

# Uptake, Use, and Inclusion Gains from Fast Payment Systems

## *Early Comparative Data*

By Kati Suominen

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### *Introduction*

In recent years, there has been growing discussion about digital public infrastructure (DPI)—systems such as digital identity systems, alternative payment methods, and data exchanges that are backed by governments through ownership, operation, or direct or indirect control or support. DPIs are often aimed to promote financial inclusion across a society. One central element in the DPI revolution is government-backed faster payment systems (FPSs) that enable instant transfers between bank accounts on a specific payment rail (for the purposes of this paper, FPSs refer to retail payments). According to the **World Bank**, as of June 2023, some 100 countries had or were implementing an FPS system. Some prominent examples of government-backed FPSs include India’s Unified Payments Interface (UPI) and Brazil’s Pix.

These payment systems have generated a great deal of interest around the developing world and the development community as a means to promote financial inclusion. However, analysis of inclusion gains and other benefits from FPSs is still nascent, and, so far, analytical lenses have been quite myopic. For example, FPSs have typically been analyzed in a case study format, without comparisons to each other, even though there are many types of FPSs and not all are government led. For example, some, such as Sweden’s Swish and the United Kingdom’s Fast Payments, are led by the private sector, while others, such as Thailand’s PromptPay, are co-led by the public and private sectors. In addition, FPSs represent only one potential payment system that can help promote outcomes that governments desire,

such as digital payments use, access to finance, and cross-border trade. Comparisons to other models are required to assess the relative contributions of FPSs on these elements.

The purpose of this brief, **based on a longer Nextrade Group study**, is to promote data-driven, policy-relevant discussion on the role of different types of FPSs and other payment systems in inclusive development. The paper explores various types of data to start shedding light on the impact of FPSs on digital payments use, access to finance, and participation in cross-border trade among consumers and small and medium-sized enterprises (SMEs). It also seeks to raise questions for future research and provide recommendations to policymakers interested in building FPSs.

The following section reviews the wave of digital payments adoption and use over the past decade. The third section assesses the role of FPSs in these developments and the impact of FPSs on the ability to pay, access financing, and engage in e-commerce and trade for both consumers and SMEs. The final section concludes with policy recommendations.

### *A Decade of Digital Payments Adoption*

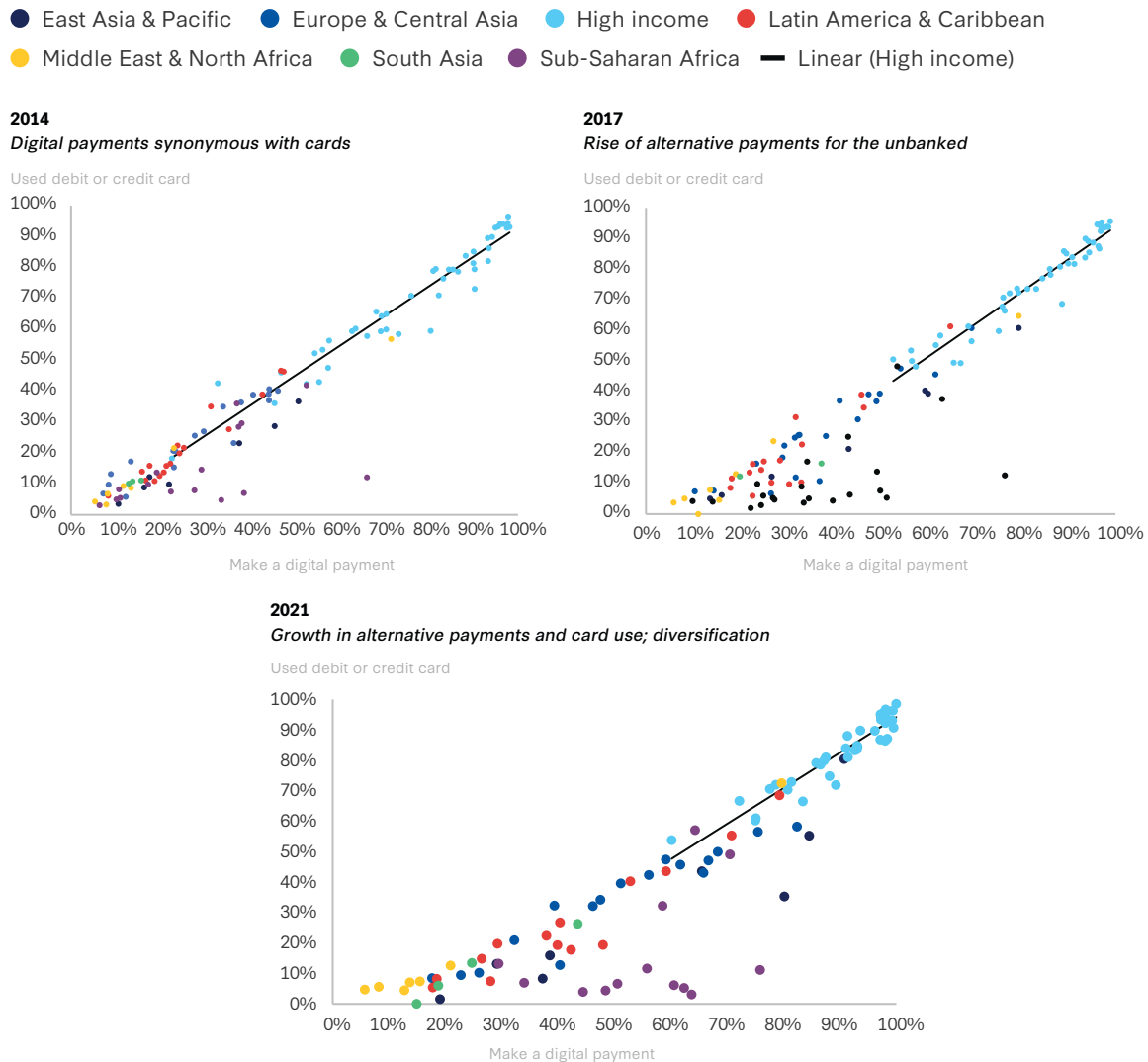
Multiple types of payment systems and methods have emerged around the world over the past decade. As of 2014, using digital payments typically meant using debit and credit cards, but by 2017 many countries, especially in Africa, started to experience striking growth in mobile payments through systems created by telecommunications companies. In these systems, an unbanked user could top up a wallet on their mobile phone by paying an agent in a kiosk with cash, thus permitting them to transact digitally with their peers (Figure 1). The pioneer in this mobile payments revolution was Kenya's M-Pesa, launched in 2007. Since then, companies such as MTN Mobile Money and Tigo Pesa have enabled mobile payments in multiple African markets. Similarly, in Bangladesh, mobile payment platform bKash, developed by a fintech firm, has enabled millions of unbanked individuals to engage in digital transactions.

By 2021, the rise of new payments systems had become even more visible, with many African countries featuring high digital payments use but low card use and bank account ownership rates. Some countries also “had it all,” growing in terms of users of card and non-card payments simultaneously. These included, for example, China via fintech Alipay and Kazakhstan through its “super app” Kaspi.kz, both of which have also promoted card payments by allowing users to link their cards to the platforms. In Thailand, e-wallet TrueMoney and FPS PromptPay grew popular amid a rapid rise in bank account ownership and card use.

These trends have helped expand the share of individuals over 15 years of age globally that report using digital payments, growing from 36 percent in 2014 to 59 percent in 2021 (Figure 2). The use of different types of instruments similarly expanded over this time frame. According to the World Bank's **Global Findex Database**, card use expanded in 115 economies between 2014 and 2021, from 28 percent to 40 percent of individuals over 15 years of age, while the share of individuals using non-card digital payments more than doubled, from 8 percent to 19 percent. Digital payments adoption has been robust even in the poorest quintile, raising from 10 percent in 2014 to 28 percent in 2021 in Latin America, from 8 percent to 33 percent in sub-Saharan Africa, from 2 percent to 18 percent in South Asia, and, especially remarkably, from 9 percent to 49 percent in East Asia. Overall, various types of

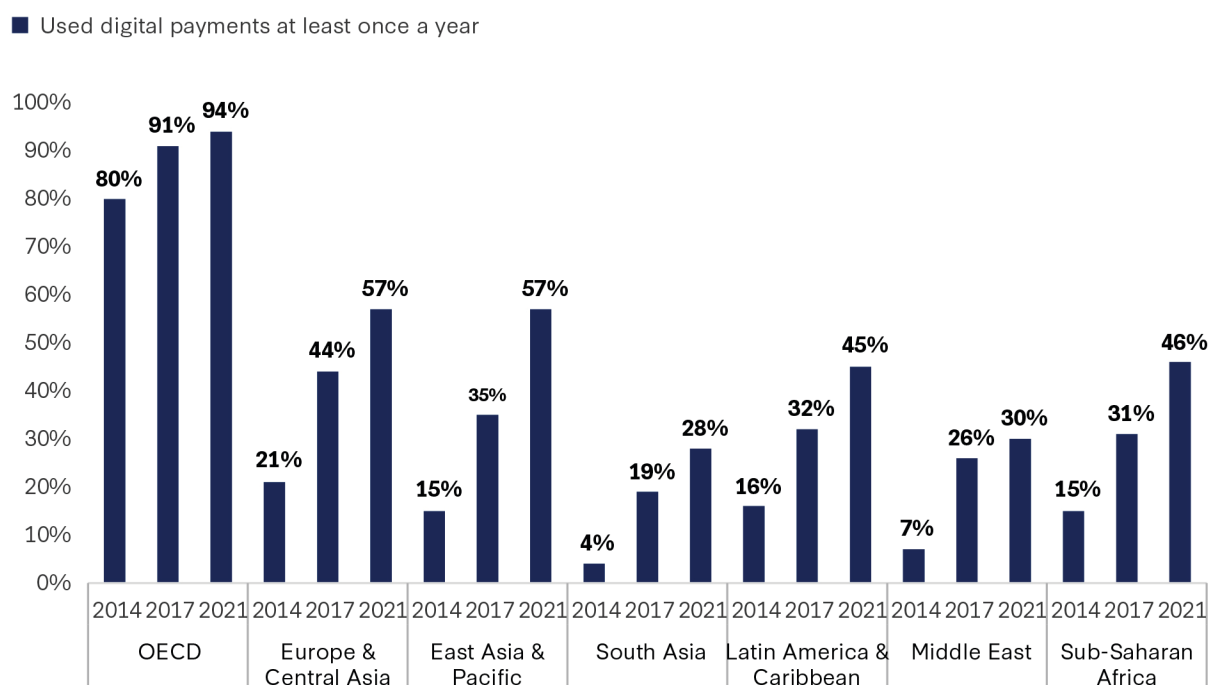
digital payments have enabled billions to transact digitally over the past decade and have also enabled lower-income populations to enter the digital economy.

Figure 1: Growth in the Use of Card Payments and Overall Digital Payments



Source: World Bank's Global Findex Database, 2014, 2017, 2021. See "The Global Findex Database 2021," World Bank, 2021, <https://www.worldbank.org/en/publication/globalfindex>.

Figure 2: Growth in the Use of Digital Payments by Region, 2014–2021



Note: Share of people over 15 years of age using digital payments at least once a year.

Source: The World Bank's Global Findex Database, 2014, 2017, 2021.

Today, FPSs are widely discussed as the next breakthrough technology that could close the remaining gap in digital payments adoption, especially among the poor. Given this background, it is important to investigate what role FPSs have played in the digital payments revolution and explore to what extent they have promoted other trends such as access to finance and cross-border trade.

### *Digital Payments Use and Inclusion Gains from Fast Payment Systems: Early Data and Hypotheses*

Have FPSs promoted inclusion—specifically digital payments use, access to finance, and trade inclusion—across different segments of societies? This question is still quite unexplored. Indeed, **reviews to date of the impacts of FPSs** on digital payments inclusion have focused **largely on total transactions or transactions per capita**, not on the number of users or how these users may come from different income segments. The impacts of FPSs on access to credit and trade are also unexplored.

This section seeks to provide initial answers to these questions through data on the number of FPS users in different countries with government- and private sector-led FPS models; survey data on the frequency with which consumers and firms are using FPSs; and different types of views from FPS users on the relative value of FPSs, compared, for example, to credit cards, for engaging in trade and accessing loans. The data are based on the World Bank's Global Findex Database surveys, which involved a total of 445,498 respondents around the world across 2014, 2017, and 2021; central bank

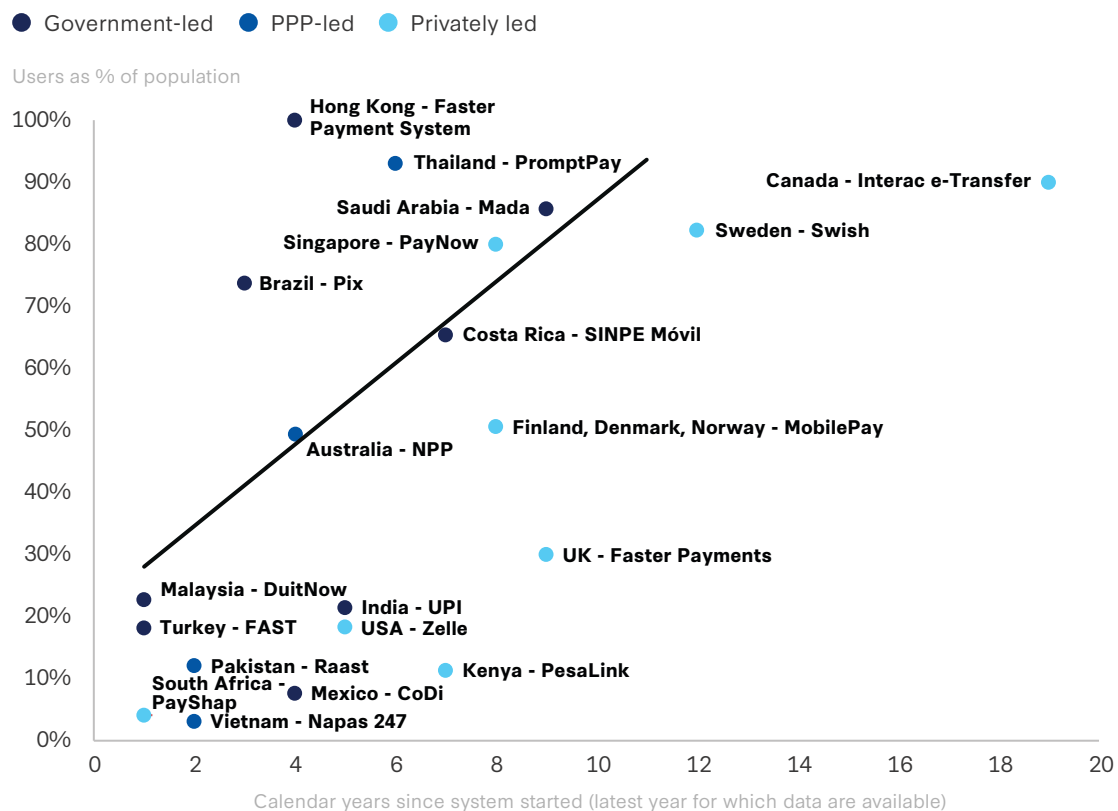
and third-party data on FPS adoption and use; and Nextrade Group surveys from November 2023 and January 2024. The Nextrade Group surveys involved 1,480 consumers and 840 businesses in Brazil, Costa Rica, India, and Thailand, asking respondents about how they used various digital payments and how the different types of users, including purely FPS users, accessed financing or participated in trade.

There are four main conclusions:

1. **FPS adoption and use appears to be especially robust in countries with substantial preexisting and rapidly growing use of digital payments.** Among FPS systems, according to the latest year for which data is available, government-led systems (such as Brazil's Pix and Costa Rica's SINPE Móvil), public-private models (such as Thailand's PromptPay), and private sector-led models (such as Singapore's PayNow and Sweden's Swish) have had strong adoption rates in a relatively short period of time, while government-led systems (such as Mexico's CoDi, India's UPI, and the United Kingdom's private-led Faster Payments) have been slower to take off (Figure 3). While India's UPI was used by over **300 million Indians** by its fifth year, this is still less than 22 percent of the population, well below the **74 percent use rate achieved by Pix in Brazil** by year three, **50 percent** for Australia's NPP by year four, and **over 90 percent** for Thailand's PromptPay by year six. The countries with mass adoption of an FPS have also had the **strongest monthly per capita** payment transactions.

These data suggest two potential conclusions. First, government-led FPSs do not appear to have been more successful than privately run FPSs in gaining users. Models driven by the private sector, such as Sweden's Swish and Singapore's PayNow, and public-private systems, such as Thailand's PromptPay, have been wildly popular. Second, FPSs with government involvement appear to have gained users in countries where digital payments use had already started and was growing when an FPS was introduced. For example, Brazil, Costa Rica, and Thailand had rather robust debit and credit card usage rates in 2017, around the time their FPSs were introduced, and strong growth in card adoption concurrently with FPS adoption. Between 2017 and 2021, **according to the World Bank Findex**, card use grew from 39 percent to 55 percent in Brazil, 35 percent to 40 percent in Costa Rica, and 21 percent to 35 percent in Thailand. These three countries also had **relatively fast growth** in monthly FPS transactions per capita. Meanwhile, in countries with slower FPS adoption, card use was lower and had grown more slowly. For example, in India (where UPI launched in 2016), card use only grew from 12 percent to 13 percent between 2017 and 2021. Likewise, in Mexico (where CoDi launched in 2019), card use grew from 13 percent in 2017 to 26 percent by 2021. The widely different adoption rates between Brazil and Costa Rica, on the one hand, and India and Mexico, on the other, may suggest that government-sponsored FPSs are unlikely to lead to mass adoption without preexisting digital payments use and an existing ecosystem.

Figure 3: Percent of Population Using FPS and Time since FPS Introduction



Note: The data for each country is the latest year available since launch. For example, a system that was started in 2019 and for which latest user data was for 2022 would be presented here as having three years since its launch.

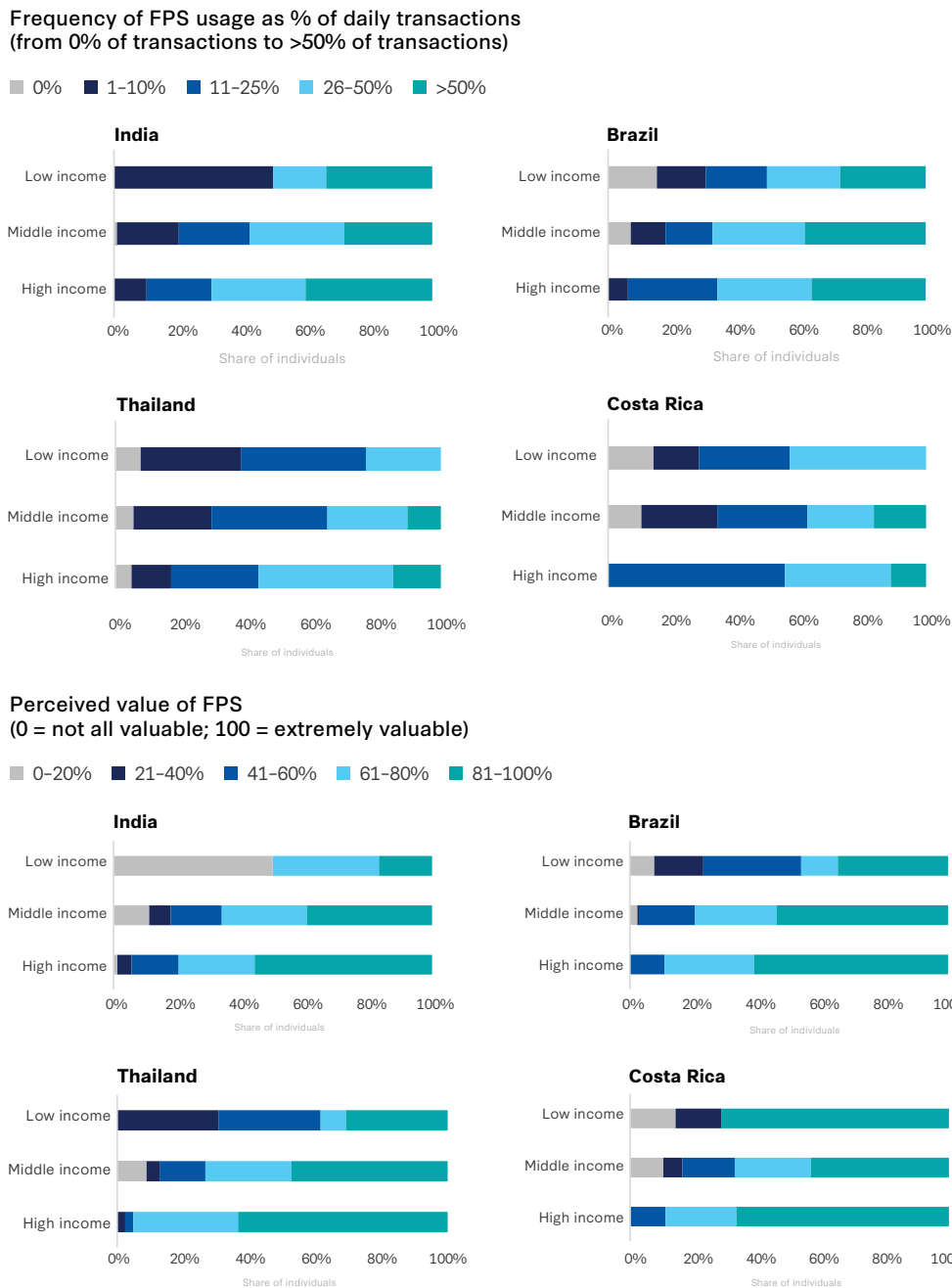
Source: Author's research based on central bank and third-party data.

2. **FPS adoption appears to be strongest and FPSs appear to be valued most among SMEs and consumers that already use some other digital payment system.** There is little analysis to date of FPS adoption by income segments to substantiate the notion that FPSs enable the poor in particular to transact digitally. The Nextrade Group survey data indicates that poorer consumers, even ones who are banked, use FPSs less intensively than their wealthier counterparts and still often opt for cash; they also appear to value FPSs less than wealthier segments do. For example, in Brazil, 15 percent of the poorest segments do not use Pix at all, 15 percent use it only for 1 to 10 percent of their transactions, and 27 percent use it intensively. In the wealthier segments, only 6 percent use Pix for 1 to 10 percent of transactions and 36 percent use it intensively (Figure 4). Across countries, FPSs **appear to be adopted** and used more intensively among wealthier segments that typically also use cards; these segments adopt FPSs as another convenient way to pay and thus **possibly substitute** for some card payments. Wealthier segments also value FPSs more. For example, in India, 85 percent of UPI users rate the FPS between 81 and 100 on a scale of 0 to 100, compared to only 50 percent of poorer segments.

These patterns are similar among SMEs. The surveyed SMEs that use and accept credit card payments are likeliest to accept FPSs intensively and are also most prepared to pay for card and FPS acceptance. These SMEs are typically digitized and successful multimarket exporters often

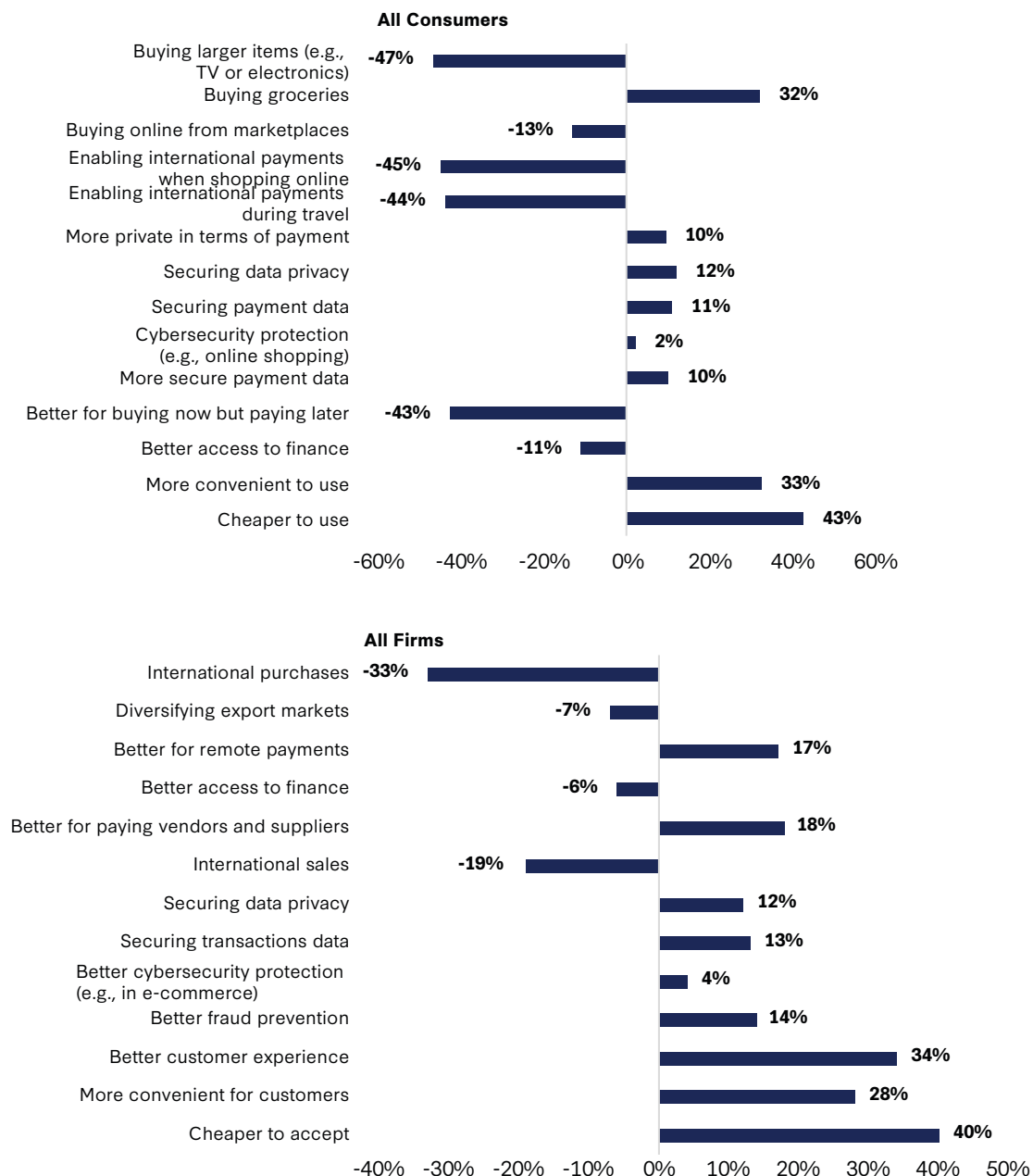
found outside urban areas and whose customers habitually use digital payments. Meanwhile, FPSs are used less intensively by SMEs that do not accept cards or export, which often includes retailers found in major urban areas and firms that struggle to grow. These firms are also typically unwilling to pay for digital payments acceptance, reflecting both their low profit margins and, likely, the use of cash by their customers.

Figure 4: Intensity of FPS Use and Value Assigned to FPSs, by Income Segment and Country



Source: Nextrade Group surveys on November 24–27, 2023, and January 15–19, 2024, with 1,480 consumers in Brazil, Costa Rica, India, and Thailand.

Figure 5: Perceptions of the Benefits of Cards vs. FPSs for Firms and Consumers in Brazil, Costa Rica, India, and Thailand



Note: A positive value indicates that the respondent believes that FPSs are a net positive; a negative value indicates that respondents believe that cards are a net positive.

Source: Nextrade Group surveys on November 24–27, 2023, and January 15–19, 2024, with 840 businesses in Brazil, Costa Rica, India, and Thailand.

- Surveys in the four countries suggest that FPSs and credit cards have distinct comparative advantages: FPSs are perceived as providing convenience at moderate cost, while cards are seen as conducive to access to credit and cross-border payments.**



Across countries, firms that accept and use FPSs report positive impacts, such as increased sales, improved customer experience, and efficiency gains. However, credit card users see similar gains from the use of credit cards. More interesting are the relative benefits: on balance, for both SMEs and consumers surveyed in this research, FPSs are seen as competitive on cost, convenience, and customer experience, but cards are seen as critical for cross-border payments, e-commerce sales and purchases, and accessing credit (Figure 5). FPSs and cards are also used for different types of purchases: among consumers, FPSs are used especially for smaller payments such as groceries, while credit cards are used for larger purchases, such as electronics and appliances, where the financing that cards offer is also especially valuable.

The data also indicate what could be expected: FPSs do not support trade for SMEs, as FPSs do not interoperate well with each other, with the exception of some mostly bilateral interoperability pilots. Among surveyed SMEs, when asked whether they would rather give up FPSs or credit cards, 70 percent of exporters in India would rather give up UPI and some 66 percent of exporters in Brazil would give up Pix.

4. **FPS adoption has helped some consumers and firms access financing, but card users and users of both cards and FPSs report better access to finance than FPS-only users.** FPSs could provide users that previously transacted in cash new opportunities to develop credit histories through data on digital payments. Does this mean that FPSs improve users' access to finance? And do FPSs improve users' access to finance more than, for example, mobile or card payment systems? An analysis of the World Bank's Global Findex Database suggests that borrowing from banks is higher among card users than non-card users that have bank accounts in a vast majority of markets and across income segments. The Nextrade Group survey echoes some of these findings. For example, while 25 percent of Indians and 33 percent of Brazilians who do not use cards see the use of an FPS as having promoted their access to online loans, 70 percent of card users report improved access to online loans. Among firms, 44 percent of SMEs in Brazil that accept cards and Pix report "significant" improvement in access to financing after adopting these instruments, compared to 29 percent of firms that accept Pix only. In Thailand, 74 percent of firms that use both cards and PromptPay report "significant" improvement in access to finance, versus only 14 percent of firms that only use PromptPay.

These data are indicative, but they raise useful hypotheses for research. For example, they suggest that FPS adoption and use can promote, but not necessarily revolutionize, access to financing for consumers and firms. The data may also indicate that card users have characteristics that make them more credit-worthy, as opposed to the FPS-only users that are likelier to be the poorer "thin-file" borrowers. In addition, as the above section indicates, FPS-only users may still use FPSs less frequently and amass less data on which credit decisions can be made than segments that also use other digital payments.

For governments considering the growth in FPSs, these data offer thoughts on the challenges to gain adoption and translate FPSs into financial and trade inclusion. A further consideration is management of DPIs and FPSs in general. The deployment, maintenance, governance, and sustainability of DPIs and government-led FPSs can be expected to require a solid enabling environment with data privacy regulations, cybersecurity capabilities, and internet connectivity.

Governments can also **risk pursuing coercive tactics** and unsustainable business models to drive adoption. The **longer Nextrade Group study** includes a DPI-readiness index that shows, for example, that sub-Saharan African nations still have a great deal of work to do to create enabling environments for DPIs, including for FPSs. When making decisions about building and operating FPSs, governments should also **consider the burden and risks of operating FPSs**. Meanwhile, many countries have succeeded at promoting digital payments through public-private or purely private solutions.

## *Conclusions and Recommendations*

Hundreds of millions of individuals and SMEs have started using digital payments over the past decade thanks to the mass uptake of bank accounts, debit and credit cards, and various payment systems created by telecom companies, fintechs, and, often more recently, FPSs. This paper has explored the adoption and gains from FPSs, reaching three main conclusions:

1. Countries around the world have promoted digital payments use through various pathways, such as through bank- and card-driven solutions for banked populations, telecom-driven solutions for the unbanked, and fintechs that have services for diverse segments. Mass adoption of a payment system, when it has occurred, has resulted from a strong product-market fit. For example, Kenya's M-Pesa and Bangladesh's bKash gained tens of millions of users thanks to being introduced at a time when millions of unbanked individuals gained access to mobile phones.
2. Government-led FPSs do not appear to have an edge over privately operated FPSs in terms of adoption and use. In addition, in Nextrade Group's surveyed markets, FPS adoption and use appear to be correlated with prior and growing digital payments use: FPSs have gained mass adoption in emerging markets and segments with an affinity and appetite for digital payments. This suggests that merely introducing an FPS into a market does not necessarily catalyze digital payments use or promote financial or trade inclusion; rather, the ecosystem needs to be ripe for using an FPS.
3. With multiple types of payment systems and methods available today, users often choose a method fit for purpose. FPSs have various comparative advantages: they are especially conducive to smaller local transactions and stand out by their ease of use and transaction efficiency. Card networks, meanwhile, are valued for cross-border payment capabilities, online shopping advantages, and greater access to finance. There is no "silver bullet" payment solution that would solve for digital payments and financial and trade inclusion. Instead, there is a mix of various solutions that firms and consumers should have access to and use as they see fit.

This gives way to four recommendations for policymakers seeking to promote digital payments and inclusive development:

1. **The North Star for governments seeking to promote digital payments should be user choice—for firms and consumers to be able to leverage the comparative advantages of different systems such as FPSs, cards, and other instruments.** A system of complementary payment methods and free and fair competition among them is the best of all worlds. When governments decide to back an FPS, ensuring that private sector solutions are built into the FPS's business model from the start is key to ensuring financial inclusion, consumer choice, and innovation.

2. **Governments need to consider the risks of operating FPSs—and they do not have to own and operate them.** Indeed, many widely adopted FPSs are run by banks or public-private consortia. This is a strong choice, especially given that the deployment, maintenance, governance, and sustainability of FPSs is challenging and requires strong data privacy regulations, cybersecurity capabilities, internet connectivity, and government data management.
3. **Card-based payments are key to enabling SME participation in trade.** Governments around the world are increasingly interested in promoting the participation of SMEs in trade, for example, through e-commerce. SMEs that engage in trade need both fluid cross-border payments and access to working capital to manage their supply chains. FPSs are domestic payment systems and do not enable SMEs in trade. Meanwhile, card-based payments not only enable SMEs to pay and accept payments worldwide but also enable SMEs to access financing and thus fuel their supply chains.
4. **Governments and researchers seeking to understand the inclusion gains from FPSs should focus first and foremost on the number and share of users and the intensity of usage in different income segments,** instead of only measuring total transactions or transactions per capita. The number of transactions is not necessarily a good indicator of digital payments inclusion—the number of users and intensity of usage is. Also critical are analyses that examine the extent to which FPSs developed to move poorer population segments to digital payments actually have successfully substituted for cash or other forms of existing digital payments. Similarly, there is a need to measure the broader gains from FPSs, for example, on access to credit and participation in trade. This should be done by comparing the impacts of FPSs (a) across countries, to understand differentiated effects from, for example, government-led versus privately led FPSs; and (b) in any one market, vis-à-vis the impacts of other payment systems and methods. ■

*Kati Suominen is an adjunct fellow (non-resident) with the Europe Program at the Center for Strategic and International Studies in Washington, D.C.*

*This report is supported by the Mastercard Policy Center for the Digital Economy.*

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