

The payment landscape of B2C e-commerce marketplaces in Latin America and the Caribbean

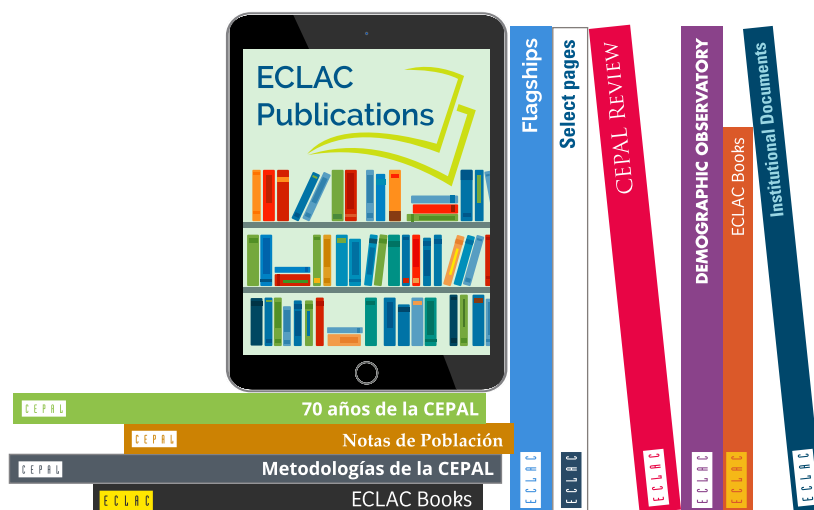
Romina Gayá



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Romina Gayá



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Abstract

This paper studies the digital payments landscape of B2C e-commerce marketplaces in Latin America and the Caribbean. It presents the main characteristics of different digital payment methods, as well as their advantages and disadvantages. It also examines how digital payments contribute to financial inclusion and it describes the global and regional trends and prospects. It presents the main findings of an exhaustive analysis of payment methods accepted by more than 550 transactional marketplaces in 33 countries in LAC. It also examines the main obstacles to development of digital payments in LAC, especially regarding cross-border e-commerce, and proposes some initiatives to address those constraints.

Introduction

Digital payments have been flourishing and reducing the use of cash during recent years. The COVID-19 pandemic accelerated this transformation at a global level and Latin America and the Caribbean (LAC) region was not an exception.

Electronic payments have many advantages over other methods, such as security, speed, efficiency and convenience. Some digital payment methods also play a key role in financial inclusion because they improve access to financial services by unbanked and underbanked people and businesses. Although they are increasingly used in face-to-face transactions, digital payments are highly relevant to the development of e-commerce, both for domestic and cross-border transactions.

This paper examines the digital payments landscape in LAC for e-commerce development. It is divided into four chapters. chapter I presents the main characteristics of different digital payment methods, as well as their advantages and disadvantages. It also analyzes how digital payments contribute to financial inclusion and it describes the global trends and prospects. chapter II is focused on electronic payments in LAC. At first, it describes recent trends based on available data and literature review and then it presents the main findings of an exhaustive analysis of payment methods accepted by more than 550 marketplaces in 33 countries. Chapter III analyzes the main obstacles to development of digital payments in LAC, especially regarding cross-border e-commerce, and proposes some initiatives to address those constraints. Finally, conclusions are presented in chapter IV.

I. Digital payments at glance

This chapter is divided into three sections. First, it presents definitions and classifications of different digital payment methods, including the advantages and disadvantages of each of them from the point of view of e-commerce. The second section focuses on the relationship between digital payments and financial inclusion, while the third part comprises the most relevant trends in global digital payments scenario.

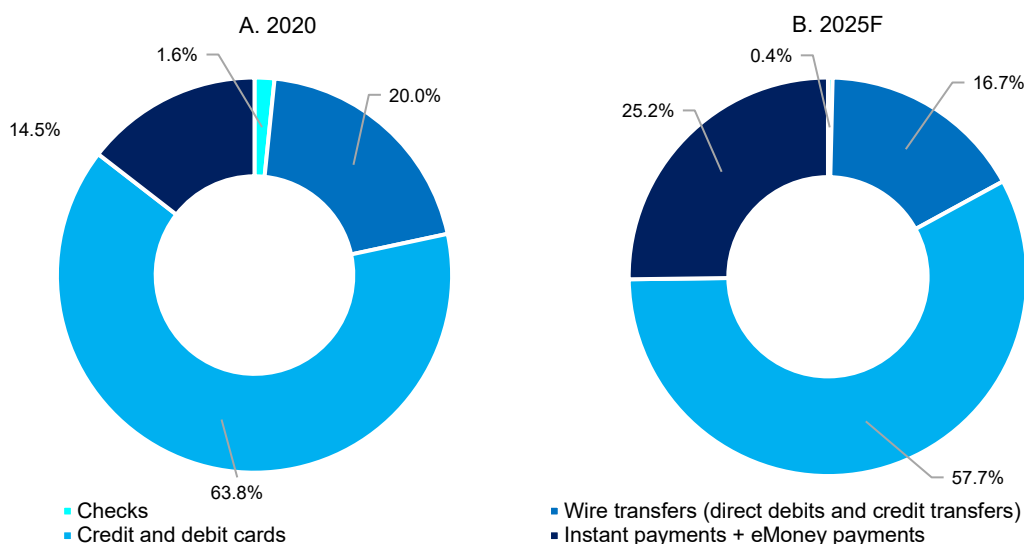
A. Definitions and classifications

Digital or electronic payments are money transfers from an account related to the buyer to another related to the provider of a good or service, using a digital device to transfer the information (CEPAL & CENPROMYPE, 2022) (CEPAL, 2022).

Digital payments can be made using several methods. Authors use different classifications which are related to the information available, but also with constant innovation that results in new technologies, business models and regulation. In this study, we use the following categories: cards (credit cards, debit cards, other such as gift cards or prepaid cards), mobile money and instant payments (digital wallets, mobile money, peer-to-peer apps and fast retail payment systems), wire transfers¹, cryptocurrencies and other (including vouchers, among others). These categories are similar to most used non-cash payment methods included in Capgemini Research Institute (2021), as shown in o and discussed later.

¹ It includes wire transfers made by users through netbanking.

Figure 1
Global non-cash payments mixture, 2020 and 2025F
(Including checks and excluding cryptocurrencies)



Source: Capgemini Research Institute (2021).

Although digital payments are increasingly used in face-to-face transactions and many online purchases are paid in cash (usually upon product delivery), electronic payments are highly relevant to the development of e-commerce, both domestic and cross-border transactions.

As explained below, the COVID-19 pandemic boosted e-commerce and digital payment. Although, the “return to normality” in many countries resulted in a partial cash usage rebound during 2021, but most shifts seem to be permanent: e-commerce continues to grow and digital payments methods are chosen by many buyers and sellers for several reasons (Calabrese, n.d.):

- **Security:** encryption technologies enable to securely transfer data and funds from buyers to seller, reducing the risk of the information being stolen or compromised.
- **Efficiency:** electronic payments are fast (usually immediate) and not limited by distance, time or location.
- **Convenience:** digital payments improve customer experience because the buyer can easily pay from anywhere at any time and choose from different payment methods that are commonly accepted.
- **Financial inclusion:** as mentioned earlier, some novel digital payment methods (e.g., e-wallets) facilitate financial inclusion by enabling unbanked people to access and benefit from a wider range of financial services.

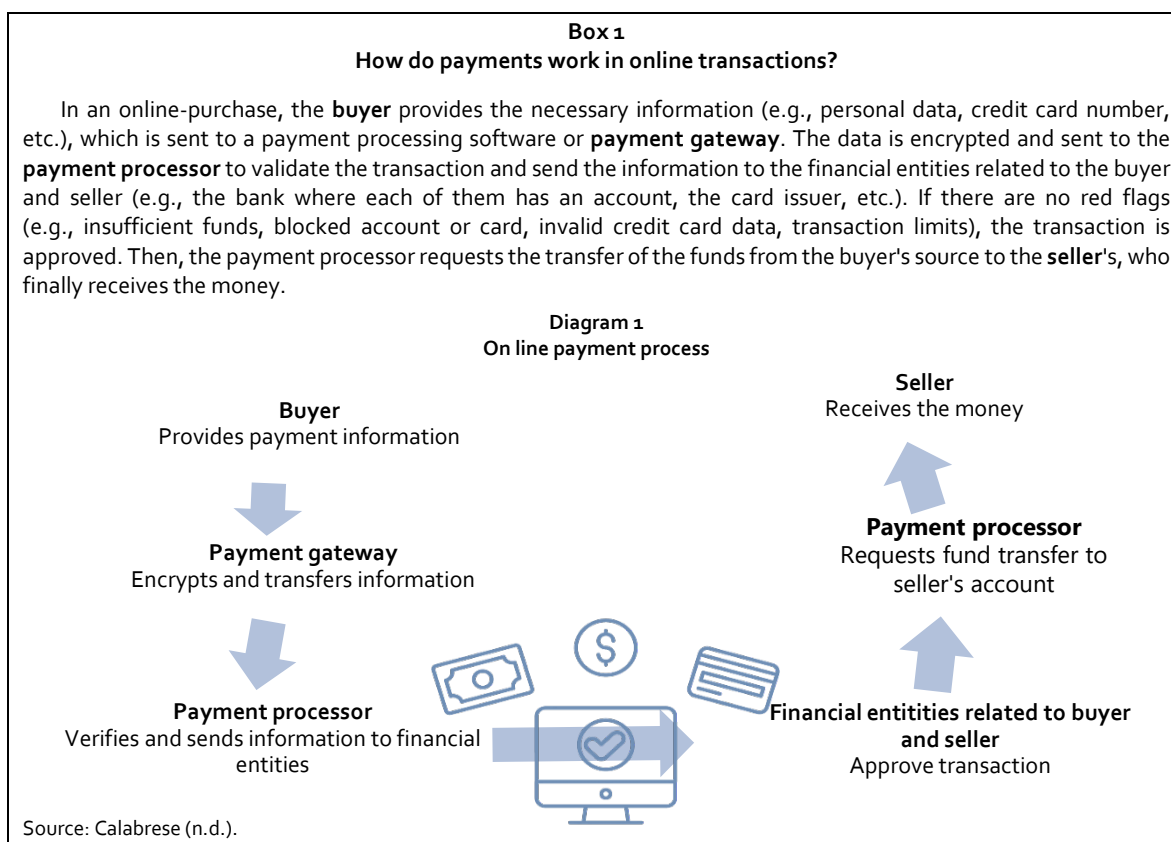


Table 1
Advantages and disadvantages of digital payment methods

| Electronic payment method | Advantages | Disadvantages |
|-----------------------------------|--|---|
| Cards | Security Supported by banks Fast Widely accepted by vendors (especially credit cards and in many countries also debit cards) Lower fees compared to international wire transfers Easy integration with vendor's management system Buy on credit (credit cards) Protection from fraudulent / unauthorized charges (credit cards) Lower fees than credit cards (debit cards) | Transaction limits High fees for vendors, especially in cross-border transactions Seller is less protected than buyer in charge disputes Buyer and seller need a bank account (debit and credit cards) |
| Wire transfers | Security Supported by banks Fast No charges for seller if buyer declines the purchase | Buyer and seller need a bank account High fees and delays in cross-border transactions Limits in some countries |
| Mobile money and instant payments | Neither the buyer nor the seller needs a bank account Efficiency and convenience Wider variety of payment methods Security and privacy Instant payments Easy integration to e-commerce platforms Some e-wallets can be used in cross-border transactions Lower fees than international wire transfers | Unbanked vendors can face problems to transform their balance to cash Sellers might face high fees |
| Cryptocurrencies | Security Privacy Instant payments: no authorization is required Lower fees | Volatility Limited use |

Source: Author's elaboration based on CEPAL & CENPROMYPE (2022) and Calabrese (n.d.).

Table 1 presents the advantages and disadvantages of each digital payment methods, which are discussed in the following subsections. It is important to consider that many buyers use alternative methods on a regular basis and that the frontier between different means of payment is blurring due to increasing interaction and new business models. For example, many e-wallets enable buyers to pay using pre-charged money and other digital payment methods (e.g., credit cards, cryptocurrencies). Some of them are also payment aggregators, meaning that they are responsible for managing and processing merchants' online transactions, including payments with different methods. Furthermore, traditional financial institutions such as credit card companies or banks are developing their own digital wallets and building alliances to enable payments with cryptocurrencies using credit cards.

1. Cards

Debit and credit cards are issued by banking institutions and can be used in offline and online purchases, cash withdrawals, among other transactions. The holder of a debit card can pay using the funds available in the associated account. In contrast, credit cards allow buying on credit and paying later and in some cases, buyers can spread out the cost with monthly instalments. The predominant credit and debit cards worldwide are Visa, Mastercard, American Express (Amex), Discover and Diners Club.

Credit and debit cards accounted for 64% global non-cash transactions in 2020. Although they will continue to be the predominant payment method, their share is expected to decrease to 57.7% by 2025 due to the expansion of new payment instruments (Capgemini Research Institute, 2021).

Credit and debit cards have multiple advantages: they are easy to use, payments are instant, as they are supported by financial entities, they are broadly accepted by vendors, they can be easily integrated with the seller's management system, they are secure and the buyer is protected from fraudulent or unauthorized charges. Moreover, international cards can be used in cross-border transactions, but users face higher costs and stricter requirements to get them, compared to domestic cards (CEPAL & CENPROMYPE, 2022; Minsait Payments, 2021).

However, large purchases might be restricted due to transaction limits, the seller is less protected than the consumer in charge disputes, and credit card fees can be high for vendors, although lower than in international wire transfers (CEPAL & CENPROMYPE, 2022; My Choice to Pay, s/f). As both buyer and seller need an associated banking account, many people do not have access to debit and credit cards, especially in developing countries.²

Virtual or plastic **prepaid cards** work as debit cards where the buyer can use available funds which have been previously charged, instead of the banking account balance, enabling access by unbanked people. Prepaid cards are issued by financial and non-financial institutions. **Gift cards** are a specific type of prepaid cards (with fixed or variable amounts) that can be used only in one store (which usually issues the card) or group of vendors (belonging to the same holding or that have with some kind of agreement with the issuer) (AMVO, 2018).

2. Wire transfers

Wire transfers are electronic transfers of funds via a global network administered by banks and transfer service agencies. The funds are transferred from the buyer's account to the seller's account, but unlike payments with debit cards, no physical card is needed.

Wire transfers can be domestic or international, and the payer needs to provide some information such as the receiver's name, account number and ID. Procedures and delays vary among countries. Despite being the most popular payment method in business-to-business (B2B) e-commerce, wire

² There are some credit cards with limited which are issued by non-financial institutions (e.g., stores) and do not require an associated bank account.

transfers are less frequent in business-to-consumer (B2C) transactions (CEPAL & CENPROMYPE, 2022; Calabrese, n.d.). As explained below, instant transfers via mobile or desktop apps are not included in this category.

Wire transfers have some important advantages: they are secure because the buyer does not provide any sensitive information, they are supported by financial institutions, and there are no charges for the seller for receiving the funds or in case that the buyer declines the purchase. While in some countries many wire transfers are immediate and free, in other jurisdictions they can take up to a few days and may involve charges.

Cross-border transfers usually take more time and are more expensive than other payment methods for both buyer and seller. Furthermore, in some countries international wire transfers are restricted by regulation such as exchange controls. As both parts need a bank account, the use of wire transfers is limited in regions with low levels of financial inclusion.

Capgemini Research Institute (2021) estimates that credit transfers (customer-driven push transactions) and direct debits (beneficiary-driven pull transactions) will reduce their share in global non-cash payments from 20% in 2020 to 16.7% in 2025.

3. Mobile money and instant payments³

We use the category “mobile money and instant payments” to include several payment methods such as mobile money, e-wallets, peer-to-peer transfers and fast retail payment systems. Despite some differences, all these methods are frequently related to each other and all of them enable buyers to make instant or fast payments using a mobile and / or desktop app. Instant payments involve an immediate transfer between two accounts. In some cases—known as instant debits—the vendor sends a payment request to the buyer and when it is accepted, the funds are automatically transferred to the receiver’s account.

- **Mobile money** is a financial service provided by a mobile network operator (alone or in partnership with another stakeholder) which enables users to pay and store value using a mobile money account (e.g. Tigo Money in several LAC countries). Given that these transactions are independent of the traditional banking network, users do not need a bank account.
- **Peer-to-peer (P2P) transfers** (also known as person-to-person transfers) are electronic money transfers from a person to another using a platform (e.g., mobile or desktop app). Some P2P providers also include digital wallets in their services (e.g., PayPal).
- **Fast retail payment systems (FRPS)** are systems in which the customer can use a digital wallet or banking app to make instant payments from a virtual or banking account (e.g. CoDi in Mexico and Pix in Brazil). In FRPS the transmission of the payment message and the availability of the final funds to the payee take place in real time and the system is available every day at any time.
- **Electronic or digital wallets (e-wallets)** are apps that run on electronic devices (they are often called mobile wallets or m-wallets when they are used on mobile devices). The user can associate the information of a bank account, different credit and debit cards and other payment methods to the e-wallet, and then use it to make online and offline transactions (e.g., Apple Pay and Google Pay). Some digital wallets also allow the user to pre-charge money to a virtual account (as if it were a digital prepaid card). When a payment is made, the funds are transferred to the receiver’s electronic wallet and they can be used in other transactions or wired to a bank account.

³ Sources: (Appshoper, 2021) (CEPAL & CENPROMYPE, 2022) (My Choice to Pay, s/f). IMF and BIS.

There are five types of digital wallets:

- *Closed wallets*: they are typically issued by a vendor and users can only make transactions with the issuer.
- *Semi-closed wallets*: users can make online and offline transactions at a limited list of stores and locations. Merchants need an agreement with the issuer to accept payments with the wallet.
- *Open wallets*: they are usually issued by banks and can be used to pay goods and services and to make instant transfers and cash withdrawals. Many open wallets enable users to make cross-border transactions, as long as the sender and the receiver use the same app.
- *Crypto wallets*: they are used to send, receive and store cryptocurrencies. They store the user's public and private keys and can be used in domestic and international transactions.
- *IoT wallets*: they are e-wallets based on internet of things (IoT) because they are installed in smartwatches, other wearables or other connected devices.

Mobile money and instant payments have many advantages. First, they can play a key role in financial inclusion. Given that in most cases neither the buyer nor the seller requires a bank account or credit card, these methods can be used by people who do not access to traditional electronic payment means. However, in some cases unbanked sellers can face some problems to transform their balance to cash.

Second, these payment methods are efficient and convenient. For example, by storing all user's payment information securely, e-wallets eliminate the need to carry a physical wallet and, in some cases, they allow the buyer to choose a payment method that might not be accepted directly by the vendor. These methods are also easy to use and enable instant payments.

Third, most of these methods can be easily integrated to e-commerce platforms. Therefore, the vendor can offer a wider variety of payment methods, although in some cases fees could be high.

Fourth, they involve benefits in terms of security and privacy because data is encrypted and the buyer does not share any sensitive information with the buyer.

Last, but not least, some e-wallets and P2P apps can be used in cross-border transactions and fees are usually lower than in international wire transfers. In many developing countries, people use these methods to receive remittances from their relatives abroad, and then use the balance to make online and offline purchases.

Most important e-wallets and P2P apps are issued by tech and retail giants such as PayPal, WeChat, Alipay, Samsung Pay, Apple Pay, Google Pay, among others. In LAC region there are also some large local players like Mercado Pago (Mercado Libre), Davipay (Davivienda), Fpay (Falabella), as well as some digital wallets issued by banks (BBVA Wallet, Santander Wallet, MODO).

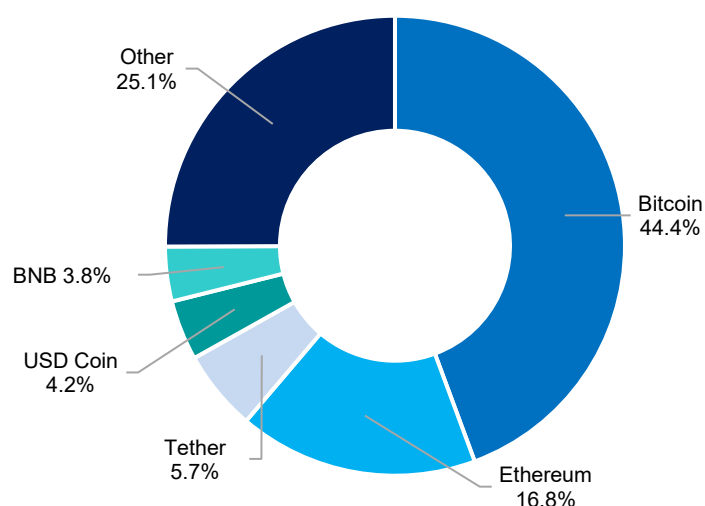
The development of non-bank payment service providers (NBPSP) poses great challenges to regulators who need to encourage financial inclusion, competition and innovation and preserve financial stability. Regulation of NBPSP varies among countries. In general, they have to meet requirements in terms of anti-money laundering (AML) and combating the financing of terrorism (CFT), data protection risk management and cybersecurity and consumer protection. In contrast, they are not forced to meet other requirements such as authorization, minimum capital, safeguarding of funds and interoperability. Developed countries tend to allow NBPSP to provide more types of payment services, compared to emerging economies (Ehrentraud et al., 2021). In this scenario, many PayTechs build alliances with banks or other financial entities to provide traditional financial services (e.g., Rappi in several LAC countries, as discussed in section 2.A.d).

4. Cryptocurrencies

Cryptocurrencies are digital, encrypted and decentralized means of exchange that use distribution network technology (e.g., blockchain) to secure transactions, verify transfer and control the creation of additional units. In fact, the main difference between traditional and cryptocurrencies is that the latter are not created and administered by central banks.

However, some central banks (e.g., Bahamas) have recently issued their own cryptocurrencies (Central Bank Digital Currencies, CBDC), while others are carrying out pilot or concept tests (e.g., China, Jamaica, Japan, Korea Republic, Sweden, Uruguay, among others) and some are considering to do so (Minsait Payments, 2021).

Figure 2
Main cryptocurrencies according to market cap



Source: CoinGekko (4/6/22).

The global cryptocurrency market cap is valued at USD 1.3 trillion and it's highly concentrated on a few players: Bitcoin accounts for 44.4% of global market cap, followed by Ethereum, Tether, USD Coin and BNB (o).

Transactions with cryptocurrencies do not require bank intermediation, but both buyer and seller must have access to an app (e.g., e-wallet) that allows the purchase and sale of cryptocurrencies (CEPAL & CENPROMYPE, 2022). Fees tend to be lower, depending on the means through they are used (e.g., direct transfers vs. digital wallets).

The greatest advantages of cryptocurrencies are security, privacy (the buyer does not share any personal information with the seller), decentralization and speed since external approval is not required. Price volatility is their main disadvantage, and they are not supported by financial entities, which discourages many people to use them.

Although cryptocurrencies can be used to buy goods and services, most crypto transactions are related to investments other than regular payments. However, many traditional actors are starting to offer services related to cryptocurrencies, which could lead to a wider use of these assets as means of payment. For instance, Visa and Mastercard recently enabled the conversion of crypto to regular currencies in their networks in some countries, while Amazon announced that it is considering to accept bitcoin (Minsait Payments, 2021).

Authorities are exploring regulation of crypto assets and stablecoins (a form of crypto assets aimed at maintaining a stable value relative to other assets) following different approaches. For example, in 2021 El Salvador made bitcoin legal tender, while the Central Bank of the People's Republic of China declared all cryptocurrencies illegal in 2021. The European Parliament adopted in 2022 Markets in Crypto-assets (MiCA) Regulation, which creates a legal framework for crypto-asset markets, including the issuance and provision of crypto assets, the protection of consumers and investors, financial stability and monetary policy risks, AML and CTF measures. In the UK, the government developed a consultative process with key stakeholders to examine alternatives to build a regulatory framework to enable payments with certain stablecoins, while in the US there are some proposals oriented towards fully regulating stablecoins by forcing issuers to adhere to certain rules and converting these assets into payment means (Minsait Payments, 2021) (Deloitte, 2022).

B. Digital payments and financial inclusion

“Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs—transactions, payments, savings, credit and insurance—delivered in a responsible and sustainable way” (World Bank, 2022).

Financial inclusion is a direct enabler for 7 of the 17 sustainable development goals (SDG): eradicating poverty (SDG1), ending hunger, achieving food security, and promoting sustainable agriculture (SDG2), profiting health and well-being (SDG3), achieving gender equality and economic empowerment of women (SDG5), promoting economic growth and jobs (SDG8), supporting industry, innovation and infrastructure (SDG9) and reducing inequality (SDG10). It also plays an indirect role in SDG17 (strengthening the means of implementation) given that greater savings mobilization contributes to investment and consumption necessary for growth (UNCDF, s/f).

Financial inclusion can be assessed according to four dimensions of financial services: use (adoption, persistency, frequency and penetration), access (skills and infrastructure needed to use financial services), quality and impact on welfare (Accenture, 2020). Digital payments can have a positive impact on most of them.

From the point of view of **individuals and families**, accessing a transaction account allows people to save money, send and receive payments on a regular basis. However, this is usually limited by informality and tax evasion, low financial literacy, lack of trust, concentration of branches in large cities, insufficient funds, high fees, lack of necessary documents, among other factors (CEPAL & CENPROMYPE, 2022).

Given that access to some digital payment methods (e.g., e-wallets) is easier for some unbanked and underbanked people, electronic payments can be critical to financial inclusion because they act as a gateway to other financial services such as credit and insurance. Moreover, when people have access to these services, they are more likely to save money, develop businesses, better manage financial shocks and invest in education and health. Furthermore, as women and population in rural areas tend to have less access to bank accounts, the development of digital payments can contribute to reduce gender and urban-rural gaps (IDB-LAB & WEF, 2022; World Bank, 2022). However, assumed that mastering new technology is often complicated for some elder people, a broader use of digital payments could result in a larger age-gap in terms of financial inclusion.

Concerning **businesses**, digital payments allow micro, small and medium enterprises (MSMEs) to develop online sales and reach more customers, even in other regions and countries. In fact, digital payments are a driver of digital trade. This tends to level the field between MSMEs and large firms. Providing that e-payments are traceable, they also contribute to formality. Besides, merchants that have access to transaction accounts are more likely to plan and invest for long-term goals (IDB-LAB & WEF, 2022; World Bank, 2022).

Electronic payments also contribute to the effectiveness of public policies to reduce poverty, given that they help **governments** to disburse resources to unbanked people (IDB-LAB & WEF, 2022). In fact, many studies -including several in LAC⁴- have found that digitizing and centralizing payments through treasury single accounts increase efficiency and savings opportunities (Better than Cash Alliance; IDB & FOTEGAL, 2020).

C. Global digital payments outlook

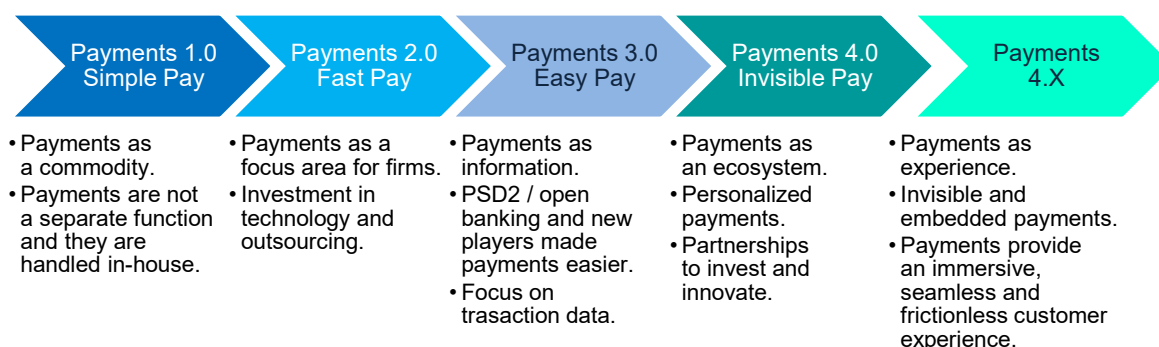
1. General trends

Evolution

The global payments landscape has dramatically changed during last decades. On the one hand, traditional payment methods (cash, checks, cards and wire transfers) have evolved as a result of the adoption of new technologies. For example, payments with credit and debit cards became faster and more secure with the introduction of smart cards (which store their data on an embedded microchip) and contactless cards. On the other hand, the emergence of new actors with innovative technology and business models led to disruptive payment methods (e.g., cryptocurrencies, mobile money, buy now pay later -BNPL- schemes) and forced traditional actors to improve their services and introduce new payment solutions, such as Central Banks' FRPS or banks' digital wallets.

From the point of view of the function of payments, Capgemini Research Institute (2021) identifies four stages in the evolution of digital payments (o). In the first phase (Payments 1.0), payments were simple transactions handled in-house. The second stage (Payments 2.0) started about 15 years ago, when firms started outsourcing some payments processing functions to providers who invested in technology that enabled fast payments. During the second half of last decade, investments in technologies such as big data analytics and machine learning and some regulatory innovations (e.g., open banking and European Union's Payment Services Directive 2 -PSD2) led to a third phase (Payments 3.0) where data is used to improve and accelerate payments (easy pay). More recently, payments are increasingly considered as an ecosystem leading to a fourth stage (Payments 4.0) where firms offer invisible and personalized payment services and BigTechs play a key role. Some emerging trends are accelerating the transformation of payments to a new stage (Payments 4.X), which is discussed in subsection 1.C.c.

Figure 3
The evolution of digital payments



Source: Capgemini Research Institute (2021).

⁴ See Babatz (2013) (Mexico), Manoel & Pérez (2017) (Dominican Republic) and Better than Cash Alliance, IDB & FOTEGAL (2020) (Costa Rica, Dominican Republic and Peru).

It is worth mentioning that some of these stages coexist, not only in different economies but also within countries. For many MSMEs in LAC —especially where there is a high preference for cash—, payments are still a commodity, while in other cases they are going through the second stage. In contrast, in some LAC economies there is a more mature payment landscape in terms of technological development and regulatory framework more consistent with Payments 3.0 and, to a lesser extent, 4.0. (e.g., the Brazilian approach to open banking is discussed in chapter III).

Impact of COVID-19 pandemic

The pandemic drove significant shifts in the global payments landscape, both on demand and supply sides. Lockdowns and other sanitary measures forced consumers and vendors to migrate from physical to electronic commerce and to prefer digital payments (especially instant and contactless methods) to cash. On the one hand, new demands from consumers and firms induced traditional actors, PayTechs and newcomers to develop new products and services, and to adopt innovative business models (Botta, Bruno, & Galvin, 2021; Capgemini Research Institute, 2021). On the other hand, some regulatory innovations and other government measures contributed to a wider use of digital payments.

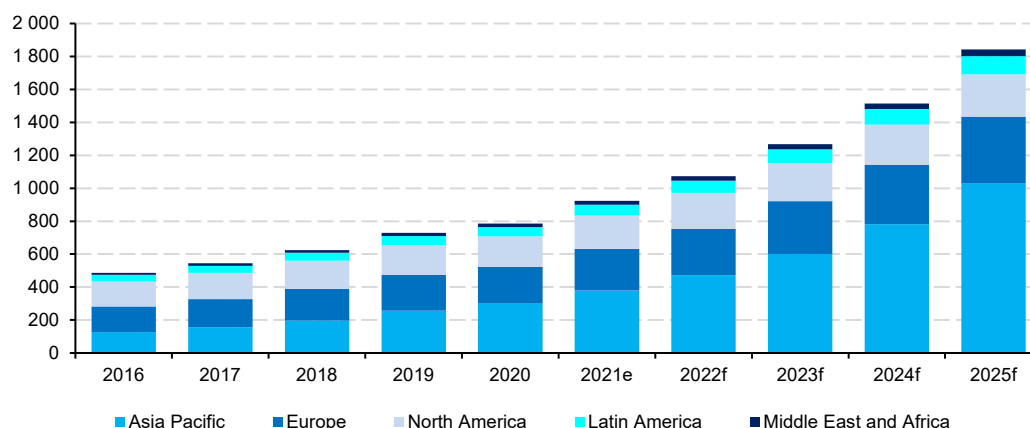
However, there are four main challenges to the development of digital payments: high costs, processing delays, limited access and low transparency. These obstacles are mainly related to low interoperability, different standards and working hours, complexity to meet requirements related to data protection, AML and CFT, and the use of obsolete technologies (Minsait Payments, 2021).

Recession and the mentioned changes in payment habits resulted in a contraction of 16% in global cash payments 2020, while non-cash transactions decelerated but continued to grow (6% YoY). Fueled by digital wallets, payment features embedded in social media and e-commerce, the number of real-time payments such as quick response (QR) codes, “tap to pay” and link-based payments grew by 41% in the same period and they are currently active in 56 countries (Botta et al., 2021).

According to Capgemini Research Institute (2021), the number global non-cash transactions will grow at 18.6% CAGR between 2020 and 2025 and reach 1,8 trillion (785 billion in 2020). Instant payments and e-money represented 14.5% of global non-cash transactions in 2020 and they will account for more than 25% by 2025.

As shown in o, Asia Pacific accounts for 41.1% of global non-cash transactions, followed by Europe (27.3%) and North America (24.8%). LAC’s share declined from 8.4% in 2016 to 7.1% of global total in 2020. However, this share is relatively high as LAC accounts for only 5% and 3% of global trade in goods and services, respectively. Asia Pacific will continue to be the most dynamic region until 2024: non-cash payments are expected to increase at a 27.9% CAGR between 2020 and 2025, reaching 55.8% of total. In LAC, these transactions will grow 14.1% CAGR during the same period and their share in global non-cash payments may fall to 6.0%.

Figure 4
Worldwide non-cash transactions volume by region
(In billions)



Source: Capgemini Research Institute (2021).

2. Cross-border payments

The expansion of cross-border e-commerce, technological innovations, and new regulations (e.g., the European Cross Border Payment Regulation 2) are contributing to the development of international payments. Global cross-border payment revenues related to B2C e-commerce reached USD 13 billion in 2020 (+18% YoY), driven by changes in consumer preferences towards e-commerce and more value-added services that led to increased margins (Botta et al., 2021).

Nevertheless, there are still some important restrictions that inhibit growth of cross-border payments (especially in the case of B2C transactions) such as lack of interoperability, regulatory barriers, high costs, processing delays, different standards and working ours, among others (Getnet, 2022).

In July 2021, the Bank for International Settlements (BIS), the International Monetary Fund (IMF) and the World Bank issued a joint statement about the potential contribution of CBDC to improve the efficiency of cross-border payments. They also highlighted international cooperation as a necessary condition to reach that goal.

There are some interesting initiatives to facilitate cross-border payments. The BIS and Monetary Authority of Singapore presented Project Nexus in 2021. It is aimed at improving global payments network connectivity via multilateral linkages of countries' national retail payment systems. The project includes gateways to enable compliance coordination, foreign exchange conversion, message translation and the sequency of payments. These gateways will be based on common standards and will be developed and implemented by the operators of national payment systems of participating countries. Nexus also comprises a scheme to define the governance framework to coordinate cross-border payments among participating systems and entities. Countries adopting Nexus protocols could access to a wide cross-border payments network without needing to negotiate with each counterpart on a bilateral basis (BIS, 2021).

3. Emerging trends and prospects

The aforementioned effects of the pandemic, digital payments industry consolidation, low barriers to entry that facilitated the entrance of new players with different business models (e.g., PayTechs, but also non-endemic actors such as super apps) and technological innovations (artificial intelligence, IoT, open banking, 5G, the metaverse, among others) are leading to a new phase of "Payments 4.X" (o).

In this stage, payments are embedded and invisible, and they work as an enabling function to provide an immersive, seamless, and frictionless customer experience. Thanks to network effects, as companies share infrastructure and data via platforms, payments costs decrease and risk management improves. Moreover, low barriers to entry deepen disintermediation and encourage the emergence of new players, many of them non-traditional actors (Capgemini Research Institute, 2021; Minsait Payments, 2021).

According to Capgemini Research Institute (2021), emerging payment methods include:

- Buy now, pay later (BNLP): this method is very attractive for customers who often use credit cards but want to avoid high charges, for consumers (especially Gen Z) who prefer more user-friendly alternatives to credit cards, and for unbanked and new-to-credit population.
- Invisible payments: innovations focused on reducing friction in payment checkout in online and offline transactions.
- Biometric payments: they use biometric authentication (e.g., fingerprints or face recognition) to improve security and privacy.
- Cryptocurrency payments: they are especially relevant to cross-border transactions and for buyers and sellers concerned about high fees and lack of international standardization.

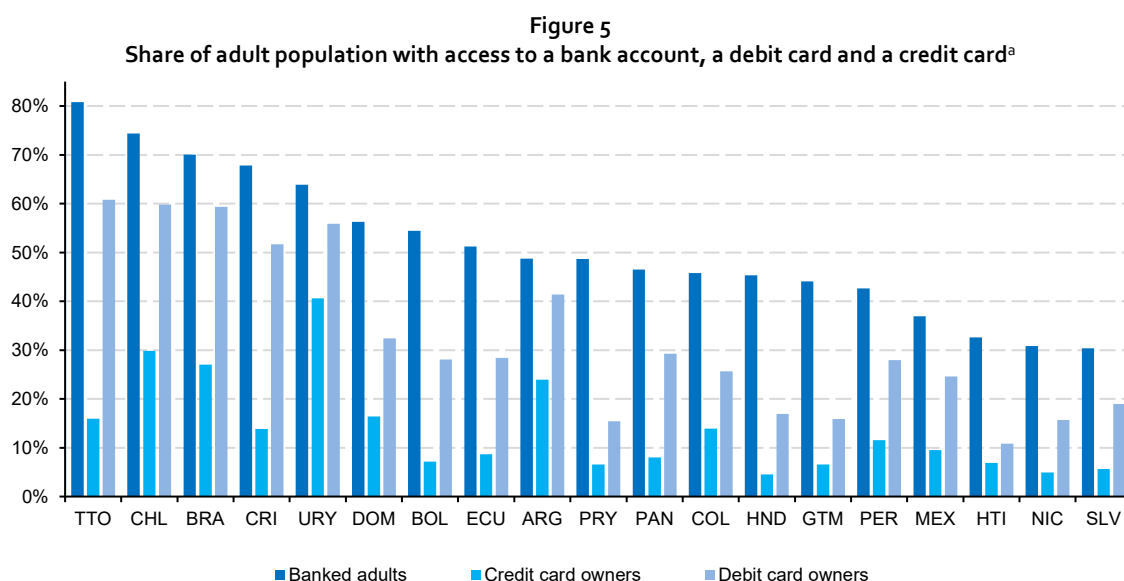
II. The digital payment landscape for Latin America and the Caribbean

This chapter includes two sections. Section A describes most relevant trends in digital payments in LAC and the impact of the COVID-19 pandemic on that ecosystem. The analysis is based on available data and literature review. Section B focuses on the payment landscape of B2C e-commerce marketplaces in LAC. It presents the methodology used and the main findings of the collection and analysis of digital payment methods accepted by more than 550 marketplaces in 33 countries.

A. Main trends in digital payments

1. Introduction

B2C transactions in LAC multiplied by almost seven between 2010 and 2020 and reached USD 107 billion. Brazil accounts for 45% of online purchases, followed by Mexico (29%), Argentina (12%), Colombia and Chile (9% each) (Minsait Payments, 2021). Cross-border transactions represent about 14% of e-commerce in LAC and they correspond mainly to people from LAC buying online services to extra regional providers. However, there are significant differences among countries: cross-border transactions represent a small fraction of total e-commerce in Brazil, while it accounts for a larger share in Paraguay, especially because of imports of digital services.



Source: Global Findex database (2017).

^a Share of population age 15+.

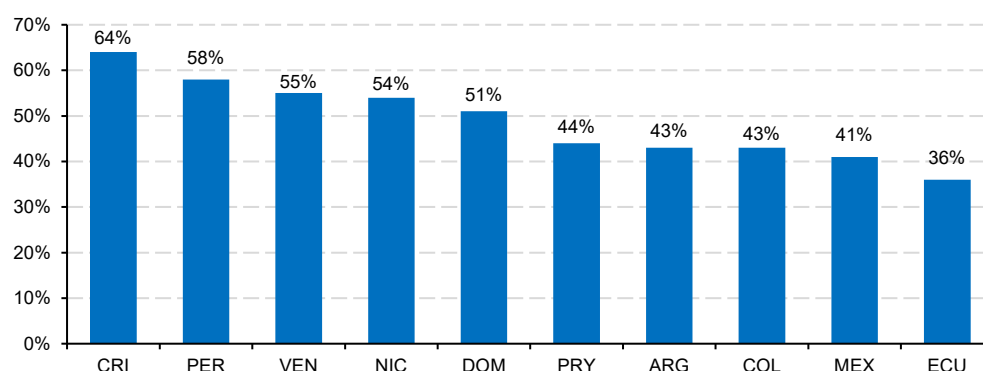
In this scenario, digital payments have accelerated in LAC, catching up with developed regions. The expansion was also driven by some regulatory innovations and by the growth of fintech companies that offer payment and other financial services to a wider audience, including people who do not own credit or debit cards and in particular, unbanked people. The latter is very important in terms of financial inclusion, considering that in 14 out of 19 countries more than 40% of the population does not have an account. Additionally, according to the last available data from the World Bank, in most countries less than 30% of adults in LAC own a debit card and less than 20% have a credit card (o).

Like in other regions, the pandemic led to a broader use of digital payments, as a result of several factors (UN-ECLAC, KAS & IDB, 2021):

- The switch from offline purchases to e-commerce: many people started buying online and e-shoppers increased the number of transactions.
- The replacement of cash with digital wallets to reduce physical contact resulted in a broader use of e-wallets by people who were already familiar with these methods, but also attracted many new users, including elder individuals, unbanked / underbanked people and informal or traditional small business.
- Credit lines offered by some marketplaces for unbanked people whose incomes were negatively affected by lockdowns.
- Government financial support offered through the traditional financial system and/or digital wallets. For example, in Argentina 10% of adults received social assistance via digital means for the first time (Ansar, Klapper, Singer, & Hess, 2021).
- Incentives of electronic transactions by banks: As their branches were closed, banks encouraged the use of mobile banking, digital wallets, credit, and debit cards, and many of them also improved user experience.

- Emergency led to trust: many people and traditional or small business had concerns about security and privacy of digital payments, but as they had to rely on these methods, they became familiar and realized that e-payments were secure and started to trust them.

Figure 6
People who prefer to continue using cards or mobile money after the pandemic
(Percentage of people who started using digital payment methods during the pandemic)



Source: Ansar et al. (2021).

According to Ansar et al. (2021), 42% of adults in LAC use digital payments and 11% newly adopted in-store digital payments amid COVID-19. However, there are significant disparities across the region. For instance, one out of three adults used digital payment methods in online transactions in Argentina, Brazil, Costa Rica, and Venezuela in 2020, compared to less than 15% in Dominican Republic, El Salvador, Nicaragua and Paraguay.

There are also contrasts within countries, mainly related gender (especially in Mexico, Costa Rica, and Peru), income level (corresponding the largest gaps to Peru, Argentina, Brazil, and Mexico) and location (differences between urban and rural areas). Despite some cash rebound in 2021, many people who started using digital payments during the pandemic continue to prefer cards and mobile money in many LAC countries (o).

Americas Market Intelligence forecasts that e-commerce volume in the region will grow 31% between 2020 and 2024 and will represent 14% of overall retail (10% in 2021). Marketplaces and social media will make up 48% and 25% of B2C e-commerce, respectively. This expansion will continue to boost digital payments (Lehr, 2022).

2. Payment methods in Latin America and the Caribbean

In terms of value, payments from accounts (wire transfers and instant payments) in LAC accounted for 85.2% of electronic payments in 2020 (10.9 percentage points more than a decade earlier) and cards rose from 3.7% to 5.9% during the same period. However, cards are the most popular non-cash method in LAC in terms of volume, representing more than three quarters of total electronic transactions (two thirds in 2010). Direct debits still have a small share (1.6% in 2020) and they are only allowed in some countries (Minsait Payments, 2021).

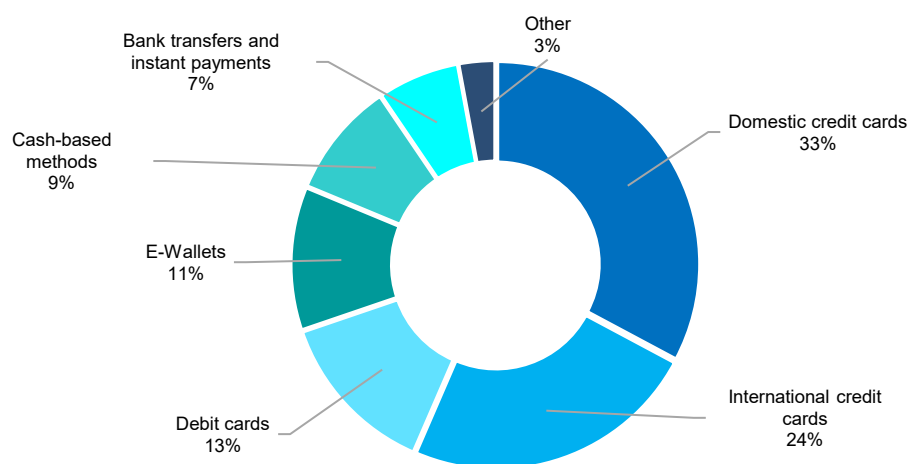
The number of cards in LAC increased from 800 million in 2008 to 1.8 billion in 2021. In most countries, there are more debit cards than credit cards, but financing purchases with credit cards is significant in LAC compared to other regions, especially in Colombia, Chile, and Brazil (4% to 6% of GDP) (IDB-LAB & WEF, 2022; Minsait Payments, 2021).

Banked people use several payment methods according to their preferences, alternatives provided by vendors and available promotions and discounts. Even though banks are still the most popular entities among banked population, many fintech companies are gaining market share by offering innovative solutions. The use of e-wallets among banked adults with internet access increased across the region between 2020 and 2021 and about 23% of these people in Argentina, Brazil and Peru identify digital wallets and P2P apps as their favorite payment method. Furthermore, fintech firms also offer e-wallets and prepaid cards related to virtual accounts, enabling unbanked people to access to transaction accounts and other financial services (Minsait Payments, 2021; Carballo et al., 2021).

3. Payment methods in online transactions

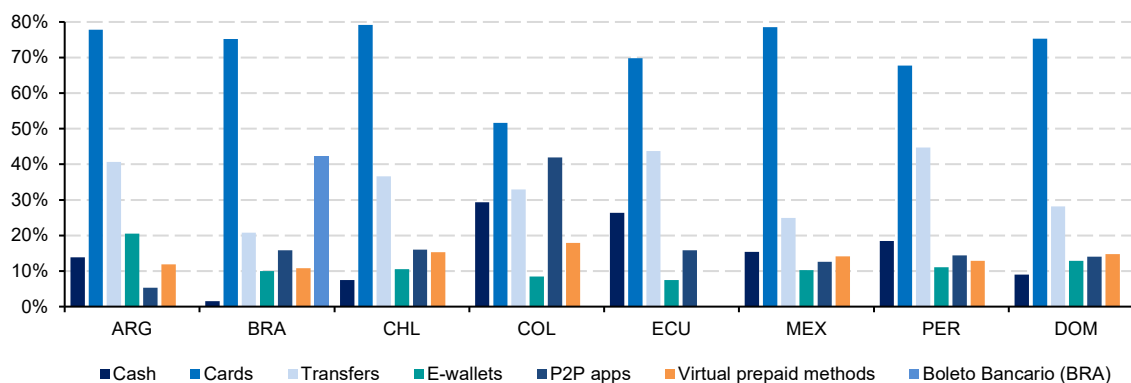
Cards account for 72% of e-commerce sales in LAC. Credit cards represent 59% (33% domestic cards and 24% international credit cards), followed by debit cards 13%. E-wallets have been growing 40% annually and currently account for 11% of online transactions. Burgeoning instant payments like Pix in Brazil and PSE in Colombia increased the share of transfers (traditional wire transfers and instant payments) from 4% in 2018 to 7% in 2021. In contrast, cash fell from 14% to 11% during the same period (o) (Notini, 2022).

Figure 7
Payments in online purchases, by method (2021)



Source: Notini (2022) based on AML.

Figure 8
Share of banked adults with internet access that use each payment method in online purchases



Source: Minsait Payments (2021).

Cards are the most used payment method in online transactions across the region. According to Minsait Payments (2021), cards were used by most banked adults in all countries (from 51.9% in Colombia to 79.2% in Chile), followed by wire and instant transfers in most jurisdictions except for Brazil and Colombia. Argentina is where e-wallets are more popular in online purchases, while Colombians tend to use more P2P apps (PSE) and virtual pre-paid apps. In Brazil, 42.4% of banked adults use a voucher system called “Boleto Bancario” in B2C transactions (o). Despite some cash recovery in total payments during 2021, the use of cash in online transactions halved between 2020 and 2021 (Minsait Payments, 2021).

4. New actors and business models

Wider use of mobile phones, a small share of population with access to a bank account and large margins earned by payment services providers in LAC encouraged the entrance of new players in digital payments market. During the last decade, digital payments ecosystem in LAC has been transformed by the emergence of innovative actors that offer payment solutions and other financial services, challenging banks and other traditional stakeholders. About 25% of fintech companies in LAC include payment gateways, aggregators, digital wallets and mobile POS (Alfonso, Tombini, & Zampolli, 2020; BID & Finnovista, 2022).

This section explores some interesting initiatives and payment solutions led both by the private and the public sectors.

Central banks’ fast retail payment systems (FRPS)

Although at a slower pace than other regions, some countries in LAC are implementing FRPS that are affordable and easy to use. These systems enable real-time payments, every day at any time. They are usually focused on small transactions, which are more relevant in terms of financial inclusion.

Most ambitious FRPS initiatives in the region are **CoDi** in Mexico and **Pix** in Brazil, two centralized real-time automated clearing payment platforms led by Central Banks. Argentina, Chile, Colombia and Costa Rica also using some FRPS.

CoDi started operations in 2019. It is regulated and operated by Bank of Mexico and based on its real-time gross settlement system (SPEI in Spanish) and on the mobile operator’s network. Pix was launched by the Central Bank of Brazil (BCB) in 2020. Both platforms allow all transaction account holders to send and payments through mobile devices. Individuals can send and receive funds at no cost. CoDi enables Mexican merchants to collect payments for free, while in the case of Pix the cost is significantly lower and faster compared to other payment methods (Alfonso et al., 2020).

While all participating payment services providers (PSPs) are forced to enable their customers to initiate and receive instant payments with Pix, some institutions cannot collect payments through CoDi. Participation in CoDi is limited to financial institutions that are members of SPEI, but other actors can develop apps that generate payment requests. Any bank with more than 3,000 accounts is forced to offer CoDi. Pix admits payment initiation providers (third parties authorized to complete payment initiation at a request of a customer), transaction account providers (financial institutions and PSPs that offer accounts to final users and participate in the settlement infrastructure) and special intermediaries who connect indirect members of Pix to BCB’s settlement infrastructure) (Alfonso et al., 2021; PYMENTS & Kushi, 2022).

Both platforms are enabling many unbanked people to access to an account because they comprise simplified opening procedures, they do not require minimum holdings and are more affordable (low cost or no fees) than bank accounts. By the end of 2021 there were more than 251 million accounts connected to Pix and 75% of 1.2 billion monthly transactions corresponded to P2P transactions (Alfonso et al., 2021; BID & Finnovista, 2022).

The Central Bank of Argentina (BCRA) launched **Transferencias 3.0** which facilitates digital payments through interoperability of QR codes. It allows users of any e-wallet or banking app to make instant payments via transfers from their banking or virtual accounts, using any QR code. Like Pix, the system is free of charge for final users and merchants face lower fees compared to other payment options.⁵

SINPE Móvil is an automated clearing house (ACH) mobile payment platform launched by the Central Bank of Costa Rica (BCCR). It enables bank clients to make P2P transfers or small payments to accounts related to a mobile phone number, using any electronic banking platform. It has currently over 2.9 million active accounts. Transfers via SINPE multiplied by 4 between 2020 and 2021 in terms of value and number of transactions.⁶

Payment gateways and interbank initiatives

There are several payment gateways that facilitate e-commerce by enabling vendors to collect payments with different methods (mainly credit and debit cards, but also prepaid cards, vouchers or cryptocurrencies, among others) via online platforms, QR codes, payment links or tap-to-pay buttons.

Some examples are **Webpay** in Chile (owned by acquiring company Transbank), **Pagadito** in Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Panama and the unicorns **Clip** (Mexico), **Kushki** (from Ecuador and currently also available in Chile, Colombia, Mexico and Peru) and **D-Local** (from Uruguay with operations in about 40 emerging economies).

Competition from new entrants encouraged traditional financial institutions to introduce new products and services. For example, ACH (responsible for monitoring and controlling automated financial transactions in Colombia) developed Pagos Seguros en Línea (**PSE**) and **Transfiya** and a group of Argentinean banks launched **Modo**. These services enable customers to make P2P transfers and / or instant payments from their bank accounts using an app.

Other key stakeholders from LAC

Some Latin American companies are expanding their businesses and offering payment and other services related to e-commerce. Two examples are the unicorns Mercado Libre and Rappi.

- Mercado Libre: born in Argentina in 1999, Mercado Libre became the largest e-commerce company in LAC with branches in 18 countries⁷. In 2003, the company launched Mercado Pago, an online payments network. It is currently used in seven countries (Argentina, Brazil, Chile, Colombia, Mexico, Peru and Uruguay), not only to buy in Mercado Libre's marketplace, but also in thousands of online and brick and mortar shops, to pay online services and subscriptions, as well as to make P2P transfers. Mercado Pago also works as a payment gateway for many online shops and Mercado Libre offers other services related to e-commerce like shipping (Mercado Envíos) and advertising (Mercado Ads), software-as-a-service and other financial services such as credit for buyers and vendors (Mercado Crédito) (Botta et al., 2021).
- Rappi: the Colombian company started as a delivery platform and became a super app used by more than 10 million people in Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Peru and Uruguay. More recently, Rappi began to provide financial services through strategic alliances with local banks. For example, the company launched RappiCard Visa with Banorte in Mexico, with SoftBank in Brazil and with Davivienda in Colombia. In their home country, Rappi also offers a free virtual account (RappiPay) that allows users to send money and pay in online and offline shops and a cash delivery service (RappiCash).

⁵ Source: BCRA.

⁶ Source: BCCR.

⁷ Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

Furthermore, the company provides other financial services in Peru through RappiBank -a joint-venture with Interbank- and it is also planning to do the same in Chile with Banco Itaú. Rappi will also create its own bank in Colombia (together with Davivienda) to offer financial services to businesses and individuals (América Economía, 2021). During the pandemic, Rappi launched Rappi Care in Mexico, in partnership with a local laboratory called Previta, in order to provide health services and carry out PCR tests to detect COVID-19.

Buy Now, Pay Later (BNLP)

Given large shares of unbanked people in LAC, few people can access to credit cards and other credit sources. Thus, BNLP model might be disruptive for the region: according to Americas Market Intelligence's estimations, BNLP could capture 20% of the region's online sales (Duque, 2022a).

Some examples of BNLP applied to e-commerce are Mercado Libre's **Mercado Crédito**, available in Argentina, Brazil and Mexico and **KueskiPay**. The latter enables Mexican consumers to make purchases in affiliated online shops and pay later without credit cards, choosing the duration of the credit and dividing the amount into biweekly instalments.

New international entrants

Some international big players are arriving to LAC to provide mobile money and related services. The advent and expansion of these tech giants poses big challenges to local traditional and new actors.

Google Pay is already available for online transactions in ten LAC countries (Antigua and Barbuda, Argentina, Brazil, Chile, Colombia, Dominican Republic, Mexico, Panama, Peru, and Uruguay), while **Apple Pay** users can make purchases with their iPhones or Apple Watches in Argentina, Colombia, Costa Rica, Brazil, Mexico and Peru.

Meta's **Facebook Pay** can be used in 39 countries and territories in LAC. It allows users to associate their PayPal account, credit or debit cards to make payments on Facebook. Meta also launched **WhatsApp Pay** in Brazil in 2021 in association with nine companies, including banks, neobanks and other fintech firms⁸. The service is available for P2P transfers between holders of debit or pre-paid cards issued by those nine companies, as well as Visa, Mastercard. Users can send up to 1,000 Brazilian reals (about USD 195) and receive a maximum of 20 transfers a day and there are no fees or charges. The company intended to allow consumer-to-business (C2B) payments, but this feature is temporarily suspended by BCB (Martins, 2021).

B. Digital payments in B2C e-commerce marketplaces in Latin America and the Caribbean

1. Contribution of this study and methodology

The expansion of digital payments drew attention of analysts worldwide and LAC was not the exception, especially since the pandemic accelerated digital transformation. Recent studies cover the main trends in the digital payments landscape for LAC, their drivers and the opportunities and challenges faced by the region in this area. Some of them also include policy recommendations to foster electronic payments.

⁸ Banco do Brasil, Banco Inter, Bradesco, Itaú, Mercado Pago, Next, Nubank, Sicredi and Woop Sicredi.

Further, several reports examine the relation between e-payments and financial inclusion, considering that in 2020 45% of Latin Americans did not have a bank account and 80% did not have a credit card (Ansar et al., 2021). Moreover, some authors concentrate on certain sub-regions or countries, while others focus on specific segments, such as cryptocurrencies.⁹

Although methodology varies among studies, recent reports are based on analysis of statistics, previous research, and surveys and interviews to consumers, vendors, policy makers and key stakeholders of the digital payments ecosystem.

This paper focuses on the payment landscape of B2C e-commerce marketplaces selling goods in LAC. Its main contribution to previous work is the collection and analysis of payment methods of more than 550 transactional marketplaces across the region.

The first stage of this research included the analysis of more than 3,200 marketplaces in LAC of which about are 600 full and semi-transactional B2C marketplaces where consumers can buy goods. We examined the latter, in order to identify digital payment methods accepted by each of them.

After excluding some websites due to some difficulties in getting data (e.g., each seller accepts different payment methods), the final database included 555 marketplaces from 33 countries in the region and other large international B2C goods marketplaces where LAC consumers usually make purchases (e.g., Ali Express, Amazon, eBay).. For this reason, it should not include any geographical bias. The original list was put together by a team of researchers from the University of Applied Sciences of Amsterdam, The Netherlands, the International Trade Centre, and ECLAC. This list includes all B2C marketplaces selling goods in all 33 countries in LAC.

Payment methods were divided into five groups: cards (credit cards, debit cards and other such as gift and prepaid cards), mobile money and instant payments (digital wallets, mobile money, P2P apps and FRPS), wire transfers, cryptocurrencies and other (including vouchers and coupons, BNPL, among others).

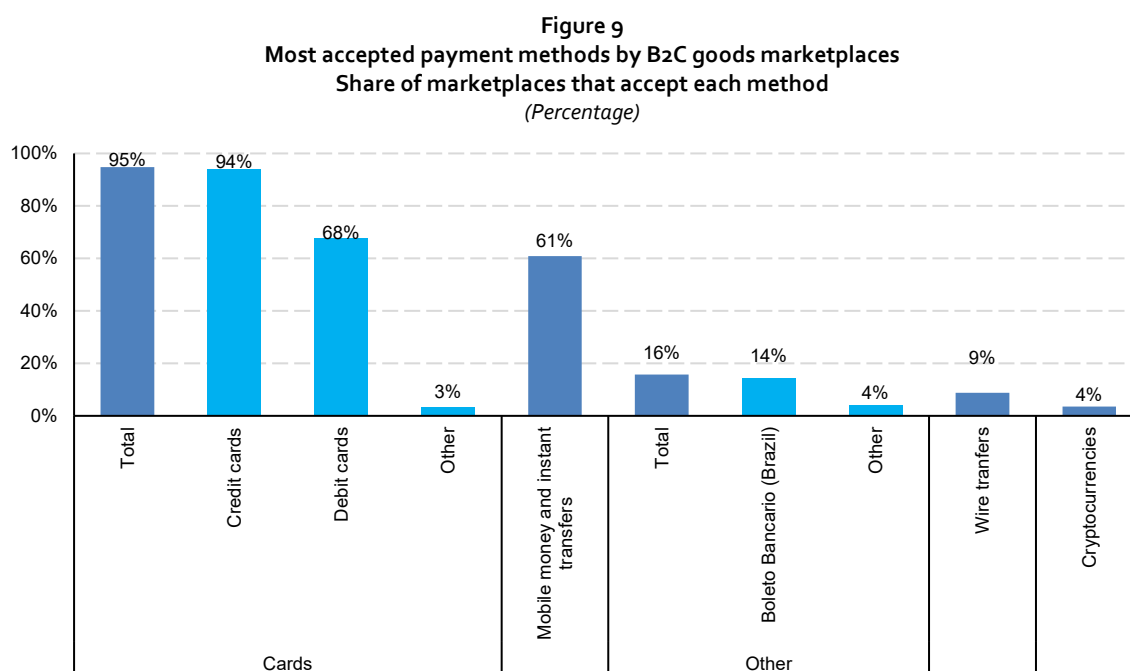
Some marketplaces accept credit and / or debit cards, but they do not specify which of them they use. Those cases were marked as other credit / debit cards. Provided that many marketplaces allow buyers to pay with several methods through digital aggregators, we assigned all the payment options that can be associated to each accepted e-wallet in the corresponding country.

The following section presents the main findings of our analysis. We identify the most frequently accepted payment means considering the number of marketplaces that allow customers to pay with a certain method, compared to total number of marketplaces in the database (at a regional or national level). However, only a few marketplaces concentrate most part of the traffic in some countries. For this reason, we include specific comments for those marketplaces for which traffic information is available in Similar Web, and that represent at least 3% of total traffic in target country (section 2.B.b.vi).

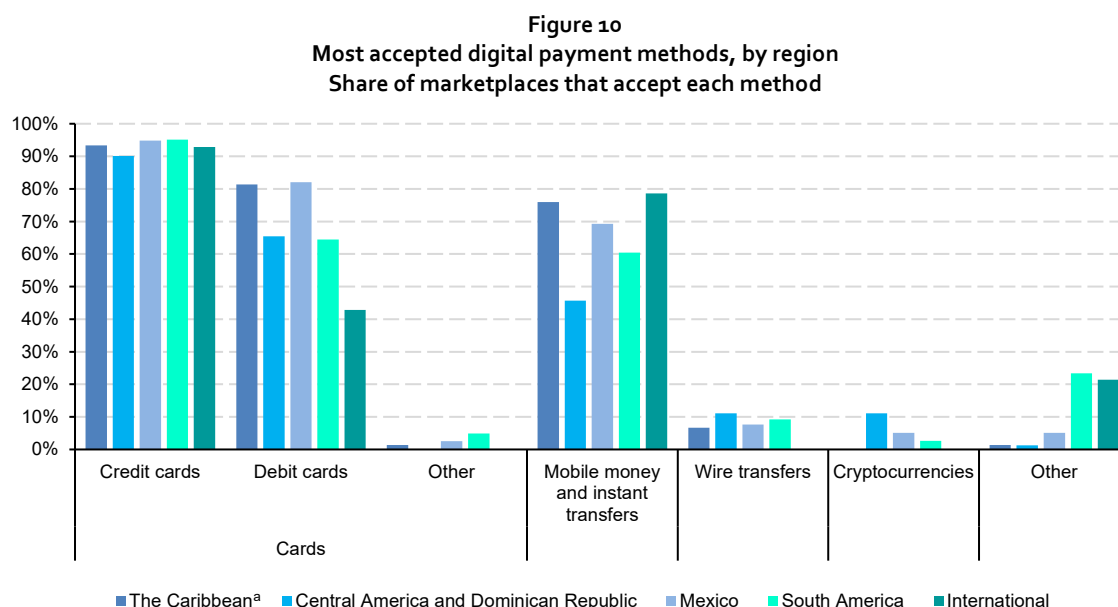
2. Main findings

As expected, cards are the most popular digital payment method across LAC marketplaces. Credit cards can be used in 94% of marketplaces, while 68% of websites enable buyers to pay with debit cards. In contrast, gift and prepaid cards are only accepted by 3% of vendors. Payments with mobile money and instant transfers are allowed in 61% of marketplaces. About 16% of websites include "other payment options", but most of them correspond to Brazilian vendors which accept Boleto Bancario (see below). Buyers can pay via standard wire transfers in 9% of websites and cryptocurrencies are still accepted by a small share of marketplaces (0).

⁹ For example, PYMENTS & Kushki (2022) focuses on Central America and the Caribbean, INDECOPI (2021) on card payments in Peru, Greco & Vicens (2019) in competition in the Argentinean payments market, AMI (2022) on cryptocurrencies in LAC.



Source: Author's calculations.



Source: Author's calculations.

^a Belize, Guyana and Suriname are included in the Caribbean region.

Unsurprisingly, marketplaces in large economies where more people own bank accounts or cards offer a broader range of payment alternatives than in the rest of the region, including international and domestic credit and debit cards and mobile money and instant payments, as well as other payment options such as BNPL and voucher-based methods. Some of these countries such as Argentina, Brazil, Colombia, Chile and Mexico also have a more mature regulatory framework, which facilitates the emergence of innovative payment solutions and new actors.

In contrast, countries with low levels of banked population tend to have a higher preference for cash. Consequently, digital payment methods are less widespread in some Central American websites (especially in El Salvador, Guatemala and Honduras). However, marketplaces tend to accept e-wallets more frequently in the Caribbean compared to the rest of the region, while more websites allow payments with cryptocurrencies in Central America and Venezuela, where they are relevant for remittances (o).

Table 2
Accepted payment methods, by country
(Number of marketplaces included in the database and share of websites that allow users to pay with each method)

| Country | Marketplaces | Credit cards | | | | | | Debit cards | | | | Other cards | Mobile money and instant transfers | | | | | Wire transfers | Crypto | Other |
|---------|--------------|--------------|------|------------|------|--------|-------|-------------|------------|------|-------|-------------|------------------------------------|--------|--------------|------------|-------|----------------|--------|-------|
| | | Total | Visa | Mastercard | Amex | Diners | Other | Total | Mastercard | Visa | Other | | Total | PayPal | Mercado Pago | Google Pay | Other | | | |
| Total | 555 | 94% | 88% | 87% | 72% | 46% | 62% | 68% | 55% | 54% | 26% | 3% | 61% | 35% | 8% | 4% | 26% | 9% | 4% | 16% |
| ATG | 4 | 100% | 100% | 100% | 50% | 0% | 25% | 100% | 100% | 100% | 0% | 0% | 75% | 75% | 0% | 0% | 0% | 0% | 0% | 0% |
| ARG | 33 | 97% | 94% | 94% | 76% | 61% | 64% | 85% | 79% | 82% | 39% | 6% | 52% | 18% | 30% | 3% | 6% | 6% | 3% | 6% |
| BHS | 8 | 100% | 100% | 100% | 63% | 13% | 63% | 63% | 63% | 63% | 0% | 0% | 75% | 75% | 0% | 0% | 0% | 0% | 0% | 0% |
| BRB | 3 | 100% | 100% | 100% | 0% | 0% | 33% | 67% | 67% | 67% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% |
| BLZ | 5 | 100% | 80% | 80% | 20% | 0% | 60% | 60% | 60% | 60% | 0% | 20% | 60% | 60% | 0% | 0% | 0% | 20% | 0% | 0% |
| BOL | 13 | 92% | 69% | 69% | 38% | 0% | 46% | 69% | 54% | 54% | 15% | 8% | 85% | 46% | 0% | 8% | 38% | 8% | 0% | 8% |
| BRA | 107 | 96% | 90% | 89% | 82% | 65% | 86% | 33% | 28% | 28% | 22% | 9% | 64% | 17% | 1% | 3% | 62% | 10% | 3% | 72% |
| CHL | 53 | 96% | 91% | 91% | 85% | 83% | 81% | 89% | 55% | 51% | 70% | 4% | 66% | 17% | 28% | 2% | 25% | 8% | 4% | 0% |
| COL | 57 | 95% | 89% | 89% | 86% | 67% | 72% | 84% | 54% | 49% | 65% | 2% | 49% | 16% | 19% | 2% | 21% | 9% | 2% | 0% |
| CRI | 16 | 94% | 69% | 69% | 38% | 31% | 50% | 69% | 44% | 44% | 25% | 0% | 31% | 25% | 0% | 6% | 6% | 25% | 19% | 6% |
| CUB | 1 | 100% | 100% | 100% | 100% | 0% | 0% | 100% | 100% | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% |
| DMA | 3 | 100% | 100% | 100% | 67% | 67% | 100% | 67% | 67% | 67% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% |
| DOM | 11 | 100% | 100% | 100% | 73% | 64% | 82% | 64% | 64% | 55% | 0% | 0% | 73% | 64% | 0% | 9% | 27% | 0% | 9% | 0% |
| ECU | 15 | 93% | 93% | 93% | 73% | 20% | 40% | 47% | 47% | 47% | 0% | 0% | 60% | 47% | 0% | 7% | 13% | 7% | 0% | 0% |
| SLV | 9 | 78% | 67% | 67% | 44% | 0% | 33% | 67% | 56% | 56% | 11% | 0% | 56% | 44% | 0% | 11% | 11% | 11% | 11% | 0% |
| GRD | 4 | 100% | 100% | 100% | 100% | 25% | 50% | 100% | 100% | 100% | 0% | 0% | 100% | 100% | 0% | 25% | 25% | 0% | 0% | 0% |
| GTM | 12 | 83% | 75% | 75% | 50% | 50% | 58% | 50% | 42% | 33% | 8% | 0% | 42% | 33% | 0% | 8% | 8% | 8% | 8% | 0% |
| GUY | 6 | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 67% | 0% | 0% | 100% | 83% | 0% | 0% | 33% | 33% | 0% | 0% |
| HTI | 4 | 100% | 100% | 100% | 100% | 0% | 50% | 100% | 100% | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 25% | 0% | 0% |
| HND | 13 | 77% | 62% | 62% | 38% | 0% | 31% | 62% | 46% | 46% | 15% | 0% | 38% | 31% | 0% | 8% | 8% | 23% | 8% | 0% |
| JAM | 7 | 100% | 100% | 86% | 71% | 57% | 71% | 71% | 57% | 57% | 0% | 0% | 57% | 57% | 0% | 0% | 0% | 0% | 0% | 0% |
| MEX | 38 | 95% | 87% | 87% | 82% | 3% | 42% | 82% | 74% | 74% | 26% | 3% | 68% | 61% | 5% | 3% | 21% | 8% | 5% | 3% |
| NIC | 10 | 100% | 80% | 80% | 60% | 0% | 50% | 80% | 60% | 60% | 30% | 0% | 40% | 40% | 0% | 10% | 0% | 0% | 10% | 0% |
| PAN | 10 | 100% | 90% | 90% | 60% | 10% | 40% | 70% | 60% | 60% | 10% | 0% | 50% | 40% | 0% | 10% | 10% | 0% | 10% | 0% |
| PRY | 12 | 92% | 83% | 83% | 67% | 67% | 75% | 75% | 67% | 58% | 42% | 0% | 67% | 33% | 0% | 8% | 33% | 8% | 8% | 0% |
| PER | 24 | 96% | 96% | 96% | 88% | 79% | 50% | 71% | 63% | 67% | 13% | 0% | 29% | 25% | 4% | 4% | 4% | 8% | 0% | 0% |
| KNA | 3 | 100% | 100% | 100% | 100% | 0% | 33% | 100% | 100% | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% |
| LCA | 2 | 100% | 100% | 100% | 100% | 0% | 50% | 100% | 100% | 100% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% |
| VCT | 3 | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 67% | 0% | 0% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% |
| SUR | 8 | 63% | 63% | 63% | 50% | 50% | 50% | 88% | 63% | 50% | 25% | 0% | 75% | 50% | 0% | 0% | 25% | 13% | 0% | 13% |
| TTO | 14 | 93% | 93% | 93% | 43% | 7% | 21% | 79% | 57% | 79% | 0% | 0% | 43% | 36% | 0% | 0% | 7% | 0% | 0% | 0% |
| URY | 14 | 100% | 100% | 86% | 36% | 43% | 21% | 71% | 43% | 71% | 0% | 7% | 64% | 36% | 29% | 7% | 0% | 7% | 0% | 0% |
| VEN | 17 | 82% | 82% | 82% | 65% | 6% | 29% | 71% | 71% | 71% | 6% | 0% | 88% | 59% | 0% | 6% | 53% | 24% | 6% | 0% |
| Int'l. | 16 | 94% | 94% | 94% | 81% | 19% | 81% | 50% | 50% | 50% | 6% | 0% | 81% | 63% | 0% | 13% | 38% | 0% | 0% | 31% |

Source: Author's elaboration.

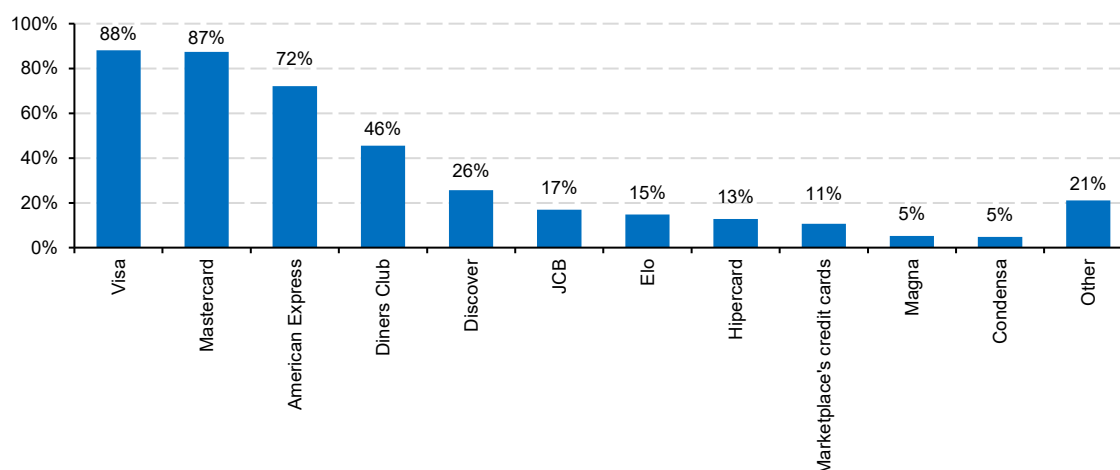
Note: Darker (lighter) blue indicates higher (lower) acceptance of each method.

Cards

Credit cards are accepted by 94% of examined marketplaces, either directly or via aggregators and they are the most popular digital payment method across LAC (o). However, acceptance levels are lower in Suriname, Guyana and some Central American countries compared to the Caribbean, Mexico and South America (o and o). This is not surprising, considering that few people own credit cards in these countries (4.5% in Honduras, 5.7% in El Salvador and 6.6% in Guatemala) (o).

Visa and Mastercard are widely accepted across the region by almost nine out of ten marketplaces, followed by Amex (72%) and Diners Club (46%) (o). Although customers can pay with Discover and JCB in 26% and 17% of marketplaces, respectively, these cards are directly accepted in a few countries only, and indirectly through PayPal and similar services in other parts of LAC. This is also the case of Diners Club in some jurisdictions. Given that domestic buyers do not use these brands, e-wallets enable vendors to accept international credit cards used by foreign buyers, which facilitates cross-border trade.

Figure 11
Most accepted credit cards
(Share of marketplaces that accept each credit card)



Source: Author's calculations.

There are also some cards—most of them national—which are only used in a few countries. Some of them are widely accepted—such as Elo and Hipercard in Brazil, Magna in Chile and Condensa in Colombia—, while others are less frequently used (e.g., Cabal, Naranja and Argencard in Argentina or Ame in Brazil).

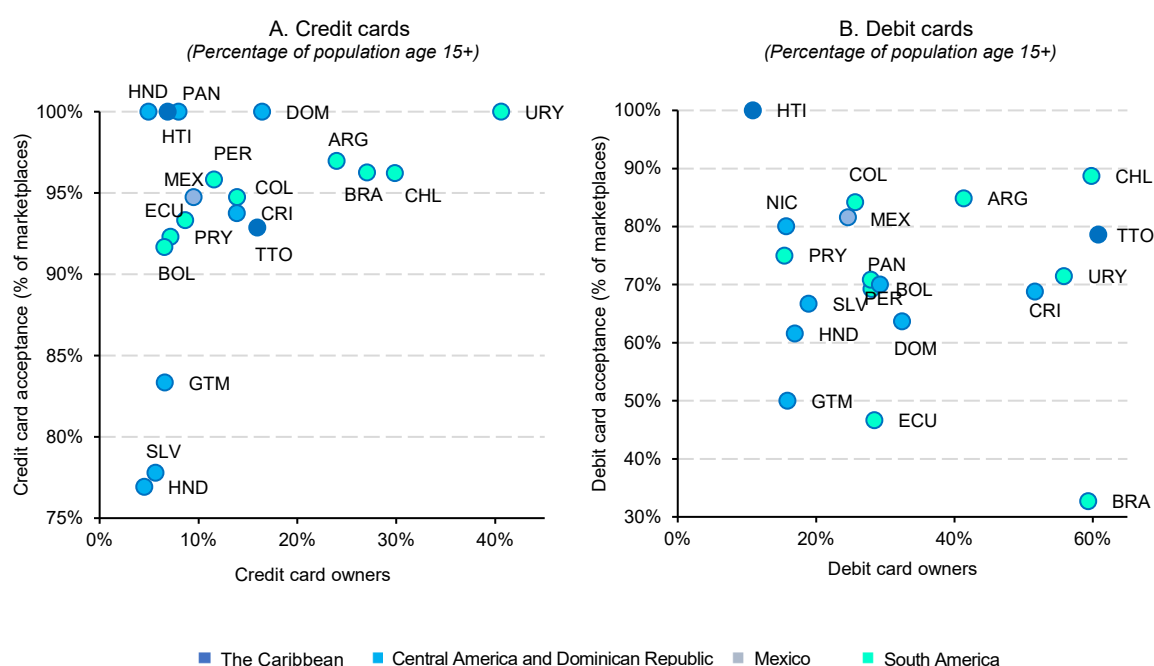
Some marketplaces issue their own credit cards. Their use can be limited to purchases in those marketplaces (e.g., Carrefour and Luiza in Brazil and Coppel in Mexico), but in some cases these cards are also accepted by other vendors, such as Falabella's CMR or Cencosud in Argentina, Chile, Colombia, and Peru.

More than two thirds of marketplaces in LAC allow payments with **debit cards** (directly or via payment aggregators (o). These cards are more popular in the Caribbean and Mexico than in Central and South America (o). Customers can pay with Mastercard (also known as Maestro in some countries) and Visa in 55% and 54% of these websites, respectively. Other debit cards are only used in specific countries, especially in Chile and Colombia.

There are substantial contrasts among countries and the acceptance does not seem to be associated to the penetration of debit cards. In fact, buyers can pay with debit cards in at least 75% of marketplaces in Argentina, Chile, Colombia, Mexico, Nicaragua, Paraguay and most Caribbean countries. Debit cards are widespread in some of these countries (e.g., Argentina, Chile and Trinidad and Tobago), but in others they are owned only by a small share of the population (e.g., Paraguay and Nicaragua).

In contrast, debit cards can be used only in 33% of Brazilian marketplaces, despite almost six out of ten adults owning a debit card. As shown in ob, in Guatemala and Ecuador -where less than a third of adults has a debit card- buyers can use them in about half of marketplaces.

Figure 12
Card owners and card acceptance by country
(Percentage of marketplaces)



Source: Global Findex database (2017) and author's calculations.

Although **gift and prepaid cards** are only admitted in a small share of marketplaces, they are more frequently accepted in Belize and South America (Brazil, Bolivia, Uruguay, Argentina and Chile) than in the rest of LAC (o).

Mobile money and instant payments

The use of mobile money and instant payments has skyrocketed in recent years and they are now accepted by 61% of marketplaces. They are especially relevant in the Caribbean, but also in Venezuela (due to high inflation, the use of foreign currencies -such as Euro and Colombian peso- and remittances) and, to a lesser extent, in other South American countries such as Bolivia, Brazil, Chile and Paraguay. In contrast, less than 45% of marketplaces in Peru, Trinidad and Tobago and some Central American countries (Costa Rica, Guatemala, Honduras and Nicaragua) allow customers to pay with their digital wallets or instant payment methods.

Consumers from LAC can use their e-wallets —mainly PayPal— in 78% of international marketplaces. Although users can make and collect payments via PayPal in most countries, in Bolivia, Paraguay and Saint Vincent and the Grenadines it is only available to pay, but not to receive transfers from abroad.

PayPal is the most popular and widespread digital wallet, included in 35% of marketplaces, but accepted by almost all websites from Caribbean countries. Mercado Pago can be used in seven different countries, being most relevant in Uruguay, Chile, Argentina and Colombia. The use of BigTech's e-wallets is still small in online purchases in LAC: payments with Google Pay and Apple Pay are only allowed in 4% and 1% of websites, respectively, and in a limited number of countries. Many marketplaces also let users to pay with local e-wallets, such as Khipu, Mach and Falabella's Fpay in Chile, Azul's Altice in Dominican Republic, Bancard's Pago Móvil in Paraguay, among others.

In Brazil (where buyers can use mobile money and instant payments in 64% of marketplaces), Pix is the most popular payment platform (accepted by 46% of websites). Although most Pix transactions correspond to P2P transfers, B2C purchases are escalating and they exceeded USD 80 billion in 2021 (Lehr, 2022). According to Notini (2022), Pix already surpassed credit card ownership Brazil. It is worth mentioning that in some cases Pix works as a BNLP method, enabling users to divide payments into instalments (Pix Parcelado).

The expansion of Pix is related to the BCB's approach to open banking. It includes a payment initiation function —started in October 2021— which enables marketplaces and e-wallets to run Pix transactions directly on the app. Given that authorization from the user's banking app is no longer required, Pix transfers have become easier and faster, which improved user experience in e-commerce. Mercado Pago (currently accepted by a small number of Brazilian marketplaces) was the first authorized payment initiator under open banking in Brazil and recently enabled buyers to use Pix through their app (Duque, 2022b).

Wire transfers

Customers can pay via wire transfers in 9% of examined marketplaces. This method is more popular in Belize, Costa Rica, Guyana, Haiti, Honduras and Venezuela, where wire transfers are accepted by 20% to 33% of marketplaces. In contrast, payments via wire transfers are not allowed by any website in 14 countries, most of them in the Caribbean.

Cryptocurrencies

Only 4% of examined marketplaces include cryptocurrencies among payment options. All of them accept bitcoin and a few also allow buyers to use other cryptocurrencies. As mentioned above, a small share of LAC population continues to have access to crypto assets and most holders use them as an investment option, rather than a payment method.

In Venezuela and some Central American countries, the use of cryptocurrencies is related to remittances. Although El Salvador made bitcoin legal tender in 2021, only one out of nine marketplaces allow buyers to pay directly with this cryptocurrency.

Other payment methods

Customers can use other digital payment methods in 16% of marketplaces. The most relevant is **Boleto Bancario**, accepted by 74% of Brazilian marketplaces. It is a voucher-based payment method that enables buyers to pay their offline and online purchases by printing a coupon and paying with cash in several physical points, or to pay online using home or mobile banking services. Although it has been partially cannibalized by the use of Pix, Boleto Bancario is still very popular due to high preference for the use of cash. A small share of websites also receives payments through coupons and other domestic means.

BNLP methods are emerging in some countries like Chile, Colombia and Mexico. In some cases, services like Pix (Pix Parcelado) and Mercado Pago (Mercado Crédito) enable users to divide payments into instalments. However, these methods were not considered as BNLP because it is not possible to distinguish when consumers are allowed to do it or not, except for those cases when marketplaces explicitly include Pix Parcelado as a payment method.

Even though this study is focused on digital payment methods, we also identified that one every three websites allow payments with cash. This includes direct payment against delivery of good and services, as well as other instruments or services that receive cash such as bank deposits, Boleto Bancario in Brazil and other voucher-based methods (Baloto in Colombia, Oxxo in Mexico), Western Union, Efecty in Colombia or PagoEfectivo in Peru. It does not include cards or e-wallets where buyers can pay with pre-charged cash (e.g., Mercado Pago in some countries).

Payment methods in most popular websites

As mentioned before, only a few marketplaces concentrate most part of the traffic in some countries. This subsection describes payment methods accepted by 21 marketplaces in seven countries (Argentina, Brazil, Colombia, Chile, Mexico, Peru and Venezuela) and one from abroad (Amazon.com), for which we have traffic information from Similar Web and that represent more than 3% of total traffic in target country.

All these marketplaces enable payments with credit cards. Visa and Mastercard are accepted by all of them, while users can pay with Amex, Diners Club and other credit cards in 86%, 45% and 64% of websites, respectively. Customers can use their debit cards in 82% of top marketplaces, being Visa the most popular brand.

In all these countries except for Venezuela, Mercado Libre is the most visited marketplace accounting for 17.3% (Perú) to 75.7% (Argentina) of traffic and customers use Mercado Pago to pay their purchases with different payment methods, such as credit and debit cards, Pix, Boleto Bancario (Brazil) or Oxxo (Mexico) or pre-charged money in their Mercado Pago virtual account.

Excluding Mercado Libre, only six marketplaces enable buyers to pay with mobile money, e-wallets and instant payments. They accept PayPal, Google Pay and Pix (Brazil). Brazilian buyers can also use Boleto Bancario in most popular marketplaces. None of them include cryptocurrencies among payment methods and only one accepts wire transfers.

III. Addressing constraints to the development of digital payments

As mentioned earlier, there is a huge potential for the development of digital payments in LAC. However, and despite rapid growth, there are significant constraints that should be addressed with adequate policies and private initiatives. This chapter examines the main obstacles to the development of digital payments in LAC and includes some policy recommendations based on international and regional best practices.

A. Infrastructure and skills

One major challenge is the underdeveloped internet infrastructure (low penetration and quality, high prices of broadband services) and skills, such as weak financial literacy and limited digital skills of consumers and e-readiness of MSMEs (AFI, 2019; Alfonso et al., 2020; Carballo, Garnero, & Henao Monje, 2021; CEPAL & CENPROMYPE, 2022; Tombini, & Zampolli, 2020; UN-ECLAC, KAS & IDB, 2021).

On the one hand, the development of digital payments requires that individuals and businesses access to **affordable digital devices and broadband services**. Best international practices usually include digital strategies or national broadband plans focused both on the development of supply and demand of internet services. Concerning supply, governments play a key role in defining the political, macroeconomic and regulatory conditions needed to promote large investments in telecommunications. In some cases, they are directly involved in the financing and / or deployment of infrastructure. Additionally, given the existence of economies of scale and scope, competition policy becomes essential. Fostering demand of internet services increases the number of users and makes investments more attractive. Demand-oriented policies usually aim at making broadband services and digital devices affordable (e.g., by reducing tariffs and taxes or providing subsidies), as well as developing digital skills, trust and local contents (CEPAL & CENPROMYPE, 2022).

On the other hand, LAC needs to **improve digital and financial skills** of individuals and businesses, so they can benefit from the use of digital payment methods. The region not only lags behind developed countries, but there are also significant gaps within countries related to income levels, age, gender, location and firm size. Policies should aim at building capacities in terms of digital skills, digital transformation of MSMEs and the implementation of new business models where e-commerce plays an essential role. Some interesting initiatives to foster digital transformation of MSMEs in LAC have been carried out in Argentina, Brazil, Chile, Colombia, El Salvador, Peru and Uruguay, as well as in Central America and the Caribbean at a regional level (CEPAL, KAS & BID, 2021; CEPAL & CENPROMYPE, 2022).

Governments, financial institutions and business chambers can contribute to the development of financial skills of individuals and businesses' capabilities. Moreover, they can provide financial and technical assistance to help small and traditional merchants to better understand available digital payment options and to identify the most suitable alternatives for each of them (Carballo et al, 2020).

For example, in Argentina the Central Bank implemented an educational program focused on financial planning for high school teachers, students and households, especially in vulnerable groups. Furthermore, Mercado Libre signed agreements with local governments to help MSMEs enhance online sales and collect payments through digital methods. Ualá, an Argentine fintech with operations in Argentina, Colombia and Mexico, created a web repository (Aula Ualá) including online talks, educational videos, free online courses and a blog to promote financial education (CEPAL & CENPROMPYME, 2022).

B. Formality

High levels of informality limit access to bank accounts and other financial services in LAC. Many small and traditional businesses only use cash, which makes traceable payments less attractive. Also, in most Latin American countries more than 40% of workers are in the shadow economy, reaching 57,4% in Mexico, 62,4% in Colombia, 68,3% in Peru and 82,8% in Bolivia, according to the International Labour Organization (ILO).

In 2009, Brazil introduced a program (*Micro Empreendedor Individual, MEI*) aimed at improving business formalization through a simplified tax system for business owners whose revenue is under a certain threshold and who employ no more than one person. A decade later, there were nearly 8 million people registered with MEI and SEBRAE estimates that about 600,000 people formalized their businesses through this program (OECD, 2020).

As mentioned earlier, fintech companies are playing an essential role by enabling unbanked and underbanked people to access to transactional accounts and other financial services, such as credit and saving and investment instruments. Governments can boost this trend by encouraging the development of these actors and also by facilitating access to bank accounts. This can be reached through regulation (e.g., banks in Argentina are forced to offer unbanked people a "free universal account" that includes some basic services free of charge) or by digitizing financial support to households and businesses (e.g., the Brazilian government provided financial aid through bank accounts and e-wallets during the pandemic) (Carballo et al., 2020).

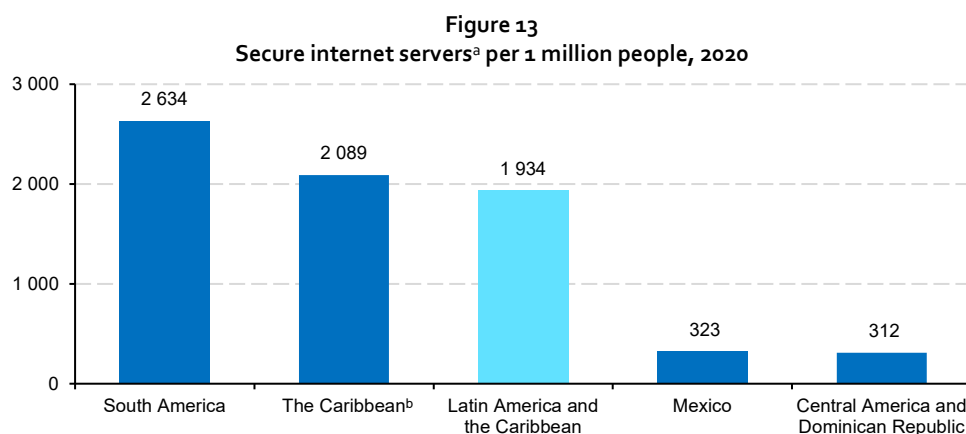
C. Trust and simplicity

Although trust improved during the pandemic, many people still perceive digital payments as unsafe, unreliable or too complicated. There is also a trade-off between maintaining adequate safeguards to prevent fraud and designing regulation that increases financial inclusion (AFI, 2019; Alfonso et al., 2020;

CEPAL & CENPROMYPE, 2022; Lehr, 2022). According to a survey carried out by Minsait Payments (2021), people trust more traditional banks than other stakeholders like neobanks or marketplaces, when it comes to the protection of their personal information and the management of their savings.

In order to build trust, governments, traditional financial entities and new players should **make individuals and MSMEs aware of the benefits of digital payments**, such as speed, simplicity, security and lower costs. For instance, if accessing to a virtual account enables people to build credit history and works as a gateway to other financial services, digital payments will be associated to future benefits (Carballo et al., 2020).

Security and privacy are essential for trust. There are 1,934 secure servers per 1 million people, in LAC. Although there are substantial contrasts between South America and the Caribbean compared to Mexico and Central America (o), all LAC countries except for Belize lag behind developed economies (57,452 in OECD members).



Source: The World Bank.

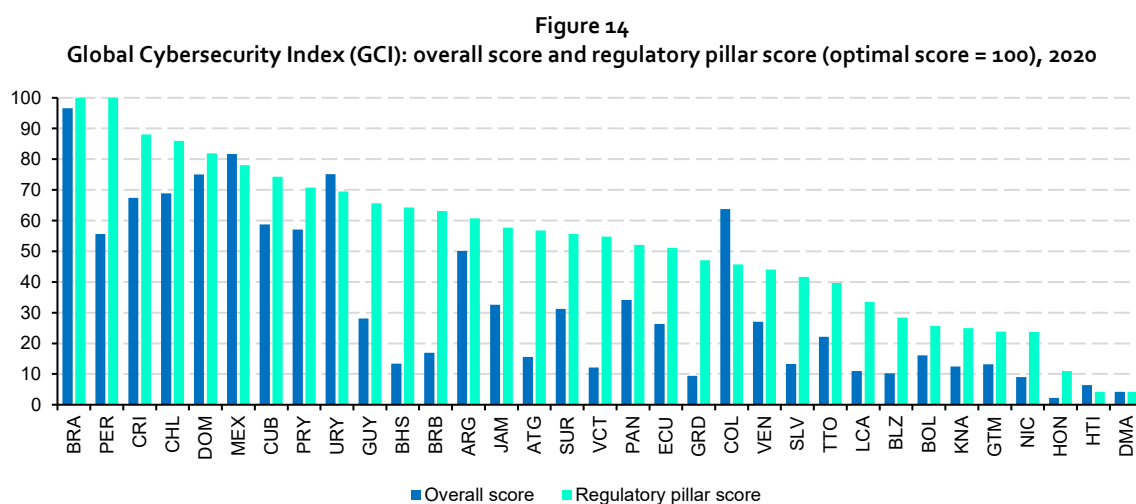
^a The number of distinct, publicly-trusted TLS/SSL certificates found in the Netcraft Secure Server Survey.

^b Belize, Guyana and Suriname are included in the 2020 survey.

Promotion of e-commerce and digital payments should be consistent with data and consumer protection policies, as well as legislation on cybersecurity. It is worth mentioning that not all LAC countries have specific regulation on these issues and that there are substantial disparities among existing regulatory frameworks.

According to UNCTAD's Global Cyber Legislation Tracker, only 24 of 33 LAC countries have legislation on privacy and personal data protection. The Global Cybersecurity Index (GCI)¹⁰ of the International Telecommunications Union (ITU) shows that there are significant differences among LAC countries. Brazil leads the regional ranking with a score of 96.6 out of 100, followed by Mexico, Uruguay and the Dominican Republic (+75). On the contrary, some Central American and Caribbean countries have less than 15 points. Although these contrasts remain, most countries show a better performance in the legal pillar (which takes into account the regulation on cybercrimes and cybersecurity) (o) (CEPAL & CENPROMYPE, 2022).

¹⁰ The GCI measures the level of cybersecurity in 194 jurisdictions based on five pillars: legislation, technical measures, organizations, capacity building and cooperation.



Source: ITU.

Private actors can also contribute to improve security without worsening user experience through biometric authentication and other technologies (Carballo et al., 2020). In Mexico, Clip developed a simplified system which enables traditional and small businesses to collect digital payments, even if they do not have specific devices or digital skills. To encourage the use by MSMEs, Clip transfers the funds on a daily basis and helps businesses to understand the benefits of receiving digital payments (Cosío Robles, 2022).

D. Regulation and competition

Governments should create an appropriate environment for the development of digital payments, including legal, fiscal, commercial and technological conditions. However, LAC faces several problems related to regulatory frameworks, especially in terms of competition.

According to IDB & Finnovista (2022), 46% of fintech companies in LAC identify regulatory challenges, including absence of regulation where needed, as well as excessive rules (i.e., legislation that inhibit innovation and / or the entrance of new actors). However, there are significant differences among countries: almost two thirds of surveyed companies in Brazil consider that the regulatory framework is adequate, compared to 14% to 20% in Costa Rica, Dominican Republic and Peru.

On the one hand, regulatory frameworks often limit **competition** by inhibiting the entry of new actors, especially when they adopt a reactive approach that discourages technological and business innovation. Some measures also constrain the extension of digital payments acceptance. Regulatory barriers include strict licensing and capital requirements, domestic processing and data restrictions, operational limits to retail payment systems (e.g., hour limits to payment orders and delays in execution), interchange fees, among others (Alfonso et al., 2020; IDB-LAB & WEF, 2022; PYMENTS & Kushki, 2022; UN-ECLAC, KAS & IDB, 2021). Limited competition results in higher prices, lower quality of payment services and less innovation. Although this situation is changing due to the entrance of new players (e.g., fintech) which forces traditional actors to improve their services, payment markets in LAC still need progress in terms of regulation to increase competition (Carballo et al, 2020).

On the other hand, competition law is essential to level the playing field. There are significant information asymmetries between platforms and traditional financial institutions because platforms can benefit from economies of scale and scope in the collection, processing and use of large volumes of

data. In addition, this situation enables platforms to provide financial services that generate habits in consumers and create switching cost and it can also facilitate abusive practices.

Increasing **transparency** is important to strengthen competition because it helps consumers and vendors to compare among different financial services providers. For instance, the BCRA publishes on its website charges imposed by banks on most important services in Argentina. This initiative should be extended to a wider range of services and entities offering payment services. Given that some of them are not regulated by the Central Bank, cooperation with other government agencies (e.g., related to consumer protection) would be needed.

Public-private sector collaboration is essential to build efficient and flexible regulatory frameworks that encourage the development of innovative, sustainable and inclusive payment solutions (IDB-LAB & WEF, 2022). For example, the design of Mexican payments regulation was based on close interaction between policy makers, traditional banks, acquiring firms and fintech companies. Even though digital payments are still underdeveloped, new regulation allowed Mexico to make significant progress (Cosío Robles, 2022).

Open banking is the sharing of personal and business data (with their permission) through application programming interfaces (API) by financial institutions with third parties, so they can offer more and better financial services. Consequently, open banking can enhance competition and transparency. The role of authorities is crucial to ensure that the information is effectively shared, but also to prevent the emergence of dominant players (e.g., by requiring APIs to share common standards) and to protect sensitive data from unauthorized use, hacking or fraud (Alfonso et al., 2020).

There are some open banking initiatives in progress in LAC. Mexican Fintech Law requires financial institutions to develop APIs with common standards to allow authorized users to access aggregated data, as well as individual information with the explicit consent of the customer (Alfonso et al., 2020).

In Brazil, the BCB is developing an open banking program divided into four phases, according to the information shared in each stage: product and service information, customer data, transactional information (fund transfers between accounts, debit payments, payment initiation and bank slip payments) and open finance (exchanges, investments, pension plans and insurance). Given that sharing data is only mandatory for tier 1 and tier 2 banks (about 40 institutions), but not for smaller entities, neobanks and fintech companies, the impact of open banking in Brazil is still limited (Duque, 2022b).

To address the trade-off between encouraging innovation and managing financial risks, many countries (e.g., Australia, Denmark, Lithuania, Netherlands, Poland, United Kingdom, among others) are using regulatory **sandboxes**. These are frameworks set up by regulators that enable fintech companies to conduct live experiments of their new products, services or business models under a controlled environment.

Thanks to close interaction between public and private sector, sandboxes help policy makers better realize the impact of regulation and increase its efficiency, while firms improve their understanding of regulation, which leads to better enforcement (Bijkerk, 2021).

There are different types of sandboxes (Bijkerk, 2021):

- *Compliance assistance sandboxes*: they are aimed at improving enforcement of regulatory framework and limited to regulated entities.
- *Policy promoting sandboxes*: their goal is to assess if regulation prevents the emergence of innovative products, services or business models. They are also exclusive for regulated companies.

- *Thematic sandboxes*: they are oriented towards stimulating innovation in a specific area (e.g., cross-border payments) or to achieve a specific goal (e.g., improving financial inclusion).
- *Cross-border sandboxes*: they are based on international agreements of regulators from different jurisdictions to test innovations developed by companies that operate in several countries.

According to Bijkerk (2021), regulatory sandboxes can be very helpful, but they are also complex and expensive mechanisms. Consequently, they are common in robust and innovative fintech ecosystems -especially in developed regions-, but rare in small and less mature markets. Thus, it is not surprising that the use of sandboxes is limited in LAC. In 2021 they were in force in Brazil, Colombia and Mexico, while Peru was working to set them up. Efforts to improve regulation and encourage innovation in LAC are frequently related to public-private dialogue and some innovation hubs (an area within the regulatory agency aimed at facilitating companies to understand regulation).

E. Affordability

As mentioned earlier, over regulation and low competition result in high costs of payment services in some LAC countries. Credit and debit card providers, as well as some e-wallets, usually charge both businesses and consumers and fees tend to be high, especially in small transactions (PYMENTS & Kushki, 2022).

Legislation and infrastructure improvements can help reduce these costs. For example, Mexico is introducing new fintech regulation in order to facilitate the opening of virtual accounts and storing money in digital wallets (PYMENTS & Kushki, 2022). As mentioned earlier, there are some interesting experiences in LAC (e.g., CoDi in Mexico, Pix in Brazil, Transferencias 3.0 and universal free accounts in Argentina and SINPE Móvil in Costa Rica) that are contributing to financial inclusion.

Besides regulation, the emergence of new stakeholders in the private sector is also playing a key role in reducing costs associated to payments. By offering several financial services which are often easier to use and more affordable than traditional alternatives, they are increasing competition and forcing banks to develop new solutions, reduce costs and improve user experience.

F. Interoperability

There are limits to interoperability both for domestic and international payments in LAC. On the one hand, there is low technical and legal compatibility among different payment systems within some countries, especially among banks and electronic wallets. In fact, only 10% of LAC countries offer full interoperability for mobile money services, compared to three quarters of Asian emerging economies. This situation results in higher costs and longer times to process and execute transactions, lesser competition among PSPs and, consequently, higher fees faced by buyers and vendors (Alfonso et al., 2020; UN-ECLAC, KAS & IDB, 2021).

On the other hand, regulation often limits digital payments to domestic operations, resulting in significant restrictions to cross-border transactions. According to a study by the IDB and ALAI (Carballo et. al, 2021), regional cooperation on international payments is not focused on encouraging cross-border trade, but on preventing money laundering.

In some LAC countries -such as Argentina, Brazil, Costa Rica, Mexico and Peru- PSPs are required to transfer retail payments among themselves, while in Chile, Colombia and Paraguay interoperability is only mandatory for certain payments and some PSPs. In contrast, there are not any interoperability requirements in countries like El Salvador, Guatemala and Nicaragua (Alfonso et al, 2020; Minsait Payments, 2021).

Interoperability tends to be shaped by public policy. Consequently, LAC countries should not only encourage technical and legal compatibility among domestic different payment systems, but also increase international cooperation to facilitate cross-border transactions.

G. Cross-border payments

If LAC countries want to strengthen international e-commerce, they should work both on domestic and regional initiatives to remove or reduce obstacles to cross-border electronic transactions.

Concerning national agendas, some countries impose barriers to international payments (e.g., exchange controls or taxes) that restrict cross-border trade, while others are not allowed to receive payments from abroad through most used platforms due to company policies. To address this problem, in Paraguay a group of business associations (including the Industrial Union of Paraguay and some entities related software and computer services, audio-visual services, creative industries, e-commerce, video-games, fintech, among others) is working with the Ministry of Industry and Trade to enable payments collection via PayPal, which would facilitate exports of services and digital products.

Additionally, not only few people have credit cards in LAC, but also a vast majority of those cards can be used just in domestic transactions. For example, one out of five credit cards in Brazil allow cross-border payments (CEPAL & CENPROMYPE, 2022). Access to international credit cards is often limited by higher costs and stricter requirements than domestic cards.

In this context, LAC 2 should **cooperate to build a regional digital payments system** with full interoperability and participate in regional and multilateral initiatives. In order to do so, governments should reduce regulatory barriers to cross-border payments, encourage competition, facilitate the adoption of e-money, adopt international standards in terms of AML and CFT, and work with the private sector to stimulate local acquiring companies able to process cross-border payments (CEPAL & CENPROMYPE, 2022) (CEPAL, 2022).

The Digital Agenda for Latin America and the Caribbean (eLAC 2022), supported by the Economic Commission for Latin America and the Caribbean (ECLAC), seeks to develop a regional digital market through different initiatives, including the promotion of regulatory frameworks that encourage innovation in digital payments (CEPAL, 2020). Likewise, other regional initiatives to strengthen digital economy (e.g., the Pacific Alliance's Digital Agenda, the MERCOSUR's Digital Agenda Group, the Central American Regional Digital Strategy and the CARICOM Single ICT Space) should include consistent measures aimed at fostering e-commerce and developing an integrated digital payment system.

The **private sector and international organizations** also play a relevant role in making cross-border payments easier. For example, the IDB, the Global Alliance for the development of the Blockchain Ecosystem in Latin America and the Caribbean (LACChain) and Citi Bank are fostering international payments based on blockchain technology. Furthermore, some PSPs from LAC like Ebanx (Brazil) and D-Local (Uruguay) facilitate cross-border e-commerce through an innovative model: they are registered as vendors in several emerging countries where they collect payments from buyers, and then send funds to sellers in local currency using APIs (CEPAL & CENPROMYPE, 2022).

IV. Concluding remarks

A wide use of smartphones, a small share of banked population and large margins earned by payment services providers in LAC encouraged the emergence of innovative actors that offer payment solutions and other financial services, challenging banks and other traditional stakeholders. This transformation was accelerated by the COVID-19 pandemic, which drove significant shifts in the global payments landscape.

Although a high preference for cash, **digital payments are gaining momentum in LAC**. Credit and debit cards remain as the most popular payment method in online transactions, but mobile money, e-wallets and instant payments are increasing their market share.

Unsurprisingly, **marketplaces in large economies** where more people own bank accounts or cards **offer a broader range of payment alternatives than in the rest of the region**, including international and domestic credit and cards, instant transfers and e-wallets, as well as other payment options (e.g., BNLP and voucher-based methods). Despite that, marketplaces tend to accept e-wallets more frequently in the Caribbean compared to the rest of the region, while more websites allow payments with cryptocurrencies in Central America and Venezuela, where they are relevant for remittances.

There are significant opportunities for the development of digital payments in LAC. These methods offer substantial advantages in terms of security, efficiency and convenience. However, their main value is the **potential to improve financial inclusion** by enabling unbanked and underbanked people and MSMEs to access and benefit from a wider range of financial services.

However, LAC faces multiple challenges to the development of cross-border payments. Governments and the private sector should work together to address these concerns.

LAC countries need to improve access to infrastructure, as well as digital and financial skills of individuals and small businesses. Public policy should also aim at facilitating access to traditional and innovative financial services. In order to build trust, e-commerce and payments policies must be

complemented with consistent regulation related to security and privacy. All relevant public and private stakeholders should also make people and MSMEs aware of the benefits of digital payments.

The development of digital payments needs an appropriate legal, fiscal, commercial and technological environment. Therefore, regulatory frameworks should be efficient and flexible, in order to enable and foster competition and innovation, and manage financial risks.

There are limits to interoperability both for national and international payments in LAC, which result in higher costs and delays and affect e-commerce, especially cross-border transactions. On the one hand, governments should foster technical and legal compatibility among different domestic payment systems. On the other hand, they should remove or reduce obstacles to cross-border transactions and cooperate with other countries to build a regional payments system. The private sector and international organizations can also play a key role. Initiatives to strengthen digital economy within regional integration schemes (e.g., the Pacific Alliance's Digital Agenda, the MERCOSUR's Digital Agenda Group, the Central American Regional Digital Strategy and the CARICOM Single ICT Space) should include consistent measures aimed at fostering e-commerce and developing an integrated digital payment system.

Acronyms

| | |
|------|--------------------------------------|
| Amex | American Express |
| AML | Anti-money laundering |
| APIs | Application programming interfaces |
| ARG | Argentina |
| ATG | Antigua and Barbuda |
| B2B | Business-to-business |
| B2C | Business-to-consumer |
| BCB | Central Bank of Brazil |
| BCCR | Central Bank of Costa Rica |
| BCRA | Central Bank of Argentina |
| BHS | Bahamas |
| BIS | Bank for International Settlements |
| BLZ | Belize |
| BNLP | Buy now, pay later |
| BOL | Bolivia (Plurinational State of) |
| BRA | Brazil |
| BRB | Barbados |
| CAGR | Compound annual growth rate |
| CBDC | Central Bank Digital Currencies |
| CFT | Combating the financing of terrorism |
| CHL | Chile |
| COL | Colombia |

| | |
|-------|---|
| CRI | Costa Rica |
| CUB | Cuba |
| DMA | Dominica |
| DOM | Dominican Republic |
| ECU | Ecuador |
| FRPS | Fast retail payment systems |
| GRD | Grenada |
| GTM | Guatemala |
| GUY | Guyana |
| HND | Honduras |
| HTI | Haiti |
| IoT | Internet of things |
| JAM | Jamaica |
| KNA | Saint Kitts and Nevis |
| LAC | Latin America and the Caribbean |
| LCA | Saint Lucia |
| MEI | <i>Micro Empreendedor Individual</i> |
| MEX | Mexico |
| MSMEs | Micro, small and medium enterprises |
| NBPSP | Non-bank payment service providers |
| NIC | Nicaragua |
| P2P | Peer-to-peer |
| PAN | Panama |
| PER | Peru |
| PRY | Paraguay |
| PSP | Payment services providers |
| QR | Quick response |
| SDG | Sustainable development goals |
| SLV | El Salvador |
| SPEI | Sistema de Pagos Electrónicos Interbancarios (Mexico's real-time gross settlement system) |
| SUR | Suriname |
| TTO | Trinidad and Tobago |
| URY | Uruguay |
| USD | United States dollars |
| VCT | Saint Vincent and the Grenadines |
| VEN | Venezuela (Bolivarian Republic of) |
| YoY | Year on year |

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