

A revolution in digital payments: faster, user-friendlier and cheaper

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December 2024

Abstract

Digital payments are a promising tool to improve people's payment experience and financial health. This is especially true for fast payments, which allow for immediate availability of final funds to the beneficiary. Often combined with new functionalities, fast payments can offer enhanced convenience compared with other payment instruments. They can also be cheaper for individuals and businesses, especially when provided by or in collaboration with the public sector and on a cost recovery basis. This chapter provides a high-level overview of key insights and issues discussed at the Workshop on "Fast payments in Latin America" organised by the Bank for International Settlements and the World Bank and held in Mexico City in May 2024. In particular, it draws out some common themes on financial inclusion, the role of central banks, domestic and cross-border interoperability and new functionalities, and gives an overview of the other chapters in this volume.

JEL classification: G23, G28, L51, L96, O16, R11.

Keywords: Fast payments, digital payments, fast payment systems, financial inclusion, interoperability, digital innovation.

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1. Introduction

The retail payments landscape in Latin America and the Caribbean (LAC) is going through revolutionary changes. At the heart of this revolution is the introduction of fast payment systems (FPS) and the adoption of fast payments (Randall et al (2024)). Fast payments, also referred to as instant, real-time, immediate or rapid payments, allow for transaction messages to be transmitted and final funds to become available to the beneficiary in real time or near real time, and as near as possible to 24 hours a day and 365 days a year (24/365) (CPMI (2021); World Bank (2021a)). FPS enable swift processing of retail transactions to ensure the immediate availability of funds for the recipient. In this chapter, we use “FPS” as an umbrella term that encompasses the underlying technical infrastructure, participating payment service providers (PSPs), end user-facing services and underlying rules that govern the processing and delivery of fast payments (Frost et al (2024)).²

Over 15 jurisdictions have implemented an FPS in LAC (see Table 1 for some examples). Brazil’s Pix was implemented in November 2020 and is a notable example of a central-bank owned FPS (Duarte et al, 2022); over 90% of the adult population in Brazil received or initiated a Pix transaction between July 2023 and July 2024. Costa Rica has seen a similar success story with SINPE Móvil, which was implemented in May 2015, with nearly 80% of adults using it by August 2024. In Mexico, the central bank launched Cobro Digital (digital collection, “CoDi”) and Dinero Móvil (mobile money, “DiMo”) in 2019 and 2023 respectively, building upon the large-value Sistema de Pagos Electrónicos Interbancarios (Interbank Electronic Payments System, “SPEI”). By September 2024, the number of validated CoDi accounts had grown to 20.3 million. In Peru, the Automated Clearing House (ACH) implemented a fast payment service in November 2020. This happened in parallel with the rise of digital wallets (eg Yape and Plin), which also allow immediate transfer of funds. These developments have boosted the uptake of fast payments in Peru, which reached 157 such payments per adult in 2023.

In Bolivia, the central bank implemented QR BCB Bolivia – a standardised and interoperable QR code – for fast payments in 2022. In December 2020, the Central Bank of Argentina launched Transferencias 3.0, which comprises different fast payment services provided by the private sector, including payments initiated with QR codes. End users in Uruguay have been able to send and receive fast payments using “Toke”, which is also based on QR codes, since September 2024. In 2025, Colombia plans to implement “Bre-B”, which is a new central bank-owned service that interconnects financial institutions offering fast payments, such as institutions using the (private sector) FPS Transfiya and Entre-cuentas. In Central America, the countries of Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras and Nicaragua have seen a rapid increase in digital cross-border payments, thanks to their regional real-time gross settlement (RTGS) system, Sistema de Interconexión de Pagos (System of Payment Interconnection, “SIPA”) and the Transfer 365 FPS.

² The use of the term “fast payment systems” can vary. It sometimes refers only to the infrastructure underlying the delivery of fast payments, its governing rules and participants (see CPMI (2016, 2021)). Our interpretation is wider and includes the end user-facing services offered by multiple participants, such as the mobile payment app built on top of these infrastructures, and the rules governing these.

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. See footnote 2. 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.

What has been driving these developments? In LAC, the implementation of FPS is often viewed as a tool to achieve public policy objectives. Fast payments have the potential to drive financial inclusion, reduce transaction costs and stimulate economic activity by providing individuals and businesses with convenient and affordable payment solutions and faster and cheaper access to funds (Aguilar et al (2024)). The implementation of an FPS has also been associated with improved access to credit (Aurazo and Franco (2024)). Through these and other benefits, greater use of fast payments could also improve financial health, which is defined as the extent to which a person or family can successfully manage their financial obligations and have confidence in their financial future (Cantú et al (2024)). In particular, it could give users the ability to pay and be paid more efficiently, save for the future and thus better withstand shocks.

Central banks traditionally play a pivotal role in the payment system to safeguard trust in their currency and ensure the safety, efficiency and integrity of payments. Generally, they have been involved in payments as operators, overseers and catalysts (CPSS (2003a)). Driven by the potential of fast payments to support some key public policy objectives, LAC central banks have been a key facilitator in the provision and adoption of fast payments, particularly by modernising the payment infrastructure and other complementary policies.

Despite the rapid adoption of fast payments in LAC, there are still many open questions. How can fast payments contribute to a digital economy? How can central banks and other public authorities further support the growth of fast payments? What specific design choices have worked well in practice, and under what circumstances? What lessons can be learned from observations from individual jurisdictions? How can central banks and other public authorities regulate, supervise and oversee FPS and the PSPs offering fast payment services, and what are the challenges?

The BIS and the World Bank organised a Workshop on “Fast payments in Latin America” in Mexico City on 21–22 May 2024 to share information, knowledge and experiences between central banks. The workshop brought together participants from 13 central banks, as well as the BIS, the World Bank and the Centro de Estudios Monetarios Latinoamericanos (CEMLA).³ This volume collects related research, including papers presented at the workshop. It includes assessments of a range of successful experiences, such as Pix in Brazil, SINPE Móvil in Costa Rica and the Unified Payments Interface (UPI) in India.

This first, overview chapter provides a high-level summary of the key insights and issues discussed at the workshop. Section 2 discusses the link between fast payments and financial inclusion, and Section 3 explores the role of central banks in fast payments in LAC. Section 4 sheds light on initiatives in LAC to foster domestic and cross-border interoperability of fast payments. Section 5 dives into other value-added services. Finally, Section 6 concludes and gives an overview of the other chapters in the volume.

2. Fast payments and financial inclusion

Digital payments are associated with greater access to transaction accounts (Graph 1.A). Such access is a core indicator of financial inclusion (CPMI and World Bank (2016)). Digital payments are also associated with greater borrowing from financial institutions (Graph 1.B). Greater use of *fast* payments has led to greater adoption of transaction accounts and use of digital payments in general. Thus, it has been a key driver for financial access and has served as a gateway to broader financial inclusion.

As more individuals and businesses adopt fast payments, those that are still unbanked may see greater value in doing the same, due to network effects. Consequently, they become more likely to open (and regularly use) a transaction account. Given the two-sided nature of payment markets, decisions by individuals and businesses (eg merchants) can become mutually reinforcing (Julien et al (2021)). Fast payments can also help people and businesses to overcome challenges and reduce costs associated with cash handling and cash management. Also, subject to customer consent, financial institutions may use insights generated from fast payments to develop and offer personalised financial products, such as credit cards,

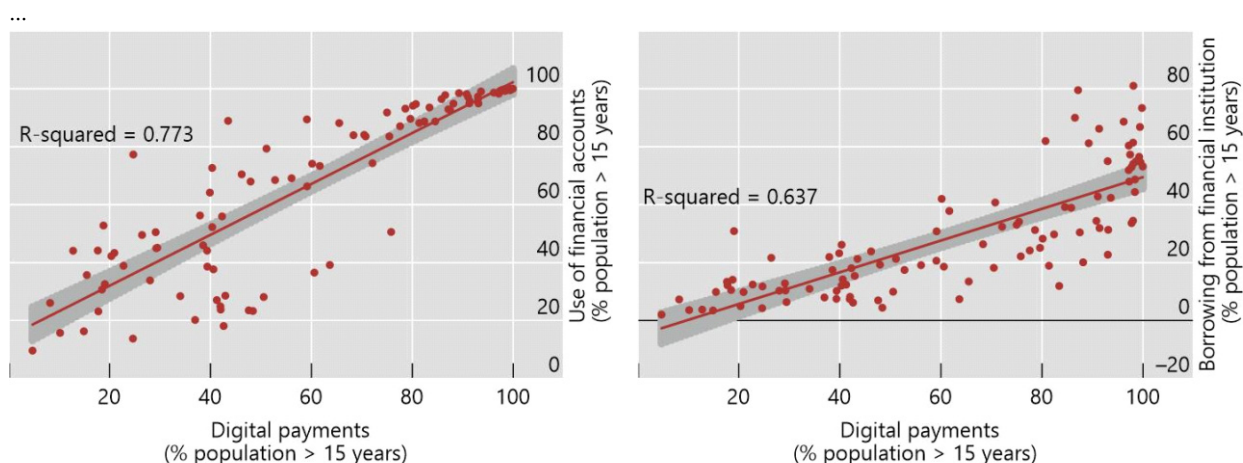
³ Participants came from the central banks of Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Peru and Uruguay, and from the BIS, World Bank and CEMLA. With many thanks to Ines Avalos, Irasema Aguilar and Karla Fernandez (BIS) and to Holti Banka, Maria Teresa Chimenti, Guillermo Alfonso Galicia Rabadan, Jose Antonio Garcia Garcia Luna and Douglas Randall (World Bank) for making the workshop possible.

loans and insurance policies. Indeed, Aurazo and Franco (2024) find that the implementation of an FPS is associated with improved access to credit. For instance, in Peru, the widespread use of Yape has enabled formerly unbanked people to access credit from financial institutions.

In Chile, due to the early introduction of the *Transferencias Electrónicas de Fondos* (TEF) FPS in 2008, the share of the population with a transaction account increased from 42% in 2011 to 87% in 2021. Around 70 million Brazilians who had not made a digital transaction before used Pix for the first time to make a digital payment. In Peru, the growth of digital wallets has gone hand in hand with a rise in the share of adults having a transaction account and an explosion in the number of fast payments – from six transactions per adult in 2020 to 157 in 2023.

Digital payment use is associated with greater access to accounts and credit Graph 1

A. Digital payments are linked to higher account access B. ... and access to credit in the financial system



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

The benefits of fast payments go beyond mere access to the financial system. Fast payments may also affect interest rates through their potential impact on monetary policy transmission. As more people acquire loans and hold deposits, the interest rate channel of monetary policy can be strengthened (Mehrotra and Yetman (2014)). To the extent this second-round effect of greater use of fast payments materialises, they could contribute to increasing the effectiveness of monetary policy and the ability of central banks to support price stability.

3. The multifaceted role of central banks in fast payments

Central banks' involvement in payments has historically been an integral part of their mandate to ensure trust in money and the safety and efficiency of the payment system (CPSS (2003b); BIS (2020)). While the exact responsibilities and activities of central banks differ across jurisdictions, they are generally involved in the development and evolution of FPS as operators, overseers or catalysts, or a combination of these (CPSS (2003a); CPMI (2016)).

As operators, central banks typically own and manage critical payment infrastructures, such as RTGS systems that settle large-value interbank payments. Over the past decade, many central banks have extended their operator role in the area of fast payments. Various approaches have been taken, ranging from limited operational involvement⁴ to the full provision of an FPS (CPMI (2021)).

As overseers, and in some cases also regulators, central banks generally set standards and ensure proper governance and risk management to guarantee that FPS are safe, secure, resilient and efficient. Central banks as overseers may also set out oversight expectations or requirements regarding FPS rules governing access to the payment infrastructure to ensure safety and promote competition. Depending on its mandate, a central bank may regulate fees for participants and end users.

In their role as catalysts, central banks generally foster the development of – or migration to – new or enhanced retail payment solutions, and promote the adoption of consistent technical standards. Central banks have the power and ability to help the market overcome coordination challenges by bringing together all stakeholders, from both the public and private sector, and to incentivise the market to act. This role has been particularly significant in fast payments, where central banks have stepped in to ensure that new systems are interoperable, efficient and accessible.

The traditional operator, overseer and catalyst roles are not mutually exclusive; rather they are often mutually reinforcing. Many central banks have taken on multiple responsibilities to ensure a robust, efficient and inclusive payment system. The Central Bank of Brazil (BCB), for example, has been instrumental in Pix's development, acting as operator, regulator and catalyst. As the operator, the BCB developed and operates the core infrastructure of Pix, ensuring its reliability and accessibility. As a regulator, it mandated participation of large institutions and implemented a regulatory framework to ensure the system's safety and security.⁵ As a catalyst, it promoted interoperability and competition to ensure that Pix operates efficiently and inclusively, eg by mandating unified application programming interfaces (APIs), user interface guidelines and authentication requirements.

In Mexico, the central bank also owns and operates the FPS, SPEI. In its role as operator, the Bank of Mexico ensures the system's reliability, security and operational integrity by managing its infrastructure. In this role, it also monitors the performance of SPEI and implements technological innovations to enhance its accessibility and functionality. For example, CoDi and DiMo were introduced, respectively, to promote QR code-based fast payments, and to allow end users to initiate payments using mobile phone numbers instead of account numbers. As overseer, the Bank of Mexico ensures compliance with relevant regulations and risk management frameworks to promote operational safety and soundness.

The Central Bank of Costa Rica has played a pivotal role in the introduction of SINPE Móvil. As both an operator and a catalyst, it has been instrumental in promoting the system's development and ensuring its widespread adoption. In its operator role, the central bank established the necessary infrastructure and regulatory framework to facilitate secure and efficient fast payments. It has also set technical

⁴ For example, this could include final settlement of inter-PSP obligations across accounts held by the PSPs within the central bank-operated RTGS system.

⁵ For more details, see this resolution issued by the Central Bank of Brazil.

standards and requirements for participating financial institutions.⁶ As a catalyst, it encouraged collaboration between the public and private sector, engaging with financial institutions and fintechs to expand accessibility of financial services. This combination of roles has allowed SINPE Móvil to contribute to enhancing financial inclusion and offered a more affordable and accessible payment option for individuals and businesses.

The Central Reserve Bank of Peru has promoted the uptake of fast payments by facilitating dialogue between financial institutions and fintechs, a function that aligns with its catalyst role. In addition, the central bank has acted as regulator by mandating interoperability between the largest digital wallets, Yape and Plin (see also next section),⁷ between these wallets and other payment instruments, and among PSPs. This effort expanded the reach of fast payments and allowed more institutions, including e-money issuers, to offer them.

Similarly, in Uruguay, the central bank has played a catalyst role in modernising the payment system by encouraging competition and fostering the introduction of new payment instruments, such as those based on QR codes and mobile payments. This approach has helped Uruguay enhance financial inclusion while promoting innovation in its payment landscape.

In other countries, the central bank has issued regulation to ensure the robustness and efficiency of FPS. For instance, in February 2022 the Central Bank of Chile issued a regulation to create, regulate and oversee retail payment ACHs.⁸ In 2023, Colombia's central bank was empowered to regulate the retail payment system (Article 104, Law 2294). This enabled the central bank to enforce interoperability between fast payment services (see next section).

As operators, overseers and catalysts, central banks face various challenges arising from the rapid pace of technological change and evolving payment landscape. Issues like fraud and consumer protection have long been a concern, and are not new. Nonetheless, central banks that operate an FPS may have to further strengthen efforts to address these risks. For instance, given the actions of bad actors, central banks may need to enhance their fraud detection mechanisms and ensure the implementation of robust security standards – particularly if they were previously not responsible for operating an FPS or other type of retail payment system (World Bank (2023)). Additionally, central banks face the challenge of balancing private sector interests conflicting with the broader public good.

4. Domestic and cross-border interoperability

Domestic interoperability across payment instruments, schemes or systems enables the transfer of funds between different types of accounts, such as a bank account and an e-money account, regardless of the PSP offering the accounts. Such

⁶ See [here](#) the regulatory framework of SINPE Móvil.

⁷ See [this circular](#) issued by the Central Reserve Bank of Peru.

⁸ For more details, see [this central bank circular](#).

interoperability can help overcome market fragmentation and increase competition between large and small players, which may ultimately lead to lower end user fees (see Bianchi et al (2023)). Domestic interoperability may also improve end users' payment experience to the extent that they no longer need to have multiple payment instruments or accounts to meet most if not all of their payment needs.

Fostering interoperability requires careful consideration of potential unintended consequences. Some unintended effects may relate to a decline in coverage. For instance, in the mobile money market, mandatory interoperability may reduce telecom infrastructure coverage, particularly in rural areas where investment costs are higher (see Brunnermeier et al (2023)). Similar risks may arise in the payments market more generally, for instance mandatory interoperability between PSPs might decrease the presence of physical access points (eg automated teller machines (ATMs), bank branches), especially in rural areas. This may be particularly relevant where different business lines cross-subsidise one another. Finally, where interoperable payment services substitute for card payments, there can be differences in fraud protections and customer rewards, which may influence use.⁹

Various LAC jurisdictions are promoting or even enforcing interoperability in their payment markets. In Colombia, the central bank has introduced a new regulation to establish mandatory interoperability between the fast payment platforms currently available in the country. It will also implement "Bre-B", a brand name to identify interoperable fast payments enabled by PSPs, in which it will implement a centralised directory. Similarly, in Peru, the central bank issued a regulation in October 2022 to mandate interoperability between Yape and Plin and with other payment instruments and PSPs.

In Bolivia, the central bank has issued a standardised QR code system called QR BCB Bolivia to facilitate fast payments. It has also mandated interoperability across all digital payment channels by requiring PSPs to support QR code payments for their digital banking platforms and wallets. Similarly, in April 2024, the Central Bank of Argentina issued a regulation requiring all digital wallets provided by commercial banks and other PSPs to be compatible with all QR codes available in the market and vice versa (see also next section).

Jurisdictions in the Americas have taken some initiatives to foster cross-border payment system interoperability. Cross-border interoperability (or interlinking) allows banks and other PSPs from different jurisdictions to transfer payments, such that end users can seamlessly transact with each other regardless of their geographic location or choice of PSP.¹⁰ In Central America, the regional initiative SIPA allows for cross-border interoperability by interlinking the RTGS systems of six jurisdictions in the region. SIPA payments are cheaper and faster than other available cross-border payment methods, such as services offered by international money transfer operators. In addition, in June 2023 the same Central American jurisdictions launched Transfer365 CA-RD, a system for instant cross-border payments. Since then, the

⁹ Especially credit cards often give rewards to users, paid for by merchant discount rates. While these rewards can encourage card use, changes in the size of rewards have been found to have only small effects in practice (see Ching and Hayashi (2010); Arango et al (2015)). In some economies with widespread use of fast payments (eg Brazil), credit and debit card payments have continued growing.

¹⁰ See Boar et al (2021) for a discussion on interoperability between payment systems across borders.

initiative has rapidly achieved scale in terms of both number and value of cross-border payments. It is particularly popular for payments from El Salvador to Guatemala, which is in part driven by trade and business-to-business payments.

Various other cross-border initiatives are being explored in LAC to address the high costs and long processing times of cross-border payments. For instance, Brazilians can pay with Pix at some merchants in Uruguay (since December 2023), Paraguay (since February 2024) and Argentina (since April 2024) through isolated private solutions. Another potential solution to improve cross-border payments in the Americas is to interlink jurisdictions' FPS. But there are key challenges and barriers to overcome first. For instance, anti-money laundering/combating the financing of terrorism (AML/CFT) regulations vary across jurisdictions. In addition, cross-border interlinking is more likely to be successful if FPS are widely used and available in all participating jurisdictions, and it may require implementation of common standards, eg harmonised messaging formats. The BIS Innovation Hub project Nexus is a prominent example of how to interlink domestic FPS to enable instant cross-border transactions. Nexus is a collaboration of the central banks of India, Malaysia, the Philippines, Singapore and Thailand, and the BIS Innovation Hub Singapore Centre.¹¹

5. The role of further value-added services

Many FPS provide value-added services that deliver enhanced value to participants and a better user experience than traditional payment methods. Examples include request to pay (RTP) functionality, proxy lookup functionality, scheduled payments and QR code payments (CPMI (2021); World Bank (2021b)). Through implementation of value-added services, an FPS can expand its use cases. Standardisation of value-added services can also enable interoperability between different payment platforms and instruments. Central banks, depending on their mandates and degree of involvement in the provision of fast payments, can play a critical role in promoting the development and harmonisation of these services, such as by setting rules for participation and ensuring that overlay service providers adhere to operational standards (World Bank (2022)).

One of the most prominent examples of a value-added service is payment initiation via QR codes, which has gained widespread popularity among both merchants and consumers. QR codes offer a low-cost and user-friendly solution for consumers and businesses to initiate fast payments.

Central banks in LAC are actively promoting the introduction and use of QR codes to propel fast payments and promote digitalisation. In Argentina, the central bank has launched an interoperable QR code system as part of Transferencias 3.0 to expand its use cases. This service allows users to make payments by scanning any QR code using any digital banking app or digital wallet. Interoperability is ensured not only at the user interface level but also in the back end, allowing payments to be processed by any financial institution or PSP, regardless of who generated the QR

¹¹ For more details, see Project Nexus: enabling instant cross-border payments.

code. This effort has enhanced interoperability and contributed to the growth of digital payments in Argentina.

SINPE Móvil, the FPS launched by the Central Bank of Costa Rica, has enabled peer-to-peer transfers using mobile phone numbers as aliases. To expand the service, the central bank is now incorporating QR code functionalities, allowing users to send and receive payments without needing payee account numbers or mobile phone numbers. Other new features, such as RTP, are being explored to facilitate more complex payment use cases. These can include invoice and bill payments, recurring payments and subscriptions, and embedded payments in business-to-business (B2B) transactions.

The Bank of Mexico has also been actively promoting value-added services. The launch of CoDi in 2019 enabled users to make and receive fast payments via QR codes and near field communication (NFC) technology. Building on this initiative, the central bank introduced DiMo in 2023. DiMo expands the ways to send transfers by allowing users to make fast payments using only a recipient's mobile phone number. DiMo also allows participation by non-bank players, such as fintechs, to further drive adoption of digital payments.

In Peru, the central bank issued a regulation to establish a common standard for QR code payments in 2020. In addition, PSPs in Peru are required to register with the BCRP QR Registry if they provide wallets that allow for QR code payments and/or if they issue QR codes.

6. Conclusion and overview of chapters

By making available the research presented at the workshop on “Fast payments in Latin America” and related work, this volume sheds light on various aspects of fast payments and jurisdiction experiences, with a specific focus on the LAC region. The rest of the volume is organised as follows:

The first chapter, by Jose Ornelas and Matteus Sampaio, looks in greater depth at Pix in Brazil, and its complementarities with other means of payment. In particular, the authors find that Pix increases the use by individuals and businesses of the four most common payment services in Brazil. They also find that Pix has contributed to an increase in the number of bank accounts and the use of and access to credit, benefiting both banks and non-bank financial institutions. Their findings indicate that the implementation of new payment systems like Pix yields advantages not only for businesses and individuals but also for the broader banking and payment industry.

The second chapter, by Douglas Araujo, Carlos Cantú, Allan Chinchilla, Cecilia Franco, Jon Frost and Andrea Oconitrillo, looks into the experience of SINPE Móvil in Costa Rica. The authors find that higher SINPE Móvil use has been correlated with lower cash withdrawals, a greater number of users and lower average transaction values. Using a synthetic controls approach comparing Costa Rica with peer jurisdictions, they show that wide adoption of SINPE Móvil led to lower non-interest expenses for Costa Rican banks. This suggests that payment innovation can enhance bank efficiency.

The third chapter, by Giulio Cornelli, Jon Frost, Leonardo Gambacorta, Sonalika Sinha and Robert Townsend, looks into the experience of UPI in India. The authors argue that the strong growth of UPI relates to the ease of development of applications, and an open, technology-agnostic architecture that enables transactions across multiple third-party application providers. They also argue that the system has been strengthened by active partnership with the private sector. Appropriate regulatory conditions have been critical in laying the foundation for this success, and in addressing challenges that have arisen.

Adoption of new technology is, fundamentally, a sociological process. Understanding this process requires an interdisciplinary approach. In the absence of laboratories and controlled experiments, the best means to understand how to promote the adoption of fast payments, and digital payments more generally, is to compare experiences across different jurisdictions. Dialogue between authorities from different jurisdictions can help to give them access to effective practices and lessons from similar projects.

This volume represents a snapshot of current research on this evolving topic, with a focus on the LAC region, as part of a broader research agenda at the BIS, World Bank and central banks, and among academic researchers across the region. The authors of these chapters will continue to contribute new work in this area, in the hopes of supporting sound policymaking and valuable research insights for a wide audience.

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