Payment by Pix: How Digital Public Infrastructure Expanded Financial Inclusion in Brazil

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Theme C: Technology, Innovation, and Power

On June 15, 2020, WhatsApp announced that users in Brazil – its second largest market after India – would be able to send and receive money via its messaging app. Payments would be routed through Facebook Pay, the payment service launched in 2019 by WhatsApp owner Facebook. Payments would be free to users but businesses would pay a 3.99 percent processing fee to receive payments. Just a week later, in a dramatic turnaround, Brazil's central bank, the Banco Central do Brasil or BCB, suspended the instant messaging app's mobile payment service in Brazil.

Five months later, the BCB launched that payment system and called it Pix, derived from "pixel" (which is the same word in English and Portuguese). On its face, Pix is an instant payment system, like India's Unified Payment Interface or FedNow in the U.S. Any Brazilian with a CPF (a tax identification number) and a cell phone can send payments to, or receive payments from, individuals or businesses, for no fee and with immediate settlement. At its heart, however, Pix is far more than tool for moving money. Beyond that, Pix is the embodiment of a political and economic worldview that prioritizes financial inclusion, national autonomy and exercise of government power to facilitate social goals. As such, Pix explicitly prioritizes domestic economic progress over global norms with respect to monopoly power and market access for "Big Tech." Pix's lightning-fast adoption and outsize success (quantified below) challenge the notion that free-market competition is the best, or the only, route to rapid technology innovation and consequent market power. More fundamentally, implicit in the meteoric ascent and creative evolution of Pix is the idea that the Global South can lead in technology innovation. Given the primacy of technology in business and growth, leadership in innovation translates directly into enhanced global power.

The BCB launched Pix in November 2020 to simultaneously solve a market failure and a social policy challenge in Brazil. The market failure was that an oligopoly of major banks dominated both levels of the payment system: payment infrastructure (the "rails" on which payments move and settle) and customer-facing payment applications (the technologies that customers use to initiate and receive payments). Moreover, as of 2020, making or receiving electronic payments required a traditional bank account, which could only be obtained and maintained via that oligopoly of incumbents. Not surprisingly, this oligopoly market structure yielded high prices and low service. Wire transfers cost US$1.50 to US$3.00 and took days to clear. Credit card fees reached 2.2 percent of transaction value, versus 1.7 percent in the US, 1.5 percent in Canada and 0.3 percent in the European Union. Average annual interest rates for revolving credit card debt (*rotativo*) exceeded a staggering 300 percent. The social policy challenge was that about 45 million Brazilians, about 22 percent of the 2020 population, was unbanked or underbanked and therefore excluded from digital commerce.

Pix solved these market and social challenges via a design that includes technology, legal, and economic features.

The technology future chiefly distinguishing Pix from other payment systems is vertical integration: the BCB owns and operates both the "rails" and the "app." The rails are the Instant Payment System, or SPI, which is digital infrastructure providing real-time, 24/7/365 settlement. The app is the customer-facing Pix technology – typically incorporated as a core feature of mobile banking apps (Itaú, Bradesco, Nubank) or digital wallets – by which individuals and businesses access the SPI and related services.

Beyond vertical integration, two key legal features of Pix reinforce its technology design. First, use of the SPI is mandatory for Brazilian banks and major payment service providers (PSPs). As a practical matter, this means that banks and PSPs are required to include a "Pix" menu option in their apps for instant and (as discussed below) free money transfers. Second, the SPI was built exclusively for Pix and any other payment scheme would be prohibited from connecting to it for instant settlement.

The key economic attribute of Pix: money transfers among individuals and small businesses are free.

These mutually reinforcing technology, legal and economic features create a virtually insurmountable competitive moat around Pix, for at least the following reasons. First, Pix is a "natural monopoly," with massive fixed costs (i.e., the cost of developing payment and settlement infrastructure) and minimal marginal costs.

Second, in addition to being a natural monopoly, Pix is a "two-sided market," that is, the market in which two sets of agents – here, merchants and consumers – interact through a platform, and the decisions of each set of agents affects the outcomes of the other set.

Third, purposefully or by fortuitous accident, the BCB started Pix as a "minimum viable product" – a straightforward payment tool. Since launch in 2020, however, Pix has expanded to cash withdrawals (Pix Saque), automated recurring payments for utility bills (Pix Automático), installment plan purchases (Pix Parcelado), and future payments (Pix Agendado).

As a function of these competitive advantages, Pix has experienced rapid, sustained growth. According to BCB statistics, in July 2026, Pix reached nearly 8 billion transactions and moves over US$660 billion monthly. This means that, annually, Pix moves three times Brazil's GDP of about US$2.64 trillion. As of late 2025, over 170 million consumers (almost 80 percent of Brazil's population of 214 million) used Pix – more than the number using debit cards (~69 percent) or cash (~69 percent).

This rapid, widespread penetration of Pix in Brazil has advanced financial inclusion, created new economic opportunities, contributed directly to GDP growth and burnished the technology, innovation and financial bona fides of Brazil specifically, and the Global South generally. Pix has effectuated these ends in at least the following five ways:

First, according to a 2025 study entitled "Instant Payment Systems and Competition for Deposits," led by Professor Sergey Sarkisyan of Ohio State University, Pix represents a welfare boost equivalent to quarterly deposit of US$380 per consumer, implying a 15 percent increase in Brazil's GDP per capita.

Second, and relatedly, as reported by Forbes and CNN Brasil, Pix is expected to boost Brazil's GDP by US$54.4 billion by 2028.

Third, an August 2026 report by EBANX indicates that Pix has resulted in 71.5 million newly banked users – a sizable migration of citizens from the economic periphery into productive participation.

Fourth, Pix generally, and services like Pix Automático specifically, enable users to develop credit histories, and thereby access credit and other financial products that were heretofore inaccessible.

Fifth, as of middle 2025, Brazil accounted for 75 percent of all real-time money transfers in Latin America – underscoring Brazil's potential to shape the future of digital finance across the region.

Sixth, and finally, the BCB created Pix independently – with no help (or hindrance) from "Big Tech" firms. This demonstrates that technology, innovation and social entrepreneurship in the Global South can

leapfrog economic achievements in the U.S. or Europe, democratizing resources and reducing inequality. In our increasingly mercantilist world, domestic economic power translates to global political power. What started as a simple payment tool will not only bring millions of Brazilians in from the economic cold; it will also enhance Brazil's standing and suasion on the world stage.