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Can innovation in payment systems affect the ranking of international currencies?

The international monetary system (IMS) remains dominated by the US dollar for all functions of an international currency. However, two recent dynamics could threaten this supremacy: rising geopolitical tensions and technological innovations in cross-border payment systems. The disorderly expansion of innovative initiatives, driven by the desire of some large emerging countries to become less dependent on the US dollar, could indeed pose a risk of fragmentation of the IMS. The Eurosystem is pursuing a firm strategy to modernise its infrastructure, which emphasises its strategic autonomy while actively contributing to multilateral efforts and international cooperation in this area. Financial innovations could help change the IMS by lowering transaction costs between currency pairs. However, empirical studies on this subject remain to be developed.

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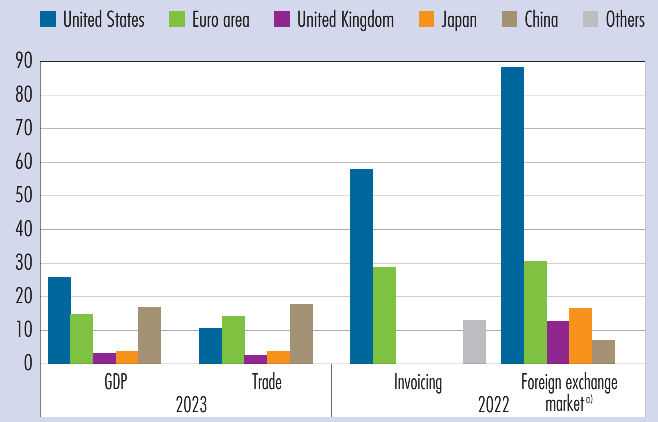
JEL codes
F31, F33,
F42

88%
the dollar's share
of the foreign exchange market
(out of a total of 200%)

75
the number of jurisdictions
that currently have an instant
payment system in place

1.5 to 2.5%
the average commission charged in 2023
on payment markets for cross-border retail
transactions, depending on the use case

Weight of economies and currencies
(%)



Sources: World Bank (WDI indicators), IMF, Federal Reserve (Fed), BIS; authors' calculations.
a) Since a transaction always involves two currencies, the sum of the shares is equal to 200%.

The international role of a currency is traditionally associated with the three functions of money: medium of exchange, unit of account, and store of value (Krugman, 1980). Furthermore, the theoretical corpus looks at a currency's internationalisation using three complementary approaches that integrate: i) market aspects (transaction costs associated with the use of a currency, in particular); ii) institutional issues (government decisions); and iii) geopolitical issues, where the internationalisation of a currency is part of a broader international political order (Bénassy-Quéré, 2016).

Current initiatives aimed at improving cross-border payments mainly concern the use of an international currency in its function as a medium of exchange and can be analysed using the three approaches mentioned above. This article presents these strategic initiatives for the Eurosystem and examines their effects on the international role of currencies from a geopolitical and institutional perspective. It concludes with a discussion of how these initiatives could affect the transaction costs associated with international currencies.

At the end of the article, a glossary explains the main technical terms.

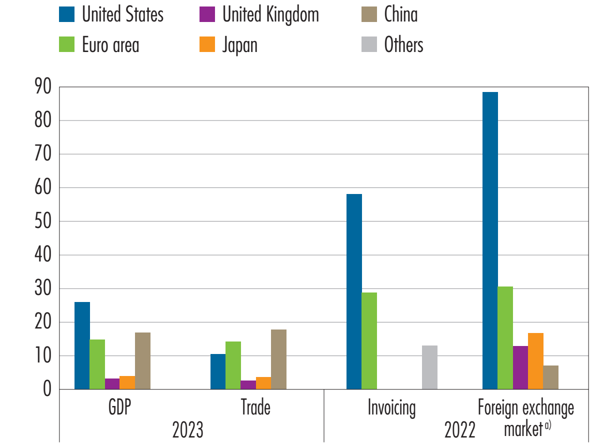
1 The dominance of the dollar is threatened by geopolitical tensions and innovative payment systems

An international monetary system organised around the US dollar and, to a lesser extent, the euro

In the context of international payments, the attractiveness of the US dollar (hereinafter referred to as the dollar) stems in particular from its role as a medium of exchange, which gives it a dual function as a invoicing/settlement currency and a vehicle on the foreign exchange market. The dollar's dominance in this role is illustrated by the gap between the weight of the US economy (around 26% of GDP and 11% of world trade in 2023) and the use of its currency in international payments (over 50% of trade denominated in dollars in 2022) and on the foreign exchange market (with the dollar present in around 88% of currency pair trades in 2022) – see Chart 1. The dollar's dominance as

C1 Weight of economies and currencies

(%)



Sources: World Bank (WDI indicators), IMF, Federal Reserve (Fed), BIS authors' calculations.
a) Since a transaction always involves two currencies, the sum of the shares is equal to 200%.

a vehicle currency is particularly noticeable on the foreign exchange market, where even trade between major currencies, such as the euro and the pound sterling, is predominantly carried out indirectly through the dollar. In 2022, 74% of transactions involving the euro were against the dollar, and only 5% against the pound sterling and 3% against the yen. In other words, only 12% of transactions were carried out without involving the dollar.

The dominance of the dollar within the international monetary system (IMS) and the international financial system has enabled the United States to use its currency and the dollar-denominated financial system to exert influence, thus creating a "political risk" of dependence on the dominant currency (McDowell, 2023). Against this backdrop, the recent rise in geopolitical tensions is heightening the desire of some countries to invest in alternative payment systems, in particular to circumvent the use of the dollar. These developments could contribute to a phenomenon of "geoeconomic fragmentation," leading to the fragmentation of payment systems and even technological decoupling (Gopinath, 2024).

At the same time, the G7 and G20 work programmes continue to place a strong emphasis on cross-border payments, in line with the G20 roadmap adopted in 2020 (CSF, 2020), which sets quantitative targets to be achieved by 2027 and 2030 in terms of speed, cost, transparency, and accessibility of these payments. These payment flows are processed by a network of correspondent banks that has gradually concentrated around the most profitable and least risky corridors, i.e. those directly involving the dollar or currencies that are easily convertible into dollars. This has contributed to excluding some developing countries because of the risks they may represent. According to the Financial Action Task Force (FATF), this "derisking" is "the phenomenon of financial institutions terminating or restricting business relationships with clients or categories of clients to avoid, rather than manage, risk in line with the FATF's risk-based approach." The work of the G7 and G20 therefore aims to improve the traditional banking correspondence network, but also to develop innovative solutions beyond traditional channels.

The new technological landscape is paving the way for the development of new payment systems that use non-Western currencies

Recent initiatives aimed at improving cross-border payments vary depending on the segment considered (retail payments, migrant remittances, large-value payments), the frictions involved (e.g. currency conversion costs, compliance costs), the technology used and, consequently, the timeframe for implementation. In the short and medium term, the G20 roadmap promotes the interlinking of instant payment systems (IPS), which could be a significant milestone in improving cross-border retail payments.

In the interbank payments segment, China's unilateral initiative to launch the Cross-Border Interbank Payment System (CIPS, a real-time gross settlement system in renminbi between mainland China and international markets) could open up new opportunities for cross-border renminbi settlements.

The implementation of FX on-chain[1] solutions, which may or may not involve central bank digital currency (CBDC) to facilitate and secure currency trades, is only planned for the longer term. At this stage, the Mariana project led by the Bank for International Settlements (BIS) Innovation Hub, which relies on automated market makers (AMMs) as foreign exchange tools, has consisted in conducting experimentations without actual transactions. The participants in mBridge (see below), including China, have not yet tackled the issue of foreign exchange, but are considering doing so. These initiatives are closely linked to the future structure of the IMS and, therefore, to the respective roles of each currency in that system.

2 Faced with these technological developments, the leading powers are developing different strategies

China and the United States are pursuing power strategies, but in opposite directions

On the one hand, China is actively investing in payment systems to reduce its dependence on the dollar and strengthen the position of the yuan (officially called the renminbi) on the international stage. This concerns both the yuan used domestically (CNY) and the yuan traded abroad (CNH), within a more flexible framework. To this end, it has launched its own digital currency (the e-CNY), developed an alternative settlement infrastructure (CIPS) and is participating in international projects to facilitate currency trades, some of which give priority to its geopolitical partners.

For example, the recent BRICS Bridge project, still at the announcement stage, aims to create a platform between BRICS[2] for the interliking of CBDCs. This solution remains less advanced than the multi-CBDC platform project known as mBridge, involving the central banks of China, Hong Kong, and Thailand, which now has a pilot version with minimal functionality and is seeking to attract new international participants. Saudi Arabia recently joined this project. This participation could prove strategic in the future, as China gradually seeks to settle its hydrocarbon purchases in the Middle East in its own currency.[3]

1 FX stands for forex, foreign exchange market; on-chain refers to blockchain.

2 Brazil, Russia, India, China, South Africa, then joined by Egypt, the United Arab Emirates, Ethiopia, Indonesia, and Iran (BRICS, then becoming BRICS+). See also Banque de France, 2024.

3 An agreement between China and Saudi Arabia was thus concluded in November 2023, on the sidelines of Xi Jingping's visit to the kingdom, and aims to allow Saudi oil to be settled in yuan (see Reuters, 2023).

On the other hand, the United States seems to be focusing on improving domestic infrastructure, in particular with the launch of its FedNow IPS and the promotion of private payment solutions. This US position is consistent with:

i) Strong political opposition to CBDCs. The US political class is hostile to the distributed ledger technologies (DLT)[4] underlying CBDCs, on the grounds that they would enable transactions to be traced by a public entity.

ii) The ultra-dominant position of US private players in retail payments (Visa and MasterCard networks) and fears that payment innovations could undermine the status quo (see box below);

iii) The leading international role of US banks in the correspondent banking network;

iv) The authorities' confidence in the ability of US private sector actors to take advantage of their technological lead in digital finance.

The Eurosystem is developing a strategy to modernise its infrastructure

Interconnecting IPSs is often seen as a way of generating short-term gains for cross-border retail payments. These systems are state-of-the-art in terms of technology, operate continuously (24/7, 365 days a year), and 75 jurisdictions have already implemented an IPS (BIS, 2024a). However, cross-border retail payments account for only a small share of cross-border payments, around 23% in value terms, compared with 77% for wholesale payments. These IPSs are sometimes highly developed, such as India's Unified Payments Interface (UPI) and Brazil's Pix. So far, the gains

BOX

The reconfiguration of the international monetary system and private initiatives in the field of payments

Some innovative private companies are playing an increasing role in the international payments ecosystem, which is likely to marginally affect the international monetary system (IMS). Companies such as PayPal, Stripe, and Square offer cross-border online payment solutions that facilitate international transactions without resorting to traditional banking infrastructures. The growing adoption of these solutions could change the structure of the IMS by shifting power from banking institutions to private technology companies. This is also the case with electronic wallets and mobile payment solutions. Services such as Apple Pay, Google Pay, and WeChat Pay have greatly democratised electronic payments, especially for everyday transactions.

Private actors also aim to offer new payment solutions based on the latest technological innovations. In particular, the growing use of distributed ledger technology (DLT) and the increasing contestability[1] of the payment solutions market have led to the emergence of cryptoassets intended to serve as means of payment. These solutions, which are overwhelmingly based on the trading of stablecoins,[2] promise transparency and greater traceability of transactions, shorter settlement times, lower costs, and easier access than traditional bank accounts. However, their role in international payments remains marginal. Above all, these solutions do not fulfill the three traditional functions of money: while stablecoins can be used as a medium of exchange, their value is in no way guaranteed, as shown by the sudden collapse of Tether in 2022. The opacity of their backing introduces significant risks for users.

1 A market is considered contestable when participants are free to enter and exit the market, under tolerable conditions, thus making it competitive.

2 The exact definition of stablecoins is still under debate at present. The European Central Bank proposes the following definition: "digital units of value that differ from existing forms of currencies (e.g. deposits, e-money, etc.) and rely on a set of stabilisation tools to minimise fluctuations in their price against a currency, or basket thereof."

4 For the time being, transactions in central bank money are recorded in central bank payment systems and those in commercial money in commercial bank systems.

are essentially domestic, the focus being on the financial inclusion of populations furthest from the traditional banking system. For example, UPI accounted for 75% of electronic transactions in India in 2023 (and 90% in 2027 according to PwC forecasts). Pix is used by 80% of the adult population in Brazil. However, various IPS interlinking initiatives, supported by the G20, are underway. They aim at interlinking IPSs in the short or medium term, either multilaterally—such as in the Nexus project led by the Bank for International Settlements (BIS)—or bilaterally, in order to extend domestic benefits to a global level.

The Eurosystem is seeking to develop the strategic potential of its pan-European instant payment settlement platform, TIPS (TARGET Instant Payment Settlement), to avoid the risk of economic and financial fragmentation (ECB, 2024b).

At the level of the European Economic Area (EEA), the chosen strategy is regional integration through the gradual inclusion of Nordic currencies in the TIPS platform; this has already been done for Sweden since February 2025 and for Denmark since 22 April 2025 (ECB, 2025). Finally, the ECB recently authorised the Banca d'Italia[5] to develop a "clone" of the TIPS[6] platform available to several Western Balkan countries as part of the modernisation of their infrastructure, in order to settle instant payments in euro in that region.

For the time being, only single-currency settlements are possible within TIPS (i.e., euro against euro, or Swedish krona against Swedish krona). The Eurosystem is planning to launch a cross-currency functionality to extend settlement to transactions requiring a currency conversion. Payment services providers will continue to manage other aspects related to foreign exchange (rates, liquidity, etc.) and will therefore also be key to the success of this new functionality.

TIPS fully meets the G20 objectives for improving cross-border payments, at least in the retail and remittance segments. The platform can also contribute to deepening regional integration and the international role of the euro, and to strengthening ties with countries that share economic or political interests.

At the multilateral level, several options are being explored, such as a connection to the Nexus project, which has already been tested in 2022 (Banca d'Italia, 2022). These initiatives reflect the recognition of a growing risk of fragmentation of the IMS and the possible undermining of central banks' role as anchors of the IMS.

Interlinking agreements are currently based on the correspondent banking network: settlement banks (commercial or central banks) convert currencies along the payment chain. These procedures remain opaque and costly. As regards foreign exchange transactions, experiments are currently underway (notably with the BIS) to test the use of automated market makers (AMM) in order to offer an FX on-chain solution, thereby providing a single counterparty for currency conversions. Such a solution would lower settlement risk in a similar way to the payment versus payment (PvP) settlement mechanism currently offered by the continuous linked settlement (CLS) system, which lessens settlement risk by guaranteeing the simultaneous execution of both sides of a foreign exchange transaction, but is only available for 18 currencies.

This new solution is linked to the development of an interbank central bank digital currency, as in the Mariana project that brings together the Banque de France, the Swiss National Bank, and the Monetary Authority of Singapore. The expected (but prospective) benefits include not only a reduction in settlement risk and costs, but also greater transparency, thereby meeting the G20's objectives in this area. Finally, other projects aim at reducing the costs arising from regulatory differences between countries. Project Mandala is exploring the possibility of embedding the political and regulatory requirements specific to each jurisdiction in a common decentralised protocol.

5 Banca d'Italia operates and develops the TIPS infrastructure, acting on behalf of the Eurosystem service-providing central banks.

6 The Governing Council of 7 June 2024 approved the creation of a TIPS platform for the central banks of Montenegro, Kosovo, the Republic of North Macedonia, and Bosnia and Herzegovina, in addition to the central bank of Albania, which had previously obtained the same agreement (ECB, 2024a).

3 The actual impact of innovation in payment systems on the international monetary system is still poorly documented

In theory, payment innovations could reduce the network effects that benefit the dollar

The benefit of a currency is self-reinforcing, particularly according to the transaction cost theory (Swoboda, 1969; Krugman, 1980) and the network effects theory (Matsuyama et al., 1992). Thus, in terms of its role as medium of exchange, the greater the volume of trading in a currency, the more its fixed transaction costs can be amortised over a large number of transactions. Lower transaction costs encourage the use of the vehicle currency, which in turn helps to raise transaction volumes and reduce costs.

The use of a vehicle currency as a medium of exchange also increases its use with regard to the other international currency functions, in particular that of store of value (Portes and Rey, 1998; Devereux and Shi, 2013; Gopinath and Stein, 2018). The various functions of a currency (medium of exchange, unit of account, store of value) thus become complementary and tend to reinforce each other (network effects), which, in an international context, creates strong inertia, currently in favour of the dollar.

In theory, payment innovations have the potential to erode network effects and the role of the dollar as a medium of exchange, and could also affect its functions as a unit of account and reserve asset. According to theoretical intuition, faster and more efficient technologies, by lowering transaction costs, should reduce the benefit for IMS players of using a single benchmark currency (Genberg, 2009; He and Yu, 2016; Brunnermeier et al., 2019; Eichengreen, 2019).

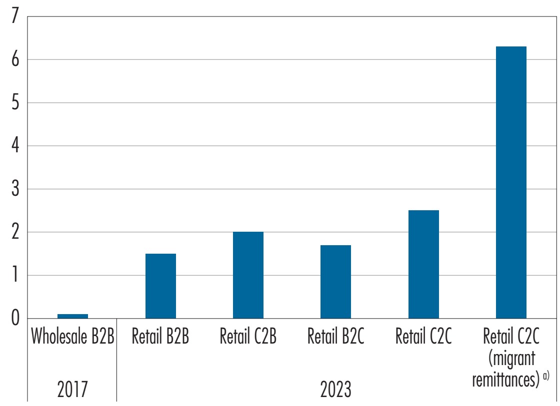
However, it is important to qualify this intuition, which remains theoretical at this stage. While these innovations may reduce the dollar's role as a medium of exchange, its use as a store of value (US Treasury securities as reserve assets) remains dependent on other structural factors. Indeed payment innovations do not alter the depth and liquidity of the market for dollar-denominated debt securities, nor do they affect the legal certainty offered by the US economy and institutional framework (Flemming and Judson, 2024). However, for a currency to develop as a reserve asset, it must be freely convertible – which requires open currency markets – and must have deep financial markets to ensure its liquidity. Some economists therefore suggest that improving competition between different international currencies could lead to a separation of the various functions of money, with, for example, one currency specialising as a medium of exchange and another specialising as a reserve asset (Brunnermeier et al., 2019).

The impact of innovations on the dollar will vary depending on the flows, payment corridors and markets concerned

Frictions in cross-border payments vary significantly depending on (i) the segment ("wholesale" or "retail"[7]) and use case (C2C, B2C, C2B, B2B – acronyms explained below Chart 2), and (ii) the geographical area concerned. Studies estimate an average commission of 0.1% for transactions conducted in the wholesale segment in 2017,

C2 Average transaction costs worldwide by segment and use

(%)



Sources: FSB, 2024; McKinsey and SWIFT, 2018.
Notes: Wholesale payments from USD 100,000.
B2B, business-to-business; C2B, consumer-to-business; B2C and C2C according to the same terminology.
a) Average cost of a USD 200 transfer.

7 The Financial Stability Board (FSB) distinguishes between two segments based on a transaction threshold of EUR 100,000, with transactions above this threshold considered large-value payments.

compared with a range of 1.5% to 2.5% for the retail segment in 2023, albeit with significant regional differences (FSB, 2024; McKinsey and SWIFT, 2018). For example, the transaction cost for a B2B retail payment from Europe and Central Asia is estimated at 0.8%, compared with nearly 3% for Latin America and the Caribbean. The differences are partly due to economies of scale, with transaction costs falling as the amounts traded increase. Thus, the potential gains are higher in the retail payments market than in the wholesale market.

In addition, a distinction should be made between initiatives that affect the use of a currency as an invoicing currency and those that result in conversion on the foreign exchange market.

In terms of invoicing, reducing friction in cross-border payments could promote trade and financial flows between the economies concerned by the innovations. Since the volume of trade flows is one of the key determinants of a currency's internationalisation, payment innovations are likely to indirectly support the use of the currencies of countries that trade (Rey, 2001). IMF research shows that efficient payment systems have a positive impact on the use of the currencies for which they were designed. A one-unit increase in payment efficiency (measured by the number of payment corridors) could lead to a 4-9% rise in the share of a given currency in international payments (Seunghwan et al., 2024).

However, on the foreign exchange market, only certain more forward-looking initiatives such as Project Rialto (led by the Eurosystem Centre of the BIS Innovation Hub) would have a direct effect on the use of certain currencies by improving the conversion process. Projects aimed at reducing the costs of direct conversion between the currencies of two separate jurisdictions (FX costs) would reduce the financial benefit of using the dollar as a vehicle currency in the foreign exchange market (Brunnermeier et al., 2019). Foreign exchange costs are a significant component of the total cost of a cross-border payment. In 2023, in the retail segment, foreign exchange fees accounted for over 50% of the total cost in all use cases, ranging from 60% for C2C transactions to 97% for C2B transactions on average (FSB, 2023b). Lowering these costs would not only encourage the use of currencies other than the dollar as a medium of exchange on the foreign exchange market, but also as an invoicing currency (Goldberg and Tille, 2008).

References

Banque de France (2024)
"Expansion of BRICS: what are the potential consequences for the global economy?", *Banque de France Bulletin*, No. 250/2, January-February.
Download the document

Banca d'Italia (2022)
"Cross-currency settlement of instant payments in a cross-platform context: a proof of concept", *Research Papers (Markets, Infrastructures, Payment Systems)*, No. 19, March.

Bank of China (2024)
White Paper on RMB Internationalization – Cross Border Use of RMB in the Jointly Build Belt and Road Countries and RMB Financing in Offshore Markets.

Bénassy Quéré (A.) (2016)
"The euro as an international currency", *Routledge Handbook of the Economics of European Integration*, edited by Badinger and Nitsch.

Bertaut (C.), von Beschwitz (B.) and Curcuru (S.) (2023)
"The International Role of the U.S. Dollar", *FEDS Notes*, Federal Reserve, June.

BIS, Bank for International Settlements (2011)
"Currency internationalisation: analytical and policy issues", in "Currency internationalisation: lessons from the global financial crisis and prospects for the future in Asia and the Pacific", *BIS Papers*, No. 61, December.

BIS (2021)
"Trading in the DeFi era: automated market maker", *BIS Quarterly Review*, December.

BIS (2023)
Project Mariana. Cross border exchange of wholesale CBDCs using automated market makers, BIS Innovation Hub, September.

BIS (2024a)
"Steady as we go: results of the 2023 CPMI cross border payments monitoring survey", *CPMI Brief*, No. 5, Committee on Payments and Market Infrastructures, June.

BIS (2024b)
"Project mBridge reached minimum viable product stage", *Projects*, BIS Innovation Hub, November.

BIS (2025)
Project Rialto. Improving instant cross border payments using central bank money settlement, BIS Innovation Hub, February.

Brunnermeier (M. K.), James (H.) and Landau (J. P.) (2019)
"The Digitalization of Money", *NBER Working Paper Series*, No. 26300, National Bureau of Economic Research, September.

ECB, European Central Bank (2020)
"Stablecoins: Implications for monetary policy, financial stability, market infrastructure and payments, and banking supervision in the euro area", *Occasional Paper Series*, No. 247, ECB Crypto Assets Task Force, September.

ECB (2024a)
Decision of the ECB Governing Council, 21 June.

ECB (2024b)
"Eurosystem launches initiatives to improve cross border payments by interlinking fast payment systems", *MIP News*, 21 October.

ECB (2025)
"Danish krone now available in all TARGET Services", press release, 23 April.

Eichengreen (B.), Mehl (A.) and Chitu (L.) (2017)
How Global Currencies Work: Past, Present, and Future, Princeton University Press, November.

Flemming (J.) and Judson (R.) (2024)
"Implications of a U.S. CBDC for international payments and the role of the dollar", *FEDS Notes*, Federal Reserve, February.

FSB, Financial Stability Board (FSB) (2020)
Enhancing Cross border Payments. Stage 3 roadmap, October.

FSB (2023a)
G20 Roadmap for Enhancing Cross border Payments. Consolidated progress report for 2023, October.

FSB (2023b)
Annual Progress Report on Meeting the Targets for Cross border Payments: 2023 Report on Key Performance Indicators, October.

FSB (2024)
Annual Progress Report on Meeting the Targets for Cross border Payments: 2024 Report on Key Performance Indicators, October.

Goldberg (L. S.) and Tille (C.) (2008)
"Vehicle currency use in international trade", *Journal of International Economics*, Vol. 76(2), December, pp. 177-192.

Gopinath (G.) (2024)
"Geopolitics and its Impact on Global Trade and the Dollar", conference, Stanford Institute for Economic Policy Research (SIEPR), 8 May.

Gopinath (G.) and Stein (J. C.) (2018)
"Banking, trade, and the making of a dominant currency", *NBER Working Paper Series,* No. 24485, National Bureau of Economic Research, April.

Gourinchas (P. O.), Rey (H.) and Sauzet (M.) (2019)
"The International Monetary and Financial System", *NBER Working Paper Series,* No. 25782, National Bureau of Economic Research, April.

Hartmann (P.) (1998)
"The currency denomination of world trade after European monetary union", *Journal of the Japanese and International Economies*, Vol. 12, No. 4, December, pp. 424-454.

He (D.) and Yu (X.) (2016)
"Network effects in currency internationalisation: Insights from BIS triennial surveys and implications for the renminbi", *Journal of International Money and Finance*, Vol. 68(C), July, pp. 203-229.

ICBA, Independent Community Bankers of America (2024)
"Fed researchers say CBDC wouldn't disrupt U.S. dollar's role", February.

IMF, International Monetary Fund (2024)
"Digital Money, Cross Border Payments, International Reserves, and the Global Financial Safety Net: Preliminary Considerations", *IMF Notes,* No. 2024/001, January.

Krugman (P.) (1980)
"Vehicle Currencies and the Structure of International Exchange", *Journal of Money, Credit and Banking*, Vol. 12, August, pp. 513-526.

Matsuyama (K.), Kiyotaki (N.) and Matsui (A.) (1993)
"Toward a theory of international currency", *The Review of Economic Studies,* Vol. 60, No. 2, April, pp. 283-307.

McKinsey & Company and SWIFT (2018)
A vision for the future of cross-border payments, October.

Portes (R.) and Rey (H.) (1998)
"The Emergence of the Euro as an International Currency", *Economic Policy,* Vol. 13, No. 26, April, pp. 306-343.

PwC (2023)
The Indian payments handbook – 2023 2028.

Reuters (2023)
"China, Saudi Arabia sign currency swap agreement", 20 November.

Rey (H.) (2001)
"International Trade and Currency Exchange", *The Review of Economic Studies*, Vol. 68, No. 2, pp. 443-464.

Tombini (A.) (2023)
"The impact of international fragmentation and the role of the US dollar", speech, Chief Representative for the Americas at the Bank for International Settlements (BIS), International Finance Forum, 28 October.

Waller (C. J.) (2024)
"Interlinking Fast Payment Systems for Global Financial Inclusion and Efficiency", speech, member of the Board of Governors of the US Federal Reserve System, Global Fintech Fest, Mumbai, 28 August.

Glossary

"Augmented" FPS

An "augmented" FPS is used to make instant straight-through-processing payments (examples: Pix and UPI – see below). This solution covers settlements and clearing as well as payments at the point of sale by the user, via an easy-to-use interface and often with the possibility of using identification proxies (phone number, email address).

Automated market maker (AMM)

A decentralised exchange protocol that enables traders to exchange digital assets without relying on traditional intermediaries, by using liquidity pools (see BIS, 2021).

Central bank digital currency (CBDC)

Digital currency issued and guaranteed by a central bank, which constitutes a direct claim on the latter.

Continuous linked settlement (CLS)

A foreign exchange settlement system that eliminates settlement risk by ensuring that payments in two currencies are made simultaneously (see PvP below).

Correspondent banking

Correspondent banking refers to the provision of banking services by one bank (the correspondent bank) on behalf of another bank (the client or respondent bank). It enables the latter to offer its own customers services that it would not be able to provide directly, such as cross-border payments.

Cross-border interbank payment system (CIPS)

Chinese large-value payment system (RTGS – see below), launched in 2015, which specialises in the settlement of RMB cross-border transactions.

Cross-border payment corridor

A bilateral or multilateral payment relationship between two jurisdictions (countries or economic areas) for the cross-border transfer of funds. In concrete terms, this refers to the flow of payments (often in fiat currency, but also in e-money or stablecoins) between two currencies or two national financial systems.

Distributed ledger technology (DLT)

Technology that enables data to be stored and shared in a decentralised and secure manner. It is often associated with blockchains.

Fast payment system (FPS)

An instant payment system for carrying out instant or near-instant transfers of funds between users that is available on a continuous basis.

Financial market depth

Financial market depth expresses the market's ability to absorb large volumes of transactions without causing excessive price fluctuations. It reflects, among other things, the diversity of instruments available, the number of participants and the liquidity offered at different maturities. It is essential for ensuring price stability and the liquidity of a widely used currency.

FX on-chain

A centralised or decentralised FX (foreign exchange) application deployed on a distributed ledger (distributed ledger technology – see above) to manage the pricing and settlement/delivery of the currencies concerned in the form of tokens.

Mariana

A project conducted by the Bank for International Settlements (BIS) that explores the use of AMMs (see above) for the cross-border trading of wholesale central bank digital currencies (CBDCs) with the aim of improving the efficiency of the foreign exchange market and reducing settlement risks.

mBridge

A collaborative project that aims to develop a multi-CBDC (see above) platform shared between central banks and commercial banks, using distributed ledger technology (DLT – see above) to make instant cross-border payments and settlements.

Nexus
A project conducted by the Bank for International Settlements (BIS) that aims to connect the fast payment systems of different countries in order to facilitate instant cross-border payments, in line with the objectives promoted by the G20.

Payment versus payment (PvP)
A one-step settlement mechanism that ensures that the transfer of one currency only occurs if the transfer of the other currency takes place, reducing settlement risk in foreign exchange transactions.

Pix
Brazil's instant payment system that offers real-time fund transfers 24 hours a day, 7 days a week.

Real-time gross settlement system (RTGS)
Real-time gross settlement system for large-value payments, where each transaction is settled individually without prior clearing.

Remittances
According to the World Bank (2023), these remittances correspond to "personal transfers and compensation of employees": "Personal transfers consist of all current transfers in cash or in kind made or received by resident households to or from other non-resident households". In practice, these transfers usually cover small amounts and are recurrent (e.g., transfer of part of a worker's salary to his/her family residing in another country). They are an essential source of external financing for many developing countries, often more stable and predictable than official development assistance or foreign direct investment.

Unified payments interface (UPI)
An Indian instant payment system that offers real-time fund transfers 24 hours a day, 7 days a week.

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