



Innovations in global payment systems and the role of the BIS

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These remarks are from participation in the panel on "Money for the future: Innovations in global payment systems, the rise of virtual assets, CBDCs and their implications for global financial stability."

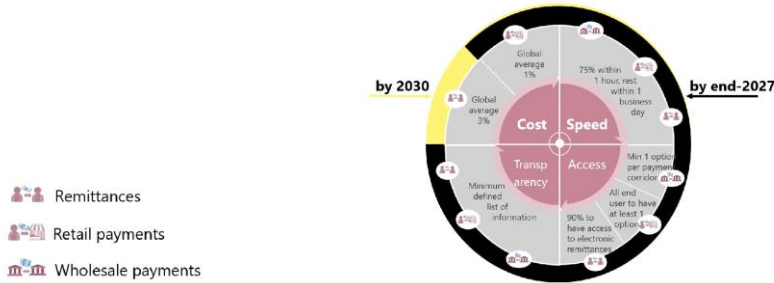
Thank you very much for the kind invitation. I am pleased to share this room with distinguished policymakers and representatives from the payment industry. I will give some reflections on innovations in global payment systems, the work of central banks in the Americas and the role of the Bank for International Settlements (BIS).

Let me start with the cornerstone of a well functioning economy: trust in money. Central banks play a crucial role in maintaining trust in money. The Central Reserve Bank of Peru is a notable example in this region. First, central banks maintain the purchasing power of money through monetary policy. Second, they ensure that money can be saved intertemporally, thanks to their lender of last resort function and the safety of bank deposits. And third, central banks ensure that money can be used for payments when needed, thanks to a sound and efficient payment system.

Another important pillar of trust in money is the clear allocation of roles between central banks, commercial banks and the private sector, as embedded in the two-tier system. Central banks provide central bank money to provide a safe asset to settle transactions between financial institutions. They also provide central bank money directly to the private sector in the form of banknotes and coins. Commercial banks provide commercial bank money to the private sector in the form of deposits and make loans to intermediate the economy's saving and investment. Of course, a sound legal, regulatory and macroeconomic framework are also key to maintaining trust in money.

Today, payment systems face three main challenges.

First, payment systems are costly and slow, particularly on a cross-border basis. The G20 has ambitious targets in reducing costs, increasing speed and transparency, and providing wider access by end-2027 and end-2030 (Graph 1).



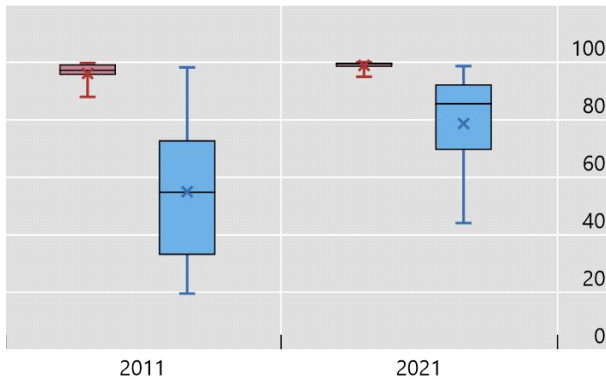
Source: Lammer and Rice (2022).

A second challenge relates to access to and use of financial services. Despite great improvements in the last few years, gaps persist. According to the World Bank, ownership of accounts rose to 76% of the world’s adult population in 2021. But ownership is much higher in advanced economies (AEs) than in emerging market economies (EMEs) (Graph 2.A). The use of digital payments (the circles in Graph 2.B) remains lower than account ownership (the squares), especially in EMEs.

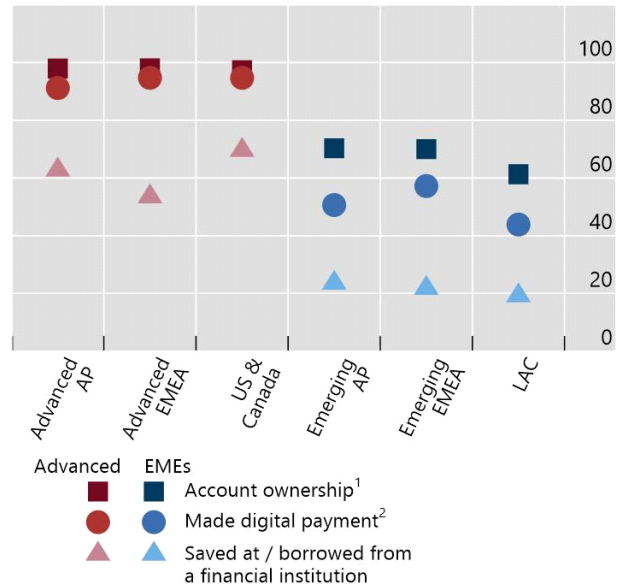
Access to and use of financial services are rising, but gaps persist

In percentage of adults

A. Considerable progress in account access in EMEs...¹



B. ...yet many adults do not pay digitally or save or borrow formally



Advanced
 ■ Interquartile range
 — Min-max range
 x Average

EMEs
 ■ Interquartile range
 — Min-max range
 x Average

Advanced ■ Account ownership¹
 ● Made digital payment²
 ▲ Saved at / borrowed from a financial institution

AP = Asia-Pacific; EMEA = Europe, Middle East and Africa; LAC = Latin America and the Caribbean.

¹ Financial institution or mobile money account. ² Digital payment includes mobile money, credit and debit cards or using a mobile phone or the internet to make a payment.

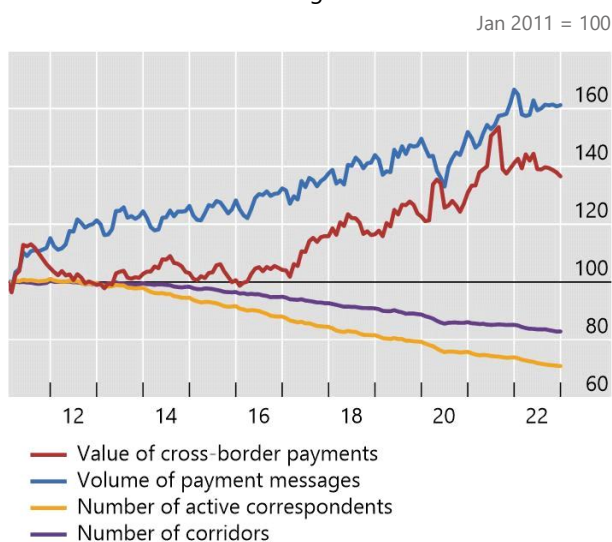
Source: Cantu et al (2024).

A third challenge is the deterioration of the cross-border payments landscape. The number of correspondent banks and foreign exchange corridors has decreased significantly over time (Graph 3.A). This has been happening in all regions of the world (Graph 3.B). It highlights the necessity to find solutions that help revert this trend and/or find new ways to ensure safe and cost-effective cross-border payments.

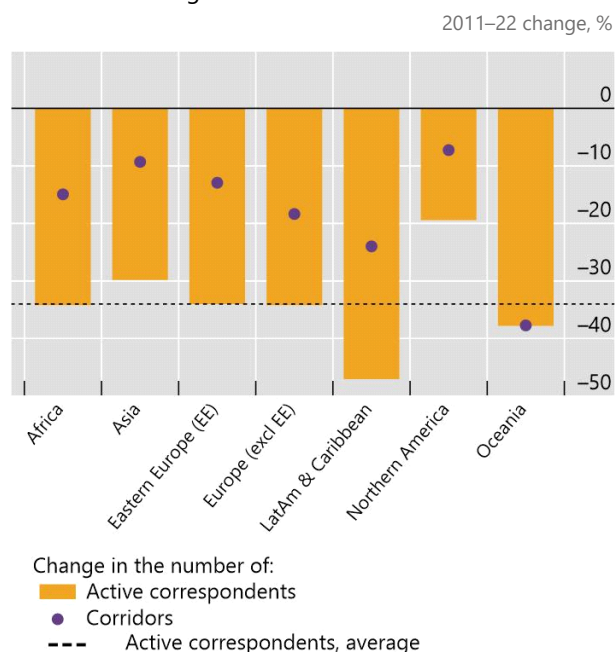
The cross-border payments landscape is deteriorating

Graph 3

A. Banks have been retreating¹



B. The decline is global²



¹ Three-month moving averages. ² Averages across countries in each region. Correspondent banks that are active in several corridors are counted several times. Grouping of countries by regions is according to the United Nations Statistics Division; for further details see unstats.un.org/unsd/methodology/m49/.

Sources: Garratt et al (2024); Rice et al (2020); CPMI (2023).

This brings me to the great opportunities of digitalisation of payments for the economy. It can help to increase trust and efficiency, provide an entry point to the financial system and contribute to overall productivity. Recognising these benefits, and in line with their mandates, central banks are playing a pivotal role in enabling the digitalisation of payments.

I would like to highlight three areas of innovation in the digital payment space. The first is the development of fast payment systems (FPS), led by the private sector or central banks. FPS improve the speed of transactions and can potentially reduce the cost of person-to-person (P2P) and person-to-business (P2B) transactions. The second is the issuance and exploration of retail central bank digital currencies (CBDCs) as a digital alternative to banknotes and coins that exists alongside cash. Finally, tokenisation is a major innovation in payments and the financial system, where the issuance of a wholesale CBDC is necessary. I will now go into a bit more depth on each one.

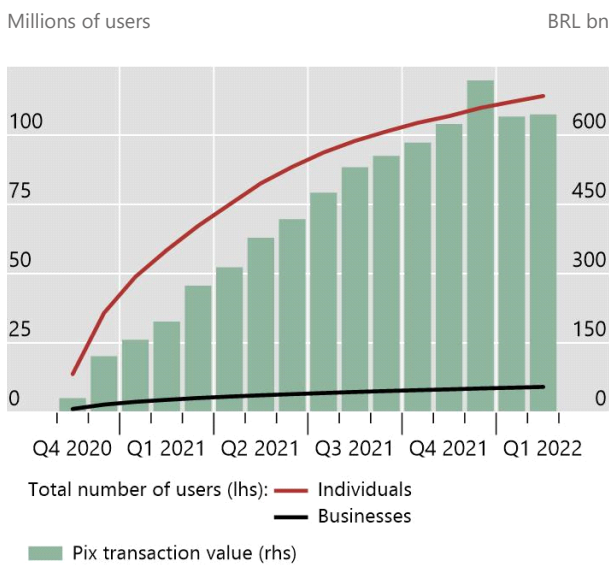
Let's start with FPS owned by central banks. In this region, Brazil's FPS Pix is a remarkable success story. The Central Bank of Brazil has developed a modern and adaptable payments infrastructure for the future. The 2013 Payments Law was key in laying the foundation. Mandatory participation

of the largest institutions created a critical mass for adoption of the platform. The participation of non-banks and the prohibition of exclusive agreements between banks and other companies were also crucial. Finally, the competitive pricing structure compared with other payment alternatives has allowed Brazilians to enjoy an efficient and revolutionary means of payment today. The number of Pix users (individuals and businesses) has taken off (Graph 4.A). Interestingly, credit and debit card payments have continued to rise, suggesting that Pix has substituted cash, not cards (Graph 4.B).

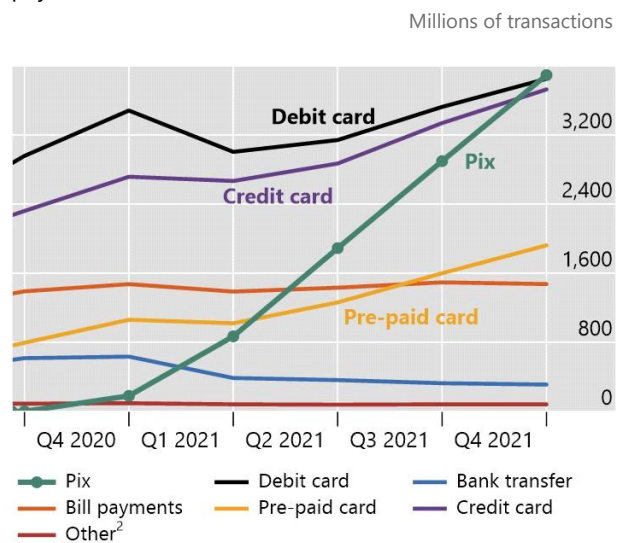
Brazil's Pix is driving innovation

Graph 4

A. Users and transaction value have risen rapidly



B. Pix is gaining market share rapidly in a growing digital payments market¹



¹ Number of transactions for each payment instrument, excluding recurrent utility payments. ² Includes cheques.

Sources: Duarte et al (2022).

The potential of FPS is apparent not only for domestic transactions but also for cross-border payments. Project Nexus is a prominent initiative to interlink domestic FPS to enable instant cross-border transactions. Nexus involves the central banks of India, Malaysia, the Philippines, Singapore and Thailand, working with the BIS Innovation Hub Singapore Centre. It helps to overcome the issue that bilateral FPS linkages are not scalable. With Nexus, each FPS connects once to access all participating countries.

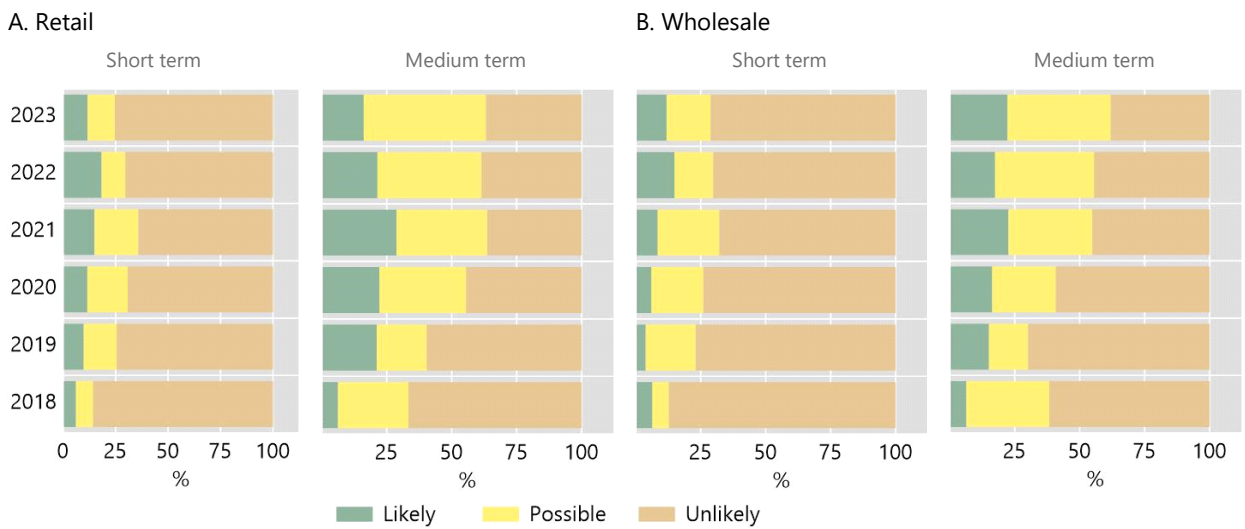
Beyond FPS, central banks around the world are exploring retail CBDCs. These are for use by individuals and firms – like a digital version of cash. A few (the central banks of the Bahamas, Jamaica and Nigeria) have already launched a live retail CBDC. The interest is based on its potential contribution to (i) increasing financial inclusion, (ii) enhancing the robustness and efficiency of domestic payment systems and (iii) preserving the monetary anchor role of central bank money. However, there is still some scepticism regarding the benefits of retail CBDCs over well functioning FPS with central bank money at the core and cross-border capabilities. Further work is needed to assess these, including the need for resilience through offline payments. In this light, the Central Reserve Bank of Peru launched a call for retail CBDC pilots led by the private sector which should consider offline capabilities in their design.

In recent years, attention has moved to wholesale CBDCs. A growing number of central banks see issuance as likely in the medium term (Graph 5). These could be especially promising if a tokenised financial system is envisaged in the future. Indeed, if private tokenised financial platforms were to emerge, a wholesale CBDC would be needed as a safe settlement asset in a digital ecosystem. Some early projects with wholesale CBDCs were conducted by the BIS Innovation Hub with, among others, the Swiss National Bank, the Monetary Authority of Singapore and the Bank of France. In this region, the Central Bank of Brazil is exploring a digital real (Drex) for wholesale transactions.

Attention is moving towards wholesale central bank digital currencies¹

As a percentage of respondents that have not issued a CBDC

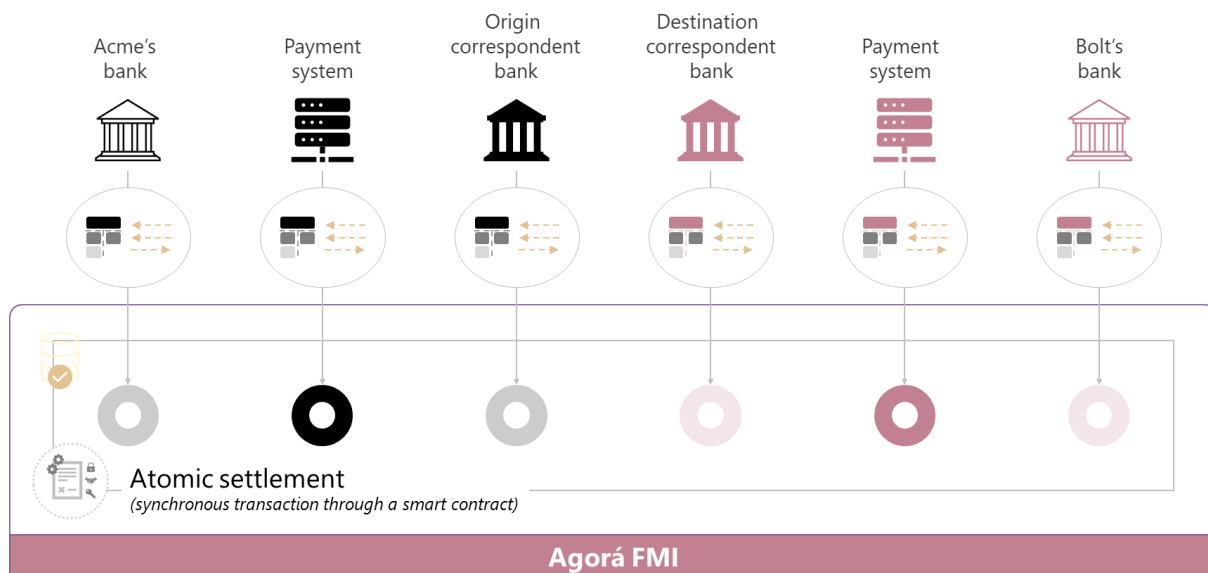
Graph 5



¹ Short term: 1–3 years; Medium term: 4–6 years. “Likely” combines “very likely” and “somewhat likely”. “Unlikely” combines “very unlikely” and “somewhat unlikely”. Euro area included as an aggregate figure. The sample includes only central banks that have replied to the question “How likely is it that your central bank will issue a live CBDC in the: ...”.

Sources: Di Iorio et al (2024).

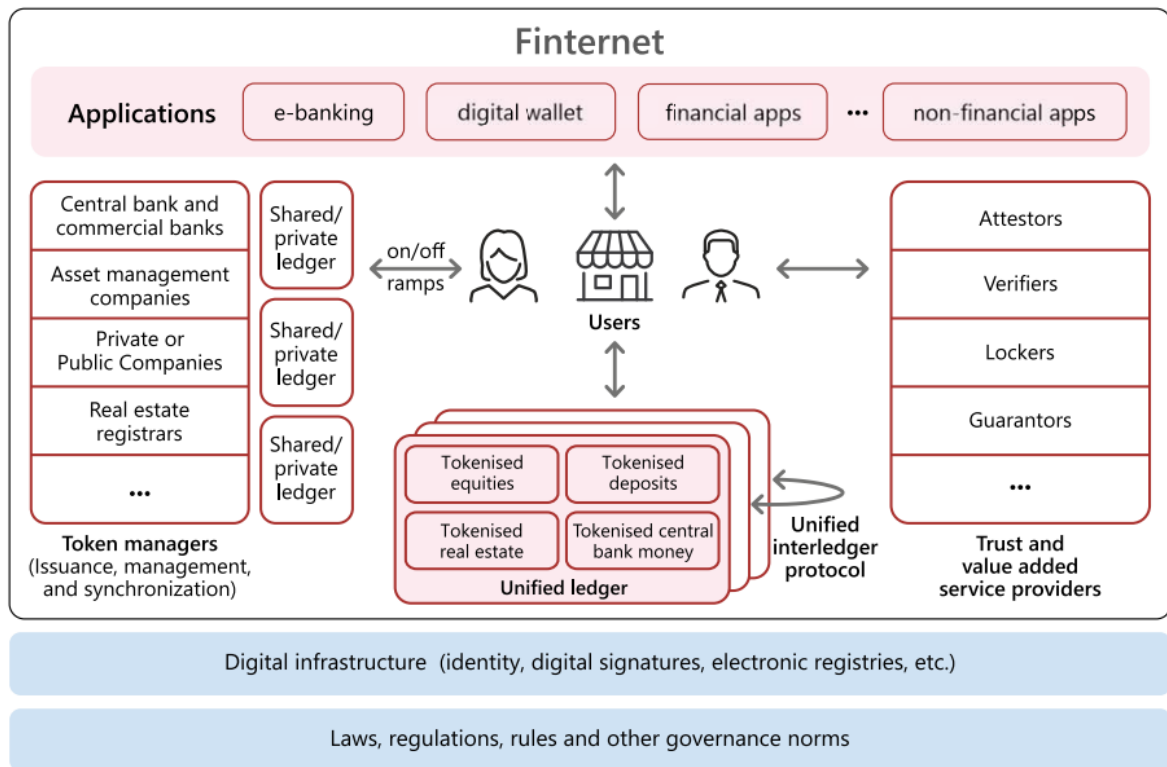
What is tokenisation, and why does it matter? Tokenisation is the digital representation of assets (eg government bonds, central bank money, deposits, equities, real estate, etc) on a digital platform. By enabling composability (the ability to break an asset into smaller parts) and programmability, it brings new opportunities, as it might create new use cases and improve efficiency. For example, a tokenized financial infrastructure enables atomic settlement – the synchronous settlement of the many parts of a transaction, as shown here, where the different steps of a transaction are lined up and performed in single atomic step (Graph 6).



Source: Author's elaboration.

The BIS is exploring the potential of tokenisation in the financial system through Project Agorá. The project involves seven central banks from around the world. It is a public-private collaboration, enabling cross-border payments using the correspondent banking model, on a programmable tokenised platform combining wholesale CBDCs and tokenised deposits in line with a two-tier financial system.

These new functions can allow us to rethink what the financial system of the future may look like. Recently, our General Manager Agustín Carstens, with Nandan Nilekani, published a paper on the Finternet. What is the Finternet? It is a vision for the future financial system where multiple financial ecosystems are interconnected with each other – much like the internet interconnects many parts of the economy worldwide (Graph 7). The Finternet would be combined with a solid financial regulatory framework. I have no doubt that the future looks very promising and challenging at the same time.



Source: Carstens and Nilekani (2024).

Let me conclude here. I will be happy to respond to questions.

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