

## The role of central banks in promoting digital payments in the Americas

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Binational Encounter Mexico-Brazil, National Autonomous University of Mexico (UNAM), 28 August 2024

### Introduction

Thank you very much to the National Autonomous University of Mexico for the kind invitation. It is an honour to be on this panel. I am glad to discuss a topic that is not only timely but also impactful – the pivotal role of digital payments and how central banks can promote them.

Let me start with a bit of context. Digital payments are crucial for economic development. As I will show you today, they can contribute to economic growth.

There has been progress in the last few years. Indeed, in this region, we are witnessing a revolution in the financial sector. This is largely driven by three innovative areas: the implementation of fast payment systems (FPS), the advent of retail central bank digital currencies (CBDCs) and the advent of tokenisation, often supported by wholesale CBDCs.

A prime example of progress in the region is the work of the Central Bank of Brazil (BCB). BCB has established several benchmarks in payments, with the introduction of Pix, the Brazilian fast payment system; the exploration of the digital real, Drex; and the implementation of Open Finance. I will share more insights from the BCB, where I was previously Governor.

Finally, I would like to highlight the key role the Bank for International Settlements, or BIS, plays in facilitating dialogue among central banks. I will share how the BIS through the BIS Innovation Hub can foster disruptive innovations in the financial and payment systems.

### Digital payments are taking off in the Americas, but challenges remain

Digital payments are growing fast in the Americas, driven by private sector innovation. Use of debit cards, credit cards and electronic or mobile money has seen particularly rapid growth (Graph 1.A). The benefits of this wave of digitalisation can be important, given the policy challenges currently faced by payment systems across the region. While digital payments are taking off, the costs of

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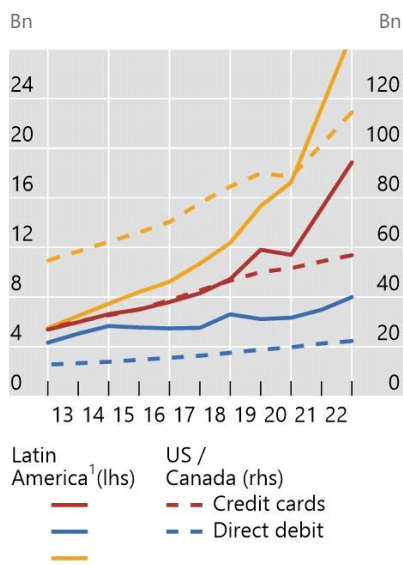
<sup>1</sup> The views expressed are my own and not necessarily those of the BIS. I thank Jose Aurazo, Bernardus Doornik and Jon Frost for their input, and Cecilia Franco and Rafael Guerra for research support.

domestic payments are still high. In Latin America, consumer credit card fees are, in total, over 1% of gross domestic product (GDP). Similarly high fees prevail in many Caribbean countries and in the United States and Canada (Graph 1.B). Additionally, in many countries in the Americas, access to transaction accounts is limited and use is low (Graph 1.C).

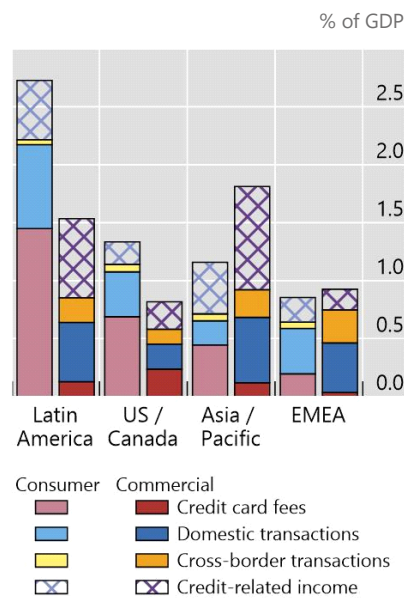
Digital payments are taking off across the Americas, but high costs and financial inclusion remain key challenges

Graph 1

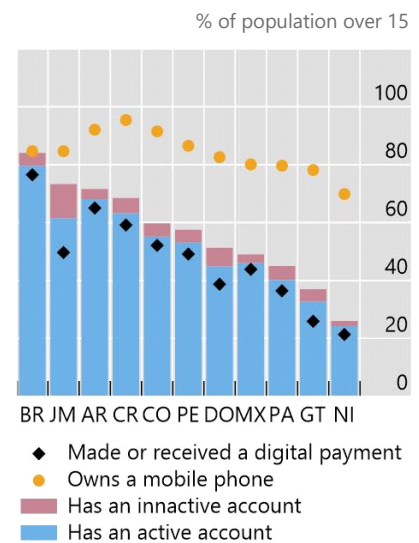
A. Digital payments are growing fast



B. Payment revenues are high<sup>2</sup>



C. Financial inclusion is a key issue in Latin America and the Caribbean<sup>3</sup>



AR = Argentina, BR = Brazil, CO = Colombia, CR = Costa Rica, DO = Dominican Republic, GT = Guatemala, JM = Jamaica, MX = Mexico, NI = Nicaragua, PA = Panama, PE = Peru.

<sup>1</sup> Sum of AR, BR and MX. <sup>2</sup> The regional GDP equals the sum of individual countries' GDPs. <sup>3</sup> For Mexico, data from 2022; for the rest of the countries, figures correspond to 2021.

Sources: Bruno et al (2021); BIS CPMI Red Book statistics; World Bank; The Global Findex Database; BIS.

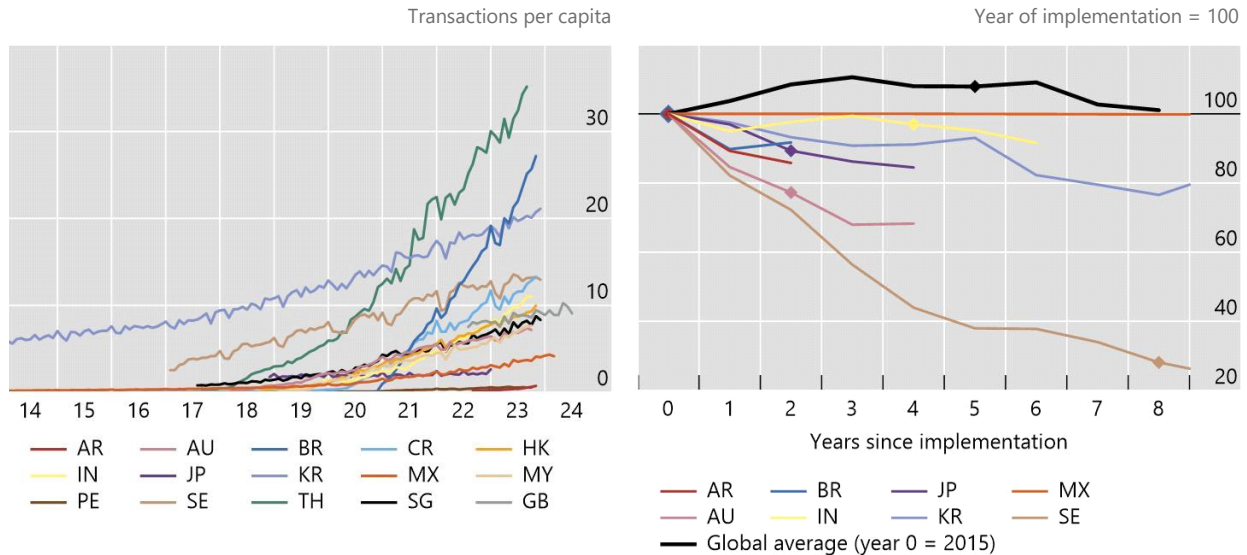
In line with the trend towards payments digitalisation, the volume of fast payments has grown rapidly in many jurisdictions (Graph 2.A). The biggest markets for fast payments in 2022 (by number of transactions) were India (48.6 billion), China (18.5 billion), Thailand (9.7 billion) and Brazil (8.7 billion). In per capita terms, Thailand (35 transactions per person per month), Brazil (27) and South Korea (21) saw the largest fast payments volumes. The rise in FPS use has coincided with a fall in cash use in many of these countries (Graph 2.B). This points to the increasing digitalisation of payments.

Fast payments are rising rapidly, while cash in circulation is falling

Graph 2

A. The volume of fast payment transactions has grown rapidly<sup>1</sup>

B. Cash in circulation has declined in many jurisdictions<sup>2</sup>



<sup>1</sup> The relevant central banks provided data on the volume of transactions. The data on population are retrieved from the World Bank. Monthly data. <sup>2</sup> Bank notes and coins in circulation as a percentage of narrow money, except for KR and MX for which currency in circulation as a percentage of narrow money is shown. The markers indicate the year of the Covid-19 pandemic, 2020. For KR, we show only eight years after 2009.

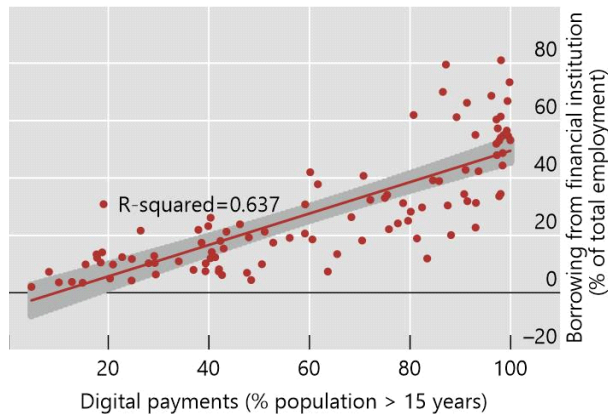
Sources: Individual central banks; IMF; World Bank; BIS CPMI Red Book statistics; authors' calculations.

Digitalisation offers a viable solution to the policy challenges in payments, and it yields benefits for the economy as a whole. Concretely, digital payments can support economic growth and development by encouraging financial inclusion and improving access to credit. In particular, digital payments are associated with greater access to credit (Graph 3.A). Digital payments are also linked to lower shares of informal labour (Graph 3.B). Indeed, in new research by Ana Aguilar, Jon Frost, Rafael Guerra, Steve Kamin and myself, we find that a 1 percentage point increase in use of digital payments is tied to a 0.06 percentage point decrease in the informal labour share and a 0.10 percentage point increase in GDP growth (Aguilar et al (2024)).

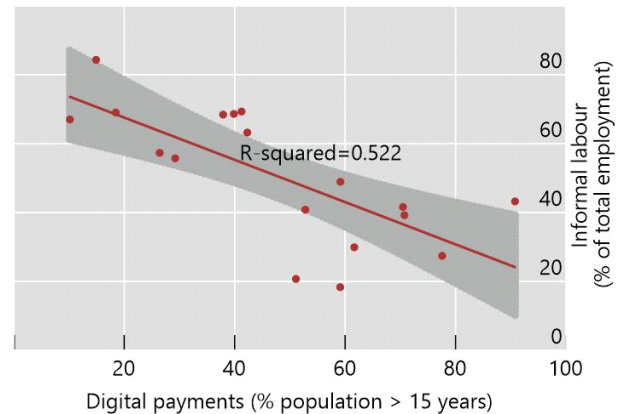
Digital payment use is associated with greater credit access and less informality

Graph 3

A. Digital payments are linked to higher access to credit



B. Digital payments are linked to lower labour informality



Sources: Aguilar et al (2024); Carstens and Nilekani (2024); World Bank, Global Financial Inclusion (Global Findex) Database; BIS.

Our study highlights the intrinsic connection between digital payments and economic development. This relationship strongly supports government policies that foster the establishment of digital payment platforms within their jurisdictions. This can be achieved not only through the formulation of regulations or the promotion of private payment providers, but also by central banks directly offering payment services such as CBDCs or retail FPS. These strategies could unlock a new era of economic growth and financial inclusion.

### Three key areas of innovation in the payment and financial system

In the realm of digital finance, retail FPS have emerged as a significant innovation. In certain jurisdictions such as Brazil and Mexico, central banks are spearheading the development of these systems, facilitating real-time, efficient transactions. Concurrently, the concept of retail and wholesale CBDCs is gaining traction (Kosse and Mattei (2023)). Central banks are exploring the potential of issuing a digital equivalent of cash, designed for use by individuals and businesses, thereby digitising the very essence of monetary transactions (Auer and Böhme (2021), Auer et al (2023)). Looking further into the future, we see the prospect of tokenisation through wholesale CBDCs. In a future tokenised private system, a safe settlement asset will be crucial – this could be in the form of tokenised central bank money, ie wholesale CBDCs. These innovations are not just transforming the way we conduct transactions, they are also redefining the very fabric of our economic systems.

### The Brazilian experience

Let me now move to the experience of the BCB. Over the last few years, the BCB has become a notable leader in payments, as it implemented several innovation projects in its agenda of structural reforms for the financial system – Agenda BC#. These include Pix in 2020 and Open

Finance in 2021. Other projects are also under way, such as the implementation of the Brazilian CBDC, the digital real – Drex.

Before diving into these key milestones, it is important 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 BCB have 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. 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.

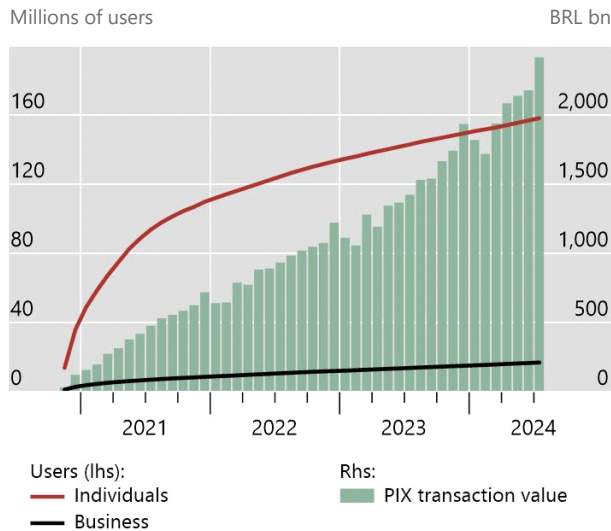
Furthermore, the law emphasises interoperability within and between different payment schemes, the soundness and efficiency of payment schemes and institutions, non-discriminatory access to infrastructures and services, and the protection of end users' rights, including freedom of choice, safety, economic 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, launched in November 2020. Users can initiate payments either through bank account information, aliases or quick response (QR) codes. Brazilians have adopted Pix very rapidly. Within a little over three years of its launch (from November 2020 until December 2023), close to 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 launch, over 110 billion transactions have been settled, for a total value of BRL 47.7 trillion (USD 8.7 trillion) (Graph 4.A). Pix transactions have surpassed many payment instruments previously available, including credit and debit cards (Graph 4.B).

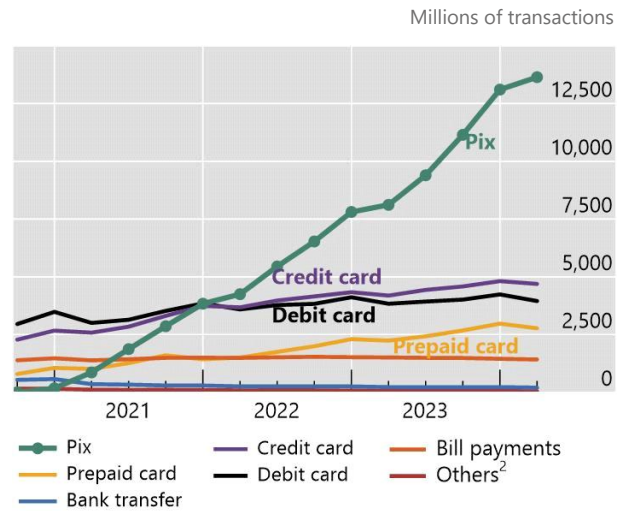
The dramatic growth of Pix illustrates the transformative potential of FPS

Graph 4

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.

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

The rapid adoption of Pix can be attributed to a combination of strategic design decisions and external factors. These include mandatory participation by large banks, the participation of non-banks, and a ban on exclusive deals between banks and non-financial firms. Further factors are a pricing structure that prohibits transaction fees for individuals and ensures non-zero but low fees for merchants and standardised user experiences across different payment service providers (PSPs).

Since launch, use cases other than person-to-person (P2P) payments have quickly gained ground. The share of person-to-business (P2B) payments has risen (Graph 5.A). This encompasses, inter alia, retail purchases at shops, restaurants and e-commerce sites. PSPs can set fees for corporate payees (for purchases) and payers (for transfers). Yet for merchants, Pix payments are much cheaper than alternatives such as card payments. The average cost of Pix payments to merchants is 0.22%. This compares with fees for credit cards of 2.2% in Brazil, 1.7% in the United States, 1.5% in Canada and 0.3% in the European Union (Graph 5.B).

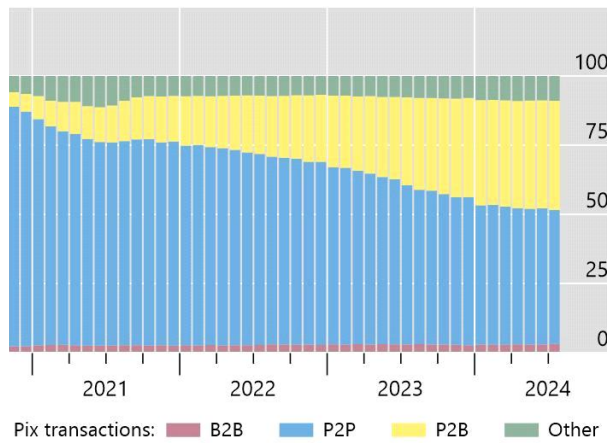


Merchant payments are becoming more common and are much cheaper on Pix

Graph 5

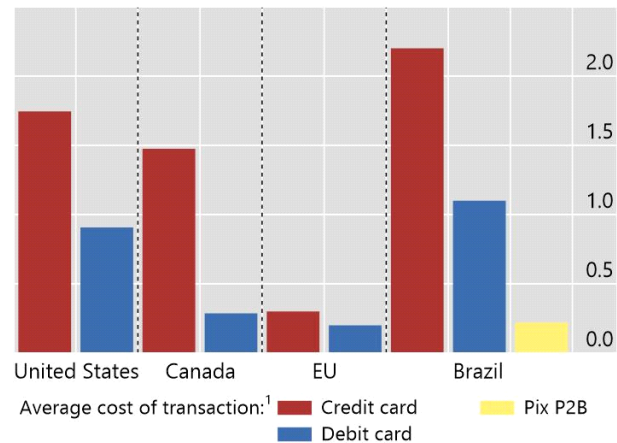
A. P2P payments still dominate, but P2B are growing

Percentage of number of transactions



B. Average costs to merchants by payment method

Per cent



<sup>1</sup> For the United States, Canada and EU, the average of interchange fees on credit and debit cards. Total cost to merchants may be higher.

Sources: Hayashi and Nimmo (2021); BIS CPMI Red Book statistics; Central Bank of Brazil; authors' calculations.

Meanwhile the digital real, or Drex, aims to promote the provision of financial services based on tokenised deposits. Tokenised deposits will have the same regulatory principles as conventional deposits, ensuring the security of the financial system. As Drex will not be interest-bearing, it will not interfere directly in monetary policy transmission or the macroeconomic framework, avoiding some of the concerns of other jurisdictions about implementing CBDCs.

Furthermore, Drex is expected to enable a more efficient trading chain of tokenised assets, strengthening the migration to a token-based world. Indeed, the same technology developed by banks and payment institutions to tokenise deposits can be used to tokenise a number of other assets. Other potential impacts include using new technologies to enhance banks' internal controls and settlement processes.

Another relevant initiative of the BCB is Open Finance, which is defined as a regulated environment for the sharing of data, products and services between regulated entities at the customer's discretion. This initiative aims to enhance the efficiency of Brazil's credit and payment markets by promoting a more inclusive and competitive financial system. The Open Finance model implemented by the BCB is a global benchmark, the largest in scope and number of institutions involved. After two years, it has achieved more than 800 participating institutions, more than 22 million customer data-sharing consents, an average of more than 350 million application programming interface (API) calls per week and more than 8 billion API calls in total.

## The role of the BIS

The BIS plays a crucial role in fostering dialogue and research on digital innovation, particularly within the realm of central banking. This is exemplified in discussions within the BIS Consultative

Council for the Americas (CCA) and the CCA Consultative Group on Innovation and the Digital Economy. These platforms facilitate the exchange of insights and experiences among central banks on digital innovation issues. BIS also conducts policy-oriented research, assessing the impact of digital payments and FPS on financial systems and the economy, as well as exploring the design of FPS and CBDCs.

Moreover, the BIS Innovation Hub is at the forefront of several groundbreaking projects. These include Project Nexus, which focuses on interlinking FPS, and Project Helvetia, which explores the settlement of tokenised assets with wholesale CBDCs. Projects Jura, Dunbar, mBridge and Mariana are investigating the cross-border linking of wholesale CBDCs. Project FuSSE and Project Agorá delve further into tokenisation, unified ledgers and cross-border payments. These activities underscore the BIS's commitment to understanding and shaping the evolving landscape of digital finance.

## Concluding remarks

In conclusion, digital payments have emerged as an indispensable tool in driving economic development. Central banks worldwide can foster them by implementing retail FPS and exploring the potential of CBDCs for both wholesale and retail purposes. The BCB stands as a global beacon of innovation in payments, with its successful implementation of Pix and Agenda BC#. Its success is a testament to a robust regulatory framework that mandates interoperability, competitive end user fees, and entry by non-banks.

Lastly, the BIS remains committed to supporting dialogue among central banks and encouraging disruptive innovations in the financial and payment systems through its committees, its research and the BIS Innovation Hub. As we look to the future, these developments underscore the transformative potential of digital payments, promising to reshape our economies and societies in profound ways.

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