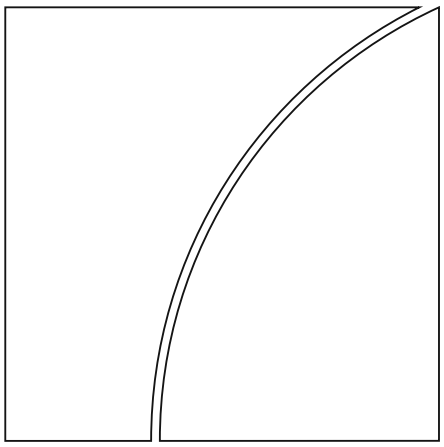

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by José Aurazo, Cecilia Franco, Jon Frost and Jamere McIntosh

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Fast payments and financial inclusion in Latin America and the Caribbean

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Abstract

Most countries in Latin America and the Caribbean are implementing fast payment systems (FPS), often with the goal of enhancing access to and use of affordable financial services. FPS offer immediate transfer of funds on a 24x7 basis between end users. This paper assesses how FPS can promote financial inclusion. We find that FPS go hand-in-hand with greater access to loans and savings in the financial system. The paper also discusses the current experience of countries across the region in FPS and related payment innovations, including central bank digital currencies (CBDCs). Finally, we discuss the key challenges in practice associated to cybersecurity risks and fraud, interoperability, end user and participant fees and universal access.

Keywords: Fast payments, fast payment systems, financial inclusion, interoperability, central bank digital currencies.

JEL codes: G23, L51, O16.

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1. Introduction

Over the past decade, financial inclusion has become a key policy goal in many emerging markets and developing economies (EMDEs). At the same time, technological improvements are reshaping the way the financial system interacts with end users. Financial institutions are moving towards digital channels (eg mobile banking applications), while bank branches are increasingly being closed (Tombini (2024)). The Covid-19 pandemic was also a catalyst for this shift towards digital channels, encouraging people to enter the financial system and to adopt and use digital payments instead of cash (Auer et al (2022)).

Financial inclusion is generally understood as universal access to, and use of affordable financial products and services that meet their needs (Her Majesty Queen Máxima (2009)).[2] Such services include payments, savings, credit and insurance. 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 (Demirgüç-Kunt et al (2022)).[3] Access to credit and savings is less developed, with only 28% of adults borrowing from and 29% saving in a formal financial institution.

Significant progress has been observed in Latin America and the Caribbean (LAC) in the expansion of access to financial services. Between 2014 and 2021, nearly all LAC countries have increased the share of individuals with access to a transaction account, thereby allowing them to become part of the formal financial system. Notable examples include Argentina, Chile, Colombia, Brazil and Peru. By contrast, some countries in the region (eg Dominican Republic and Jamaica) show a decrease in access to accounts (Graph 1.A). Despite progress over the past decade, the lack of access to financial services remains acute in many EMDEs. Only a quarter of adults in EMDEs use a savings account, and about half borrow – with more than half of this coming from informal sources (Demirgüç-Kunt et al (2022)). Access to credit or savings products is even lower in some regions, such as LAC (Graph 1.B). Between 2014 and 2021, gaps in access to accounts, payments and financial services for the most vulnerable populations (ie women, low-income individuals and the youth) have narrowed considerably. An important exception is the gender gap in savings and loans, which widened (Graph 1.C).

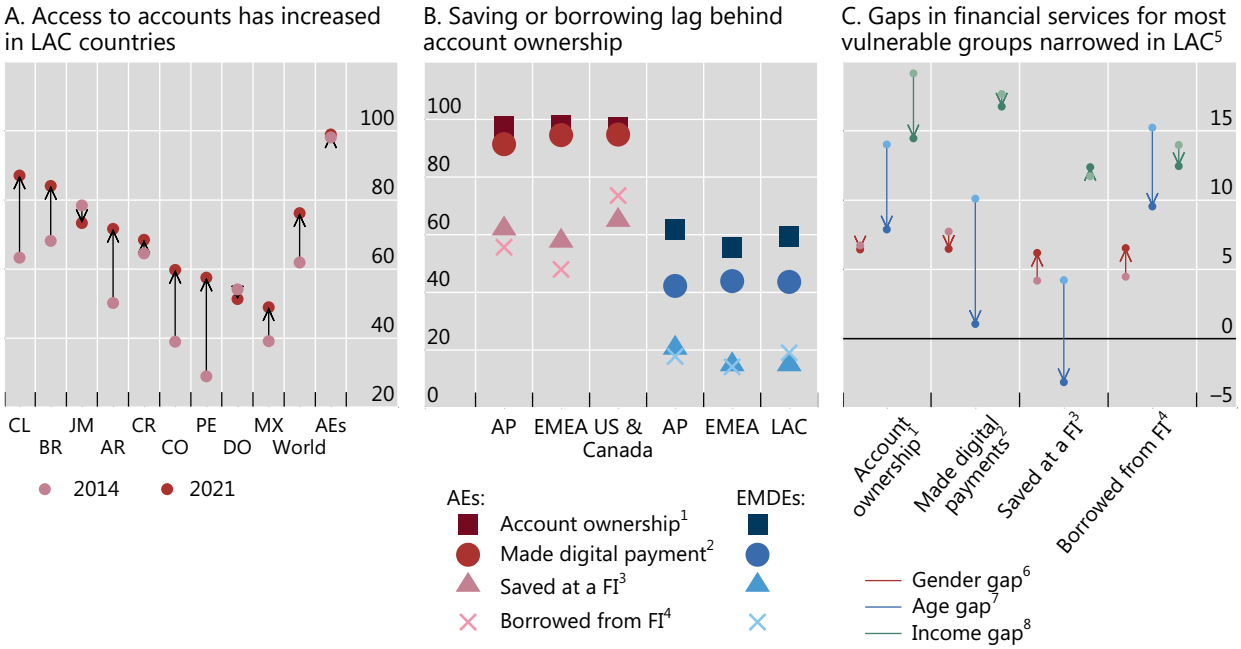
[2] A related, but broader, concept is financial health, which can be understood as the extent to which a person or family can successfully manage their financial obligations and have confidence in their financial future. See Cantú et al (2024).

[3] Transaction accounts can include bank accounts or electronic money (e-money) or mobile money accounts. E-money is an electronic store of money value, often offered by non-banks, that can be a promising vehicle for financial inclusion. Mobile money refers to payment services that can be carried out through mobile phones and is well developed in a number of African countries, among others.

Access to financial services has improved but gaps remain

In per cent

Graph 1



AR = Argentina; BR = Brazil; CL = Chile; CO = Colombia; CR = Costa Rica; DO = Dominican Republic; JM = Jamaica; MX = Mexico; PE = Peru.

AEs = Advanced economies; AP = Asia and Pacific; EMDEs = Emerging markets and developing economies; EMEA = Europe, Middle East and Africa; LAC = Latin America and the Caribbean.

[1] Percent of adults who hold a financial institution or mobile money account. [2] Percent of adults who hold a financial institution or mobile money account, who made a digital or debit card payment. [3] Percent of adults who saved in a financial institution. [4] Percent of adults who borrowed via a financial institution. [5] Light dots represents data from 2014 and dark dots represents data from 2021. [6] Gender gap = male-female. [7] Age gap = Older (% age 25+) – Young (% ages 15-24). [8] Income gap = Richest 60% - Poorest 40%.

Source: World Bank *Global Financial Inclusion (Global Findex) Database*; BIS.

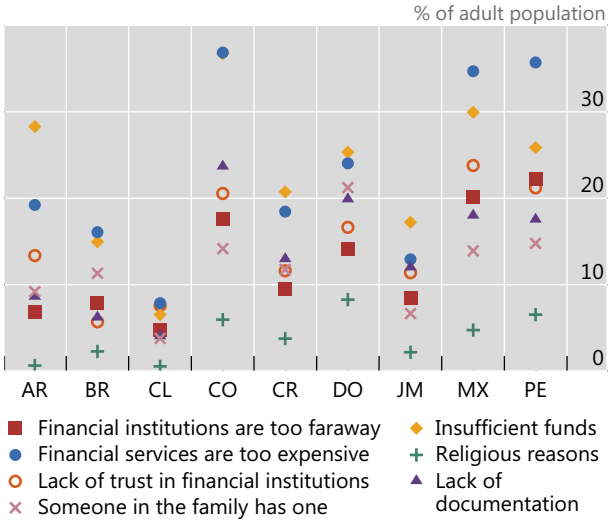
In the LAC region, the main barriers to opening an account – according to the World Bank Findex – relate to high fees of financial services and insufficient income or funds. Other relevant barriers are lack of necessary documentation and lack of trust in financial institutions. Some people do not have a formal ID (eg for geographical reasons) which prevents them from opening an account or using other financial services. Others have had negative experiences with banks in the past, such as unrecognised transactions, fees or the purchase of a financial service (eg insurance), which keep them away from the financial system. Distance to a bank branch and religious aspects are less important in LAC (Graph 2.A).

Digital payments are proving to be a key driver of financial inclusion. They can support economic growth and development by helping to formalise informal activities (the so-called "shadow economy") and improve access to credit (Aguilar et al (2024); Aurazo and Franco (2024)). To achieve this, it is necessary to reduce cash use. Yet this can be quite difficult, as demand for cash remains high. Some factors associated to the sticky preference for cash may be informality, lack of financial education and literacy, small benefits relative to costs and outright tax evasion, among others (Aurazo and Vega (2021)). Cash in circulation (relative to GDP) has

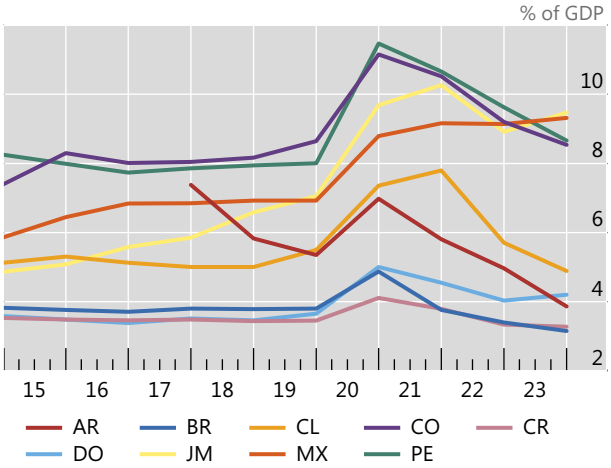
The main barriers to open an account relate to fees and income while cash in circulation has decreased in the region

Graph 2

A. High fees and insufficient funds are the main barriers to open an account



B. Cash in circulation[1] rose in the pandemic but has decreased since then



AR = Argentina; BR = Brazil; CL = Chile; CO = Colombia; CR = Costa Rica; DO = Dominican Republic; JM = Jamaica; MX = Mexico; PE = Peru.

[1] Currency in circulation, domestic currency from monetary base

Source: IMF, Central Bank Survey; World Bank *Global Financial Inclusion (Global Findex) Database*; BIS

fallen across most LAC countries, notwithstanding a surge in the pandemic in 2020. Only Mexico and Jamaica show a clear rise in cash over the past years (Graph 2.B).

To encourage digital payments and improve financial inclusion, end users should have a more attractive payment instrument at their disposal. Payments must be digital but also immediate, interoperable, low-cost and user-friendly. In this regard, a fast payment system (FPS) is a promising tool. The implementation of FPS is a key innovation in the financial and payment system, driven by central banks, the private sector or both in a joint effort. An FPS is an infrastructure focused on clearing and/or settlement of fast payments – also referred to as instant, real-time, immediate or rapid payments. They allow for the transmission of the transaction message and the availability of final funds to the beneficiary to occur in real-time or near real-time, and as near as possible to 24 hours a day and seven days a week (ie 24/7).

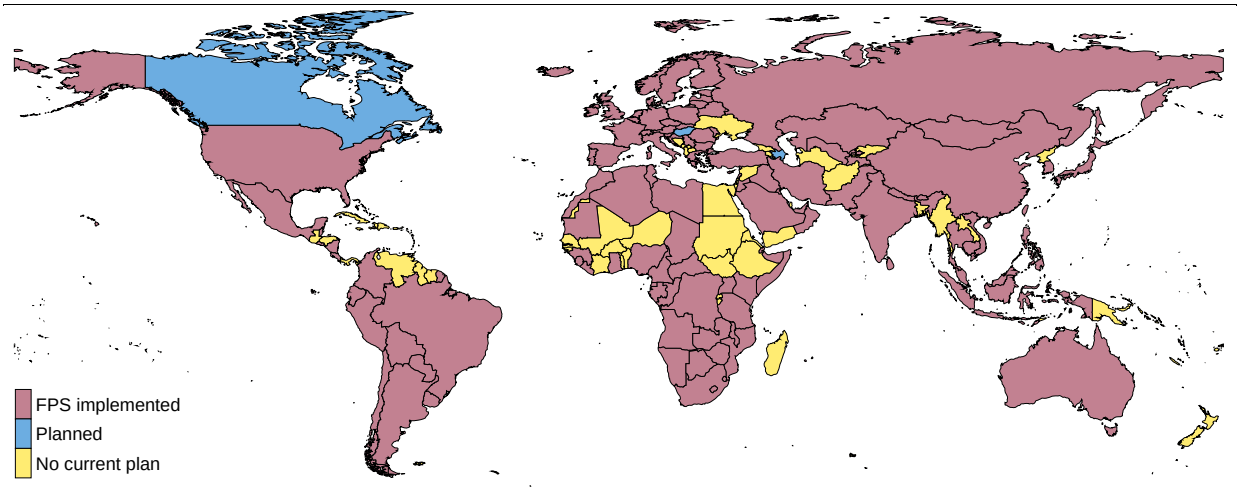
This chapter looks at how fast payments can promote financial inclusion. Section 2 looks at the rise of FPS in the region and around the world. Section 3 discusses the potential benefits and implications of digital fast payments. Section 4 discusses the current experience of countries across the region, including live central bank digital currencies (CBDCs) and projects. Section 5 discusses the key challenges in practice. Section 6 concludes with some open questions and avenues for future research.

2. The rise of fast payments in the region

To date, at least 123 countries around the world and 15 in Latin America have implemented an FPS (Graph 3). In the region, Brazil's Pix is a notable example of a central-bank owned FPS. Costa Rica has been a similarly impressive success story with SINPE Móvil (Araujo et al (2024)). In Mexico, SPEI – the large-value payment system – and their overlay services such as Cobro Digital (CoDi) and Dinero Móvil (DiMo) allow end users to send and receive payments immediately. In Peru, the Automated Clearing House (ACH) and private-owned digital wallets (eg Yape and Plin) offer fast payments. In Chile, end users are able to make fast payments since 2008 with the implementation of Transferencias en Linea. In Bolivia, the central bank implemented QR BCB Bolivia – a standardised and interoperable quick response (QR) code – for fast payments. In Argentina, the central bank launched Transferencias 3.0, which comprises different fast payment services provided by the private sector, including fast payments initiated with QR codes. In September 2024, Uruguay implemented a private sector-led FPS called "Toke", which enables payments with QR codes using transaction accounts. In the United States, the Federal Reserve System introduced an FPS called FedNow. In 2025, Colombia plans to implement "Bre-B", a new service to interconnect financial institutions offering immediate payments. In Canada, authorities are working on the so-called Real-Time Rail (RTR). In Central America, the central banks of Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras and Nicaragua have implemented their regional real-time gross settlement (RTGS) system, Sistema de Interconexión de Pagos (System of Payment Interconnection, "SIPA") and the Transfer 365 FPS for retail payments among them. A detailed overview of selected FPS implemented in the region is shown in Table 1.

123 countries around the world and 15 in Latin America have already implemented an FPS

Graph 3



The use of this map does not constitute, and should not be construed as constituting, an expression of a position by the BIS regarding the legal status of, or sovereignty of any territory or its authorities, to the delimitation of international frontiers and boundaries and/or to the name and designation of any territory, city or area. Updated as of September 2024.

Source: CPMI; World Bank; BIS

The volume of fast payments has grown rapidly in most jurisdictions around the world. 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) see the largest fast payments volumes. The rise in FPS use has coincided with a fall in cash use in many of these countries. This points to increasing digitalisation of payments (Frost et al (2024)).

Overview of FPS implemented in LAC, selected jurisdictions Table 1

	Name of FPS[1]	Launch date	Payment initiation methods			
			Account details[2]	QR codes[3]	Email[4]	Mobile number[5]
Argentina	Transferencias 3.0	Dec 2020	X	X		
Bolivia	QR BCB Bolivia	Dec 2022		X		
Brazil	Pix	Nov 2020		X	X	X
Chile	Transferencias Electronicas de Fondos	2008	X			
Colombia	Transfiya	Dec 2019				X
	Entre-cuentas	Jan 2023		X		
Costa Rica	SINPE Móvil	May 2015				X
El Salvador	Transfer 365	Jun 2021	X			
	Transfer 365 – Móvil	Jun 2022				X
Mexico	SPEI	Aug 2004	X			
	CoDi	Sep 2019		X		
	DiMo	Feb 2023				X
Peru	Transferencias Interbancarias Inmediatas	Nov 2020	X			X
	Yape	Feb 2017		X		X
	Plin	May 2020		X		X
Uruguay	Toke	Sep 2024		X		

[1] The use of the term "fast payment systems", or FPS, can vary. [2] End users can transfer funds using bank account details. [3] End users can pay by scanning QR codes. [4] End users use an email address to send and receive money. [5] End users send or receive money using their mobile phone numbers. Source: Aurazo et al (2024b).

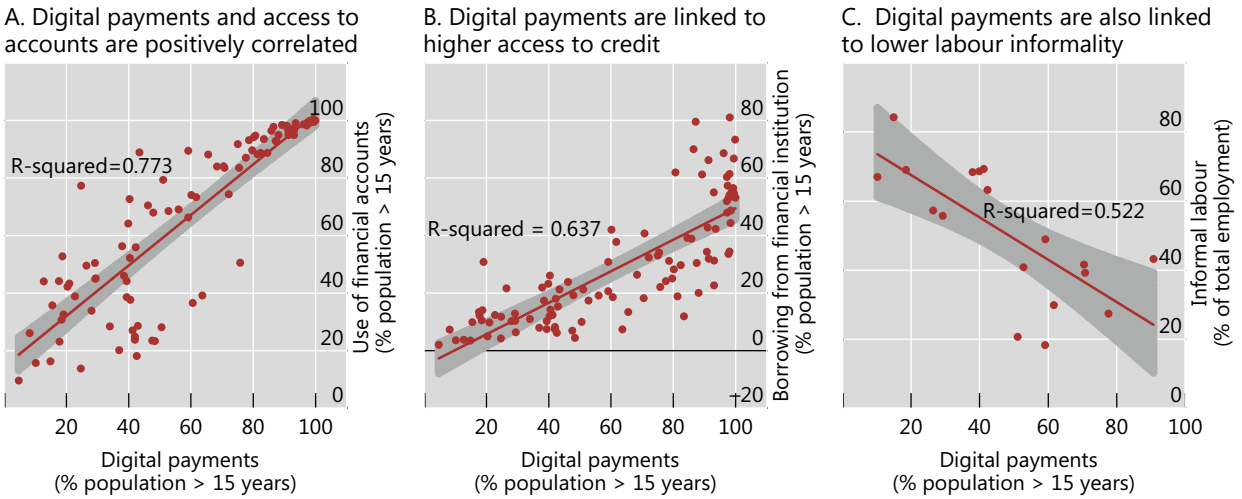
What factors could be associated to the success of an FPS? Frost et al (2024) find that the most widely adopted FPS involve central bank ownership, participation by non-bank payment service providers and a greater number of domestic use cases and cross-border connections. This underscores that key design features matter for the ultimate success of a system. Other key factors might also affect the uptake of a payment system. For example, the implementation strategy (bottom-up vs top-down), the technology access (eg unstructured supplementary service data (USSD) vs internet-based solutions), the type of account used (bank vs e-money accounts) and the cash-in and cash-out network might be relevant when deciding which payment instrument to use (Aurazo and Gasmi (2024)). In addition, end user fees, participation requirements, the number of participants, interoperability with other payment instruments, transaction limits and types of aliases could also impact FPS adoption.

3. Potential benefits of digital fast payments

Digitalisation offers a viable solution to policy challenges in payments, and it brings benefits to the economy. Digital payments are associated with greater access to transaction accounts (Graph 4.A) and borrowing from formal financial institutions (Graph 4.B). Digital payments are also linked to a lower share of the workforce that is informally employed (Graph 4.C).

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

Graph 4



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

Digital payments can support economic growth and development through a number of channels. First, digital payments are cheaper, faster and more efficient than cash or cheques, reducing the deadweight costs of payments to merchants and the economy more generally. Second, the widespread adoption of digital payments may create a "data trail" and incentivise informal sector enterprises to move into the formal sector. Third, the use of digital payments for payroll may help to formalise informally employed workers. Aguilar et al (2024) find that a one 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.

In addition, digital fast payments may foster financial inclusion. First, for large subgroups of the population in many countries for whom banknotes and coins are their only financial assets, greater adoption of digital payments could be the gateway to the financial system, encouraging ownership of financial accounts. Indeed, due to network effects, as more individuals and businesses adopt fast payments across the economy, the unbanked may start to do so, too. This can be a means to address challenges and costs associated with cash management and handling. Second, subject to customer consent, financial institutions can offer personalised financial products such as credit cards and loans by using data generated from fast payments (Aurazo and Franco (2024)). Aurazo and Franco (2024) do not find a robust relationship between FPS and account access (Table 2, columns I-III; note that only

column III is statistically significant). But they do find that, after an FPS is launched, the population borrowing from a financial institution rises by 3.9 percentage points (pp) (Table 2, columns IV-VI). This is also true for savings at a financial institution (columns VII-IX), where the introduction of an FPS is associated with an increase by 3.0 pp of adults having a formal savings. This suggests that fast payments also provide incentives to keep funds within the financial system in the form of savings.[4]

Empirical results[1] Table 2

	Have an account at a financial institution			Borrowed from financial institution			Saved at a financial institution		
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
Fast payment system	0.18	1.13	2.17**	3.91***	6.63***	4.83***	3.01***	4.38***	4.98***
	(1.30)	(1.17)	(1.11)	(1.42)	(1.80)	(1.48)	(1.12)	(1.11)	(1.02)
Country fixed effects	✓	✓	✗	✓	✓	✗	✓	✓	✗
Year fixed effects	✓	✗	✗	✓	✗	✗	✓	✗	✗
Observations	501	501	501	501	501	501	501	501	501
R-squared	0.576	0.553	0.547	0.457	0.168	0.150	0.311	0.239	0.232

[1] The coefficients of fast payment system should be interpreted in percentage points. Standard errors in brackets; ***/**/* indicates statistical significance at the 1/5/10% level.

Sources: Aurazo and Franco (2024); authors' calculations.

The benefits of digital payments go beyond mere access to the financial system. They may even affect monetary policy transmission. As a higher number of people access loans and deposits, the interest rate channel of monetary policy can be strengthened (Mehrotra and Yetman (2014)). This could increase the effectiveness of monetary policy and thus the ability of central banks to support price stability.

In addition, the introduction of an FPS might impact competition. An open FPS – like Brazil's Pix – may have positive impacts on deposit and loan markets by fostering competitive pressure from small banks and non-banks (Sarkisyan (2024)). On the contrary, walled gardens (ie closed payment schemes) might exacerbate network effects of dominant players and might lead to a corner solution with one sole provider; in other cases, this may lead to a fragmented payment market (Bianchi et al (2024)).

4. International experience

A number of countries in LAC have emerged as leaders in fast and digital payments. Concurrently, several jurisdictions aim to improve financial inclusion through deepening development of payments systems. Other motivations for the development of FPS include high costs and fees associated with domestic payments – for merchants and individuals; high numbers of unbanked or those with limited access to transaction accounts; and low use of transaction accounts. Key areas of

[4] See the technical annex for more details on the econometric strategy and dataset.

progress in digital finance in the region include FPS and central bank digital currencies (CBDCs) – which are still largely in exploratory phases. Notable examples of central bank-owned FPS are Brazil's Pix, Costa Rica's SINPE Móvil and Mexico's SPEI. Other payment solutions are owned by the private sector, including Automated Clearing Houses (ACH) and commercial banks. While many central banks are still exploring the concept of CBDC's, there are two live CBDCs in the Caribbean – the SandDollar (The Bahamas) and JAM-DEX (Jamaica) – and one pilot in Peru.

4.1 Central bank-owned FPS

Central banks have played a key role in the development of FPS. They often issue regulations and guidelines to ensure safety and efficiency of FPS and oversee their smooth functioning. This has been a traditional role for central banks in retail payments, but some issues usually remain. For instance, it is often argued that the payment market lacks innovation and competition – with dominant players operating – which in turn hinders the promotion of ultimate goals such as financial inclusion.

As a response, some central banks, such as those of Brazil, Costa Rica and Mexico, have been more active and have implemented their own FPS (see Table 3). The implementation of such central bank-owned FPS is motivated by a few reasons. First, central banks seek to encourage digitalisation, increasing speed and convenience and lowering the cost of payment transactions (CPMI (2021)). Second, they encourage innovation in payments and the real economy, fostering financial inclusion through widespread access and ease of use. Finally, expansion in the use of the fast payment systems would serve to reduce the use of cash which carries inherent costs of security, storage, circulation and removal by retailers and providers of banking and payments services (see eg BCB (2023)).

In addition, the motivations for the direct provision of such FPS by central banks are related to market failures present in the payments market. For instance, direct provision of FPS may overcome coordination failures among private sector payment service providers (PSPs), whose commercial interests do not always align with those of society. By bringing together all private sector PSPs, it may help to achieve critical mass necessary for the success of an FPS. In addition, a central bank-owned FPS might lower entry costs and production costs for PSPs (as central banks are motivated by public policy objectives, not profit). With this it can promote innovation and the emergence of new uses cases more rapidly (Ragazzo and Caminha (2024)).

Launched in November 2020, Pix represented a significant milestone for digital fast payments in Brazil. End users can make Pix transactions from their current accounts, savings accounts and prepaid payment accounts (Duarte et al (2022) and Lobo and Brandt (2021)) They can use online banking platforms and applications on mobile devices (smart phones) as Pix is an embedded button in mobile banking applications. Payments are initiated through QR codes or using aliases of the recipient such as an email or a mobile phone number. Pix transactions made by individuals are free of charge, but banks and non-bank PSPs are allowed to freely set fees for merchants, both for sending and receiving funds. These fees average 0.22% on average, and are thus significantly lower than those charged for credit card and debit card transactions (2.1% and 1.1% on average). There are no membership or fixed fees for participants, they only pay a variable fee (around USD 0.002 for every 10

transactions) which is used to cover the costs of running the platform. In addition, there are no interchange fees between Pix participants (Aurazo and Gasmi (2024)).

In Costa Rica, SINPE Móvil was launched in May 2015 as a retail payments platform but it skyrocketed since the pandemic.[5] The system has the capacity to process operations in real-time or on a deferred basis, handling both low and high-value transactions. It supports various types of transactions, including person-to-person (P2P), person-to-business (P2B), business-to-business (B2B), business-to-person (B2P), person-to-government (P2G), government-to-person (G2P) and government-to-government (G2G). This service allows users to make and receive electronic money transfers by linking their bank accounts to a mobile telephone number. Up to a certain limit, these transactions are free of charge. To date, only accounts denominated in Costa Rican Colón are eligible for SINPE Móvil.

In Mexico, SPEI was launched in August 2004 and is designed for both high-value transactions between participants and retail transactions among end users. SPEI participants can transfer Mexican pesos for their own accounts or on behalf of their accountholders in near real-time, 24 hours a day, every day of the year, via a bank, the Internet, or mobile banking. To make a payment, the user must know the Standardised Bank Code (CLABE) for the account (18 digits), the debit card number (16 digits) or the cell phone number (10 digits) associated with the recipient's account.

Two overlay services have been introduced in SPEI. The first, *Cobro Digital* (CoDi), was introduced in September 2019 and uses QR codes and near-field communication (NFC) technology to facilitate cashless transactions for both businesses and users 24/7 at no cost. The second, *Dinero Móvil* (DiMo), was introduced in February 2023 and allows end users to link a mobile phone number to their account through the financial institution's application, enabling them to receive electronic money transfers by providing only the phone number. A mobile phone number can only be linked to one account at one financial institution. There is no cost to link the DiMo account; however, transfer fees may apply depending on the financial institution. As of November 2024, there were 87 SPEI participants; 39 of them offered CoDi, while 21 provided DiMo.

Comparative information on Pix, SINPE Movil and SPEI

Table 3

	Pix (Brazil)	SINPE Móvil (Costa Rica)	SPEI (Mexico)
Launch date	November 2020	May 2015	August 2004
Payment initiation	QR codes, email address, mobile phone number	Mobile phone number	Account details, mobile phone numbers (DiMo), QR codes (CoDi)
P2P fees	Free	Free	Free[1]
P2B fees	Free for individuals, from 0.3% to 0.35% for merchants	Free	Free[1]

[1] Some fees may apply depending on the financial institution and the channel used for the transaction.

Source: BIS.

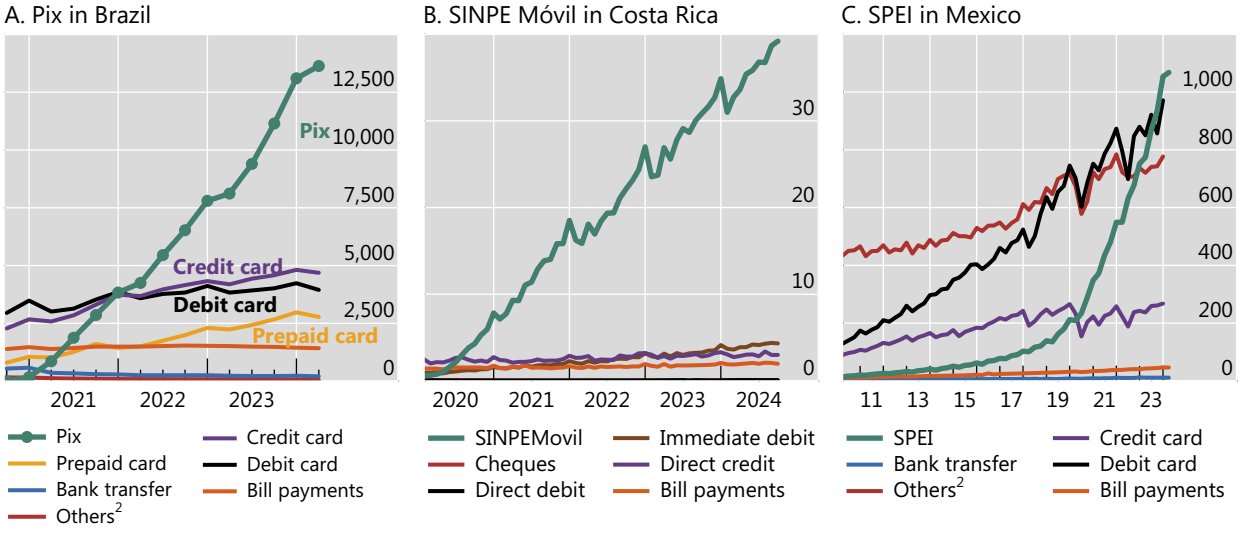
[5] The Costa Rican national payments system (SINPE) was actually launched in April 1997 by the Central Bank of Costa Rica. It is a platform that connects financial institutions and public institutions through a private network. This has allowed for transfer of funds and participation in trading markets.

The uptake of these three central bank-owned FPS has been notable. Within four years of its launch, 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 Central Bank of Brazil (BCB) data, surpassing credit and debit cards (Graph 5.A). Since launch, over 110 billion transactions have been settled, for a total value of BRL 47.7 trillion (USD 8.7 trillion). In Costa Rica, as of August 2024, there were approximately 4.12 million cumulative active subscriptions for SINPE Móvil, for 3 million unique users. There has been a steady increase in the quantity and value of transactions settled over 2021–3 with a total of 224 million transactions in 2021, 372 million transactions in 2022 and 506 million transactions in 2023 (Graph 5.B). In Mexico, CoDi had 18.1 million users registered with 27.9 million transfers made in the year after its launch in September 2019. As of September 2024, there were 20.3 million validated CoDi accounts. As of December 2023, DiMo had 5.28 million of registered users. SPEI transactions, which include those using CoDi and DiMo, have been increasing since the Covid-19 pandemic and now have become the most important retail payment instrument (Graph 5.C).

FPS are gaining market share rapidly in a growing digital payments market[1]

In millions of transactions

Graph 5



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

Source: Central Bank of Brazil; Central Bank of Mexico; Central Bank of Costa Rica; BIS.

What is necessary for a successful adoption of fast payments? By far, Pix is the most successful central bank-owned FPS. The quick adoption and success of Pix, for instance, have been attributed to a number of factors. Firstly, the central bank made participation mandatory for banks and payments institutions with more than 500,000 accounts, resulting in a significant number of user at the outset. Further, smaller banks and payments providers who were not required to participate also saw it in their interest to do so, to keep up with client demands and their competitors. Another contributing factor to the success of Pix was the role of BCB in providing the infrastructure for Pix as well as the governance arrangements and rules. Further, there

was a ban on deals between banks and non-financial firms and prohibition of transaction fees for individuals.

But none of this would have been possible without a solid legal framework. 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 introduced a set of rules governing payment schemes and payment institutions. This includes the direct access of non-banks to Pix, subject to certain requirements, 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.

4.2 Private sector-led experiences

There are also regional examples of private sector efforts to provide digital payments solutions. These have been driven by individual industry participants or by consortia but have often been openly facilitated, regulated and supervised by the central bank.

Chile was an "early mover" of fast payments with its Transferencias en Línea (TEF) system, launched in 2008, being the first instant payments system in South America. Although mandated by the central bank, TEF is operated by a private sector entity that is owned by a consortium of banks in Chile. Almost all banks in Chile participate in the TEF system. Over the first eleven years of the TEF system, there was a steady increase in the volumes of transactions, with 80-85% of payments occurring between individual customers and the most common services being bill payments and direct debits.

In Bolivia, the private sector implemented fast payments with QR codes in 2019. In 2022, the Central Bank introduced BCB Bolivia QR – a standardised and interoperable QR code – for fast payments. Since its introduction in 2019, QR code payments were perceived as a promising tool for financial inclusion, but their use skyrocketed with the standardisation of QR codes. In 2021, QR codes only accounted for 2% of total electronic funds transfers, while this share rose to 39% in 2023.

In Peru, the ACH implemented a fast payment service in November 2020, in parallel with the rise of digital wallets Yape and Plin. Yape started operations in February 2017 and Plin in May 2020. These wallets, operated by different consortia of private banks, allow individuals and businesses to send and receive money in their bank accounts immediately by scanning QR codes or using mobile phone numbers instead of bank account details. By December 2023, these two digital wallets accounted for more than 50% of total retail cashless transactions in Peru, replacing card payments (23%) as the main means of payment. The Central Reserve Bank of Peru (BCRP) played a crucial role in this achievement, by enforcing mandatory interoperability between these two digital wallets and with other payment instruments and among PSPs. This interoperability was made in four stages, starting in April 2023 with interoperability between Yape and Plin, followed by the interoperability with ACH participants (September 2023) and with e-money issuers (December 2023), and ending with the interoperability with fintechs and third-party providers in the near future.

In Colombia, the Central Bank of Colombia plans to implement Bre-B in 2025. Bre-B is a wide brand name for fast payments, provided by any PSP in the country, either private or public. This strategy encompasses the implementation of a centralised directory for aliases from several private sector fast payment services as well as the implementation of a central bank-owned FPS. It is part of a wider national payments vision, which began in October 2023 when the central bank issued *Resolución Externa 6*, which laid out conditions for interoperability and integration of payments systems given the fragmented nature of the Colombian banking and payment service sectors. This created an environment for Colombia's first Single Payment Interface (SPI). Colombia's clearing house (ACH Colombia) facilitates electronic payments and provides solutions for payments in the country. One of the products offered by ACH Colombia is Transfiya, which allows for payments transfers between customers of different banks using a mobile device. Another fast payment service dedicated for merchants is Entre-cuentas, provided by Redeban. With the Bre-B initiative, these different services can become more integrated and thus contribute further to payments modernisation.

4.3 Central bank digital currencies (CBDCs)

CBDCs are another key innovation in payments in the region.[6] While many global central banks continued to explore and research CBDCs, there were early adopters in LAC, particularly in the Caribbean. In The Bahamas, the SandDollar was launched in December 2019, and remains the first retail CBDC that has not been discontinued. Jamaica's JAM-DEX® was launched in July 2022. The Eastern Caribbean Central Bank (ECCB) launched its own pilot retail CBDC DCash in March 2021, but DCash was subsequently discontinued in January 2024. Similar characteristics among Caribbean jurisdictions include their profile as small open economies that are tourism-dependent, with concentrated banking sectors, high fees and geographical disparities in access to banking services. Moreover, the countries have relatively high adoption rates of digital technologies (eg mobile phones). Therefore, key motivations for the adoption of CBDCs in these jurisdictions include modernisation of payments systems, promoting financial inclusion and mitigating risks associated with usage of physical cash.

Most users of CBDCs transact using mobile device apps. Additionally, both SandDollar and JAM-DEX have a tiered wallet system with stricter know-your-customer (KYC) requirements for higher tiers (see Auer et al (2022)).[7] In both cases, adoption rates were low following the launch, but eventually began to improve. In The Bahamas, there were more than 130,000 registered SandDollar wallets as of August 2024 which equates to 30% of the population. In Jamaica, there were approximately 260,000 wallets which equates to about 8% of the population.

[6] A detailed discussion of the comparison between CBDCs and FPS can be found in Aurazo et al (2024a).

[7] The SandDollar wallet has three tiers. No KYC documents are required for Tier 1 (basic) wallets, and a valid government-issued ID is required for a Tier 2 (premium wallet). A Tier 3 wallet (merchant account) requires a valid business license and value-added tax certificate. JAM-DEX® has a Lynk Lite wallet requires name, date of birth, e-mail address phone number and tax registration number. The higher tier, called Lucky Lynk, requires a national photo ID.

In July 2024, the BCRP announced a CBDC pilot led by Bitel – a Vietnamese mobile network operator – focused on unbanked people and with offline capabilities. Bitel's proposal was aligned with the specific objectives of the pilot, design and characteristics established in the regulation issued by the BCRP.[8] Bitel has 7 million users in Peru, of which 2.5 million are in low-inclusion (eg rural) areas. Furthermore, Bitel has already registered a digital wallet application, BiPay, which will be used for the distribution of CBDC to end users in both online and offline contexts. This pilot will last one calendar year, which may be extended for up to one additional year, upon justified request.

5. Challenges ahead and policy considerations

Despite the increasing adoption of digital and fast payments in the region, there are a few challenges that should be discussed. These challenges relate to: i) cybersecurity, fraud and data privacy risks, ii) interoperability, iii) end user and participant fees and iv) universal access to FPS.

It is important that end users (ie individuals and merchants) of fast payments and other types of digital payments be able to carry out transactions in a safe and secure environment. **Cybersecurity, fraud and data privacy risks** are inherent with widespread adoption of any digital payment service, including fast payments. Bad actors regularly capitalise on new technologies to introduce new types of scams, stealing funds or sensitive data. In practice, both central banks and private sector PSPs that operate FPS have had to allocate significant resources to combating such practices, and to increasing fraud awareness among users. As with any payment system, security of the payments infrastructure is also critical; it is important to invest significant resources in operational resilience and cybersecurity, to mitigate the risk of cyber-attacks on critical infrastructures. There must also be safeguards and policies exist to clearly define and limit data collection and sharing, and to work with private sector stakeholders on defining clear recourse procedures in the case of fraud and scams. Here also, regulators and central banks play a key role in ensuring a safe payment system.

Another key challenge is **interoperability**. Interoperability of payment systems enables the transfer of funds between different types of accounts, regardless of the payment service provider managing the funds.[9] This can enable greater competition, as users can more easily transact with others using different PSPs, and switch between different PSPs, themselves. This means that PSPs must offer attractive, low-cost services on a level playing field with rival firms. In principle, interoperability can be achieved through agreements or soft law, but in practice, it often requires regulatory

[8] In April 2024, the BCRP issued a regulation for retail CBDC pilots (Circular No. 0011-2024-BCRP) and launched a call for the private sector to participate in the first pilot. Some aspects to be considered by the interested institutions include: i) offline payment functionality, ii) fostering access to digital payments for the unbanked population and iii) non-interest bearing accounts, among others. Interested parties should also evaluate user experience and enrolment schemes, analyse the substitution effect between cash and CBDC, and evaluate the sustainability of business cases of digital cash distribution companies, among others.

[9] Four types of interoperability are present in (mobile money) payments. See Bianchi et al (2023).

initiatives. Successful experiences on interoperability of domestic payment systems include the active role of the BCRP in Peru. With the rapid uptake of Yape and Plin, which were not interoperable, the BCRP issued the Regulation of Interoperability of Payment Services (Circular No. 0024-2022-BCRP) in October 2022 to establish the conditions and opportunities for interoperability and the consequent improvement in the efficiency of the digital payments market in Peru. In practice, it enforced interoperability between Yape and Plin, and with other payment instruments and payment service providers. Other initiatives include the regulation of interoperability of private services in Colombia, discussed above. Of course, interoperability may go beyond FPS. It is also key to facilitate the creation of a 'network of networks' to connect the diverse array of specialised networks that characterises modern financial systems (see Carstens and Nilekani (2024)).

A related challenge are **high transaction fees and costs**. High fees and costs associated with existing payments methods are often a motivation to introduce FPS in the first place. But especially for private sector initiatives (and especially when interoperability is lacking) they can arise for new fast payment services, as well. Costs to both the end users (individuals and merchants) and other participants (eg through interchange fees) can be sizeable. While one objective of FPS and other forms of digital payments is to overcome costly transactions, there might be costs that are unavoidable and that still serve as a barrier to participation for end users and other participants. It is important to achieve a balance between affordability for end users while participants have incentives to participate in an FPS. In many FPS, such as Pix or SINPE Móvil, P2P transactions are free for users, while merchants pay a low fee for accepting P2B payments.

Despite goals and policies on the part of central banks to ensure **inclusiveness and universal access**, there may still be challenges to ensuring that no one is left behind. High costs of implementation and of extending infrastructure to segments of the population at risk for exclusion can be a barrier to financial inclusion objectives. Further, there might be uneven adoption in segments of the population that exist in areas where there is no reliable supporting infrastructure (eg internet connections, mobile internet). Additionally, cultural norms, beliefs and past experiences with financial institutions by some parts of the population have the potential to limit such users' trust and participation in the financial ecosystem. Different initiatives to understand the needs, concerns and preferences of end users can help to better tailor services to these users. The goal should be to give them choices that fit their needs and deliver tangible benefits in daily life.

6. Conclusion

Payment innovations, including fast payments, are reshaping the financial and economic landscape in a number of jurisdictions. They have the potential to help to increase financial inclusion, thereby supporting economic growth and development in the region. This can be done by formalising informal sectors and improving access to credit, while financial institutions are able to improve and offer tailored products, facilitated by data gathered from digital and fast payments.

The implementation of FPS is a key innovation in the financial and payment system. FPS can be developed and operated by central banks, the private sector or in a joint effort. We have shown that the implementation of an FPS can increase access to loans and savings in the financial system, and described several specific cases. LAC has emerged as a leading region for fast payments, with successful central bank-led FPS in jurisdictions such as Brazil, Mexico and Costa Rica, and private sector-led initiatives in Colombia, Peru and other countries. In several cases, central banks have moved to make private fast payment systems interoperable, so as to ensure greater competition and efficiency. Further, the experiences of two "early movers" in the region in implementing retail CBDCs (SandDollar in The Bahamas and JAM-DEX in Jamaica) also provide valuable insights as well as several other jurisdictions doing research and pilots.

Digital innovation and fast payments continue to play a key role in many jurisdictions' strategy to improve financial inclusion, and by extension, economic growth and development. In this context, central banks and other public authorities must grapple with important considerations and challenges. End users are now looking for immediate, interoperable, costless and user-friendly payments. The private sector has enormous potential to innovate, but commercial interests may not always align with the interests of society. Challenges can arise around cybersecurity, fraud and data privacy risks, interoperability, affordability and universal access. To address these challenges, central banks and public sector authorities can learn from the experience of their peer countries. Indeed, the experiences of LAC countries hold lessons not only for the region, but for other countries around the world.

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Technical annex: econometric strategy

Following Aurazo and Franco (2024), we use country-level data from 148 countries from the 2011–21 World Bank Global Findex. We then assess how the presence of an FPS relates to three indicators of financial inclusion, namely access to an account at a financial institution, access to a loan from a financial institution, and savings at a financial system. To formally assess the role of an FPS, we run the following two-way fixed effects regression:

$$y_{i,t} = \beta_0 + \beta_1 FPS_{i,t} + \beta_2' X_{i,t} + \delta_i + \theta_t + \varepsilon_{i,t},$$

where $y_{i,t}$ are the three indicators of financial inclusion (access to a bank account, access to a loan from a financial institution and savings at a financial institution) for country i in period t. $FPS_{i,t}$ is a dummy variable which takes a value of 1 if an FPS is available in country i in period t. $X_{i,t}$ is a set of controls that vary across countries and over time, such as GDP per capita (in logs), automatic teller machines (ATMs) per 100,000 inhabitants, internet coverage and mobile phone subscriptions. δ_i and θ_t denote country and time fixed effects, respectively.

We focus on the correlation between the introduction of an FPS and these three financial inclusion indicators. We do not claim causality, given potential endogeneity issues. For example, the level of financial inclusion (eg number of adults with a financial account) could affect the implementation of a fast payment system in a country.

The regression results show that countries with an FPS have higher levels of access to credit from and savings at financial institutions. These two results are robust to different specifications and suggest that FPS may be associated with access to financial services beyond payments. Greater access to credit may relate to individual building up a track record of formal payments. In addition, this suggests that FPS may be associated with savings at financial institutions, as end users have incentives to keep their funds within the financial system (instead of withdrawing them). Regarding access to a financial account, the presence of an FPS becomes insignificant when we include country and time fixed effects.