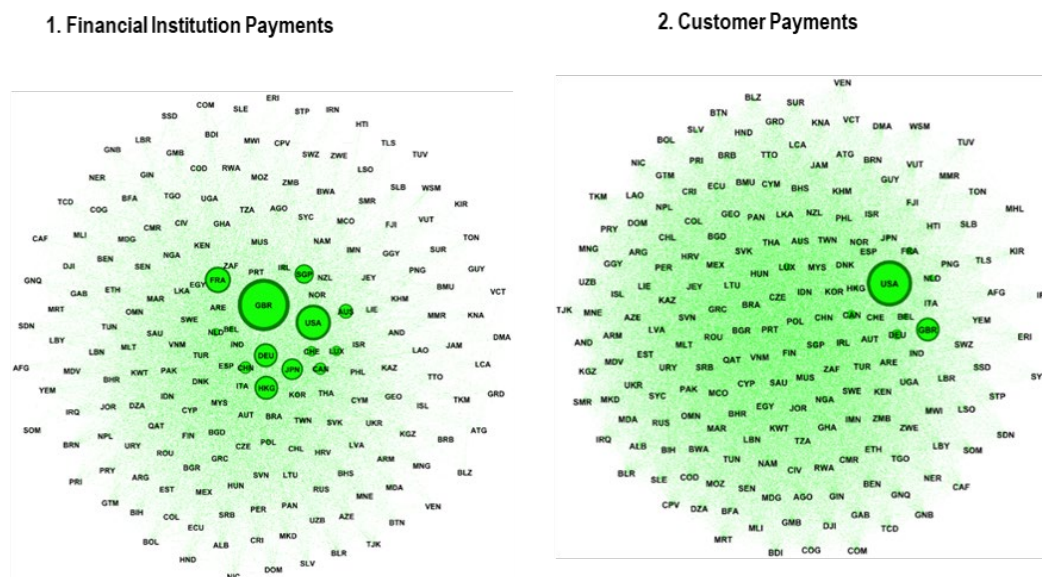
- In 2024, more than two-thirds of the financial institution cross-border payment value was intermediated by financial institutions in third-party economies—including the United States, Germany, Canada, and the United Kingdom. For consumer payments, more than one-fifth of the cross-border payment value was intermediated. The share of the intermediated financial institution payment value that is denominated in the US dollar exceeded the average but vice versa for the other SDR basket currency transactions.
- Networks of cross-border payments are highly interconnected, characterized by a large number of links connecting each economy node and a core-periphery structure. Economies with the highest centrality—an indicator of connectedness and structural importance—are predominantly major advanced economies and financial centers (Figure 2.3.1). The United States and the United Kingdom rank the highest in centrality for customer payments and financial institution payments, respectively.
- Between 2021 and 2024, connectivity among economies increased as evidenced by a growing number of links connecting each node. This increasing connectivity was particularly pronounced for payments in RMB, although the increase has been from a low base.

The gravity equation estimated on payments data for 187 beneficiary economies reveals a strong correlation between bilateral cross-border payments and factors indicative of informational proximity and economic ties. Cross-border payment values are higher between geographically closer economies. Greater bilateral imports, portfolio investment, and foreign direct investment are all associated with higher payment values. These findings align with existing findings on the importance of similar factors in shaping bilateral portfolio equity holdings and cross-border bank claims.²

Notable heterogeneity exists across payment types. Distance is a crucial factor for the value of customer payments but not as much for payments made by financial institutions. Economic ties—especially those formed through investment—consistently exhibit positive correlations with both financial institution and customer cross-border payments. Comparing payments by transaction size, smaller payments are more sensitive to a common language and historical colonial ties, while larger payments show a stronger association with economic relationships between originator and beneficiary economies.

Box 2.3 (continued)

Figure 2.3.1. Cross-Border Payment Networks



Source: Cerutti, Firat and Hengge (2025).

Notes: The figure illustrates payments from originator to beneficiary economies without depicting intermediaries and is generated using the Fruchterman-Reingold algorithm. Node sizes are determined by the Katz-Bonacich centrality of each economy. Edges between nodes are represented by green lines. Data labels in the figure use International Organization for Standardization country codes.

This box was prepared by Eugenio Cerutti, Melih Firat, and Martina Hengge based on Cerutti, Firat and Hengge (2025). Data relating to Swift messaging flows is published with permission of S.W.I.F.T. SC. SWIFT © 2025. All rights reserved. Because financial institutions have multiple means to exchange information about their financial transactions, Swift statistics on financial flows do not represent complete market or industry statistics. Swift disclaims all liability for any decisions based, in full or in part, on Swift statistics, and for their consequences.

¹ The analysis focuses on financial institution gross cross-border payments and customer cross-border payments over 2021–24.

² See, for example, Cerutti, Casanova, and Pradhan (2023) and Lane and Milesi-Ferretti (2008).

Box 2.4. Measuring International Stablecoin Flows

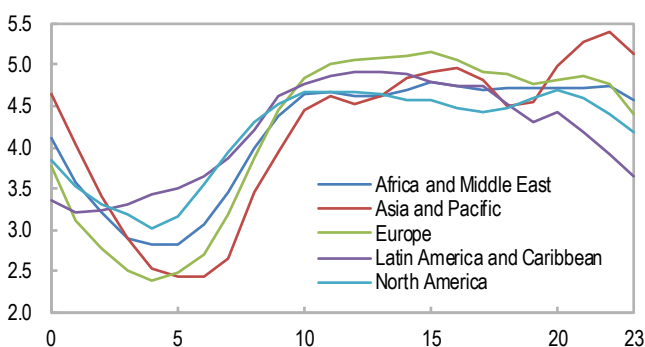
Stablecoins are crypto assets that aim to maintain a stable value relative to a specified asset, typically the US dollar. Despite stablecoins having become increasingly popular—by some estimates the volume of stablecoin capital flows exceeded Bitcoin capital flows by two to four times in 2023—much of the literature has focused on measuring cross-border flows on Bitcoin transactions (for example, Cerutti, Chen and Hengge 2024).¹

This box examines cross-border stablecoin flows using a novel method developed by Reuter (2025). The method uses two steps. First, it constructs a training sample consisting of wallets whose geographic location can be reliably identified. The validity of this training sample is illustrated in Figure 2.4.1, which shows wallet activity volumes in local time zones. As expected, activity is lowest during the nighttime and increases during the day. Furthermore, the activity patterns align closely across regions, supporting the validity of the training sample. In the second step, a machine learning model is trained to recognize these regional activity patterns and is then used to infer the geographic location of other wallets.

After estimating the geographic distribution of wallets, the results are applied to estimate stablecoin flows in USDC and USDT, the two most significant stablecoins, in 2024.² Figure 2.4.2 depicts the geographic patterns of gross stablecoin flows, totaling \$2 trillion in 138 million transactions. The average transaction size is \$14,630, indicating that flows are, on average, retail flows. North America and Asia and Pacific account for the largest fraction of gross flows, followed by Europe, Africa and Middle East, and Latin America and the Caribbean. However, relative to regional GDP, flows from Africa and Latin America are larger than in the other regions, hinting at the relative popularity of stablecoins in Africa and Latin America. Finally, flows are predominantly inter-regional, highlighting the use of stablecoins for international transfers.

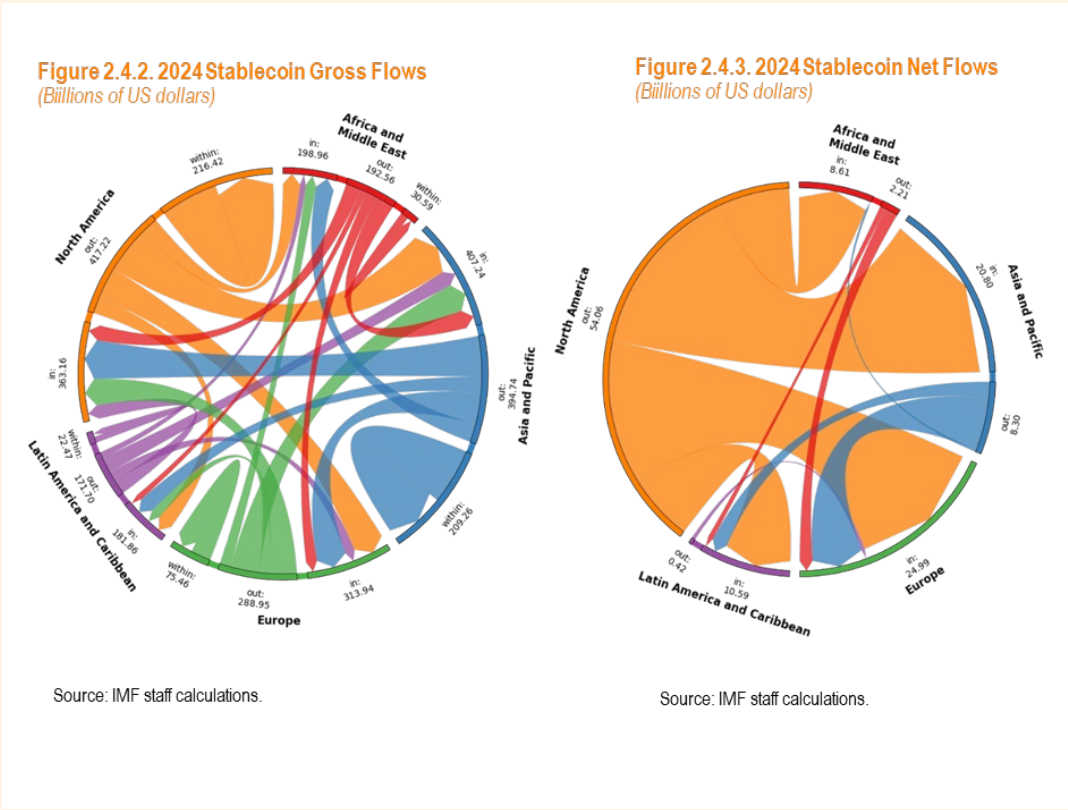
Bilateral net flows are depicted in Figure 2.4.3. Strikingly, almost all are flows from North America to other regions, which total \$54 billion. This suggests that stablecoins flowing from North America to other regions meet some of the dollar demand around the world. Last, there are net flows from Africa, Asia, and Latin America into Europe, consistent with evidence that crypto assets are used to facilitate capital flight (Graf von Luckner, Koepke, and Sgherri 2024).

Figure 2.4.1. Activity Profiles by Region
(Percent of transactions)



Source: IMF staff calculations.

Box 2.4 (continued)



This box was prepared by Marco Reuter.

¹ Some studies have considered crypto assets more holistically, providing some preliminary results on stablecoins (for example, Cardozo and others 2024).

² The analysis covers stablecoin flows on the blockchains Ethereum, Binance Smart Chain, Optimism, Arbitrum, Base, and Linea. Thus, the estimates are a lower bound for total stablecoin flows in 2024.

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