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Innovation and Financial Inclusion:

The Silent Revolution of the Central Bank of Brazil

Zetta

Preface

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The National Financial System (SFN) has been undergoing a profound transformation over the last 15 years. One way to analyze this process is to understand the main catalysts that drove this transformation.

The Central Bank of Brazil (BCB) was, unquestionably, a significant catalyst in this process. By prudently favoring the entry of new institutions and fostering financial innovation, the regulator's primary goal was to create a more competitive environment within the SFN. This aimed to overcome the long-standing criticism that Brazilian society was dependent on a few large banks that did not adequately meet the real demands of families and businesses at the time. To address this, the BCB adopted a series of initiatives, perhaps the most important of which was to approach, understand, and support the then-incipient fintech ecosystem and its ideas and innovations for the financial system.

Fintechs were fundamental in materializing this transformation of the SFN. They skillfully made a broad and precise reading of the opportunities in the Brazilian market. They built business models to serve segments of society that were not yet adequately served by the financial industry. They developed simpler products and services more aligned with the real demands of families and companies, especially those strata of society that were still unbanked. They did all this with a significantly lower cost to serve than the incumbents of the time, thanks to the intensive use of new and modern technologies and more focused, innovative business models. With this, they managed to address these challenges with more competitive prices.

The expansion of data processing and storage capacity, as well as the emergence and maturation of new technologies, formed the foundation of this transformation process. There is no doubt that without access to this technological apparatus, the changes observed in recent years would have been more modest. Part of the financial revolution seen in recent years was a consequence of (a) the intensive use of data processed by more powerful and cheaper chips and (b) stored in the "cloud" at a lower and more suitable cost, yet scalable if necessary.

Incumbent financial institutions also underwent transformations throughout this process. They recognized that the entry of new institutions was inevitable and, therefore, they needed to adapt to the new competitive environment. They faced the challenge of modernizing their legacy systems and invested in innovative technologies. Furthermore, they opened up to the world of fintechs, creating incubators and establishing strategic partnerships with these startups. There is evidence that, in response to growing competition, they reduced interest rates and margins.

The Brazilian population also played a prominent role in this transformation process of the SFN, given its ability to adapt to technological innovations. Brazilians like technology; they like practicality. Several surveys indicate that our society easily absorbs technological innovations. This becomes empirically evident when we observe what has happened in the SFN over the last 15 years: financial innovation has taken hold! The degree of penetration of financial technology was only limited in Brazil by factors unrelated to the SFN's innovation efforts, such as (a) the difficulty and cost of our society's access to telecommunication infrastructure and (b) the low financial capacity of families to acquire smartphones with more powerful processors.

In summary, after 15 years, it can be affirmed that the BCB's initiatives have been successful, as this publication makes evident. Currently, the operations of large banks, digital banks, payment institutions, and the entire fintech universe are complementary and, together, they more adequately meet the real demands of families and businesses. This new ecosystem has filled previously existing gaps and contributed significantly to financial inclusion. The numbers presented in the text are impressive. For example, the number of individuals participating in the SFN and the Brazilian Payments System (SPB) jumped from 76.3 million in 2018 to 163.3 million in May 2025, a growth of 114%!

This transformation process of the SFN will continue and should intensify in the coming years. Several public and private initiatives implemented are extremely promising but are still in a maturing phase, such as Open Finance. Other initiatives are still in the development pipeline, such as electronic trade acceptances, Drex, and tokenization. We also have the promises of Artificial Intelligence (several initiatives are already present) and stablecoins, in addition to countless other promising innovation fronts.

This work carried out by Zetta and Tendências Consultoria is an important instrument for us to measure how much we have advanced in recent years and to highlight the promising future that lies ahead. Based on this scenario, widely supported by empirical evidence, it is fundamental that society recognizes the relevance of the Central Bank's innovation agenda. The concrete benefits for collective well-being are clear, with a highly favorable cost-effectiveness ratio, which justifies the continuity of this agenda, in line with good public policy practices.

Enjoy the reading!

Design gráfico: Estúdio Irá

Tendências Consultoria Integrada (Tendências) was hired by Zetta – an association created by technology companies operating in the financial and payment methods sector – to elaborate a study on the transformations of the National Financial System (SFN) through actions and measures promoted by the Central Bank of Brazil, focusing on innovation, competition, inclusion, and the reduction of credit cost. Tendências employed its best efforts to collect the information contained in this study, aiming for it to be the most updated, correct, and accurate. The studies and data utilized are referenced throughout the text and were compiled with the objective of condensing the available empirical evidence on the impacts of the financial innovation and inclusion agenda led by the Central Bank in recent years. It should be noted that this work did not perform an independent verification of the public data utilized, which is compatible with the nature of the study and does not compromise its robustness.

Executive Summary

All public policy requires evaluation—and the same holds true for any reform agenda. In recent years, the Central Bank of Brazil has conducted a broad agenda of microeconomic reforms, especially within the scope of the BC+ and BC# initiatives, implementing various innovative measures in the financial system. Many of these actions have already been evaluated across multiple dimensions. This text synthesizes the main results available to date. When a direct evaluation of a specific measure is not yet available, we turn to international evidence from similar experiences to help illuminate the Brazilian debate.

The available results are overwhelmingly favorable. Pix has established itself as the world's most successful instant payment system among more than 120 countries with similar initiatives. It has reduced the use of cash, expanded financial access, facilitated credit access, and boosted economic activity—helping to partially explain the successive positive surprises in Brazil's GDP in recent years. All this was achieved with an implementation cost of just US$ 4 million and an estimated welfare gain equivalent to a 15% increase in per capita GDP.

Credit Portability has reduced bank spreads on eligible operations by 21% to 49%, lowering interest rates for consumers—with a practically negligible implementation cost. The Positive Credit Registry, by reducing information asymmetry, led to an average drop of 3.7 percentage points in unsecured personal loan rates. The new Receivables Registry System has reduced spreads by 9% to 11%, generating R$ 27 billion in interest savings as a direct result of increased competition and transparency.

Based on the available empirical evidence, it can be affirmed that the Central Bank's innovation agenda implemented in recent years has increased financial inclusion, promoted greater competition, and reduced interest rates—presenting a favorable cost-benefit ratio.

Open Finance, in turn, already involves over 60 million Brazilians actively sharing data, empowering consumers, simplifying financial life, and becoming a global benchmark among 95 countries adopting measures to create a more open financial system. Fintechs have also played a central role by reducing access barriers to financial products and services and bringing more competition to the banking system. This has been reflected in lower interest rates and reduced net interest margins for traditional banks. In Brazil, 58% of fintech clients gained access to previously unavailable financial services—the highest level in Latin America. This was particularly crucial in a country where, as of 2025, over 51% of municipalities still lack a physical bank branch, making digital access a necessity, not just a convenience.

In the wake of these transformations, the National Financial System (SFN) and the Brazilian Payments System (SPB) have undergone profound financial inclusion: the number of individual participants jumped from 76.3 million in 2018 to 163.3 million in 2025, a 114% increase. The progress was widespread but particularly expressive in the North and Northeast regions, contributing to the reduction of regional disparities and the democratization of access to the financial system. Indicators of banking competition (such as the Lerner index) and market concentration (such as RC5 and HHI) have also shown consistent improvement in recent years. This is a silent revolution that has occurred in Brazil, under the leadership of the BCB—with results aligned with what is expected from a good microeconomic reform agenda.

Although the advances are clear and the results positive, Brazil is still far from having a fully competitive financial system. Concentration indicators, though on a downward trend, remain high. The cost of credit continues to be among the highest in the world, reflecting the market power still held by large banks. In this context, continuing the agenda of innovation and financial democratization seems not only desirable but also consistent with the progress already achieved and the great potential for transformation that the Brazilian financial system still offers.

1

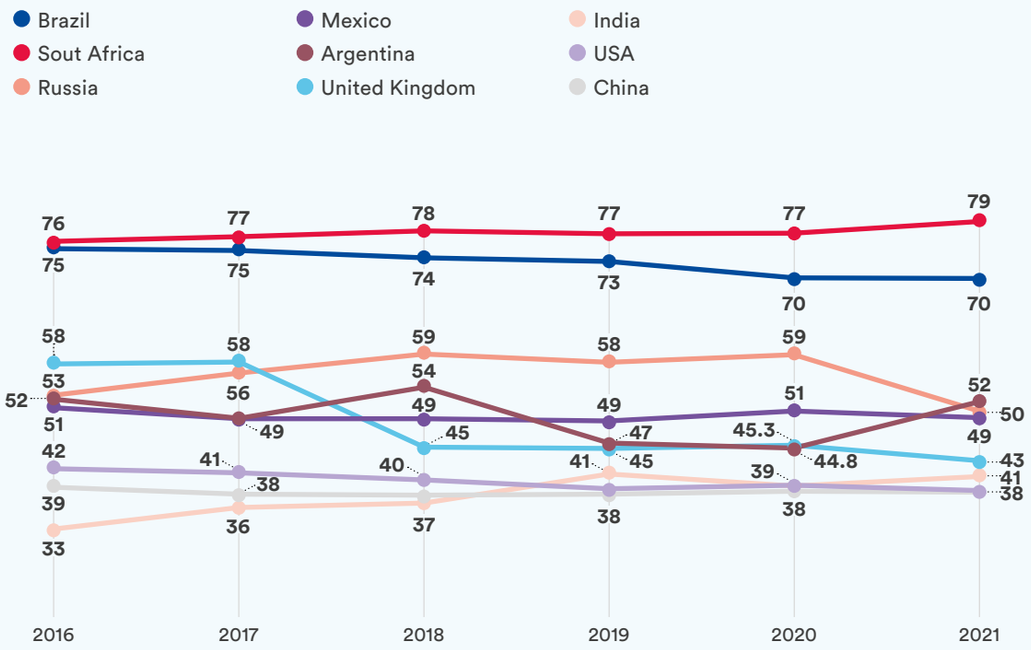
Introduction

The Central Bank of Brazil has played a crucial role in the Brazilian economy, with actions that extend far beyond monetary policy and the traditional regulation of the financial system—the authority's traditional focuses. In recent years, the institution has led an innovative microeconomic reform agenda focused on expanding financial inclusion, increasing competition, and reducing the cost of credit. This document will not merely list these reforms but will demonstrate a causal chain from specific regulatory actions to tangible macroeconomic benefits, synthesizing the empirical evidence available to date.

This reform agenda is fundamental for several reasons. The main one is that Brazil needs to improve its economic performance and raise its potential growth, currently estimated at just 2% per year, according to market consensus[1]. Recent history reinforces this urgency: over the last four and a half decades, the country has fallen from 48th to 87th in the IMF's global ranking of GDP per capita, moving closer to the poorer half of the world[2]. Since 1980, among 82 emerging countries, Brazil is among those that most frequently grew below 1% per year—precisely in the group that most needs to advance to improve its population's standard of living[3].

Graph 1

Banking concentration (assets) – selected countries (%)



Fonte: World Bank. Elaborated by Tendências Consultoria

Furthermore, the BCB's innovation agenda is important because, until a few years ago, the country still excluded part of its population—generally lower-income individuals—from the financial system, with no banking relationships, and left part of its businesses—especially smaller ones—without access to credit. This occurred in the context of a highly concentrated banking sector marked by one of the world's highest bank spreads. Since 1997, when it first appeared in the World Bank's database, Brazil has always had one of the top 4 highest spreads (cost of credit) on the planet, which is detrimental to economic development[4].

In recent years, the BC+ and BC# agendas have consolidated this strategic direction, bringing together a set of initiatives aimed at modernizing the national financial system. These actions have sought to stimulate innovation, reduce information asymmetries, and foster a more competitive, transparent, and efficient environment.

The objective of this work is to present the evolution of the measures implemented by the Central Bank (Banco Central) in recent years, focusing on innovation. Thus, the aim is to condense the available empirical evidence regarding the impacts of these measures. The results available so far indicate that the continuity of this agenda is essential not only for the development of the National Financial System (SFN) and for the improvement of social well-being, but also to strengthen the Central Bank's role in promoting economic stability, expanding the potency of monetary policy. After all, one of the main channels through which monetary policy affects economic prices is the credit channel—and this channel can be strengthened by an agenda of greater competition

To expand competition, the Central Bank implemented measures that increase customer choice. These initiatives range from regulatory enhancements—notably the regulation of fintechs and the card market—to mechanisms that encourage mobility between institutions, such as credit portability and salary account portability, forcing banks to offer more advantageous conditions to attract and retain clients.

In parallel, the institution also acted to reduce information asymmetries, promoting greater integration and quality of data available for credit analysis. In this context, the creation of the Positive Credit Registry for individuals and receivables registries for companies stand out. These instruments improve risk assessment, expand credit access, and contribute to reducing spreads. Additionally, the Open Finance agenda is prominent, empowering clients of financial institutions to become the true owners of their information, allowing them to share it with any other institution of their interest for their own benefit—resulting in increased competition[5], greater financial inclusion[6], greater credit access[7], and more efficient credit allocation[8].

On the financial inclusion front, one of the most successful initiatives was the creation of Pix, an instant payment system that has become a global benchmark[9], even recognized by Paul Krugman, a Nobel laureate in Economics[10]. With its simplicity, zero cost for individuals, and wide reach, Pix has significantly contributed to the financial inclusion of the population, facilitating access to the financial system for millions of Brazilians. Furthermore, Pix can be understood as an efficient public policy, as the benefits generated for the population and its widespread use across all regions of the country more than offset its low development cost (US$ 4 million). Some economists suggest that Pix was partly responsible for the positive surprises in Brazil's GDP since 2021, following several years of negative surprises between 2011 and 2020—the so-called "frustrated decade"[11].

Despite being distinct, these actions are complementary and converge towards the same objectives, which are to make the financial system more efficient and with a lower cost of credit for borrowers. It is worth remembering that ensuring the efficiency of the financial system is one of the main objectives of the Central Bank of Brazil (Banco Central do Brasil), as stipulated by Complementary Law No. 179 of 2021, which established the institution's formal autonomy.

Many results from this innovative microeconomic reform agenda can already be observed. The regulation of fintechs allowed for the expansion of services provided to the population, with the effect of reducing interest rates and the margins of traditional banks[12]. Credit portability facilitated the migration of clients to institutions that offer better conditions, resulting in lower spreads and lower financial costs for clients. The Cadastro Positivo (Positive Registry) gave support to smaller and less traditional institutions, which historically faced limitations in accessing customer behavior information, allowing them to expand their credit offering with lower risk, increasing competition, and reducing prices. In turn, Open Finance is facilitating people's financial lives and access to credit, with various use cases that elevate social well-being[13]. In summary, with this broad agenda, the Central Bank has strengthened competition and financial inclusion, making the financial system more modern and efficient, with lower costs for clients and positive externalities for society.

The positive effects of expanding access to the financial system are evidenced by the expressive growth in the number of users, with the reduction of regional disparities and the advancement of inclusion. Between January 2018 and May 2025, the total number of active users in the National Financial System (SFN)[14] and the Brazilian Payment System (SPB) more than doubled. For legal entities (PJ), which include individual micro-entrepreneurs, we saw growth of 312%, reaching 13.7 million active companies in the system. In the case of individuals (PF), these grew by 114%, reaching 163 million users. This is a substantial increase, making Brazil one of the World Bank's reference countries regarding financial inclusion in recent years[15].

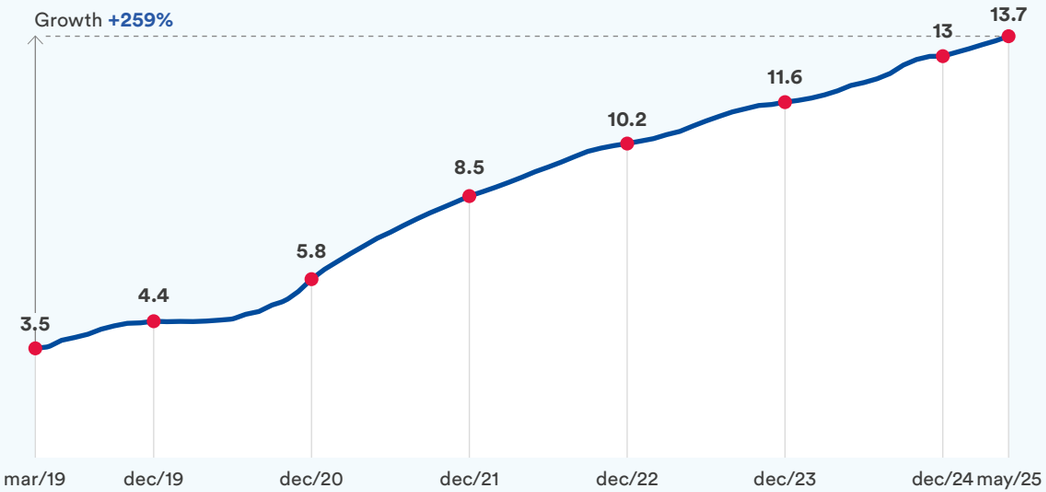
The advance of inclusion is also noticeable in the increase in the proportion of adults with banking relationships, especially in the North and Northeast regions, which showed strong expansion starting in 2020. This advancement contributed to the reduction of regional disparities.

The map shows the state of these relationships in 2018 and their evolution up to 2024. It is interesting to note that the differential between the North and Northeast regions and the other regions decreased over the years—even though they still remain lower and have the potential for greater penetration into the banking system.

The values can surpass 100% when a person has more than one banking relationship. These data suggest that the Central Bank's agenda reduced access barriers, integrating a growing number of Brazilians into the formal financial system.

Graph 2

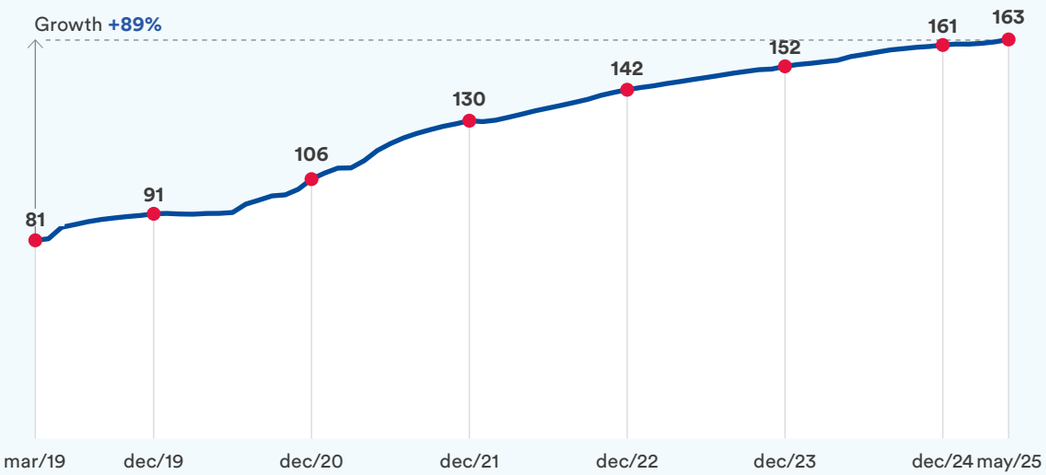
Active corporate clients (millions)



Source: BCB "Box 7 – Expansion of the number of active users of financial services". Elaborated by Tendências.

Graph 3

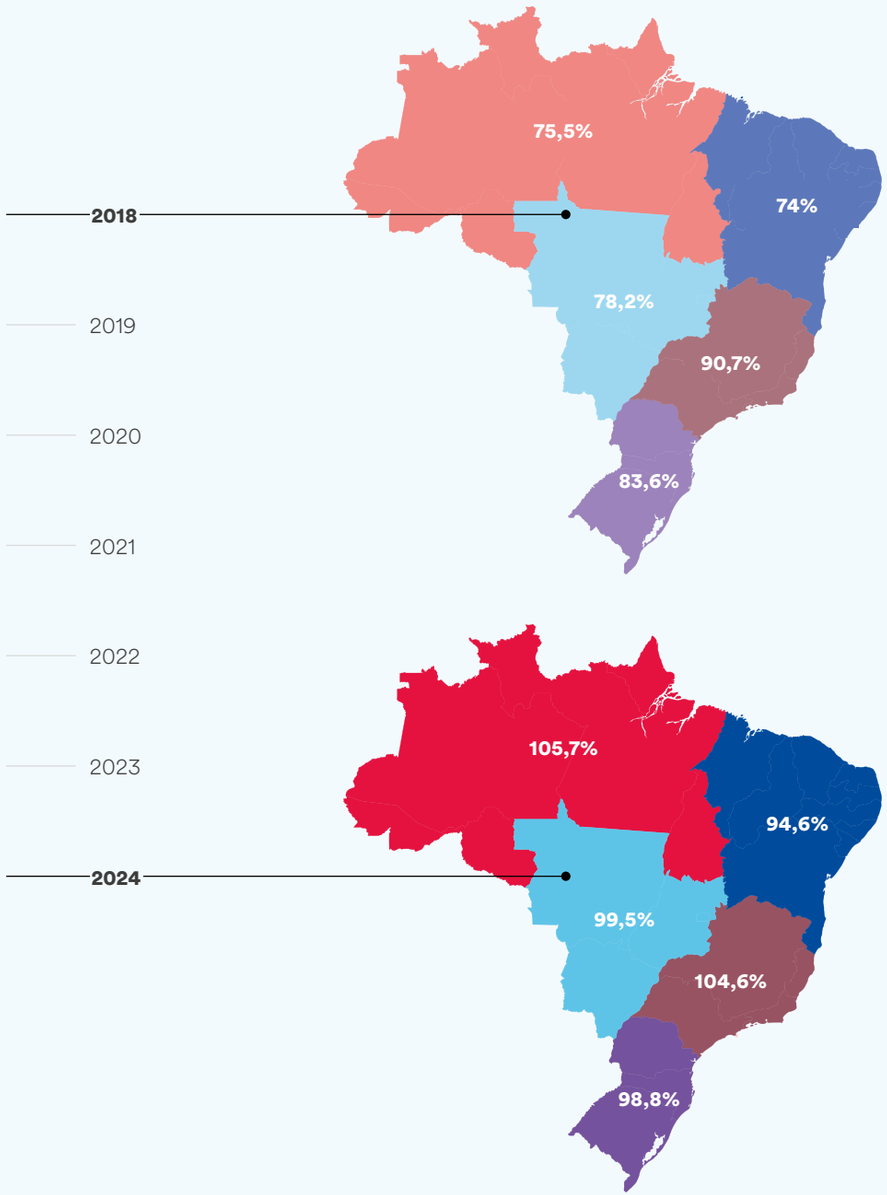
Active individual clients (millions)



Source: BCB "Box 7 – Expansion of the number of active users of financial services". Elaborated by Tendências.

Graph 4

Number of adults with banking relationships as a ratio of the adult population in each region.



Source: BCB and IBGE. Elaborated by Tendências. The data considers only one CPF per bank.

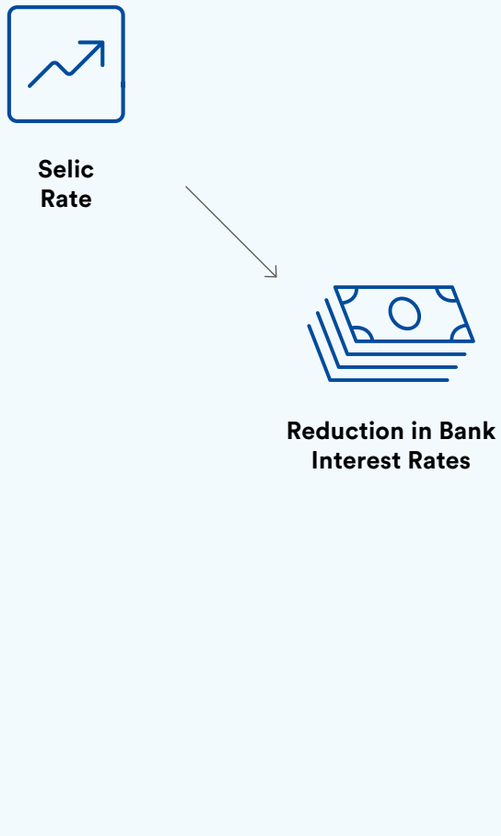
The Central Bank's innovative agenda of recent years also has implications for the conduct of monetary policy. Greater competition, according to several empirical studies, causes a reduction in bank spreads. High spreads reduce the effectiveness of the credit channel as a monetary policy transmission mechanism in two ways. First, they hinder the transmission of the Selic rate to lending rates. Second, they make credit demand less sensitive to changes in the basic interest rate. Addressing the causes of high spreads, therefore, is also a reform of the credit channel, as it enhances the impact of Selic rate changes on economic activity and, consequently, inflation.

This is important because the credit channel is one of the main mechanisms of monetary policy transmission. Through it, changes in the Selic rate affect the cost of loans in the country, influencing the demand for credit from households and companies, impacting consumption, investment, economic activity, and inflation.

Unblocking the credit channel becomes even more relevant in times of questioning about the elevated interest rate and its effects on economic activity. And it is worth remembering that policies that act to unblock the monetary policy transmission channels can reduce the neutral interest rate in the Brazilian economy (i.e., the interest rate compatible with inflation at the target), as well as its volatility[16].

Graph 5

Credit Channel - Monetary Policy Transmission



Measures that amplify this channel (improve credit functioning):

Pix: Expands financial inclusion and facilitates transfers.

Portability: Increases competition and lowers credit costs.

Receivables Registry and Positive Credit Registry: Improve guarantees to reduce defaults and stimulate lending.

Open Banking: Integrates the system.

Source: BCB. Elaborated by Tendências.

The greater penetration of credit in the lives of individuals and companies generates benefits that extend beyond the financial system itself. A study analyzed in this work shows how the Positive Credit Registry has been used by companies in other sectors, outside the financial system[17], to obtain more detailed and qualified information about their clients. This favors consumers in transactions with service providers, retailers, and other economic activities. Pix, in addition to promoting greater inclusion for populations historically underserved by the financial system, has brought more security to payments in small businesses and services, increased economic formalization, and stimulated other payment methods, increasing deposits and loans through the banking system[18].

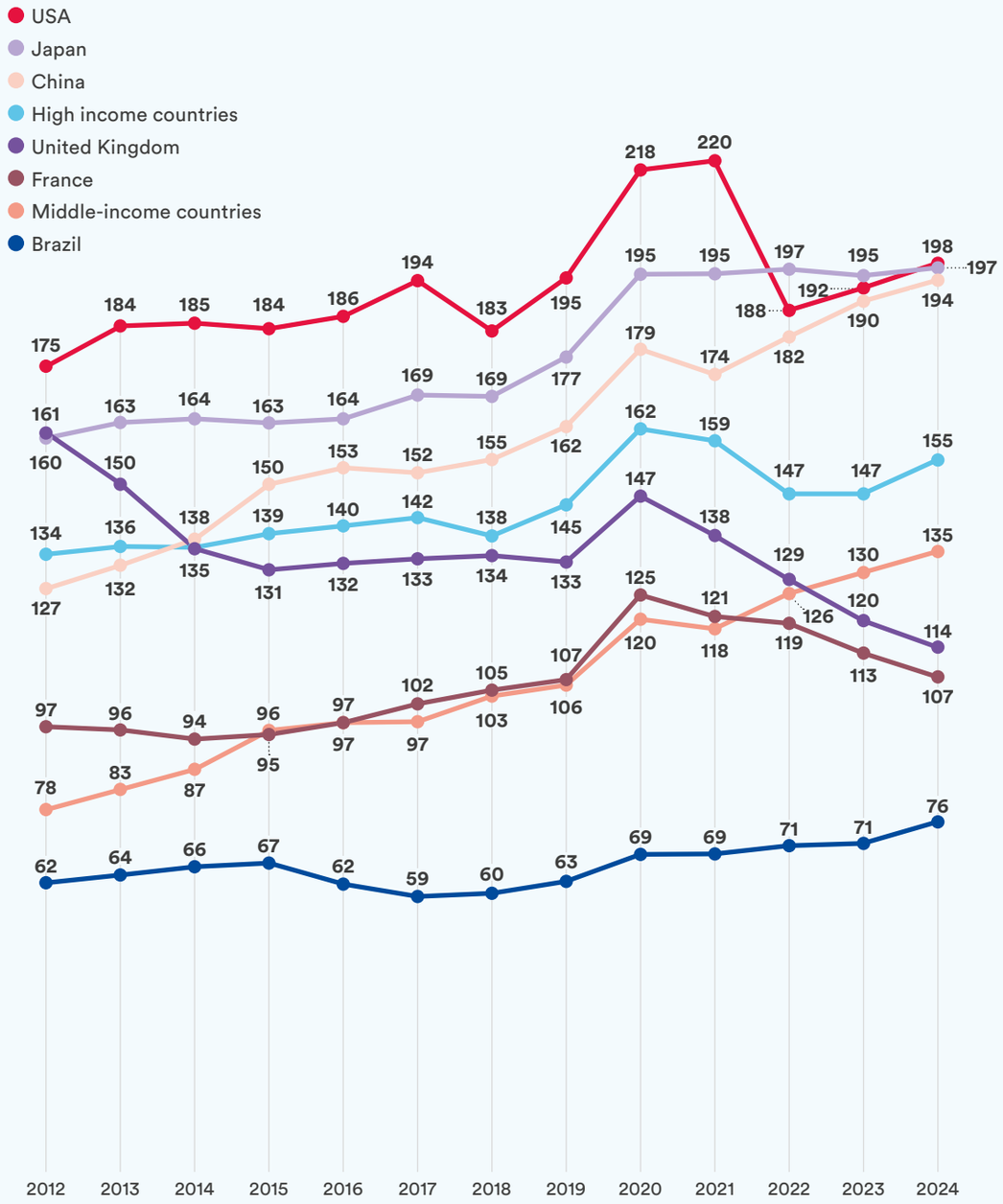
Despite all the gains these Central Bank actions have generated, the potential for growth in the credit market as a channel for consumption and investment is still very large. The graph of Brazil's credit-to-GDP ratio shows that, while growing, it remains relatively low compared to high-income countries, China, and Japan, indicating significant potential for growth.

Between January 2018 and May 2025, the total number of active users in the National Financial System (SFN) and the Brazilian Payments System (SPB) more than doubled. This substantial increase makes Brazil a reference country for the World Bank in terms of financial inclusion in recent years.[15]

To address all these topics, this work is organized as follows: following this introduction, the second chapter presents the main measures adopted by the Central Bank in recent years that have generated benefits for the country, covering each one individually. In chapter 3, we provide a summary of the evidence gathered on these measures. In chapter 4, we discuss the path this agenda has paved for greater inclusion and efficiency in the system and how the journey continues with advancements that require the continuation of this agenda. Finally, the conclusion reinforces the importance of continuing and improving these actions, highlighting that building a more efficient, inclusive, and competitive financial system requires a permanent agenda of innovation and regulatory evolution.

Graph 6

Ratio Credit and PIB - selected countries (%)



Source: World Bank. Elaborated by Tendências.

2

Analysis of the Policies

2.1. Credit Portability: more competition and reduction in interest rates

In 2013, the Central Bank of Brazil published Resolution No. 4,292, which regulated credit portability in the country. According to the Central Bank, the measure allows borrowers to request the transfer of their credit operation between financial institutions in search of better contractual conditions. Portability stimulates competition in the financial system by encouraging institutions to offer more advantageous proposals to retain or attract new clients. This initiative is part of the Central Bank's agenda aimed at increasing competition in the financial sector, with the ultimate goal of reducing the cost of credit to the borrower.

Studies confirm the positive effects of the measure. The 2020 Banking Economy Report (REB), published by the BCB, analyzed operations before and after portability and identified significant reductions in interest rates in modalities such as payroll and mortgage loans. In 2022, the REB deepened the analysis through a study with treatment and control groups. The comparison between municipalities with only one bank and those with greater competition revealed that, in locations with more than one financial institution, the possibility of portability generated an average reduction of 0.8 percentage points in the interest rate, representing a drop of approximately 5% in the average spread.

Another relevant study, published by Azevedo, Ribeiro & Rodrigues (2019), used a “differences-in-differences” methodology. This approach measured the policy’s impact by comparing the evolution of bank spreads in consumer credit (which has portability) with corporate credit (which does not), using the latter as a control group. The authors identified robust effects: credit portability reduced spreads between 21% and 49% for affected modalities, a direct result of the lower market power generated by increased competition.

More recently, a study by Bonomo et al. (2025) indicates that credit portability in Brazil generated a welfare gain equivalent to 0.2% of annual consumption. Considering the value of household consumption in 2024[19], this represents approximately R$ 14.9 billion annually. This is a substantial effect, particularly considering that the fiscal cost of implementing this policy is negligible[20].

It is worth noting that these results found for Brazil are in line with the available international literature on the topic, which shows beneficial effects of the credit portability agenda for social well-being[21]. In this sense, this is an agenda that should be deepened, as recommended by good public policy practice.

Although the effects of portability are positive, its adoption is still limited in Brazil. The Central Bank itself, in the 2020 REB (Banking Economics Report), showed that a significant portion of borrowers still pays interest rates above the market average, even having the option to port their contracts. This is evidenced by the low participation of portability in the total volume of credit granted monthly.

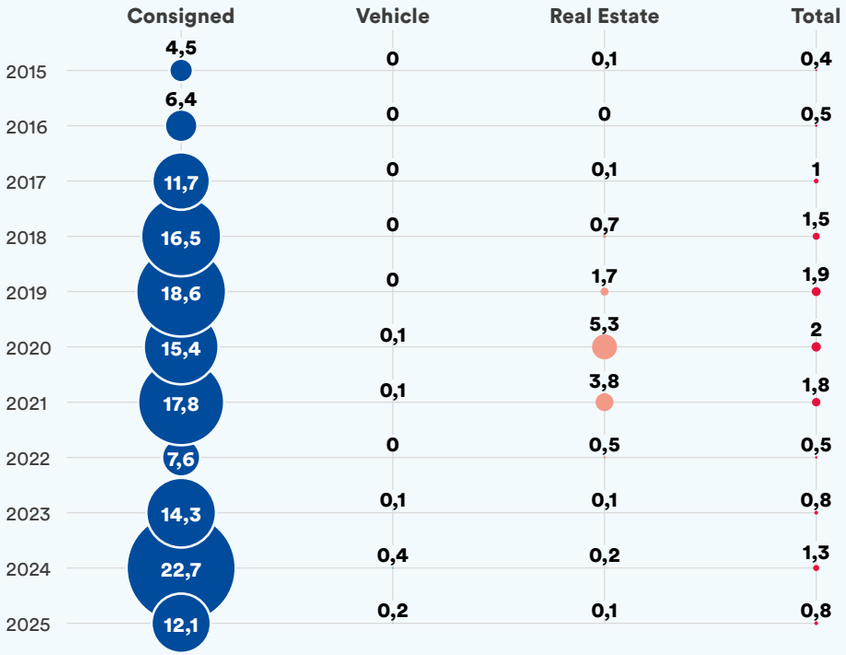
In fact, since the implementation of the measure, a gradual growth in portability has been observed, with emphasis on consigned credit (payroll-deductible credit), which concentrates about 94% of portability. Consigned credit represents less than one fifth of the total credit operations for individuals in Brazil. Portability represents only 0.8% of monthly credit concessions. In consigned credit, this share rises to 12.1%, but it is still far from its potential. In the modalities of vehicle and real estate credit, participation is still practically null.

Table 1: Studies on credit portability in Brazil and their results

Article	Methodology Employed	Result
Portability increased banking competition (Central Bank, REB 2022 Box 10)	Applies "differences-in-differences" between markets affected by portability (municipalities with >1 bank) and unaffected markets (municipalities with 1 bank).	Reduction of 0.8 p.p. in the spread in municipalities with more than one bank. Portability alone caused a 5% drop in spreads during the analyzed period.
Evolution of Credit Portability in Brazil (Central Bank, REB 2020)	Compares credit conditions before and after portability, analyzing payroll and mortgage loans.	Both modalities had significant interest rate reductions (2.9 p.p. per year for mortgages and 5.7 p.p. for payroll). Mortgages also showed positive effects on reducing installments.
Credit portability and spreads (Azevedo, Ribeiro e Rodrigues, 2019)	Applies "differences-in-differences" between credit affected by the measure (consumer) and unaffected credit (corporate).	Resolution No. 4,292/2013 reduced bank spreads on credit operations susceptible to portability by between 21% and 49%, making consumer credit cheaper.
Consumer Loans, Heterogeneous Interest Rates, and Inequality (Bonomo et al., 2025)	Combines empirical analyses and simulations to examine consumer credit interest rates in Brazil and the effects of financial reforms.	Credit portability is a pro-competition policy that generated an average gain of 0.2% in annual consumption, improving well-being.

Graph 7

Share of portability in the loans of each modality (%)



Source: BCB. Elaborated by Tendências. Data for 2025 refers to the accumulated period from January to April.

The available studies indicate that the potential for growth in portability is significant and that its advancement can generate relevant gains for the financial system. Stimulus measures—such as awareness campaigns, reduction of barriers, and the improvement of information platforms—can expand the use of portability.

In this sense, Open Finance emerges as a strategic tool, by facilitating the sharing of information between institutions and making the advantages of migrating credit operations more visible to consumers. Furthermore, the Central Bank (Banco Central) has the implementation of credit portability via Open Finance as one of its regulatory priorities for 2025 and 2026, which may facilitate—and thus stimulate—migrations to occur more broadly, in line with what is expected of an environment of greater effective competition[22].

2.2. Positive Credit Registry: reducing information asymmetry

While credit portability created the legal framework for competition, its effectiveness remains constrained by a more fundamental market failure: information asymmetry. Addressing this issue is the objective of a complementary set of regulatory initiatives implemented by the Central Bank—the Positive Credit Registry, the Receivables Registry system, and Open Finance—which promote greater competition and efficiency by improving the availability, quality, and security of borrower information.

The reform of the Positive Credit Registry, through Complementary Law No. 166/2019, made the inclusion of positive credit information automatic (opt-out), significantly expanding the database available for risk analysis. This change broke with the previous opt-in model, which required prior consumer authorization, and allowed for the incorporation of information on credit payment history and utility bills (water, electricity, telephone) into the system.

A Central Bank study, published in 2021[23], highlighted the impacts of the change: the number of registered users was 15 times greater with the new model, and 41% of consumers migrated to better risk categories, while only 26% were classified in worse categories. Additionally, the study comments that at the end of 2020 the number of inquiries made in the system by non-financial companies represented 60% of the total consulted, showing that the value of using the information available in the Positive Registry (Cadastro Positivo) is not limited to the financial system.

The improvement in the risk profile led to a reduction in interest rates. Ornelas, Oliveira, and Schechtman (2025)[24] indicate that the Positive Registry caused an average drop of 3.7 percentage points (p.p.) in non-consigned personal credit rates among those with information in the new system—potentially reaching up to 8.7 p.p. for those who experienced significant improvement in their score.

The Positive Registry (Cadastro Positivo) contributes not only to the reduction of asymmetry, but also to intensifying competition. Banks that previously held an informational advantage over their clients began to compete under more balanced conditions with other institutions. This expands the possibility of portability and improves the conditions offered, even for consumers already served.

Ornelas, Oliveira, and Schechtman (2025) also investigated whether the effects of interest rate reduction are more intense through the channel of reducing information asymmetry or through greater banking competition.

Empirical analyses indicate that both mechanisms exert relevant influence. In the case of credit borrowers with a long history of banking relationships, the addition of information tends to have a more limited impact, since these institutions already have sufficient data for evaluation. However, these clients begin to benefit from the intensification of competition, as competing banks also gain access to their information, reducing the informational advantage that traditional banks possessed.

In addition to improving the risk classification of individuals in the National Financial System, there is evidence that the Positive Registry (Cadastro Positivo) contributed to a more efficient allocation of credit. In this regard, Rocha et al. (2024)[25] investigated the impacts of the Positive Registry on credit access, default rates, and entrepreneurial activity.

Table 2 - Studies of the Positive Credit Registry and their results

Article	Objective and Methodology	Results
Private Credit Bureaus and Positive Information Sharing: Effects on credit cost? (Ornelas, Oliveira & Schechtman, June 2025)	Examines whether credit risk scores affect credit access, specifically the cost of loans. Evaluates consumers who had changes in their scores versus a control group.	Reduction of 3.7% in interest rates, with even larger effects (8.7%) for those with substantial score improvements. The analysis suggests that both channels—risk reassessment and increased competition—are relevant.
The Effects of Revealing Borrowers' Information on Credit Allocation, Defaults and Entrepreneurship (Rocha, Feinmann, Mercucci e Leite, Nov/24)	Analyzes how increased information available to lenders affects credit access, defaults, and businesses using a "diff-in-diff" approach.	More informative credit scores redirected credit allocation, resulting in greater credit access for better-rated borrowers. The policy led to lower default rates.
Analysis of the effects of the Positive Credit Registry (Central Bank of Brazil, April 2021)	Assesses whether the Positive Credit Registry law impacted credit conditions, especially cost, using a detailed empirical study.	Found: 1) new regime increased registrants 15-fold; 2) 41% of people migrated to lower-risk bands; 3) 60% of queries in Q4'20 were from non-financial companies, showing potential beyond the banking sector; 4) institutions increased discrimination power; and 5) average spread reduction of 10.4%.

The study used a robust empirical approach, with microdata from a credit bureau, covering the period of one and a half years before and two and a half years after the implementation of the measure. To isolate the effects of the policy, the authors applied the difference-in-differences methodology, comparing the evolution of credit access and default rates between individuals whose scores were significantly affected and those with little or no alteration.

The results indicate that the increased level of information provided by the Positive Registry reoriented credit allocation, generating an average increase of R$ 15 million in new concessions (approximately 20%) within the two-year period following the policy. Furthermore, the quality of credit improved substantially: operations carried out under the new regime showed default rates of only 3%, compared to 15% in operations under the previous regime.

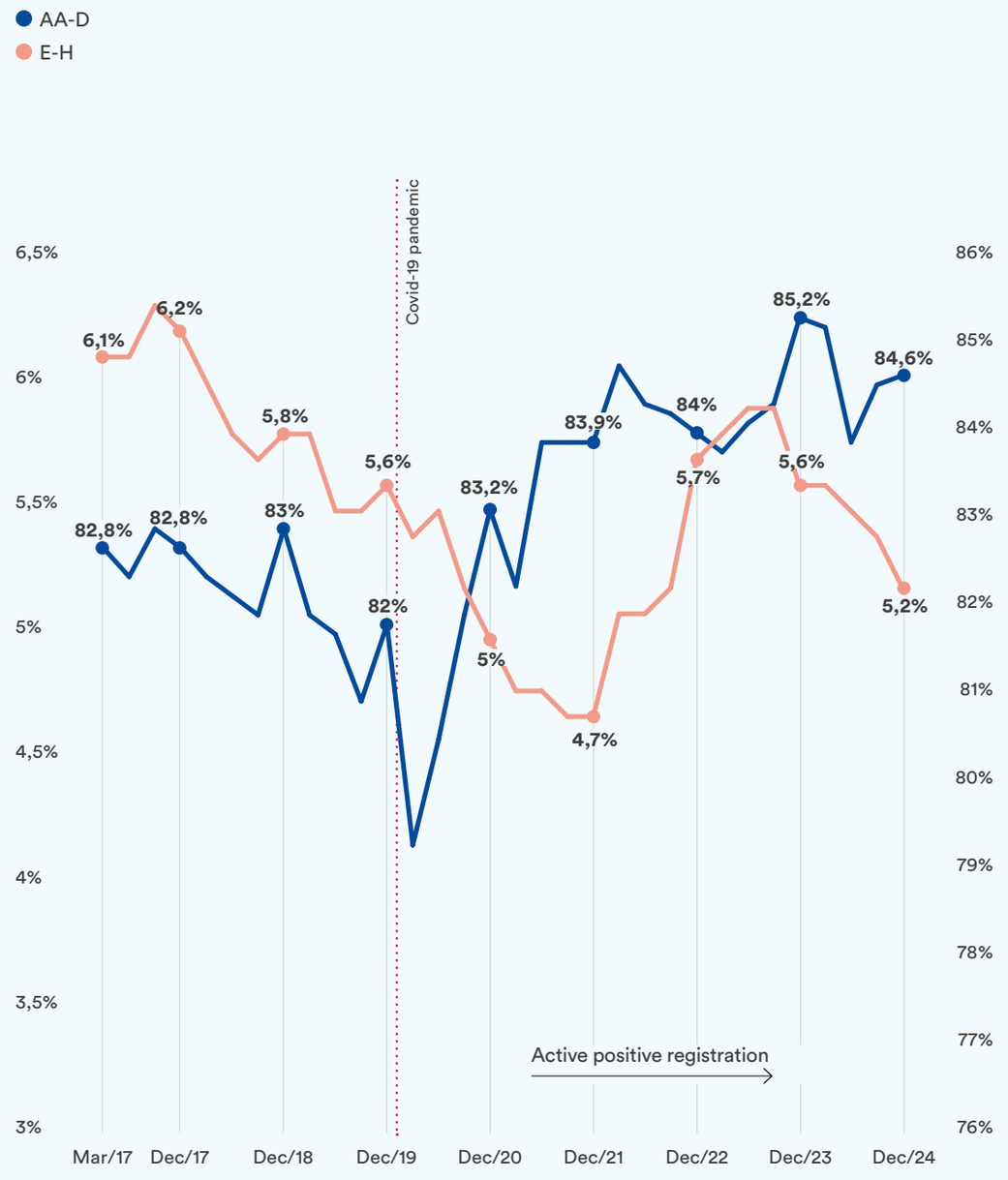
These findings suggest that the Positive Registry was effective in reallocating credit to more solvent borrowers, promoting greater efficiency and sustainability in the credit market. Central Bank data detailing the composition of the credit portfolio by risk level corroborate this change in classification, showing that the majority of borrowers migrated to more favorable risk categories after the adoption of the new system.

2.3. Receivables Registry: expanding competition

While the Positive Credit Registry expands information on consumer payment behavior, the Receivables Registry system, implemented from 2021, strengthens formalization and competition in corporate credit operations. The measure mandated that card receivables and invoices be registered in entities authorized by the Central Bank, allowing these guarantees to be used in negotiations with multiple financial institutions. Before the new regulation, merchants could only anticipate receivables with the bank with which they already had a relationship, due to the absence of a centralized registration system. The new structure opened space for greater competition, more legal security, and improved credit conditions for companies—especially small and medium-sized ones.

Graph 8

Share of risk in credit (%)[26]



Source: BCB. Elaborated by Tendências.

Central Bank data shows a dramatic increase in both the volume and the participation of receivables-backed loans in total corporate lending since the system's implementation, with participation reaching over 50% by May 2025. A study by Maciel and Bragança (2025)[27] estimated that, with the reform, spreads fell by 9% to 11%. Additionally, there was a saving of R$ 27 billion in interest due to the measure, a direct result of the increased competition and transparency brought by the new system.

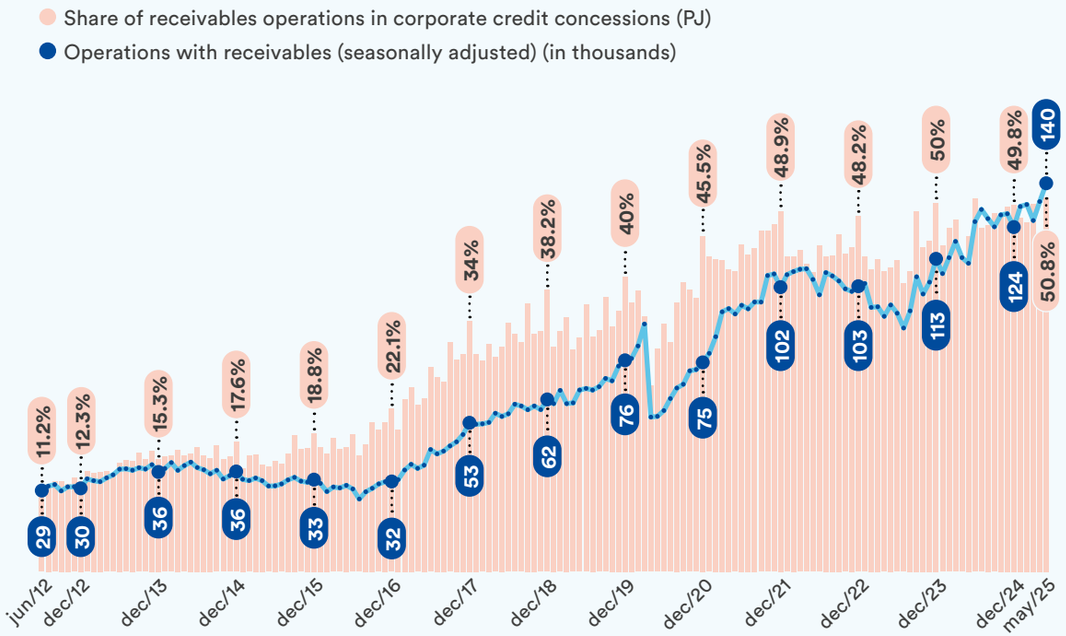
Although they have distinct approaches, the Positive Credit Registry and the Receivables Registry converge in their objectives: to reduce informational flaws, increase transparency, and foster competition. They also converge in their results: lower spreads and interest rates in the credit market.

2.4. Open Finance: complementary advances for information asymmetry and greater competition

While Credit Portability created the option for competition and the Positive Credit Registry provided the data for it, Open Finance provides the mechanism to seamlessly integrate both, dramatically lowering the friction for consumers and intensifying competitive pressure. It acts as an accelerant for previous reforms, allowing for the broad sharing of client information—at the individual's discretion and for their benefit—to create an ecosystem where innovation and competition drive more accessible and lower-cost credit. In 2020, the Central Bank began implementing Open Banking, and in 2021, it expanded the scope of shared information (such as investments, insurance, and foreign exchange operations), initiating Open Finance. This integration brings several benefits:

Graph 9

Granting of credit for operations with corporate receivables (PJ)



Source: BCB. Tendências elaboration. Data realized up to May/25 and deflated by the IPCA. The series is the sum of: duplicate discounting and card invoice anticipation.

1. **Improved credit offerings**
   By sharing their data, users gain access to credit offers more aligned with their profile, with better interest rates and terms.

2. **Potentiation of previous Central Bank policies**
   Open Finance strengthens other initiatives by reducing bureaucracy and centralizing information, amplifying the positive impacts of credit portability, fintech regulation, and the Positive Credit Registry.

3. **Greater control over financial life**
   With a single application, users can monitor their financial health, identify negative accounts, view overdue loans, and manage investments more efficiently.

Considering the gradual pace of implementation, the year 2024 was a milestone for the advancement of Open Finance in Brazil. According to the Central Bank (Banco Central), this progress was only possible thanks to the commitment of the participating institutions. Despite being an initiative of the monetary authority, the private sector embraced the proposal and actively contributed to its consolidation.

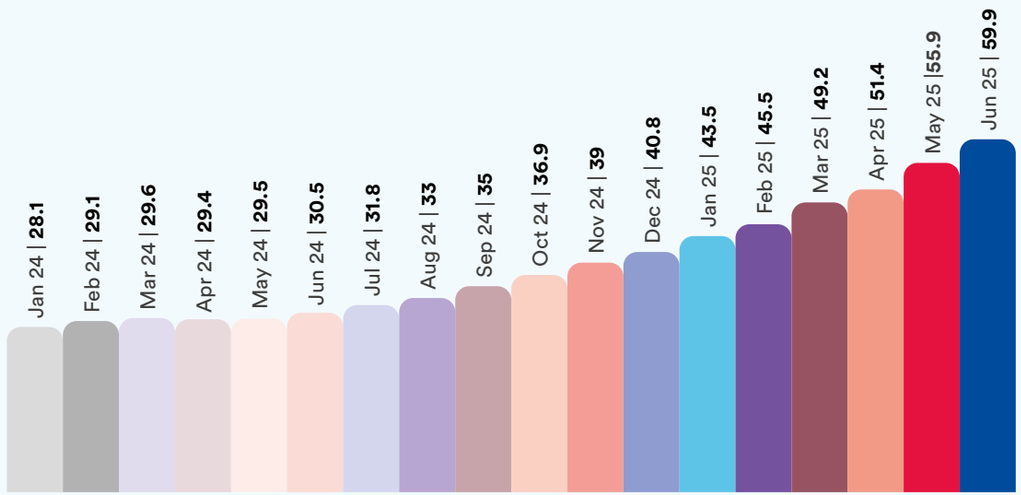
In 2024, the Open Finance Association (AOF)[28] was created. The entity gathers representatives from different segments of the financial market and its mission is to approve or veto proposals presented by the system's Directorate, ensuring that its evolution meets the interests of the institutions, the regulator, and, especially, the population. The council also includes two independent members, without ties to the financial sector.

The results attest to the success of the measure. The year 2024 ended with approximately 41 million unique consents from individuals. In 2025, this amount has already grown to 60 million consents, which represents approximately 27% of the National Financial System (SFN) clients[29].

For legal entities, 730.5 thousand consents were registered until June 2025, equivalent to 3.1% of active companies in the country[31]. Although the adherence of companies is still slower than that of individuals, the growth has been significant over the last few years: a rise of 249.5% between June 2025 and January 2024 (data considering the recipient).

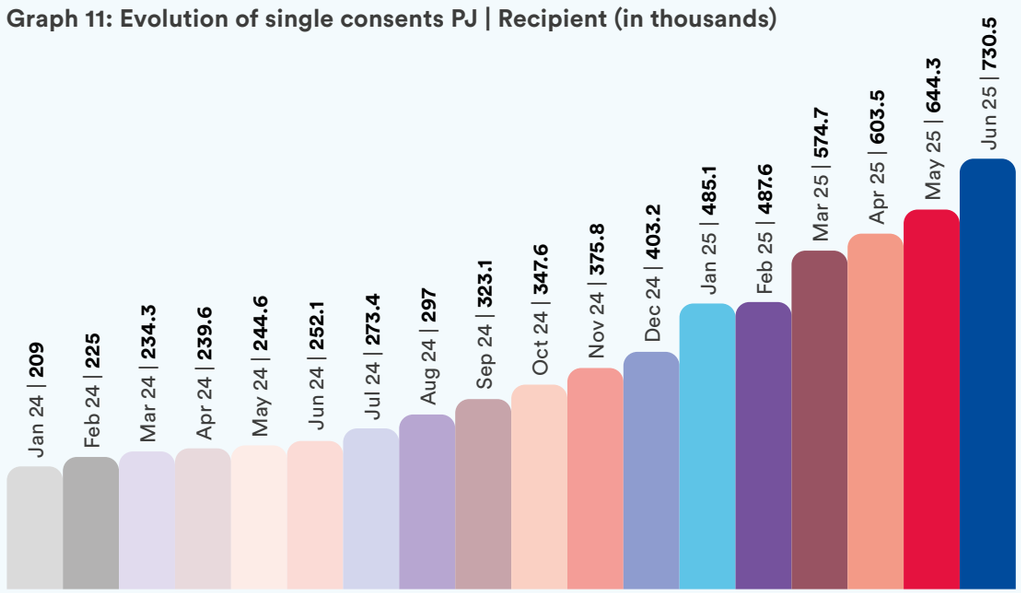
Graph 10

Evolution of single consents PF | Recipient[30] (in millions)



Graph 11

Graph 11: Evolution of single consents PJ | Recipient (in thousands)



Source: Dashboard Open Finance, considering data from the last business day of each mont. Elaborated by Tendências.

In the Financial Stability Report published in April 2025[32], the Central Bank presented an overview of the main impacts of Open Finance throughout 2024. The results highlight the positive effects of the initiative on several fronts:

1. **Notifications on balance and debit of accounts:** 3.1 million clients used alerts, saving R$ 16.1 million by avoiding overdrafts.

2. **Credit operations:** Fintechs, using Open Finance infrastructure, benefited 4.3 million clients, generating R$ 3.2 billion in new credit.

3. **Credit portability:** A single institution registered R$ 2 billion in credit generated via Open Finance's digital portability feature.

4. **Credit for Micro, Small, and Medium Enterprises (MSMEs):** One institution reported reduced working capital rates, totaling R$ 306 million granted under more favorable conditions.

5. **Products offered to companies:** Use cases for corporate financial management moved R$ 7 billion.

6. **Investment offerings:** Personalized investment products and alerts moved R$ 8 billion in the second half of 2024.

7. **Use of Pix:** The volume of Pix transactions within Open Finance totaled R$ 3.2 billion, more than five times the 2023 volume.

The evolution of Open Finance in Brazil follows a global trend of financial ecosystem modernization, as services become increasingly digital, integrated, and focused on personalization. In addition to stimulating innovation, these initiatives have contributed to preserving user security and privacy, as highlighted in the report The Global State of Open Banking and Open Finance, published by the Cambridge Center for Alternative Finance (CCAF)[33].

The study mapped the evolution of Open Banking and Open Finance in 95 countries, of which 82 already have defined structures and strategies, while the others are still in the initial stage of development.

Brazil is among the 54 countries where implementation is led by the regulatory authority, in this case, the Central Bank (Banco Central). Other countries with this model include Chile, Colombia, the United Kingdom (pioneer with adoption in 2016), India, Indonesia, Australia, Canada, and the United States. Among these countries, only 16 already implement Open Finance, an advancement relative to Open Banking.

The CCAF report also analyzed the stage of data sharing development in the countries that adopted the model, identifying which categories of information are already being exchanged between institutions. In this regard, Brazil stands out as one of the most advanced countries, with data shared in almost all categories, except pensions. To date, only the United States has implemented the complete sharing of all evaluated categories.

Graph 12

Type of data already shared in the system – selected countries

● Available ● Not Available

Countries	Payment	Results	Investments/ Savings	Financing	Loans	Pensions	Coverage (%)
USA	●	●	●	●	●	●	100,0%
Brazil	●	●	●	●	●	●	83,3%
Singapore	●	●	●	●	●	●	83,3%
New Zealand	●	●	●	●	●	●	83,3%
European Union	●	●	●	●	●	●	83,3%
Australia	●	●	●	●	●	●	83,3%
Turkey	●	●	●	●	●	●	83,3%
Thailand	●	●	●	●	●	●	66,7%
South Africa	●	●	●	●	●	●	66,7%
China	●	●	●	●	●	●	66,7%
Chile	●	●	●	●	●	●	66,7%
Canada	●	●	●	●	●	●	66,7%
Argentina	●	●	●	●	●	●	50,0%
India	●	●	●	●	●	●	50,0%
Egypt	●	●	●	●	●	●	33,3%
Israel	●	●	●	●	●	●	33,3%
Mexico	●	●	●	●	●	●	16,7%
Japan	●	●	●	●	●	●	16,7%
United Kingdom	●	●	●	●	●	●	16,7%

Source: CCAF. Developed by Tendências.

The analyzed data—both concerning the expansion of Open Finance in Brazil and its global dissemination—evidences the social benefits associated with this model of financial information sharing. The growing adoption in several countries reinforces the relevance and positive impact of the initiative on a global scale.

Many studies have already evaluated the effects of data sharing via Open Finance and identified relevant impacts on the financial system. The expanded access to information allows financial institutions to offer more advantageous conditions to clients, stimulates competition, and reduces information asymmetry in the credit market.

From the consumers' perspective, data sharing empowers them, increasing their well-being.

In the case of companies, especially smaller ones—which often face restrictions on accessing credit due to a lack of guarantees—Open Finance allows for a better demonstration of their financial and payment capacity, favoring credit access.

Table 3 summarizes the available studies, which even indicate that Open Finance contributes to a more efficient allocation of credit, reducing informational asymmetries and expanding financial inclusion in the country.

Tabela 3: Studies on Open Finance around the world and their results

Article	Objective and Methodology	Results
Open banking: an early review (Xie and Hu, 2024)	Literature review to discuss if OB fosters competition, innovation, and financial inclusion.	Access to more comprehensive data mitigates adverse selection. OB facilitates consumer access to a wider range of services, improving well-being.
Customer Data Access and Fintech Entry (Babina et al, 2025)	Evaluates OB policies using diff-in-diff models across countries. Assesses impacts on SMEs in the UK.	Consumers use OB for financial advice and credit products, improving well-being. SMEs are more likely to form new banking relationships, including with fintechs.
Open Banking and Customer Data Sharing (Nam, 2024)	Probit model with German data to assess factors influencing data sharing and its impact on loan costs.	People with lower scores are more likely to share data. Data sharing increases loan approval rates by up to 11.7 p.p. and reduces credit costs by up to 2.2 p.p.
Data as Collateral: Open Banking for Small Business Lending (Yu, 2025)	Studies the UK case to see how OB improves credit access and mitigates information asymmetry using a regression model.	OB reduces collateral restrictions, increasing the use of receivables and inventory as collateral for SMEs by about 4 p.p.
Cross-Platform Digital Payments and Customer-Driven Data Sharing (Alok et al, 2025)	Uses India as a case study with a diff-in-diff model to explore how OB affects credit access for the financially excluded.	OB intensifies the positive results of the instant payment system (increased credit volume) without increasing defaults.
The impact of open banking on traditional lending in the BRICS (Fang and Zhou, 2023)	Examines OB's influence on traditional bank lending in BRICS countries using a diff-in-diff model.	OB enabled credit access for individuals without a credit history (financial inclusion) and led to a migration of loans from traditional to non-traditional banks (banking competition).

2.5. Fintechs: regulation and innovative role

Making the National Financial System (SFN) more inclusive and efficient has been a relevant part of the Central Bank's (Banco Central) agenda. This involves simplifying procedures, adjusting rules to the size and profile of different financial institutions, analyzing new payment methods, monitoring the impacts of innovations, and improving the relationship of institutions with their clients, among other sought objectives[34].

A relevant milestone in this process was Resolution No. 4,656, of 2018, which regulated the operation of credit fintechs through the creation of Direct Credit Societies (SCD) and Peer-to-Peer Lending Societies (SEP).

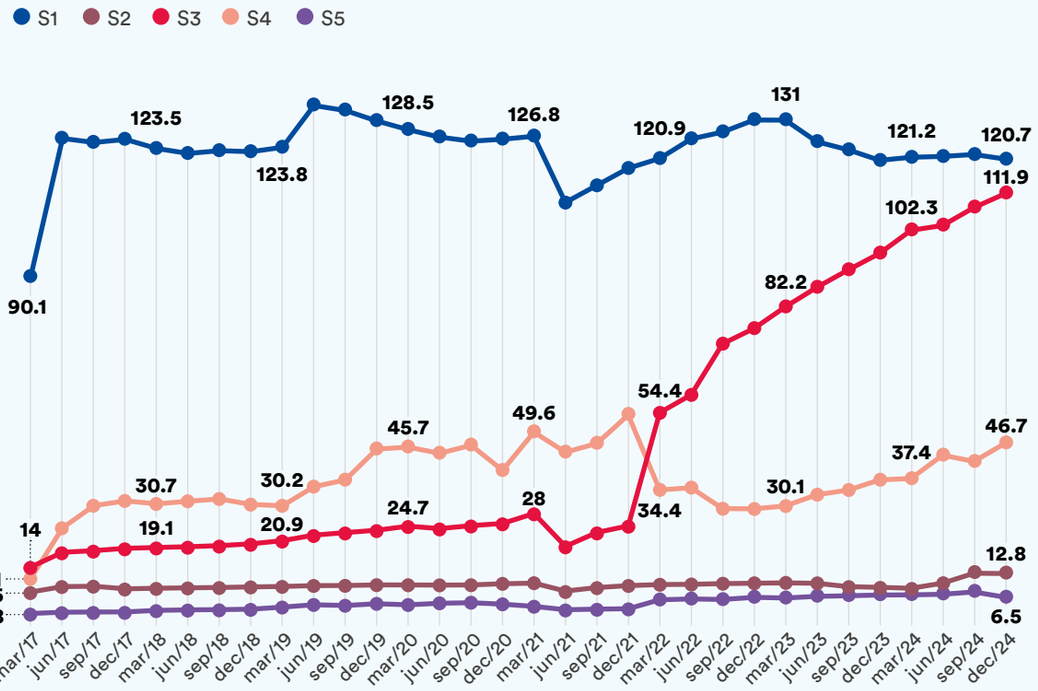
According to the Central Bank[35], the entry of new institutions into the system has the potential to generate relevant benefits for the economy. These benefits include promoting greater competition, expanding the offer of financial products and services with intensive use of technology, and stimulating the modernization of processes also in traditional institutions, through the sharing of technological innovations.

Since then, these new institutions have expanded their operations and gained space in the National Financial System (SFN), with expressive growth in their credit portfolios. The segmentation defined by the Central Bank considers Resolution No. 4,553/2017, where we have:

- S1 banks: those with size (Exposure/GDP) greater than 10% and that carry out relevant international activity;
- S2 banks: size less than 10% and equal to or greater than 1%;
- S3 banks: size less than 1% or equal to or greater than 0.1%;
- S4 institutions: institutions with size less than 0.1%;
- S5 institutions: institutions with size less than 0.1% and that use optional methodology for calculating the minimum requirements for Reference Equity (PR).

Graph 13

Quantity of clients with active operations by banking segments (in millions)[36]



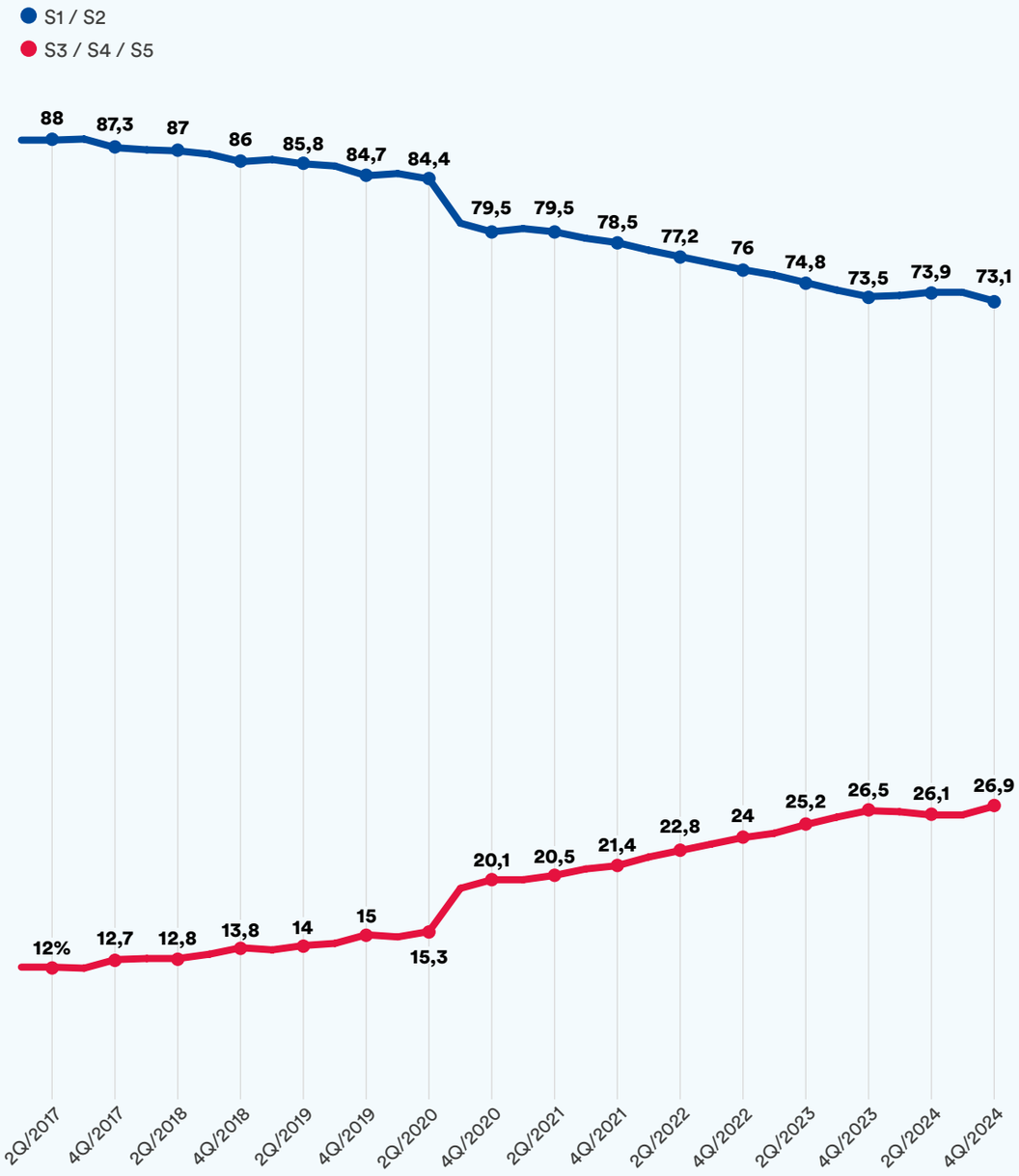
Source: BCB. Elaborated by Tendências.

Many fintechs are concentrated in the S3 and S4 segments. As shown in the graph below, they have significantly expanded their client base in Brazil—a direct reflection of the increase in the supply of financial institutions aligned with the growing demand from Brazilians for more efficient, accessible, and innovative products and services.

Despite the strong growth in the number of clients served by the new financial institutions, their share in the total credit portfolio of the National Financial System (SFN) still remains limited. Although fintechs are advancing towards greater competition in the market, this market still remains concentrated in larger institutions, classified in the S1 and S2 segments, which continue to hold the largest share of credit granted in the country—as Figure 14 makes clear.

Graph 14

Share in the total credit portfolio of the National Financial System (SFN) by banking segment (%)



Source: BCB. Elaborated by Tendências.

Various international studies reinforce the role of fintechs in financial inclusion, especially in regions historically less served by traditional banks.

For example, a study conducted by economists Julapa Jagtiani and Catharine Lemieux[37], of the Federal Reserve (FED), analyzed the impacts of fintech credit platforms on consumer financing access in the United States. Using detailed data on the performance of fintechs, the authors investigated whether these institutions actually fill gaps left by the traditional banking system.

The study shows that the loans granted by the analyzed fintech are more frequent in regions with a lower number of bank branches per capita—evidence that these companies contribute to expanding credit access in underserved areas.

Besides loans for consumers, the introduction of new financial institutions also contributes to the increase in credit availability for smaller companies. A BIS study[38] investigated how fintechs are altering the financial environment for small businesses in the United States, based on the analysis of data from fintech platforms and comparison with data from traditional banks in the period between 2016 and 2019.

The authors found that fintechs are expanding access to credit for small businesses, especially in areas with higher unemployment rates. The study also demonstrates that fintechs' internal credit scoring systems, which in the case of the United States use non-traditional digital data compared to other banks, are more efficient in predicting the future performance of loans

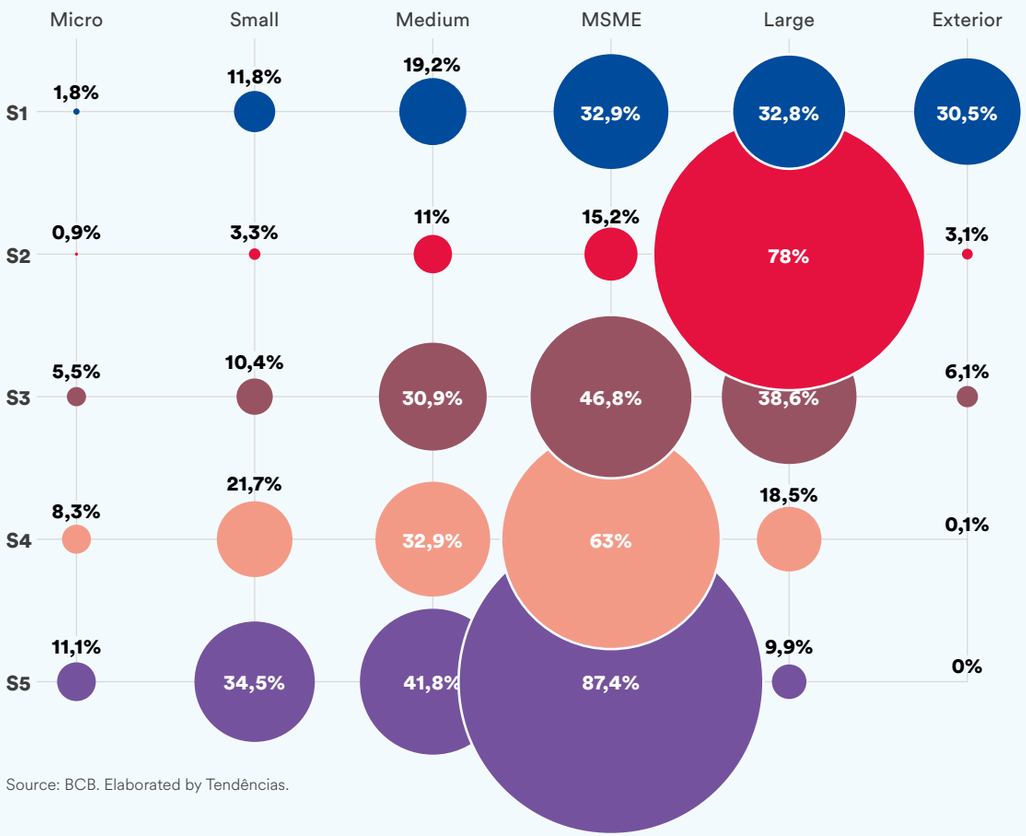
In Brazil, the new financial institutions and regional institutions also show greater engagement with smaller companies. From the table below, it is possible to observe that MPMEs (micro, small, and medium-sized enterprises) have a greater share in the credit concessions of S3, S4, and S5 institutions compared to the participation of large companies, which are more present in traditional banks.

Table 4: Studies on Fintech Lending

Article	Objective and Methodology	Results
Do Fintech Lenders Penetrate Areas That Are Underserved by Traditional Banks? (Jagtiani & Lemieux, 2018)	Examines fintech lending platforms to see if they expand credit in areas underserved by traditional banks using US data and regression analysis.	Fintech loans penetrated both highly concentrated markets and areas relatively underserved by traditional banks, especially those with fewer bank branches.
The impact of fintech lending on credit access for U.S. small businesses (Cornelli et al., 2022)	Explores the characteristics and impact of fintech lending to small businesses, examining geographic distribution relative to local economic factors.	Fintechs lent more in places with higher unemployment and more business bankruptcies, suggesting an expansion of credit access for firms less likely to get traditional financing.
Does Fintech Lending Lower Financing Costs? Evidence From An Emerging Market (Ornelas & Pecora, 2022)	Quantifies the competitive implications and welfare effects of P2P platform entry in Brazil's banking markets using a diff-in-diff analysis.	P2P platforms focus on smaller, younger, and riskier firms, penetrating more distant municipalities. Interest rates for these clients can be reduced by around 4 p.p. They generate competition with large banks, also lowering their rates.

Graph 15

Corporate Credit Portfolio (PJ) by Company Size Among Banking Segments (2024)[39]

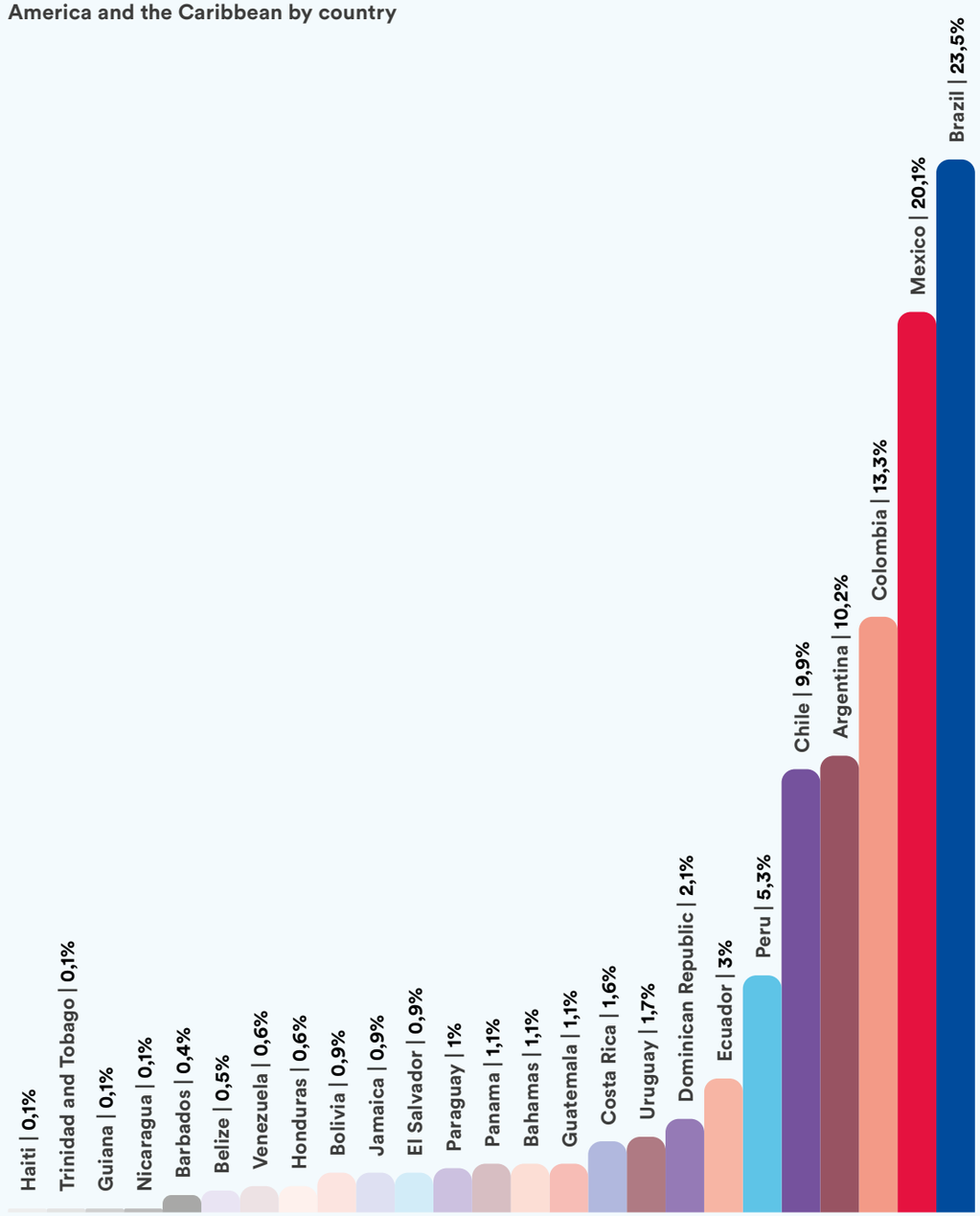


Source: BCB. Elaborated by Tendências.

Among the countries in Latin America, Brazil is the one that presents the greatest presence of fintechs in relation to the total number of companies, as suggested by a recent IDB study, titled “Fintech en América Latina y El Caribe” [Fintech in Latin America and the Caribbean]. Strictly speaking, this vibrant fintech environment in Brazil is not a surprise, as there are studies showing that fintechs tend to emerge with greater intensity in countries with higher financial intermediation costs and greater financial exclusion, with greater repressed demand for access to financial products and services under more attractive conditions—see, for example, Frost (2020)[40].

Graph 16

Percentage of fintech companies in Latin America and the Caribbean by country



Source: BID. Report “Fintech en América Latina y El Caribe”.

The relevance of fintechs in the Brazilian market is also observed in the benefits they have generated for the Brazilian population, primarily concerning access to financial products and satisfaction with the services offered, considering their strong performance in the country compared to other Latin American countries.

A Mastercard survey conducted with fintech users in six countries (Brazil, Argentina, Chile, Colombia, Mexico, and Peru) shows that Brazil has the largest share of users who said that fintechs allowed access to financial products/services that were previously unavailable, with 58% answering "yes" in Brazil, compared to an average of 46% considering the other five countries[41].

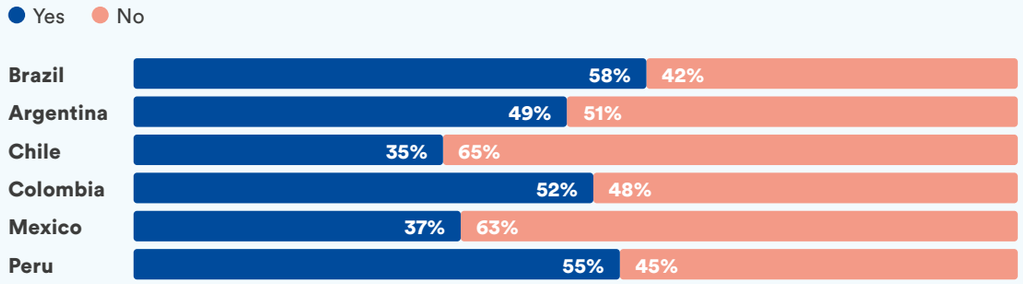
Furthermore, the survey shows that those who use fintech services in Brazil have greater satisfaction and less dissatisfaction with the services provided, compared to the other countries.

The Central Bank's (Banco Central) objective when promoting the regulation of new financial institutions in the banking system was precisely to expand the population's access to credit and other financial products, promote greater use of technology in banking services, and boost competition in order to incentivize other institutions to progress in the use of innovations with lower costs for borrowers.

The Mastercard survey also confirmed the success of this agenda by investigating the most valued attributes by fintech users in Brazil: greater banking competition and reduction in the costs of banking services—results quite aligned with the Central Bank's core objective of access and cost reduction for the population.

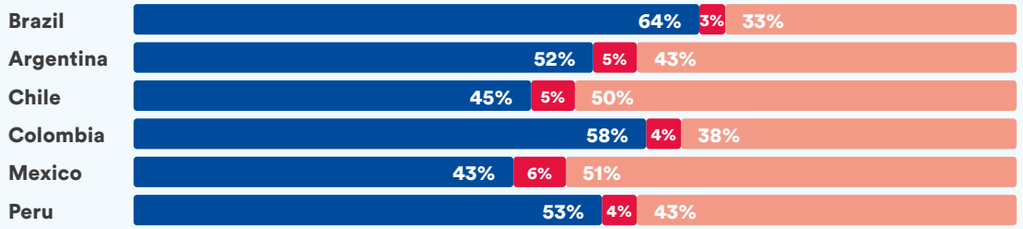
Graph 17

Percentage of users who said fintechs allowed access to financial products/services that were previously unavailable to them



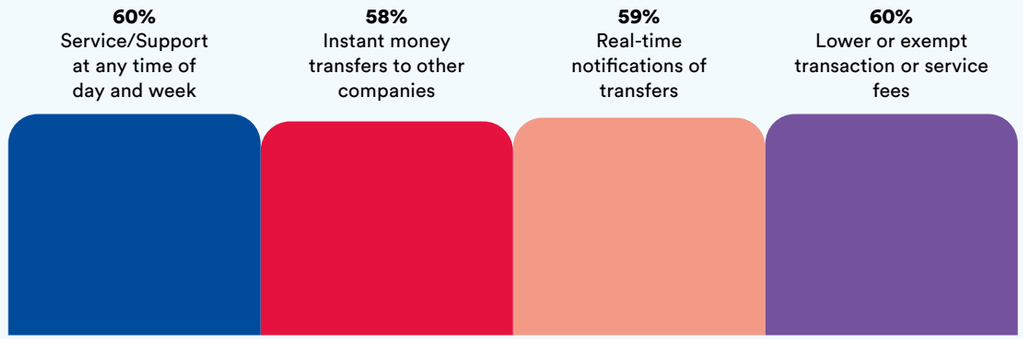
Graph 18

Level of satisfaction with fintech services



Graph 19

Resources and attributes offered by fintechs most valued in Brazil



Source: Mastercard. Report "A nova era da inclusão financeira na América Latina" nov/24.

With Pix, there was an increase in social well-being equivalent to approximately a 15% increase in Brazil's per capita GDP.

The expansion of the number of institutions operating in the financial system was accelerated thanks to the creation of instruments that favored competition, such as the Cadastro Positivo (Positive Credit Registry), Portabilidade de Crédito (Credit Portability), Open Finance, and Pix. These actions contributed to a more competitive environment, with more balanced conditions among institutions of different sizes, promoting a more efficient operation and reduced costs for the final borrower.

The most updated IMF report on the Brazilian economy[42] reinforces the analysis that the Central Bank acted significantly by regulating fintechs and that this improved the functioning of the banking system, in terms of competition and reduction in lending interest rates, in addition to enhancing the efficiency of financial intermediation in the country. In numbers, a one standard deviation increase in traditional banks' exposure to fintech competition reduces lending rates by 2.9 percentage points and the net interest margin by 1.3 percentage points. In other words, concrete evidence that more competition via fintechs in Brazil brought what was expected of this policy: lower interest rates and market power of the incumbents.

2.6. Pix: a tool for banking and social transformation

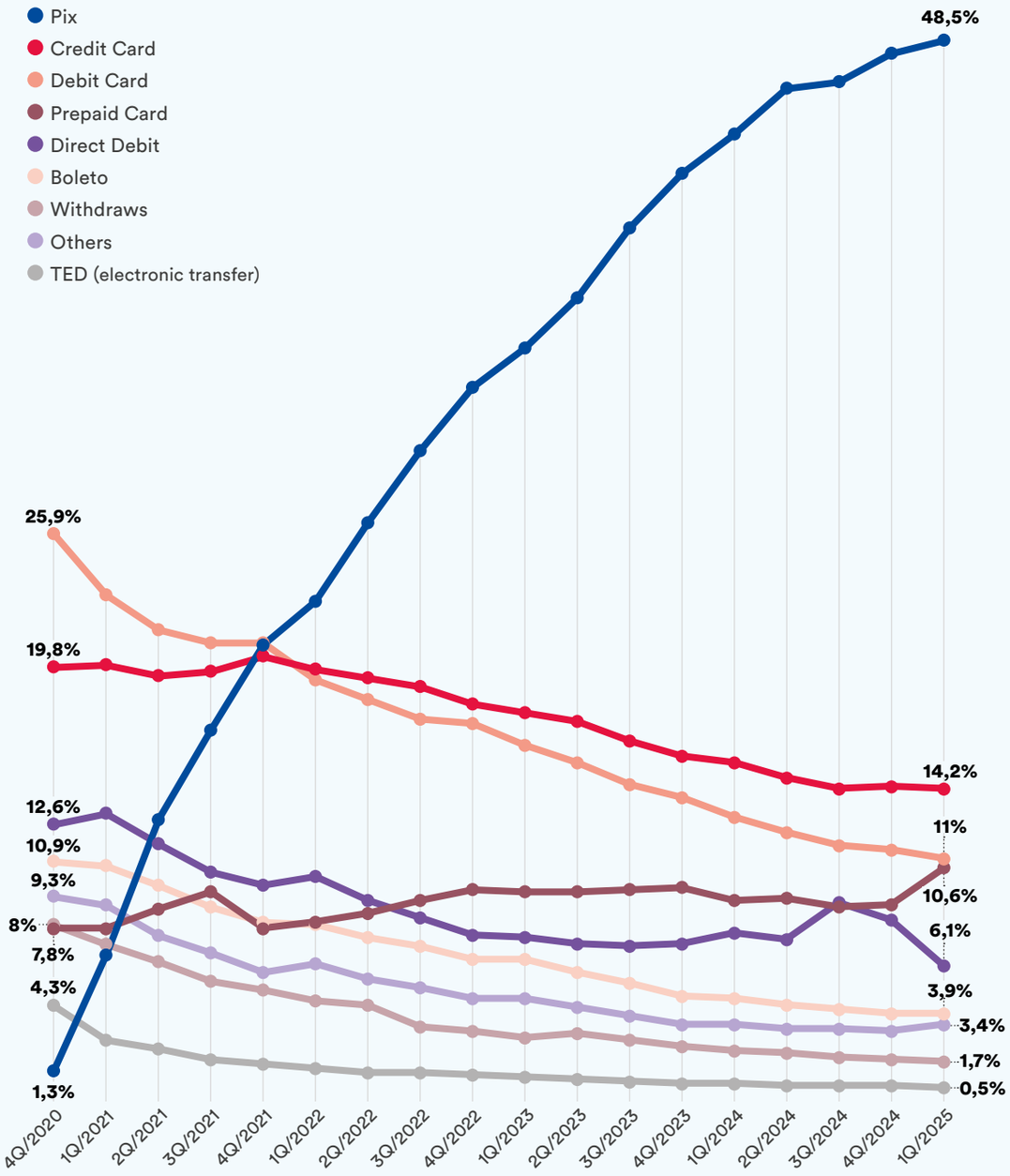
One of the best-known actions with expressive positive results for society as a whole was the creation of Pix by the Central Bank[43]. In November 2020, the BC launched a fast payment system in which people and companies could carry out transfers between bank accounts in an agile, practical, and secure way, with the system operating every day and time (24/7). Furthermore, the ease of use of Pix by users, with its system being integrated into the bank where they already have an account, helped the system to become popular in the country.

Pix was quickly accepted by Brazilians. Three months after the launch, the financial volume transacted via Pix already amounted to 50% of the GDP. In five months, it had already surpassed other payment methods in terms of the quantity of transactions. Eight months later, half of the adult population had already used this payment method. One year after its launch, it already had a greater share than credit and debit cards among payment methods. Today, almost five years after its launch, approximately 95% of adults and 84% of companies have already used it. Pix is currently the most used payment method for transactions in Brazil. In the 1st quarter of 2025, it reached 48.5% of the total transactions carried out in the period, followed by credit and debit cards.

The regional utilization of Pix is more balanced compared to the distribution of bank credit in the country. While loans and financing remain concentrated in the Southeast region – an average of 48% considering credit for individuals (PF) and legal entities (PJ) – the Southeast's share in Pix usage is lower, at around 42%. This difference reflects important progress in the North and Northeast regions, historically having less access to the traditional credit market, constituting strong evidence of the greater financial inclusion promoted by Pix.

Graph 20

Percentage Share by payment method (Transaction Quantity)



Source: BCB. Data until Q1/2025. Elaborated by Tendências.

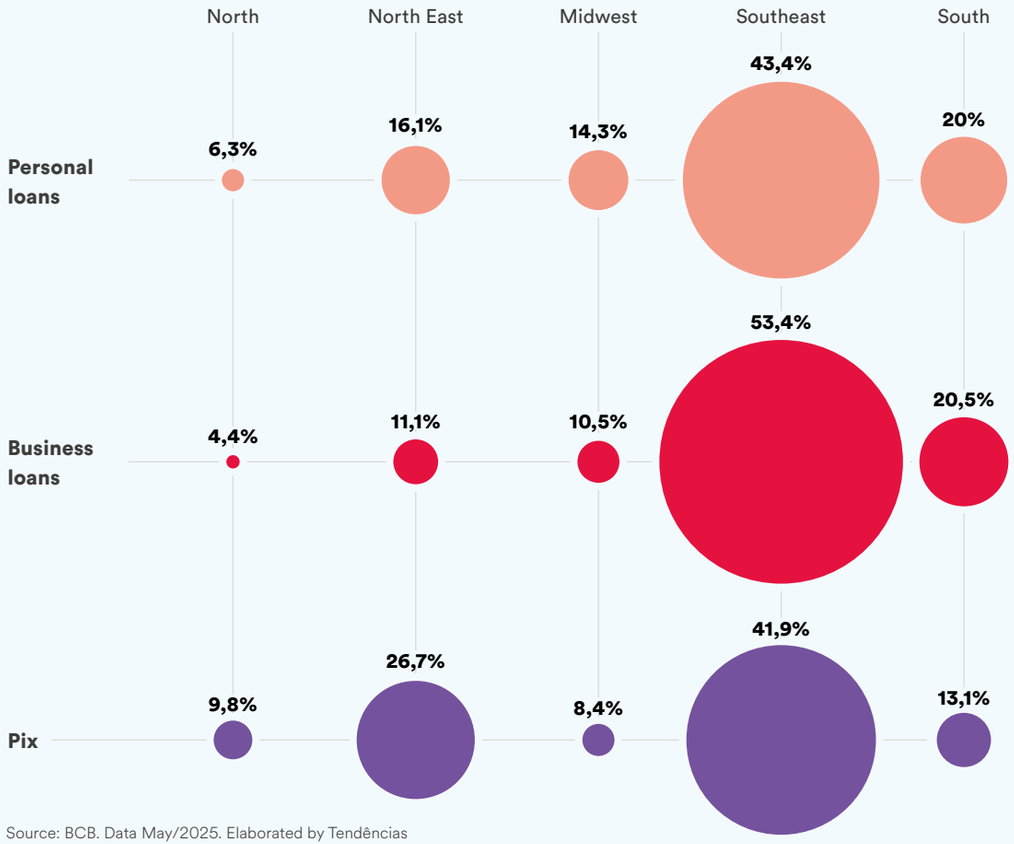
The wide capillarity of Pix usage becomes a gateway to banking relationships. This potential was investigated by Sampaio and Ornelas (2025)[44], who analyzed the contribution of Pix to the strengthening of the financial ecosystem.

To this end, the authors proposed a model using floods related to climatic events as a variable to study the effect of Pix. Since Pix was launched simultaneously throughout Brazil, there was no natural control group to compare the effects following its introduction. Thus, the authors explored the fact that extreme climatic events—such as floods—are random and could stimulate the use of Pix, given that it is common to make financial transfers to support victims in emergency situations.

The study revealed that Pix boosted the use of other banking services, such as deposits and payment instruments, indicating an expansion of users' financial relationship with the banking system. This finding is contrary to what many feared, which was that Pix could cannibalize other products and services, exerting negative impacts on the banking system. The table below summarizes the study's main financial findings.

Graph 21

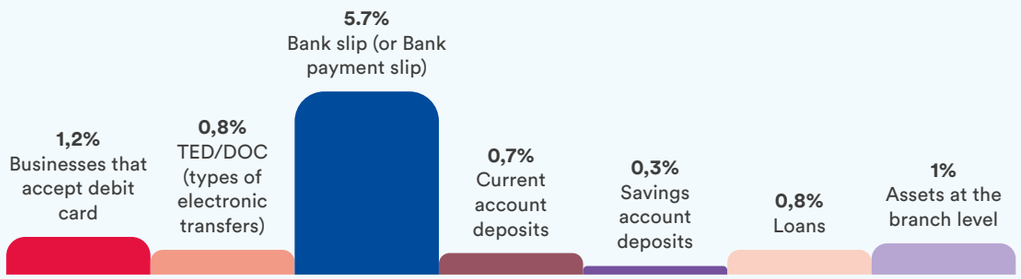
Regional share on credit and Pix



Source: BCB. Data May/2025. Elaborated by Tendências

Graph 22

Effects of the increase in Pix according to the study by Sampaio and Ornelas (2025)



Source: Payment Technology Complementarities and their Consequences on the Banking.

These evidences reinforce Pix's role as a lever for financial inclusion. Interviews with Bolsa Família beneficiaries show that "opening a Pix" has become synonymous with opening an account. By facilitating access and promoting the use of banking services, the instant payment system also contributes to the greater integration of individuals and companies into the financial market. Today, more than 90% of Bolsa Família beneficiaries have a Pix key, and the intensity of Pix use is greater in more vulnerable municipalities[45].

Pix has also consolidated itself as an important catalyst for social well-being, by promoting greater competition among financial institutions and making payment methods more accessible and equitable. Its implementation reduced costs, expanded consumer options, and brought small banks closer to the functionalities offered by large institutions.

In this context, the study by Sarkisyan (2025)[46] investigated the effects of Pix on banking competition, focusing on the behavior of deposits in large and small banks[47]. The author used an instrumental variables approach, using the level of relaxation of Covid-19 restrictions in the summer of 2020 as the instrument. The central hypothesis is that the relaxation of restrictions would have encouraged the use of Pix, without directly affecting competition in the banking market—except through the new tool.

The results indicate that an increase in Pix transactions was associated with a 3% growth in current account deposits, 3.2% in savings accounts, and a 4.3% increase in term deposits at small banks compared to large ones.

3%
growth in current account deposits

3,2%
in savings accounts

4,3%
increase in term deposits at small banks

Although the positive impact was observed across all institutions, the effect was more pronounced in smaller banks, which previously faced greater operational limitations. Pix, by standardizing transfer services between institutions, reduced entry barriers for small banks, making the competitive environment more balanced.

According to Sarkisyan, this increased competition generated two relevant social effects:

Increased consumer welfare

Greater efficiency in monetary policy transmission

For the first point, the author estimated a deposit demand model—using counterfactual scenarios where Pix would not exist, analyzing Pix's impact on rate sensitivity and customer utility. The results suggest that, with Pix, the equivalent welfare per quarter increased by an average of US$ 380 per person (about R$ 2,120). This is a substantial effect of Pix on social welfare, equivalent to about 15% of the country's GDP per capita.

Regarding the second point, the author argues that Pix acts as a digital bridge that expands the population's access to the banking system, reducing market concentration and making monetary policy decisions—such as changes to the Selic rate—more effective via the credit channel.

Complementing this analysis, Liang, Sampaio, and Sarkisyan (2025)[48] also studied the effects of Pix on monetary policy. Using structural models and empirical approaches, the authors demonstrated that the system reduced the market power of large financial institutions by being a public, accessible, and standardized technology. Consequently, the Brazilian banking system became more sensitive to Selic rate variations, strengthening the effectiveness of monetary policy.

Given these results—which include advances in financial inclusion, increased competition, welfare gains, and greater macroeconomic efficiency—the Central Bank continues to promote the evolution of Pix with new functionalities. The figure next to it summarizes the main innovations already implemented and highlights the next steps in the Pix evolutionary agenda. The initiatives are focused on meeting the population's demand for more accessible, efficient, and secure services.

In 2025 alone, there has already been the launch of Pix Automático (practical payment of recurring bills) and Pix por aproximação (Pix by proximity, eliminating the friction of entering a key or reading a QR

Code when paying). Furthermore, debates are intensifying for Pix parcelado (installment Pix, the possibility of making a Pix payment without having the balance in the account) and Pix com garantia (Pix with collateral, the use of future Pix receivables as collateral, improving credit access for micro, small, and medium enterprises). These reinforce the role of Pix, a public and free payment arrangement, as a central instrument of financial modernization in Brazil.

Pix promoted a rapid migration of transfers performed via TED to a system that is free, faster, and easy to use across all banks. This change generated not only efficiency gains but also significant financial savings for the population by reducing the transaction cost.

To estimate this impact, we conducted a counterfactual exercise aimed at calculating the potential savings generated by Pix solely regarding the lower cost of transfers. The analysis started with the historical trajectory of TED until the introduction of Pix, assuming that, in the absence of the new system, TED volumes would continue to grow, albeit at a limited pace due to the fees charged. The fees would discourage use among lower-income users and maintain alternatives such as using cash.

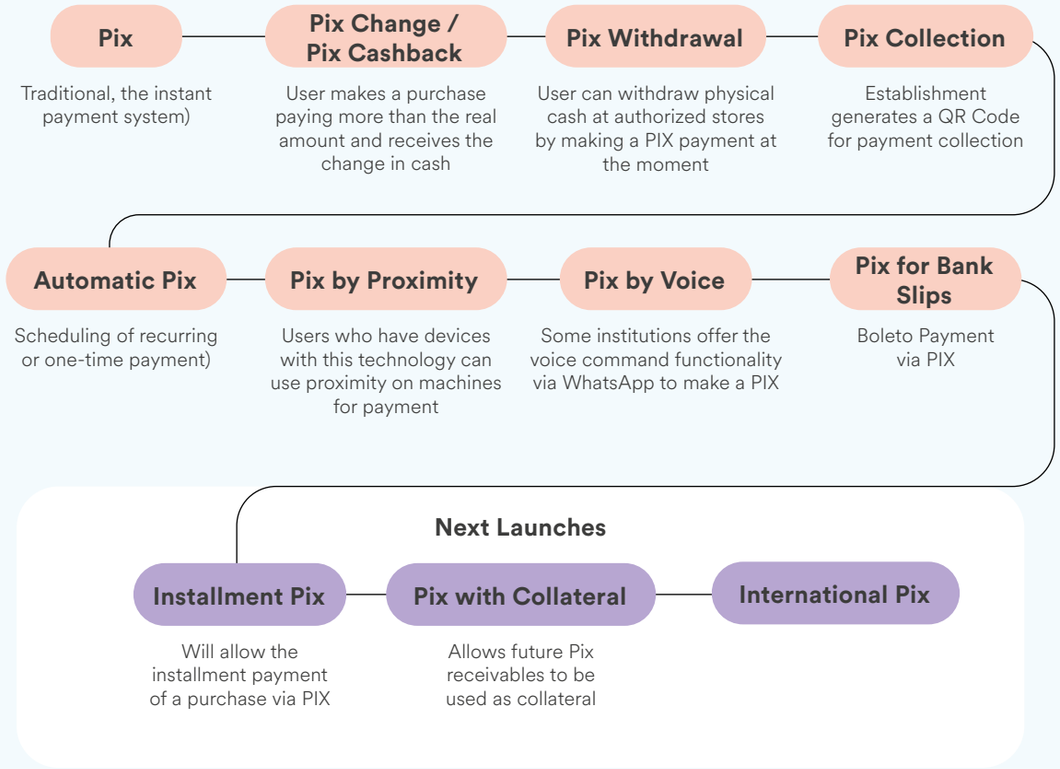
Projecting this trend without the existence of Pix, we estimated that the volume of TEDs would drop by only 6% between 2021 and 2024 (partially due to residual effects of the pandemic)[49], whereas in the real scenario—with Pix operating—the observed drop was 55%.

Considering an average cost of R$ 10 per TED (an average based on Central Bank data for electronic transfers made by individuals and digital channels), it is estimated that Pix generated savings of R$ 26 billion for the population between 2021 and 2024.

This amount vastly exceeds the system's operational costs. The total development of Pix cost around US$ 4 million. The total cost of developing Pix (US$ 4 million[50]) is significantly low, especially when compared to the welfare gain estimated from its implementation, which is equivalent to a 15% increase in GDP per capita.

Graph 23

Pix Evolutionary Agenda



Fonte: Elaboração Tendências.

It is worth noting that this exercise only considered the substitution of TED by Pix, but the economic gains extend further, including increased competition reducing the cost of other payment methods, pressure on banks to offer better account conditions and fees, reduced need for companies to issue boletos, and increased liquidity for small businesses.

2.7. Drex: the Brazilian strategy in the global transformation of payment methods

Throughout this study, we observed how the National Financial System (SFN) has advanced toward an increasingly digital environment, focusing on innovation, efficiency, and security for users in their transactions, credit operations, and payments.

This transformative movement was driven by the Central Bank's regulatory agenda for fintechs (providing additional momentum for what was being developed), continued with the creation of Pix – an instant payment system – and evolved into Open Finance, a platform that consolidates innovations and raises the level of integration, personalization, and financial control for individuals and businesses.

It is in this context of modernization that the proposal for the creation of a Brazilian digital currency emerged, with the aim of making transactions more agile, secure, and efficient, always under the regulation and supervision of the Central Bank.

The initiative began in 2020, with the first discussions about Drex – the digital real. Currently, Drex is in a pilot phase, where tests are being conducted with selected institutions and authorized users to evaluate the system's performance and ensure its robustness before full implementation[51].

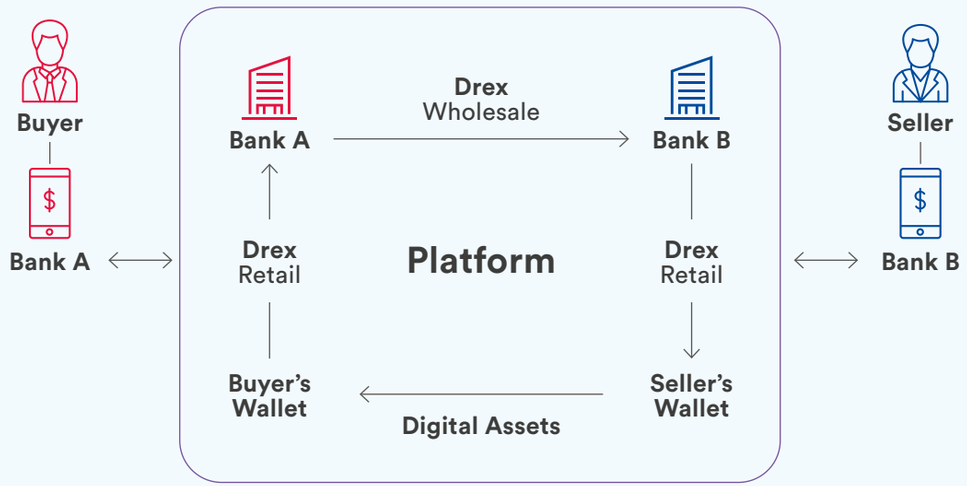
Currently, Drex is in a pilot phase, undergoing tests with selected institutions and authorized users. According to the Central Bank[52], Drex will enable secure transactions with digital assets through tokenization technology, improving existing processes by making asset exchanges faster, more reliable, and more transparent in a regulated digital environment. A typical Drex transaction would involve a buyer and a seller interacting through their respective banks on the Drex platform.

The banks would exchange wholesale Drex, while the clients' digital wallets would exchange retail Drex for the tokenized digital asset.

The creation of digital currencies by central banks (the so-called CBDCs – Central Bank Digital Currencies) has gained global prominence, accompanying the growing digitalization of payment methods and financial interactions. This is an initiative underway in more than 100 countries, which see digital currencies as an opportunity to modernize their financial systems and meet the new demands of the digital economy.

Graph 24

Example of Drex utilization



Source: Central Bank, report: Official Brazilian digital currency (Drex) – basic references.

According to the Bank for International Settlements (BIS)[53], countries are at different stages of CBDC development, classified as: “in research,” “in conceptual phase,” “in pilot,” and “in operation”. In 2025, only two countries were fully operating their digital currencies—Nigeria and Zimbabwe. Brazil, as well as the United States, Canada, Australia, and Japan, is in the conceptual testing stage.

In the Brazilian case, the Drex project is aligned with the third category (pilot phase/conceptual testing). According to the Central Bank[54], Drex will be a platform that will allow the use of programmable money and smart contracts, expanding the offering of personalized and accessible financial products to the population.

A 2020 BIS survey[55] conducted with 65 central banks (21 from advanced economies and 44 from emerging countries, including Brazil) pointed out distinct motivations between the groups. In common, all cite financial stability as a priority. However, while advanced economies highlight motivations such as efficiency in international payments, transaction security, and access to digital currency given the decline in the use of physical cash, emerging countries focus mainly on financial inclusion, efficiency in domestic payments, and improvement of monetary policy transmission.

O The BIS also distinguishes three major objectives behind digital currency projects:

1 Wholesale payments, focusing on cross-border transactions;

2 Retail payments, focused on instant transfers; and

3 Fostering innovation, enabling new business models and financial functionalities.

According to a BIS report “CBDCs: An Opportunity for the Mone - tary System”[56], the main potential benefits of a CBDC include:

1 **Promotion of competition and innovation:** CBDCs are designed to have competitive costs, encouraging competition with physical cash and other payment methods.

2 **Financial inclusion:** Facilitating universal access to digital payments, especially for unbanked groups and small businesses.

3 **Efficiency in cross-border payments:** Reducing costs and time in international transactions by improving the monetary architecture.

4 **Strengthening of financial stability and monetary policy:** Expanding the tools available to monetary authorities and mitigating systemic risks.

Drex represents Brazil’s response to a global movement of mon- etary system transformation. Its development places the country at the forefront of financial modernization, seeking the gains in efficiency, inclusion, and stability that have motivated other econo- mies around the world.

3

Summary of the evidence

Based on what has been presented throughout this study, we can summarize the analyzed measures as follows:

Credit Portability

1 Impact on Competition and Interest Rates:

- O Credit portability, regulated in 2013, stimulates competition by allowing clients to transfer their loans to institutions with better conditions.

2 Evidence of Reduced Credit Cost:

- A BCB study (REB 2022) showed that in municipalities with more than one bank, portability reduced the bank spread by 5% (or 0.8 percentage points on the interest rate).
- Another study (Azevedo, Ribeiro & Rodrigues, 2019) identified that portability reduced spreads between 21% and 49% in affected modalities.
- A third study (Bonomo et al, 2025) calculated that portability generated a social welfare gain equivalent to 0.2% of annual consumption, with no fiscal cost.

3 Limitations and Potential:

- Despite the benefits, the adoption of portability is still limited, highly concentrated in payroll loans (94%), and representing only 0.8% of total credit concessions.
- An obstacle is the population's lack of awareness and the difficulty of making portability requests.
- Open Finance is seen as a strategic tool to facilitate and expand the use of portability for both credit and salaries.

Positive Credit Registry and Receivables Registry

1 Combating information asymmetry:

- Both measures aim to reduce information asymmetry in the credit market and allow for greater banking competition, promoting access to credit under better conditions.

2 Impacts of the Positive Credit Registry:

- Automatic inclusion (opt-out) since 2019 increased the number of registered individuals 15-fold.
- 41% of consumers moved to better risk categories.
- The measure caused an average drop of 3.7 percentage points in unsecured personal loan rates.
- Competition increased as smaller banks gained access to information previously restricted to large banks.

3 Impacts of the Receivables Registry:

- Since 2021, it has allowed companies, especially SMEs, to use their card receivables as collateral in negotiations with multiple banks.
- The measure led to savings of R$ 27 billion in interest for companies and a drop in spreads of 9% to 11%.

4 Potential

- Open Finance is expected to amplify the observed benefits as the platform will further reduce information asymmetry and expand competition in the offering of financial products and services.

Regulation of fintechs

1

Competition and expansion of the SFN:

- The regulation of fintechs in 2018 allowed the entry of new institutions into the financial system, which expanded their client base.

2

Impacts

- **Financial Inclusion:** Fintechs and smaller banks (segments S3, S4, and S5) have a greater focus on serving micro, small, and medium-sized enterprises (MSMEs) and the low-income population compared to traditional banks (S1 and S2).
- **Leadership and Satisfaction in Brazil:** Brazil leads Latin America in the number of fintechs. A Mastercard survey showed that 58% of Brazilians gained access to new financial products thanks to fintechs, and the satisfaction level (64%) is the highest in the region.
- **Interest Rate Reduction:** An IMF study concluded that competition from fintechs in Brazil effectively reduced the lending rates of traditional banks and their net interest margins, confirming the expected benefits of this increased competition.

Pix: instant payment system

1 Inclusion, Competition, and Well-being:

- Launched in November 2020, Pix was quickly adopted and is now used by 95% of adults and 84% of companies. In transacted volume, it is approaching the levels of TED, allowing for a reduction in transaction costs for individuals since Pix is free for individuals while TEDs have a fee.

2 Impacts

- **Regional Inclusion:** Pix promoted greater financial inclusion, with the North and Northeast regions having a larger share in Pix usage than in the traditional credit portfolio.
- **Complementary Effects:** A study by Sampaio and Ornelas (2025) showed that the increase in Pix usage boosts other banking services, such as deposits, loans, and card acceptance, rather than cannibalizing them.
- **Increased Competition and Well-being:**
  1. A study by Sarkisyan (2025) revealed that Pix increased deposits more in small banks than in large ones, balancing competition.
  2. Pix generated a social welfare gain equivalent to R$ 2,120 (US$ 380) per person per quarter.
- **Growth of Financial Inclusion:** Between 2018 and 2025, the number of individual clients in the financial system grew from 76.3 million to 163 million; corporate clients grew from 3.3 million to 13.7 million.
- **Reduction of Regional Inequality:** The proportion of adults with a banking relationship grew more strongly in the North and Northeast regions between 2018 and 2024, reducing the disparity with other regions.
- **Strengthening of Monetary Policy:** By increasing competition and reducing bank spreads, Pix in particular, and the reforms in general, strengthen the “credit channel,” making monetary policy (changes in the Selic rate) more effective in controlling inflation.

3 Potential

- Evolutionary Agenda: The BCB continues to develop Pix with new functionalities, such as Pix Parcelado, Pix Garantia, and Pix Internacional.

4

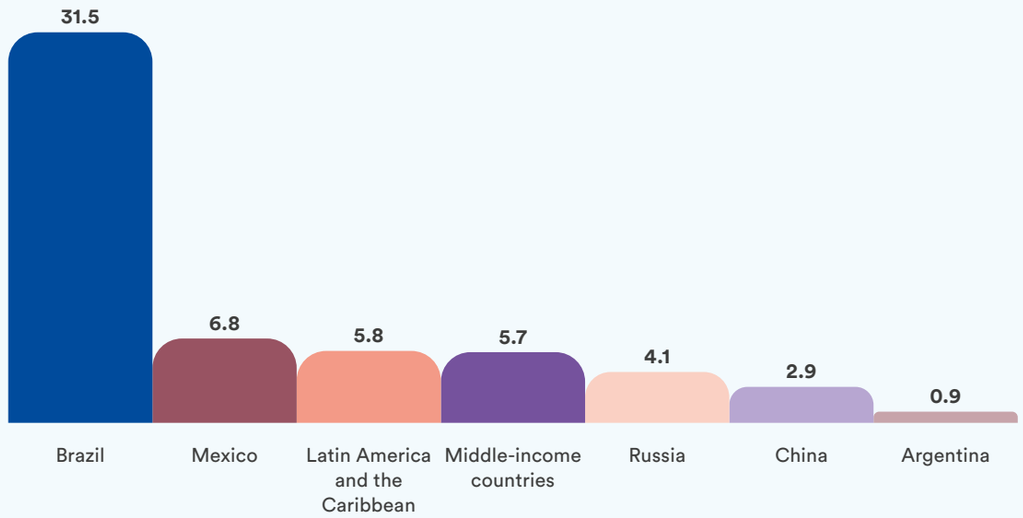
The path to a more efficient and inclusive financial system

Despite recent advances, Brazil still ranks among the countries with the highest levels of bank spreads in the world. In 2023, the country recorded the third-highest bank spread globally, at 31.5%, significantly higher than other countries like Mexico (6.8%) and the average for Latin America & the Caribbean (5.8%).

Econometric evidence indicates that the high bank spreads in Brazil are strongly associated with high concentration and market power in the banking sector[57]. Furthermore, high spreads compromise the effectiveness of monetary policy: with the credit channel obstructed, changes in the basic interest rate do not always translate into effects on economic activity and inflation.

Graph 25

Bank spreads (%) - in 2023



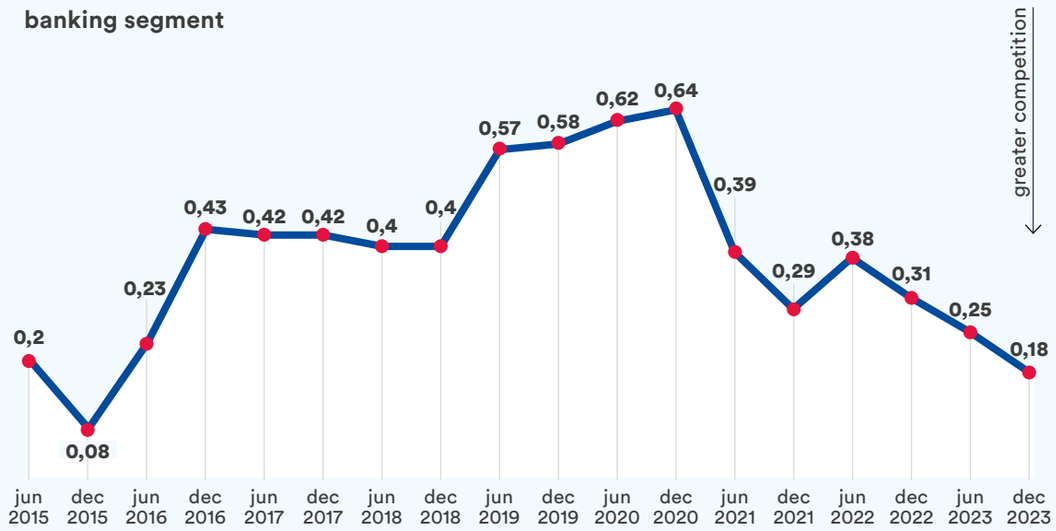
Source: World Bank. Indicator: Interest rate spread (lending rate minus deposit rate, %)

Although there are signs of reduced banking concentration in recent years—as seen in measures like RC4, HHI, and the Lerner index—progress is still limited. The Lerner index, while decreasing overall, remains at levels suggesting significant market power still exists.

In a study for the World Bank, Feyen and Huertas (2020)[58] reinforce this diagnosis, highlighting that the efficiency of the Brazilian banking system is relatively low due to its uncompetitive profile. Their recommendations for reducing interest rates include: fostering banking competition, facilitating the entry of new players, allowing the operation of non-banking institutions, and reducing customer mobility costs between institutions.

Graph 26

Lerner indicator for credit: banking segment



Source: BCB, REB 2023

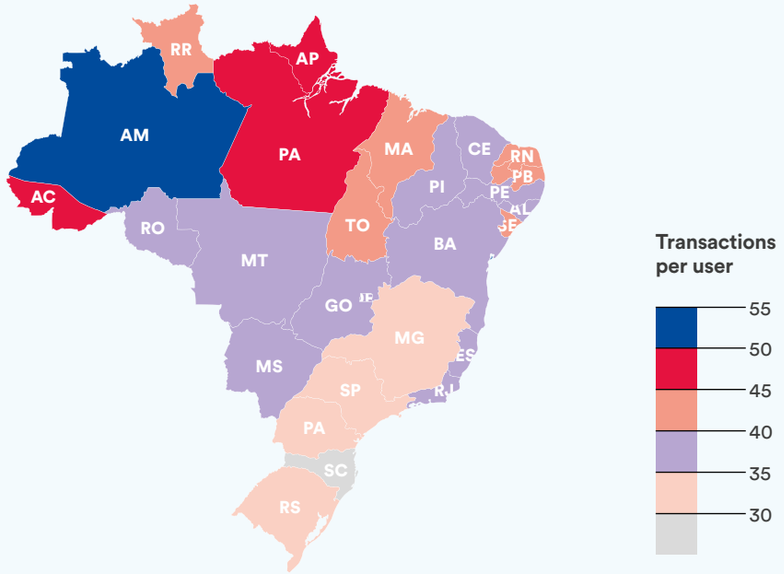
The agenda conducted by the Central Bank in recent years has been fundamental, as shown by all the data and studies mapped in this work. But the path to a deconcentrated and more competitive market is still long.

The agenda conducted by the Central Bank (BCB) in recent years has been fundamental, as shown by all the data and studies mapped in this work. It moved in the correct direction and represented an important milestone in expanding banking competition and promoting financial inclusion in Brazil. Initiatives such as Pix, Open Finance, and the incentive for fintechs transformed the access and use of financial services, especially among populations historically less assisted.

The path forward, however, is long. Open Finance, for example, has enormous potential, but only 60 million of the more than 221 million clients in the SFN have authorized data sharing. Furthermore, integrating credit and salary portability into the Open Finance framework could bring new doses of competition to the financial system, creating incentives for institutions to innovate and offer increasingly better products and services.

Despite the challenges, Brazil has achieved significant milestones. Pix has become one of the most successful instant payment experiences in the world, rapidly reaching regions historically underserved by the traditional banking system.

Beyond increasing access, Pix contributes to reducing the market power of large banks, making the system more responsive to monetary policy and strengthening the credit channel[59]. This advance is particularly visible in the North and Northeast regions, which currently lead in the average number of transactions per user. Updating the data from the FGV study on the geography of Pix[60], it is observed that, in these lower-income regions, users tend to use the tool even more frequently. This movement reinforces the importance of Pix as an instrument of financial inclusion.



Graph 27

Number of transactions per user – by Brazilian states in June 2025

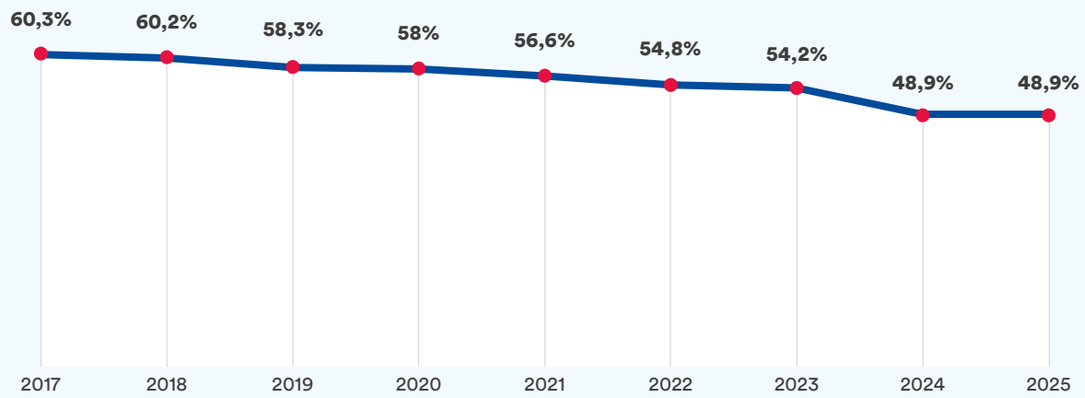
Source: FGV and BCB. Elaborated by Tendências.

In this context, the role of fintechs becomes even more relevant. The higher adoption of Pix in these regions occurs in a scenario where the presence of the traditional financial system is lower. It is worth remembering that more than half of Brazil's municipalities do not have any bank branches. That is, fintechs and digital institutions help reduce physical distance as a barrier to access the financial world. Using a phrase that has become popular in discussions about the financial system, technology is "slowly breaking the tyranny of distance"[61].

Furthermore, the advancement of fintechs boosted digitalization among traditional banks themselves, which began to invest more in digital channels. This movement is even more relevant given the continuous reduction in the physical presence of financial institutions: year after year, the number of municipalities with bank branches has been decreasing, reinforcing the need for a more digital, accessible, and inclusive system. In 2017, 60.9% of Brazilian municipalities had a branch, an amount that reached 48.9% in 2025.

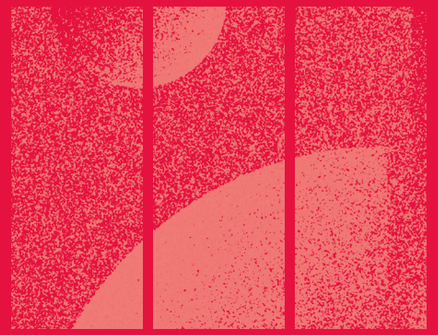
Graph 28

Evolution of municipalities with a branch and their share of the total



Source: BCB and IBGE. Elaborated by Tendências

Conclusion



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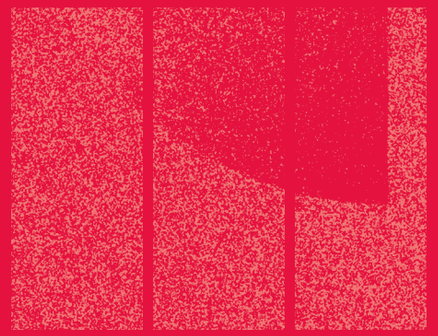


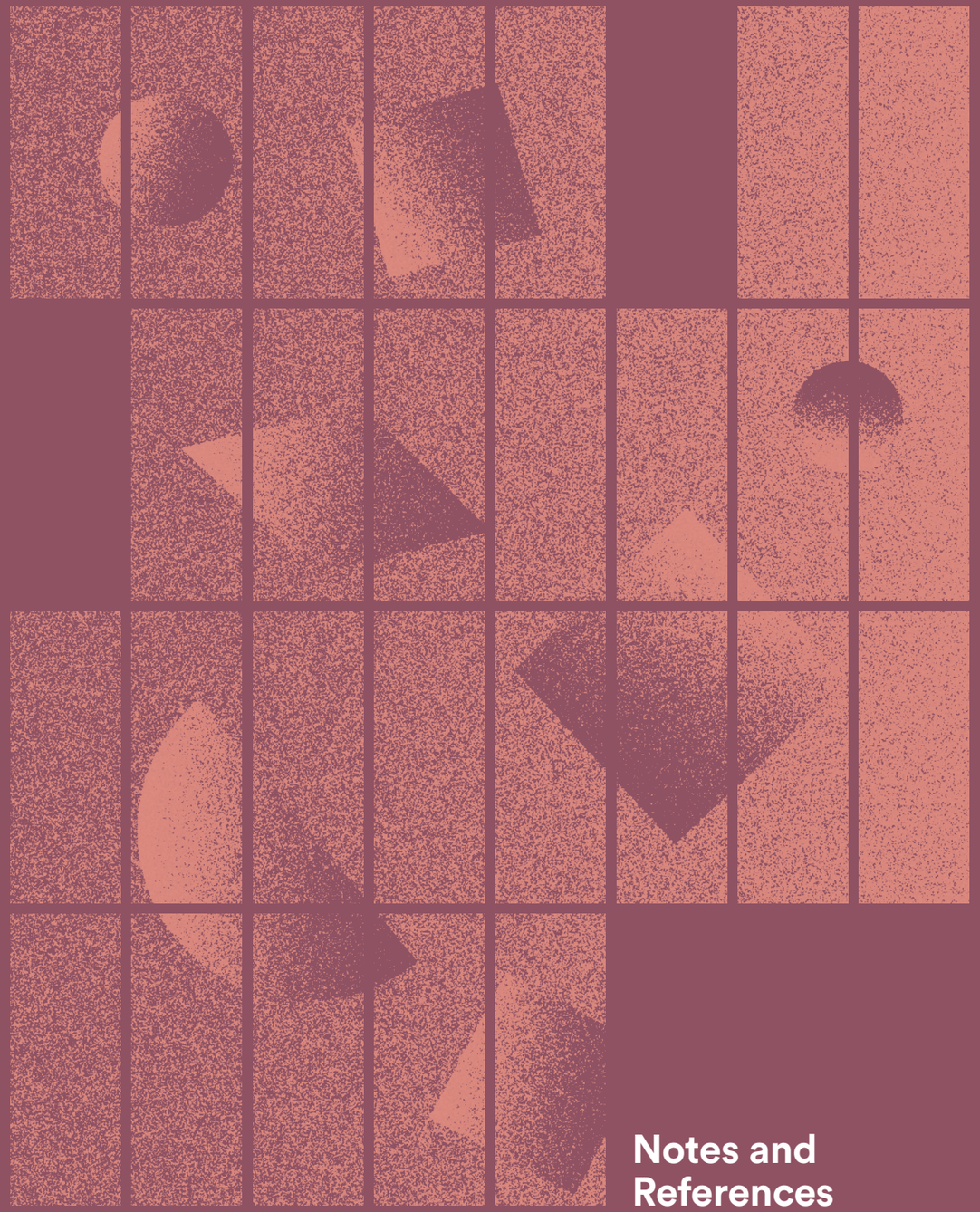
The innovation agenda led by the Central Bank in recent years, particularly within the scope of the BC+ and BC# agendas, represents an articulated, long-term strategy to reposition the national financial system as an engine of economic and social development. The measures implemented—from regulating fintechs and enabling credit portability to establishing the Positive Credit Registry, Pix, and Open Finance—have not been isolated actions but interconnected pillars designed to create a more competitive, accessible, and efficient environment..

As this analysis has demonstrated, these initiatives have generated concrete and measurable results. The interplay between increased competition (via fintechs and portability), reduced information asymmetry (via credit registries and Open Finance), and expanded access (via Pix) has created a virtuous cycle. Together, these pillars have expanded access to financial services, lowered interest rates, and increased social welfare. By stimulating competition and lowering transaction costs, these policies also strengthen the effectiveness of monetary policy, making the credit channel more responsive to changes in the Selic rate.

The analysis of the Brazilian case, supported by empirical evidence and international comparisons, shows that the country has advanced in line with global best practices, often standing out as a benchmark—as in the case of Pix. The evolution of Open Finance also reinforces this position, demonstrating a continuous commitment to responsible innovation and systemic efficiency.

The path so far evidences that the Central Bank's agenda is not merely a set of specific, isolated measures, but an articulated and long-term strategy to path traveled so far evidences that the Central Bank's agenda is not merely a set of specific, isolated measures, but an articulated and long-term strategy to reposition the national financial system as an engine for economic and social development

The transformations already implemented—combined with ongoing initiatives such as the expansion of Pix, the advancement of Open Finance, and the progress of fintechs—represent structural changes with the potential to raise potential GDP growth and increase the efficiency of the Brazilian economy. Consolidating and deepening these innovations will be essential to build a financial system that is more accessible, competitive, secure, and aligned with the real needs of society, fulfilling the central role of the microeconomic agenda in the country's economic development.



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