

## Promoting financial inclusion through technological innovation in the Americas

Speech by Alexandre Tombini

Chief Representative, Representative Office for the Americas, Bank for International Settlements<sup>1</sup>

Federal Reserve Bank of New York (FRBNY) Central Bank Seminar, 21 October 2024

### Introduction

Thank you very much to the Federal Reserve Bank of New York for the kind invitation. It is an honour to be here. I am glad to discuss how technological innovation can promote financial inclusion in the Americas. Today, I will give an overview, drawing on the experience of countries across the region.

### Technological progress is supporting digital payments and inclusion

Technology is advancing rapidly around the world and across regions. Countries in the Americas have seen significant improvements in internet and smartphone coverage, and Latin America is nearly on par with advanced economies (AEs) in this respect (Graph 1.A). Meanwhile, physical access points to the financial system (eg bank branches) have been decreasing over the past decade (Graph 1.B). This suggests a shift towards digital channels. In this new environment, there is a plethora of new options in payments, credit, insurance and wealth management that are mainly supported on mobile applications and aim to increase financial inclusion.

Over the last decade, financial inclusion has become a policy goal in many emerging market and developing economies (EMDEs). Financial inclusion is generally understood as universal access to and use of reasonably priced financial services from a range of formal financial intermediaries. Such services include payments, savings, credit and insurance. A core indicator generally used to measure its progress is access to financial accounts.

The importance of financial inclusion for EMDEs lies in the benefits it provides to the livelihoods and financial resilience of the poor and most vulnerable in society. But it can also pay macro dividends, by increasing productivity and growth and by fostering the transition to a digital economy. In addition, financial inclusion may broaden the effectiveness of monetary policy, as more people can save or access loans following changes in policy and bank rates, and it may also foster financial stability.

---

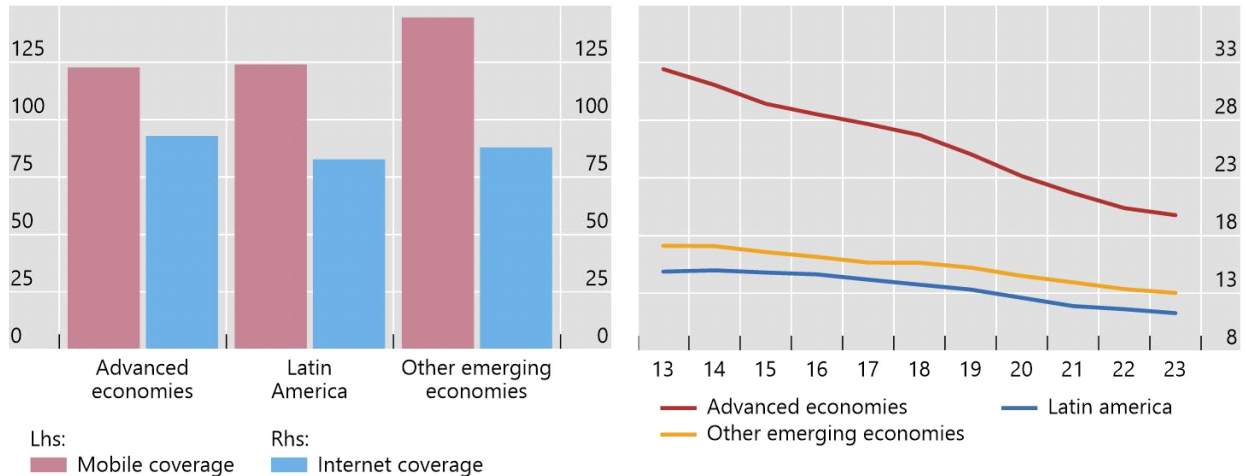
<sup>1</sup> The views expressed are my own and not necessarily those of the Bank for International Settlements. I thank Jose Aurazo, Jamere McIntosh and Jon Frost for their input, and Cecilia Franco for research support.

Mobile and internet coverage is high, while physical access points have declined

Graph 1

A. Mobile subscriptions and internet coverage are high<sup>1</sup>  
Subscriptions per 100 people      % of population

B. Physical access points declined in the last decade<sup>2</sup>  
Number of commercial bank branches per 100,000 adults



<sup>1</sup> Simple average for the region. Latest value for some cases corresponds to 2023, otherwise 2022. <sup>2</sup> Simple average for the region, data available up to 2023.

Sources: World Bank; BIS.

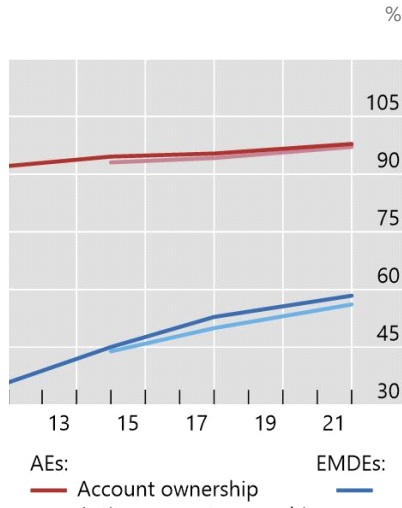
Indeed, our region has made substantial progress on financial inclusion. This can be seen in data on access, use and affordability. Access to accounts has increased across the region and EMDEs, closing gaps with AEs (Graph 2.A).

According to the Global Findex Database, 76% of adults worldwide had a transaction account in 2021, while only 55% owned a debit or credit card and 59% made a digital payment. Access to credit and savings is less developed, with only 28% of adults borrowing from and 29% saving in a formal financial institution. Lack of access to financial services is particularly acute in EMDEs. Only a quarter of adults in these jurisdictions use a savings account, and about half borrow – with more than half of this borrowing coming from informal sources (Demirgüç-Kunt et al (2022)). Access to credit or savings products is even lower in some regions, such as Latin America and the Caribbean (Graph 2.B). Lack of access to retail investment and insurance constrains households from accumulating wealth or building resilience. In most EMDEs, insurance premiums per capita (“insurance density”) are less than \$1,000 per year; premiums relative to GDP (“insurance penetration”) are less than half the level in AEs (Graph 2.C).

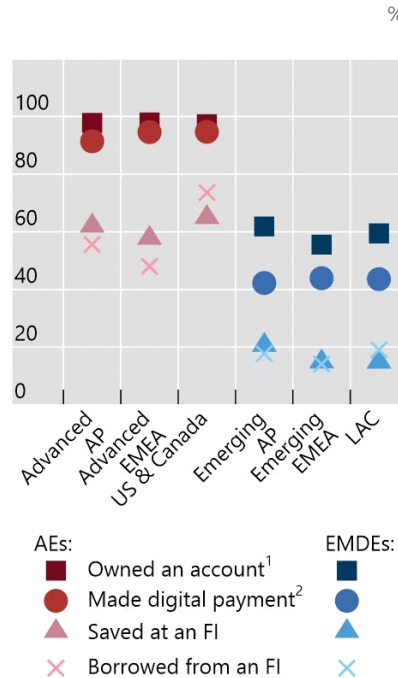
Access to financial services has improved, but gaps remain

Graph 2

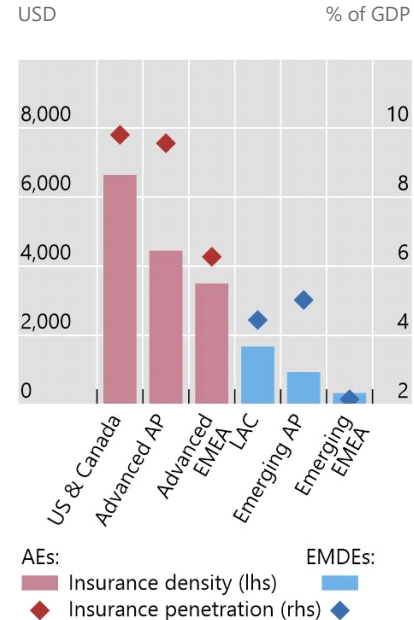
A. Gap with AEs is narrowing, but more inactive accounts in EMDEs



B. Saving and borrowing lag behind account ownership



C. Insurance density and penetration are low in many regions<sup>3</sup>



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

<sup>1</sup> The graph shows the per cent of adults who have a financial institution or mobile money account. <sup>2</sup> The graph shows the per cent of adults who have a financial institution or mobile money account, who made a digital or debit card payment, and who saved or borrowed via a financial institution. <sup>3</sup> Insurance density is defined as premiums per capita in 2022. Insurance penetration is defined as premiums as a percentage of GDP in 2022. Includes life and no-life premiums (including health).

Sources: Carstens and Nilekani (2024); World Bank, Global Findex Database; Swiss Re Institute; BIS.

Digital payments are proving to be a key driver of inclusion. In research done at the Bank for International Settlements (BIS) Americas Office (Aguilar et al (2024)), my coauthors and I find that digital payments can even support economic growth and development. They can do this by helping to formalise informal activities (the so-called “shadow economy”)<sup>2</sup> and by improving access to credit. In particular, digital payments are associated with greater access to accounts (Graph 3.A) and borrowing from formal financial institutions (Graph 3.B). Digital payments are also linked to a smaller share of the workforce that is informally employed (Graph 3.C). Panel regressions for 101 economies over 2014–19 show that a 1 percentage point increase in digital payments use is associated with an increase in the growth of GDP per capita of 0.10 percentage points over a two-year period and a decline in the share of informal sector employment of 0.06 percentage points.<sup>3</sup>

<sup>2</sup> The informal sector refers to economic activities that are not recorded in official statistics. This often comprises small firms (sole proprietorships or micro-enterprises) that operate in cash, without formal labour contracts.

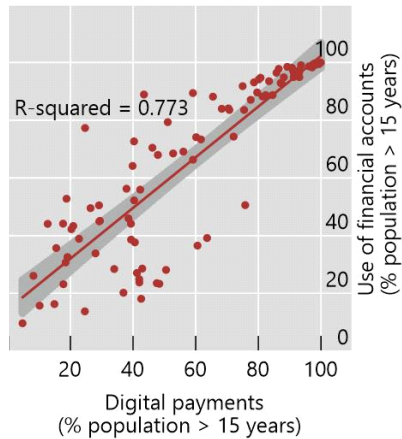
<sup>3</sup> Digital payments do not appear to be significantly associated with rises in total factor productivity, when controlling for general measures of digitalisation and government effectiveness.

Using an instrumental variable approach, with internet penetration and the share of mobile money agents in the population as instruments, we find further support for these results.

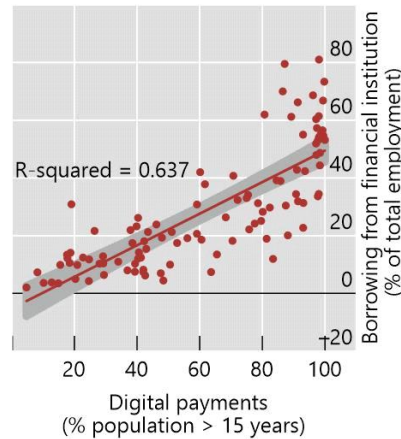
Digital payment use is associated with greater access to accounts and credit and less labour informality

Graph 3

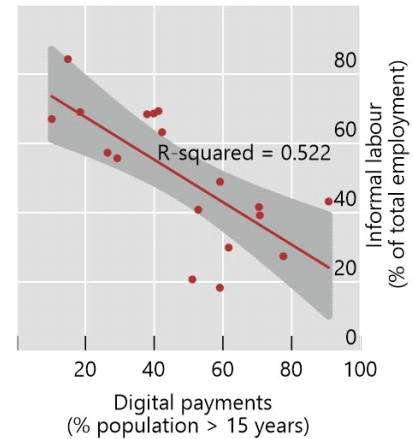
A. Digital payments and access to accounts are positively correlated



B. Digital payments are also linked to higher access to credit



C. Digital payments are linked to lower labour informality

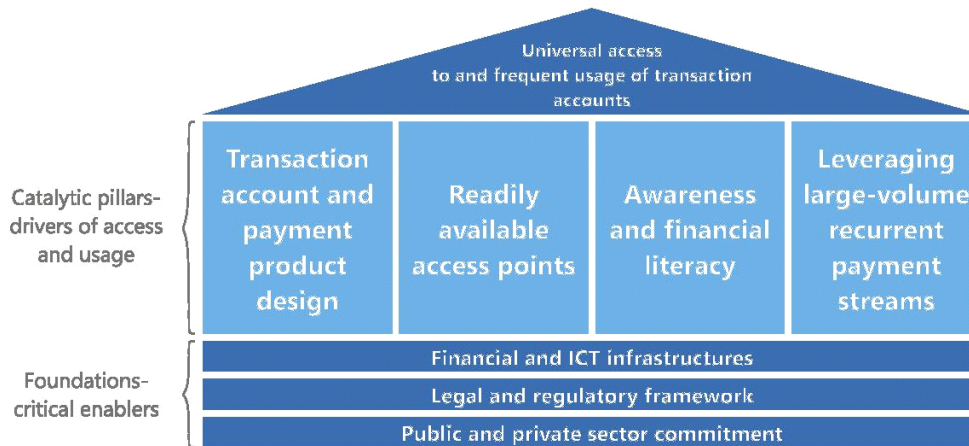


Sources: Aguilar et al (2024); World Bank, Global Findex Database; BIS.

Some key design features of payment systems have helped to promote widespread adoption of digital payments (Frost et al (2024)). This is particularly visible for fast payment systems, like Brazil’s Pix, Costa Rica’s SINPE Móvil and others. As technology advances, the use of aliases streamlines and improves the user experience. Individuals and businesses are now making and receiving payments with quick response (QR) codes or their mobile phone numbers instead of lengthy bank account details. A greater number of use cases and participation by non-banks have also played a constructive role.

## Central banks play a key role in the promotion of financial inclusion

As set out in the CPMI-World Bank payment aspects of financial inclusion (CPMI and World Bank (2020)), a set of guiding principles and key actions are recommended to overcome barriers and achieve universal access to transaction accounts. In addition to financial and information and communication technology (ICT) infrastructures, a legal and regulatory framework and public-private sector commitment are critical enablers. Meanwhile, the product design, readily available access points, awareness and financial literacy, and leveraging the large-volume of recurrent payments are catalytic pillars (drivers) of access and use of payments (Graph 4).



Source: CPMI and World Bank (2020).

Central banks are getting more involved in the promotion of financial inclusion as one of their main policy goals. Kosse and Mattei (2023) find that a key motivation for central banks to explore innovations in payments, particularly in EMDEs, is to increase the access to financial services. In many cases, central banks have a financial inclusion mandate and/or take part in forums or initiatives to promote financial inclusion, eg as a part of national strategies. Some central banks are also improving their retail payment systems and introducing immediate availability of fund transfers on a 24x7 basis (ie introducing a fast payment system (FPS)).

Now, I will go deeper into the role of central banks in implementing their FPS, emphasising the case of Brazil. It is important here to mention Law 12,865 of 2013, which represented a landmark in the modernisation of retail payments in Brazil and provided a basis for subsequent innovation. Empowered by this legislation, the National Monetary Council and the Central Bank of Brazil (BCB) introduced a set of rules governing payment schemes and payment institutions. This includes the entry of non-banks into the market and the prohibition of exclusive bilateral agreements between banks and corporates. These rules, applicable to payment schemes and institutions, and now part of the Brazilian Payments System, delineate the roles of financial institutions and payment institutions.

Furthermore, the law emphasises interoperability within and between different payment schemes, the soundness and efficiency of payment schemes and institutions, non-discriminatory access to infrastructures and services, and the protection of end users' rights. Those rights include freedom of choice, safety, economic interests, privacy and access to clear, complete information about the service. This legislative milestone reshaped the payments landscape in Brazil, promoting competition and ensuring the robustness of the system for the creation of Pix.

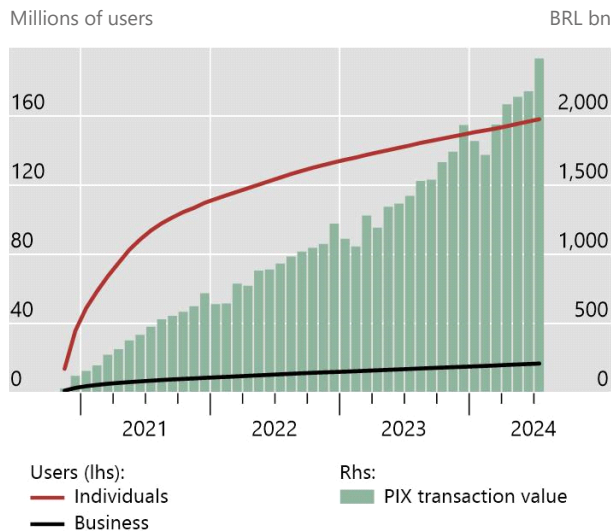
Pix is an FPS developed and operated by the BCB and launched in November 2020. Users can initiate payments either through bank account information, aliases or QR codes. Brazilians have adopted Pix very rapidly. Within a little over three years of its launch (from November 2020 until December 2023), over 90% of the adult population and close to 18 million Brazilian companies had received or initiated a Pix transaction. By July 2024, Pix represented 43% of the volume of cashless

payment transactions in Brazil, according to BCB data. Since the launch, over 110 billion transactions have been settled, for a total value of BRL 47.7 trillion (USD 8.7 trillion) (Graph 5.A). Pix transactions have surpassed credit and debit card transactions (Graph 5.B).

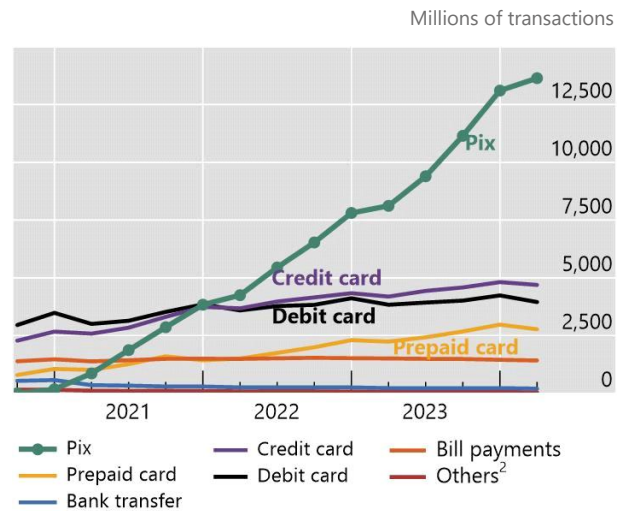
The dramatic growth of Pix illustrates the transformative potential of FPS

Graph 5

A. Users and transaction value have risen rapidly



B. Pix is gaining market share rapidly in a growing digital payments market<sup>1</sup>



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

Sources: Duarte et al (2022); Central Bank of Brazil; BIS.

## Challenges ahead: bringing efficiencies to cross-border payments

One of the most challenging areas with significant potential for improvement is cross-border payments. Our region has a relatively high cost of domestic payments, as seen in the high share of payment revenues to GDP (Graph 6.A). But the problems are even more acute for cross-border transactions. To give just one illustration, the number of active correspondents and corridors decreased between 2011 and 2022 across the region, with Latin America and the Caribbean (LAC) being the most affected region (Graph 6.B). In 2022, countries in LAC had fewer corridors and active correspondents than peers in other EMDE regions (Graph 6.C).

The BIS, through the BIS Innovation Hub, is exploring projects to make cross-border payments more efficient. Project Agorá is a public-private collaboration that enables cross-border payments using the correspondent banking model. It is supported on a programmable tokenised platform (eg unified ledgers) combining wholesale central bank digital currencies and tokenised deposits. This could enhance the functioning of the monetary system and provide new solutions using smart contracts and programmability, while maintaining the system’s two-tier structure. Indeed, it is a promising step towards next generation correspondent banking (Garratt et al (2024)).

Another initiative is Project Nexus, which interlinks 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.

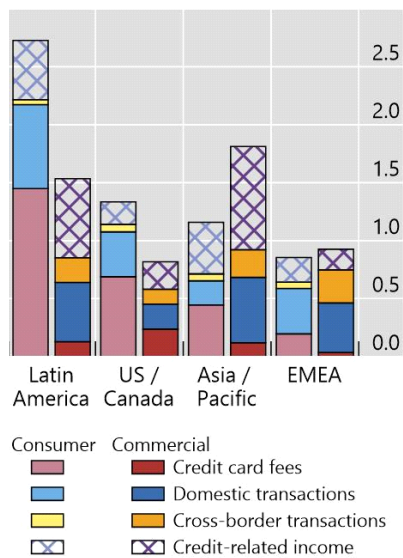
In the Americas, there is great potential in seeking cross-border payment integration. Although integration is not extensive in the region in terms of trade and financial flows, some multilateral initiatives already exist. For instance, Brazilians can use Pix to pay some Argentinean and Uruguayan merchants. Since 2005, Directo a México allows users of financial institutions in the United States subscribed to the services to send payments to any bank account in Mexico through SPEI. To give another example, since 2011, the Sistema de Interconexión de Pagos (SIPA) in Central America allows customers of affiliated financial institutions to make electronic funds transfers in US dollars in a fast, secure and low-cost manner.

Cross-border payments landscape faces key challenges in fees and integration

Graph 6

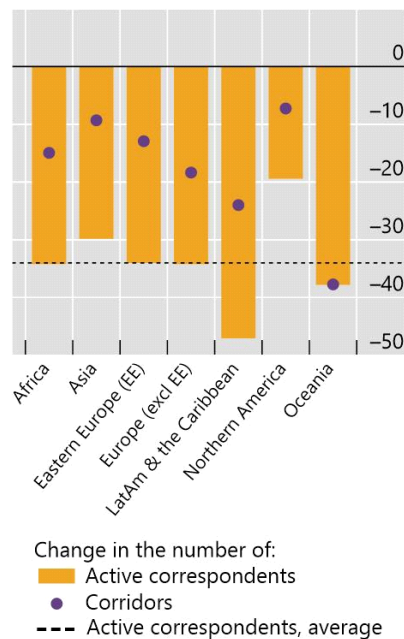
A. Payment revenues are high<sup>1</sup>

% of GDP

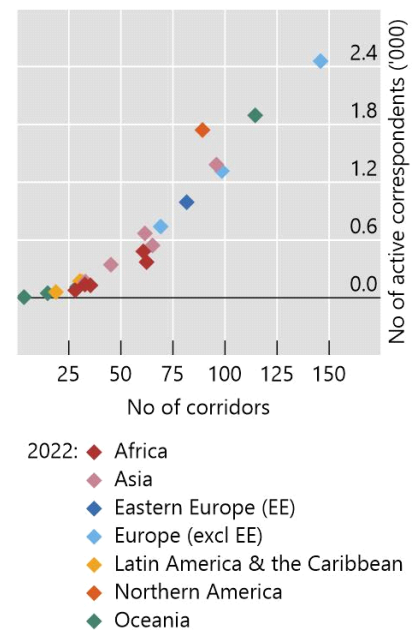


B. The decline in correspondent banking relationships is global<sup>2</sup>

2011–22 change, %



C. Some regions are less connected<sup>2</sup>



EMEA = Europe, Middle East and Africa.

<sup>1</sup> The regional GDP equals the sum of individual countries' GDPs. <sup>2</sup> 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/](https://unstats.un.org/unsd/methodology/m49/).

Sources: Garratt et al (2024); McKinsey & Company (2021).

Cross-border payment initiatives could be even more powerful if they linked the United States and Canada to countries in the region. For instance, Mexican migrants sent USD 63 billion to Mexico in 2023, according to estimates from the Bank of Mexico. The vast majority of this came from the United States. The average cost of sending these remittances (for a USD 200 transaction) was 4.87%. Imagine if those costs could be brought down, and what a difference this would make

to ordinary families. Linking Mexico's SPEI to the Federal Reserve's FPS, FedNow, could be a powerful means of achieving this.

But it is not only in the remittance space that this could be impactful. In 2023, trade between the United States and my home country of Brazil reached USD 74.8 billion. For small exporters and importers in both the United States and Brazil, the costs of making and accepting cross-border payments are still too high, and it can take hours or days for payments to go through. Imagine what would be possible if such payments could be made instantly and at low cost. What is the economic potential that this could unlock across our region?

## Concluding remarks

Let me conclude. Technology is advancing rapidly and is supporting how the financial system interacts with end users through digital channels. Thanks to this technological progress, EMDEs are closing gaps with AEs in terms of financial inclusion. In this regard, central banks play a pivotal role through the implementation of FPS and the issuance of a solid regulatory framework to ensure the safety and efficiency of payment systems. Some are also participating directly in their national financial inclusion strategies.

The BIS remains committed to supporting dialogue among central banks and encouraging disruptive innovations in financial and payment systems through its committees, its research and the BIS Innovation Hub. As we look to the future, we could think of integrating fast payment systems across the Americas. Here, there is great potential to interlink domestic systems in the region, like in Project Nexus.

## References

Aguilar, A, J Frost, R Guerra, S Kamin and A Tombini (2024): "Digital payments, informality and economic growth", *BIS working papers*, no 1196, July.

Carstens, A and N Nilekani (2024): "Finternet: the financial system for the future", *BIS working papers* no 1178, April.

Committee on Payments and Market Infrastructures (CPMI) and World Bank Group (2020): "Payment aspects of financial inclusion in the fintech era", *CPMI papers*, no 191, April.

Demirgüç-Kunt, A, L Klapper, D Singer and S Ansar (2022): *The Global Findex Database 2021; financial inclusion, digital payments, and resilience in the age of Covid-19*, World Bank Group.

Duarte, A, J Frost, L Gambacorta, P Koo Wilkens, H S Shin (2022): "Central banks, the monetary system and public payment infrastructures: lessons from Brazil's Pix", *BIS Bulletin*, no 52, March.

Frost, J, P Koo Wilkens, A Kosse, V Shreeti and C Velasquez (2024): "Fast payments: design and adoption", *BIS Quarterly Review*, March, pp 31–44.





Garratt, R, P Koo Wilkens, H S Shin (2024): "Next generation correspondent banking", *BIS bulletin*, no 87, May.

Kosse, A and I Mattei (2023): "Making headway – results of the 2022 BIS survey on central bank digital currencies and crypto", *BIS papers*, no 136, July.

McKinsey & Company (2021): *Global payments report 2021: transformation amid turbulent undercurrents*, October.