

Regulating and Supervising Fintech in Brazil: Insights from the Central Bank Experience and Emerging Challenges

Regulación y Supervisión de Fintech en Brasil: Perspectivas de la Experiencia del Banco Central y Desafíos Emergentes

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Abstract

Brazil's rapidly expanding fintech sector has led the Central Bank of Brazil (BCB) to implement an adaptive regulatory approach. This article analyzes how the BCB has addressed the challenges of fintech growth by modernizing regulation and strengthening its risk-based supervisory framework. The findings indicate that proportional, principles-based, and adaptive regulation, combined with innovative initiatives, can enhance financial inclusion while preserving stability and consumer protection. However, the experience also reveals ongoing challenges, including emerging risks and capacity constraints. The Brazilian case offers analytical insights for other emerging economies seeking to balance innovation, inclusion, and financial stability within a coherent regulatory and supervisory framework.

Keywords

Fintech, Financial Supervision, Financial Inclusion, Regulation, Consumer Protection, Brazil.

Resumen

El rápido crecimiento del sector *fintech* en Brasil llevó al Banco Central de Brasil (BCB) a adoptar un enfoque regulatorio adaptativo. Este artículo analiza cómo el BCB enfrentó los desafíos del crecimiento *fintech* mediante la modernización de la regulación y el fortalecimiento de su marco de supervisión basado en riesgos. Los resultados muestran que una regulación proporcional, basada en principios y adaptativa, combinada con iniciativas innovadoras, puede mejorar la inclusión financiera sin afectar la estabilidad ni la protección del consumidor. No obstante, la experiencia revela desafíos como riesgos emergentes y limitaciones de capacidad. El caso brasileño ofrece lecciones para otras economías emergentes que buscan equilibrar innovación, inclusión y estabilidad financiera en un marco coherente de regulación y supervisión.

Palabras clave

Fintech, Supervisión financiera, Inclusión financiera, Regulación, Protección al consumidor, Brasil.

1. Introduction

¹ Disclaimer: The opinions expressed in this article are solely those of the author and do not necessarily represent the views or positions of the Central Bank of Brazil. This publication is intended exclusively for academic and scientific purposes.

The term financial technology (fintech) does not yet have a universally accepted definition, as different countries and organizations interpret it in their own ways. The Financial Stability Board (FSB, 2019) defines fintech as “technology-enabled innovation in financial services that could result in new business models, applications, processes or products, with an associated material effect on the provision of financial services.” Similarly, Kou and Lu (2025) describe fintech as “the application of technology to the delivery of financial services.”

Although there is no consensus on its precise definition, it is clear that fintech has significantly transformed the global financial landscape, driving regulators worldwide to adapt and revise their regulatory and supervisory approaches. Fintech innovations have introduced notable changes that affect both consumers and the financial sector, including banks and broader market infrastructures. These impacts can manifest either as risks or opportunities, depending on how they are managed and regulated.

Regulators across jurisdictions continue to face the challenge of determining when and how to regulate fintech. A key policy dilemma lies in choosing between early regulatory intervention and a “wait-and-see” approach. Early regulation can help preserve financial stability and ensure consumer protection but may also hinder innovation, competition, and financial inclusion. Conversely, delayed regulation may enable rapid market development but leave systemic and consumer risks insufficiently addressed. While some advanced economies have already undergone profound transformations in their financial sectors, many jurisdictions are still navigating this transition. In that sense, lessons from early and late regulatory adopters can inform better institutional design and policy implementation. Accordingly, this study asks how regulatory and supervisory frameworks can balance innovation with financial stability and consumer protection in the context of fintech expansion. To address this question, the article adopts a qualitative analytical approach centered on the Brazilian experience, which offers a particularly relevant case for understanding how emerging economies can reconcile rapid financial innovation with prudent oversight.

Within this broader context, Brazil has emerged as one of the most dynamic fintech ecosystems among emerging economies. This article examines the major implications of fintech for financial inclusion, market stability, and consumer protection, while analyzing how the Central Bank of Brazil (BCB) has responded to these developments through a risk-based framework for regulation and supervision. By exploring the Brazilian experience, including its regulatory trajectory, supervisory adaptations, and institutional challenges, the article seeks to identify practical lessons and insights that may be relevant for other jurisdictions undergoing similar transformations.

This study adopts a qualitative and descriptive approach, combining documentary analysis with comparative review. The main sources include Brazilian legislation and regulatory instruments issued by the BCB, such as resolutions, circulars, and public reports, complemented by international standards from organizations like the Financial Stability Board (FSB), the Basel Committee on Banking Supervision (BCBS), and the Financial Action Task Force (FATF). Academic literature, policy papers, and institutional studies were selected based on their relevance to the topics of fintech regulation, supervision, and financial inclusion. All sources are organized in the reference section according to their nature (articles, legislation, regulation, reports, and web publications) and collectively support the conceptual discussion, risk analysis, and examination of the Brazilian regulatory framework, ensuring coherence and analytical depth throughout the study.

2. Fintech Risks and Opportunities

As previously noted, fintech has significantly impacted the financial sector, introducing both opportunities and new sources of risk. This section examines the main categories of these risks and opportunities, outlining how fintech innovation reshapes financial intermediation and influences both consumers and institutions. It discusses the dual nature of fintech: as a driver of inclusion, efficiency, and competition, but also as a source of operational, cyber, and conduct vulnerabilities that require regulatory attention. Understanding the underlying nature of fintech (both as technological innovation and as a new form of financial intermediation), its applications, and its transformative effects on financial markets is therefore essential to understand how these risks and opportunities arise and to identify appropriate responses.

Beyond its technological dimension, fintech represents a profound reconfiguration of how financial intermediation, risk assessment, and value transfer occur within the economy. Its applications encompass a wide spectrum of activities, including digital payments, peer-to-peer lending, crowdfunding, robo-advisory, and blockchain-based services, all of which reshape the relationship between financial institutions and consumers. Payment innovations, in particular, have become the primary driver of fintech expansion, facilitating instantaneous, low-cost transactions and fostering the inclusion of individuals and small businesses historically excluded from the formal financial system. As Arner, Barberis, and Buckley (2016) observe, fintech constitutes not merely a technological trend but an evolutionary stage in financial development, characterized by the convergence of finance and digital innovation. Similarly, Gomber et al. (2017) emphasize that fintech's transformative power lies in its capacity to promote efficiency, competition, and accessibility in financial markets, thereby reinforcing financial inclusion while also introducing new regulatory and consumer-protection challenges.

Building on these conceptual insights, several studies have examined these implications, including a notable report by the Basel Committee on Banking Supervision, which outlines key impacts, risks, and opportunities associated with fintech innovations (Basel Committee on Banking Supervision, 2018).

In this regard, the experience of emerging economies such as Brazil provides valuable insights for other jurisdictions seeking to balance innovation, inclusion, and stability in the fintech ecosystem. In many developing markets, fintech growth has been driven by structural gaps in traditional financial intermediation, particularly high transaction costs, limited banking penetration, and unequal access to credit. This has made digital finance a crucial instrument for expanding financial inclusion and promoting competition (World Bank, 2023). Lessons from Brazil, India, and Kenya demonstrate that regulatory approaches encouraging innovation while preserving proportional safeguards can accelerate inclusion without compromising consumer protection or systemic integrity (BIS, 2021a). Brazil's success with instant payments through Pix illustrates how public-sector infrastructure, when combined with clear prudential and conduct standards, can foster innovation that remains both competitive and secure. Such experiences suggest that a risk-based, adaptive regulatory framework, supported by strong supervisory capacity and regional cooperation, can serve as a model for other emerging markets pursuing similar objectives (Arner et al., 2018; World Bank, 2023).

Building on these international experiences, it becomes clear that the expansion of fintech, while offering important opportunities, also brings heightened consumer risks that require careful regulatory attention. From the consumer perspective, one of

the main risks is data privacy. It is a risk because fintech solutions typically rely on the collection and processing of vast amounts of personal and financial data. Without adequate safeguards, consumers may be exposed to unauthorized data use, breaches, or exploitation of sensitive information, which can undermine trust in digital financial services.

This concern becomes even more relevant in the context of Open Finance, a model that expands data sharing among financial institutions and authorized third parties. While such initiatives promote competition and innovation by enabling consumers to access a wider range of financial services, they also intensify challenges related to consent management, data security, and cross-border data transfers.

Another risk is inappropriate marketing practices by financial institutions. This is a concern because digital channels allow for hyper-targeted advertising, which may mislead or pressure consumers into purchasing unsuitable financial products. In some cases, marketing strategies may obscure key terms, downplay risks, or exploit behavioral biases, increasing the likelihood of financial harm or over-indebtedness.

On the other hand, fintech offers important opportunities for consumers. Financial inclusion is a major benefit, as digital platforms reduce barriers to entry for underserved populations by simplifying onboarding, lowering costs, and extending the reach of financial services to remote or marginalized communities.

Another opportunity is lower transaction costs and faster banking services, as fintech enables real-time processing, automation, and the use of alternative delivery channels such as mobile apps and digital wallets. These innovations enhance the consumer experience by providing more convenient, affordable, and accessible services.

From the perspective of banks and banking system, one critical risk is cyber risk, because the growing digitalization of financial services increases exposure to cyberattacks, data breaches, and system vulnerabilities. The interconnectedness of financial institutions and their reliance on digital infrastructure mean that a single cyber incident can have widespread consequences across the financial system.

Another concern is operational risk, particularly when it has a systemic dimension. For example, reliance on key technological components or service providers can lead to disruptions that affect multiple institutions simultaneously. This highlights the need for robust business continuity planning and operational resilience.

Third-party/vendor risk is also significant, especially in cases of high concentration or inadequate oversight of outsourced services. As financial institutions increasingly depend on external technology providers, weaknesses in vendor management can lead to security issues, operational failures, or compliance gaps.

An additional major risk is AML/CFT (anti-money laundering and countering the financing of terrorism). The use of digital channels can complicate the identification and monitoring of clients and transactions. Fintech may be exploited to move funds quickly and anonymously across borders, posing challenges to traditional detection and reporting mechanisms. Authorities must ensure that both fintechs and traditional institutions adopt effective, technology-driven risk-based approaches to AML/CFT compliance. These regulatory challenges are consistent with the standards established by the Financial Action Task Force (FATF), particularly its recommendations on applying a risk-based approach and addressing new technologies.

In terms of opportunities, one is improved and more efficient banking processes, because fintech enables automation, real-time data analysis, and digital onboarding, all of which help banks reduce costs, streamline operations, and deliver better services. Another opportunity is increased competition, which can stimulate innovation, reduce

costs, and improve the quality of financial services. Fintech challengers also force incumbents to modernize their business models and better meet consumer expectations.

Finally, RegTech, referring to the use of technology to enhance regulatory compliance, represents another key opportunity for the industry because it allows institutions to improve data collection, automate compliance processes, and identify risks more effectively and in real time, contributing to a safer and more transparent financial system.

3. The Financial Ecosystem in Brazil

The development of a robust fintech sector in Brazil must be understood within the broader context of the country's financial ecosystem and institutional framework. This section examines the main features of Brazil's regulatory and supervisory architecture, outlining the roles of key authorities and how their coordinated mandates shape the governance of financial and payment systems. It also explores the evolution of Brazil's fintech landscape, highlighting the institutional, regulatory, and technological mechanisms, such as Open Finance, AML/CFT modernization, and the adoption of risk-based supervision, which have supported its rapid expansion and positioned the country as a regional leader in financial innovation.

3.1. Regulatory and Supervisory Perimeter

The variety of arrangements for regulating and supervising the financial system varies significantly across jurisdictions. In the case of Brazil, the financial ecosystem is regulated and supervised primarily by four entities:

- a) Central Bank of Brazil (BCB): the country's monetary authority, whose main objective is to ensure the stability and control of the currency and the financial system. The BCB is also responsible for supervising the financial and payment systems.
- b) Securities and Exchange Commission (CVM): responsible for regulating and supervising the securities market, including stocks, fixed-income securities, and investment funds.
- c) Superintendence of Private Insurance (SUSEP): regulates and supervises the private insurance market.
- d) National Superintendence of Complementary Pension (PREVIC): regulates and supervises closed complementary pension funds offered by companies to their employees.

The BCB and CVM operate under the National Monetary Council (CMN), which sets general policies for the financial system, while SUSEP and PREVIC report to their respective national councils. Together, these regulators and supervisors play fundamental roles in regulating and supervising financial and capital markets in Brazil, aiming to promote stability, transparency, and the protection of investors and consumers.

3.2. The Fintech Landscape in Brazil

Beyond their traditional responsibilities, these regulatory bodies face considerable challenges due to the rapid growth of Brazil's fintech ecosystem. According to the "2021 Global Fintech Rankings" report, produced by Findexable in partnership with Mambu, a provider of cloud banking solutions, Brazil has solidified its position as one of the major fintech ecosystems globally. In 2020 and 2021, the country achieved 1st

place in Latin America and climbed five positions globally, reaching 14th place (Findexable, 2021).

Given the large number of firms and the sector's rapid growth, the need for appropriate regulation to ensure stability, consumer protection, and market integrity became evident. A key legislative milestone was Law No. 12,865 of October 9th, 2013 (Legal Framework for Payment Arrangements, 2013), designed to promote financial innovation, inclusion, and allow payment institutions operated by non-financial entities to enter the market. This legislation emphasized interoperability and financial inclusion, enabling fintechs to offer innovative solutions beyond traditional banking products.

Additionally, regulatory authorities in Brazil have issued various regulations addressing different fintech categories, as detailed below:

- a) **Payment Institutions:** legal entities that enable purchase and sale transactions and the movement of funds within a payment scheme, but are not allowed to provide loans or financing to their clients. They may operate as Electronic Money Issuers (EMIs), Credit Card Issuers, Merchant Acquirers, or Payment Transaction Initiators. These entities were established under the Legal Framework for Payment Arrangements in 2013 and were first regulated by the BCB through Circular No. 3,682, of November 4, 2013, and Circular No. 3,683, of November 4, 2013.
- b) **Crowdfunding Platforms:** platforms that provide opportunities for small and medium-sized enterprises (SMEs) and startups to raise funds from individual investors in exchange for equity or securities. They were established under Instruction No. 588 issued by the Securities and Exchange Commission of Brazil (CVM).
- c) **Direct Credit Company (SCD):** financial institutions that operate exclusively through electronic platforms to offer loans, financing, and the acquisition of credit rights. They may use their own capital but cannot raise funds from the public – except through the issuance of shares – or hold equity in other financial institutions. SCDs were created under National Monetary Council Resolution No. 4,656 of April 26, 2018.
- d) **Peer-to-Peer Loan Company (SEP):** financial institutions that facilitate peer-to-peer lending exclusively through electronic platforms. Funds are raised from individual creditors and transferred to debtors after negotiation. SEPs are not allowed to use their own funds for lending or hold shares in financial institutions. They were also created under National Monetary Council Resolution No. 4,656 of April 26th, 2018.

From 2016 onwards, fintechs under the purview of the CMN and the BCB began receiving operational authorization from the BCB, significantly increasing transaction volumes, the number of operations, and overall market activity.

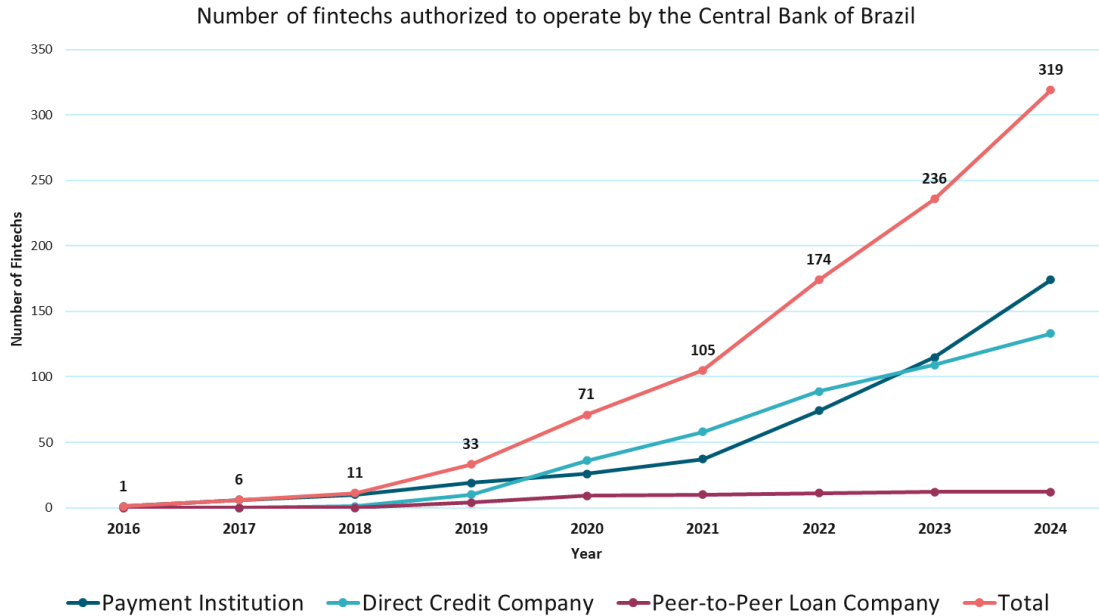


Figure 1. Number of fintechs authorized by the BCB. Own elaboration based on authorization data of institutions from the BCB for the period 2016 to 2024.

At first, the growth in the number of authorized entities was gradual. However, as the regulatory framework evolved, authorizations accelerated significantly, driven by the phased implementation of new rules, as discussed in Section 5.

3.3. Open Finance and Data Protection

Brazil's implementation of Open Finance represents a pivotal moment in the modernization of its financial ecosystem. Introduced by the BCB in 2020, the framework enables consumers to securely share their financial data with licensed third parties via standardized APIs, thereby fostering competition and innovation.

However, it also raises complex issues of consent management, cybersecurity, and cross-border data flows. The BCB's regulatory framework aligns with the Brazilian Data Protection Law (LGPD, 2018), ensuring that data sharing occurs only with explicit authorization and that participants remain accountable for information security and misuse (CMN and BCB Joint Resolution 1 of 2020).

This balance between innovation and protection has positioned Brazil among global leaders in Open Finance policy implementation. As of December 2024, Brazil reached nearly 62 million active data-sharing contents (Open Finance Brazil, 2024).

A key element of Brazil's Open Finance model lies in its governance structure. The BCB has established a framework in which private sector entities, such as banks, fintechs, and payment institutions, form governance bodies tasked with defining and enforcing rules and standards. By delegating responsibilities to these market participants, the Open Finance system benefits from industry expertise, dedicated teams, and agile decision-making processes. This approach also helps to align incentives, as participating institutions have a direct stake in creating an environment that is both competitive and secure.

Another notable feature of Brazil's Open Finance is its funding mechanism. Rather than placing the financial burden on the BCB, costs are borne by the market participants themselves, who collectively fund the technology infrastructure, data security measures, and operational expenses associated with Open Finance. This model not only spares the BCB from incurring large-scale operational costs but also

encourages institutions to optimize resources and deploy the highest standards of cybersecurity and efficiency. The result is a robust ecosystem that promotes innovation, data protection, and value-added services for consumers.

3.4.AML/CFT Framework and FATF Alignment

Brazil's anti-money laundering and counter-terrorist financing (AML/CFT) framework aligns with international best practices and the Financial Action Task Force (FATF) recommendations. The BCB incorporated updated FATF principles through Circular No. 3,978 (January 2020) and Resolution No. 119 (July 2021), which require financial and payment institutions, including SCDs and SEPs, to apply a risk-based approach to customer identification, transaction monitoring, and reporting.

These rules encourage the use of RegTech tools for automated compliance and analytics. The alignment with FATF has enhanced the resilience of Brazil's financial system and reinforced its credibility in international supervisory cooperation (FATF, 2023). Implications of these regulations will be further discussed in section 5.

3.5.Brazil in the Regional Context

Within Latin America, Brazil has consolidated its position as the leading fintech market, both in the number of startups and in the scale of digital financial adoption. According to the Fintech Report 2025 (Distrito, 2025), Brazil accounts for approximately 55.9% of fintechs in the region, followed by Mexico (18.7%), Colombia (7.7%), Argentina (5.8%), and Chile (4.1%). Complementary data from the Inter-American Development Bank (IDB, 2022) and Findexable (2021) confirm that Brazil not only leads in market share but also in the diversity of fintech verticals, ranging from payments and digital lending to wealth management and insurtech.

Several factors explain this regional leadership. Unlike other jurisdictions in Latin America, Brazil has implemented both a Regulatory Sandbox and established Financial Innovation Hubs, mechanisms that foster experimentation under supervisory oversight. Moreover, both Open Finance and fintech licensing frameworks were introduced through phased implementation, allowing the market to evolve gradually while institutions adapted to new regulatory requirements. As will be further discussed in Section 5, this progressive approach provided a stable environment for innovation to flourish.

This collaborative regulatory evolution has strengthened Brazil's position as a hub of innovation. According to Finnovista, Inter-American Development Bank & IDB Invest (2022), Brazil was, at the time of the survey, the only country in Latin America where more than half of fintech entrepreneurs (62.9%) regarded the regulatory environment as adequate. This finding underscores the country's regulatory maturity and contrasts with Mexico (42.6%), Argentina (38.7%), Colombia (32.9%) and Chile (21.6%), where perceptions of legal uncertainty persisted at the time. The same report also identifies Brazil as the main market with the highest quality of dialogue between fintech firms and regulatory authorities, reflecting the BCB's commitment to open consultations and ongoing engagement with industry stakeholders. Such institutional cooperation has enhanced regulatory predictability, fostered mutual trust, and consolidated a culture of transparency between innovators and supervisors.

Equally important, the nationwide adoption of Pix has transformed retail payments and supported the expansion of digital finance. As of late 2024, Brazil recorded more than 170 million Pix users (Central Bank of Brazil, 2025). Combined, these initiatives have fostered a secure, competitive, and inclusive innovation ecosystem, reflecting the country's unique combination of a large consumer base,

advanced payment infrastructure, and proactive regulatory environment. Furthermore, the BCB's adaptive and risk-based regulatory approach, discussed in Section 5 of this article, has embedded principles of proportionality and technology-neutrality into fintech supervision, ensuring that innovation progresses in parallel with financial stability and consumer protection objectives. As highlighted by Veronese and Bertran (2023), Brazil's regulatory experience demonstrates how emerging economies can foster innovation within a structured and risk-sensitive framework. By creating specific institutional categories for fintechs and promoting continuous dialogue between regulators and market participants, the Brazilian approach has sought to balance competition, inclusion, and prudential oversight, making it a relevant reference for other Latin American jurisdictions pursuing similar goals.

4. Fintechs and Financial Inclusion

Financial inclusion represents a central objective of modern financial policy and a key dimension of fintech development. This section examines how technological innovation has expanded access to financial services in Brazil.

Financial inclusion refers to the process of ensuring that individuals and businesses have access to useful and affordable financial products and services that meet their needs, such as payments, savings, credit, and insurance, delivered in a responsible and sustainable way (World Bank, 2025). In many emerging economies, limited access to physical banking infrastructure and high transaction costs have historically constrained participation in the formal financial system. As noted by Ozili (2018), digital finance, through mobile platforms, data analytics, and other technology-enabled services, has mitigated these barriers by lowering operational costs and extending financial access to underserved and remote populations.

In Brazil, fintech entities have played a central role in extending financial inclusion through innovative payment, credit, and savings solutions. As shown in Figures 2 and 3, their expansion has substantially increased individuals' engagement with the formal financial system. According to the BCB's Report on Financial Citizenship (Central Bank of Brazil, 2021), the percentage of adults with banking relationships increased from 85% (2018) to 96% (2020), reflecting both greater access and diversification of service providers. Payment institutions were the main drivers of this change, recording a 179% increase in customer relationships between 2018 and 2020, well above the 49% growth observed in the traditional financial system. The data also reveal that 2020 marked a structural turning point: the sharp rise in new relationships with payment institutions coincided with the acceleration of digital onboarding, the popularization of mobile applications, and the adoption of instant-payment technologies such as Pix. These trends suggest that fintech-led innovations did not merely redistribute customers across financial segments but effectively expanded the system's boundaries by attracting individuals who were previously unbanked or underbanked, thus advancing the financial inclusion agenda in Brazil.

Relationship of individuals with the national financial system by segment.

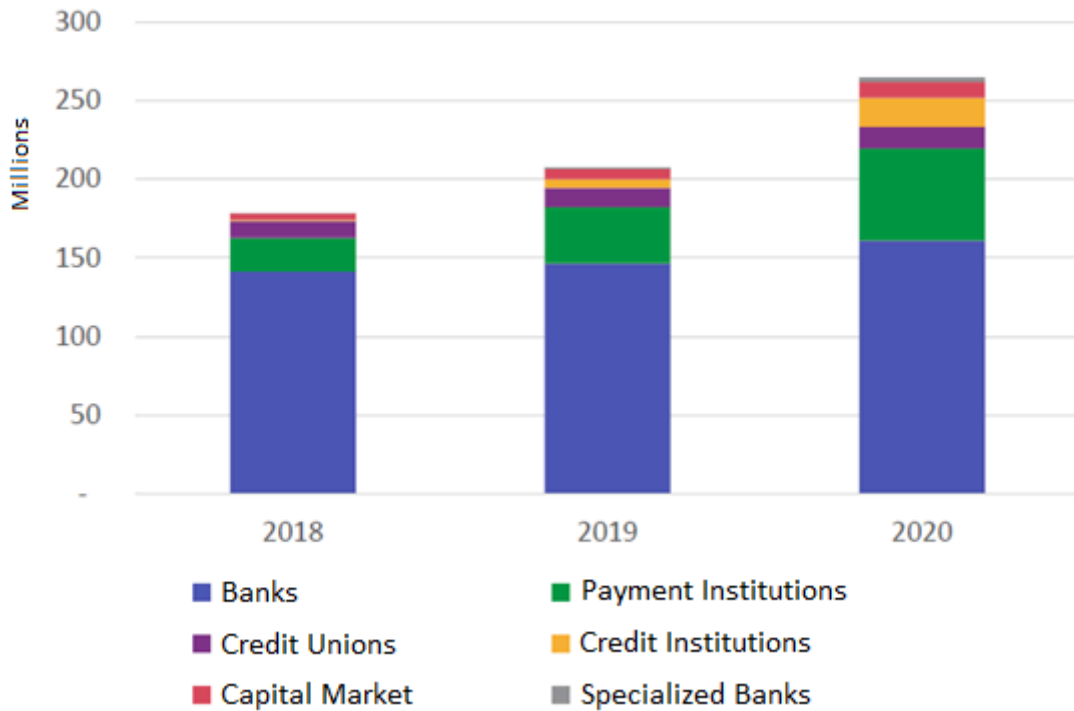


Figure 2. Relationship of individuals with the national financial system by segment. Extracted from the BCB's 2021 Financial Citizenship Report.

New relationships of individuals with the national financial system by segment

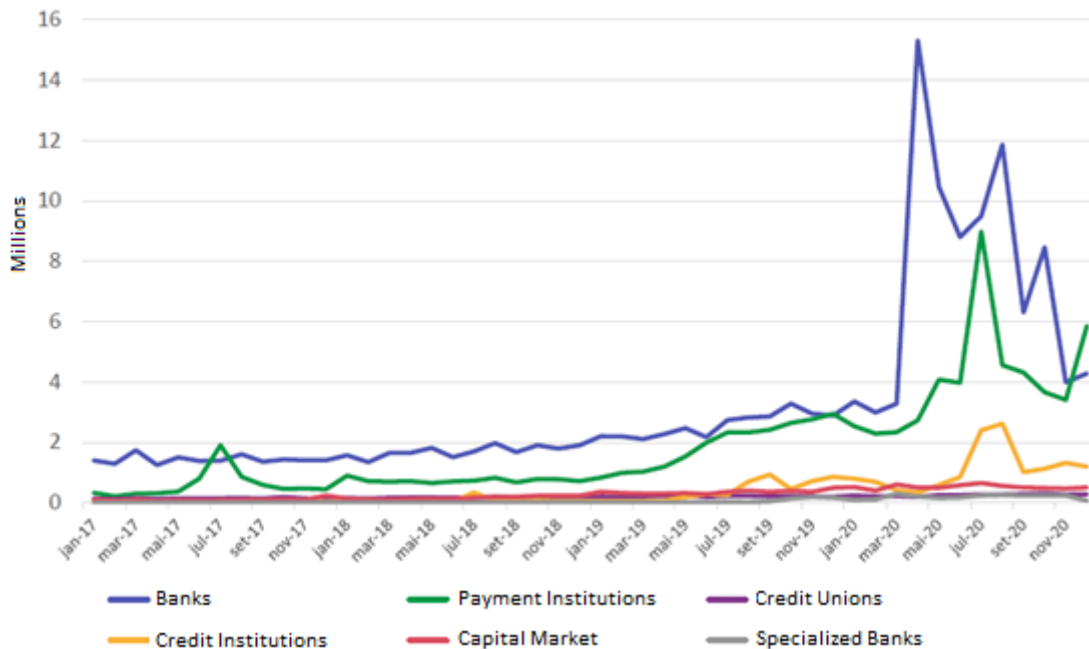


Figure 3. New relationship of individuals with the national financial system by segment. Extracted from the BCB's 2021 Financial Citizenship Report.

Some studies further highlight the transformative role of fintech in advancing financial inclusion. Drawing on empirical evidence from the World Bank's Global Findex

Database 2017 (Singer et al., 2018) and the conceptual analysis by Ozili (2018), fintech innovations, particularly digital-payment systems and mobile-based credit platforms, have lowered transaction costs, simplified account access, and expanded the reach of financial services to remote or previously underserved populations. In Brazil, the diffusion of instant-payment systems such as Pix has reinforced these effects, enabling real-time, low-cost transfers that promote greater consumer participation and small-business formalization.

Moreover, data from the 2025 Digital Experience Study (ID Wall, 2025) reveal a structural transformation in consumers' financial behavior. As illustrated in Figure 4, the proportion of individuals whose main financial relationship is with digital institutions rose sharply, from 21.3 % in 2020 to 48.7 % in 2024, nearly equaling the share of traditional banks. This steady convergence reflects more than a preference for convenience; it signals a deep shift in consumer trust and engagement, driven by the accessibility, speed, and low cost of fintech solutions. The trend also suggests that fintechs have progressed from complementing the traditional banking system to becoming primary financial service providers, reinforcing their role as a key vehicle for inclusion and market transformation in Brazil.

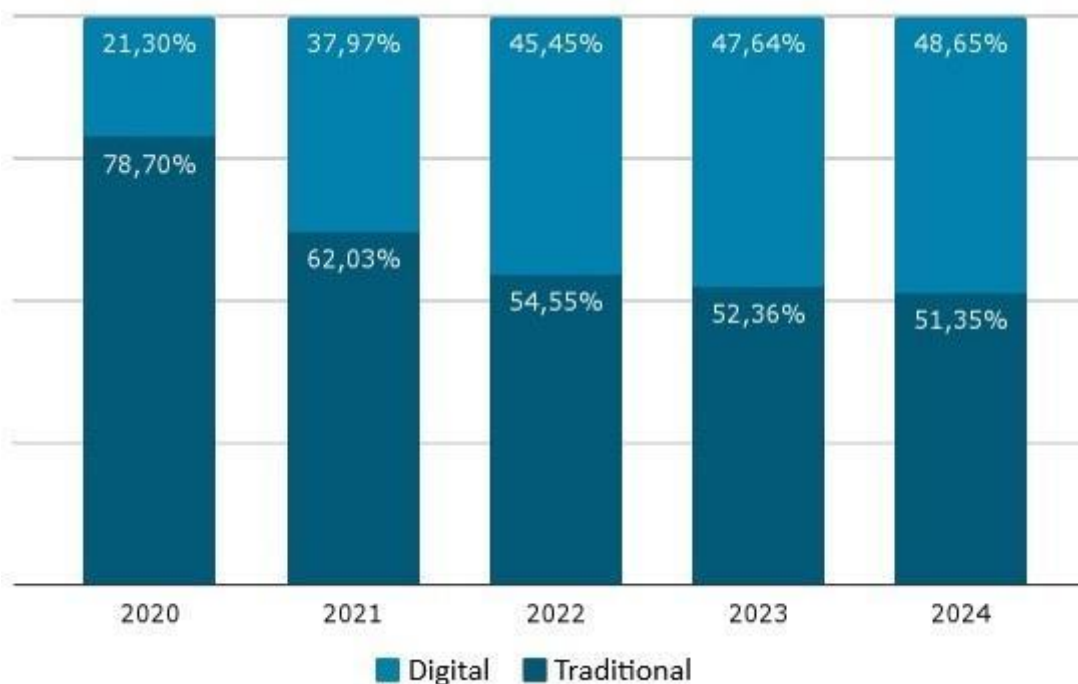


Figure 4. Distribution of main financial institution by account type (digital or traditional). Extracted from IDWall's Digital Experience Study (2025).

5. Implications, Challenges and the BCB approach

Fintechs have become central actors in Brazil's financial system, generating significant benefits in terms of efficiency, competition, and financial inclusion, but also introducing new and complex risks that challenge traditional regulatory frameworks. This section analyzes the main implications of fintech expansion for financial stability and consumer protection, examining how the BCB has responded through progressive regulatory reforms and a modernized supervisory approach. It first explores the evolution of the prudential and conduct rules applicable to fintechs, highlighting their alignment with international standards such as those of the Basel Committee and the FATF, and then discusses how these regulatory changes have translated into new supervisory practices,

particularly through the adoption of the Twin Peaks model and technology-driven oversight tools like SupTech.

Despite their benefits, particularly regarding financial inclusion, fintechs have introduced potential risks related to financial stability and consumer protection. Over time, fintechs have expanded rapidly, with several now surpassing traditional banks in customer numbers. According to the BCB, by the fourth quarter of 2024, one of the country's leading fintechs had surpassed the milestone of 100 million customers, becoming the third largest financial conglomerate in Brazil by number of clients.

Moreover, the volume of credit extended by fintechs has significantly increased. A 2024 PwC survey (Pricewaterhouse Coopers, 2024) indicated that fintechs granted R\$21.1 billion (~USD 3.5 billion) in credit in 2024, marking a 52% rise compared to the previous year. The customer base for credit fintechs grew from 25.6 million individuals in 2022 to 46.7 million in 2023, an 82% increase.

At the same time, fintechs have adopted new business models and partnerships to expand their service offerings and market presence. Specifically, Payment Institutions have started establishing subsidiaries such as financial institutions or investment funds. While fostering greater financial inclusion, this growth introduced additional risks, notably credit, liquidity, and market risks, raising concerns regarding financial stability as well as conduct-related issues.

5.1 The Regulatory Approach

The prudential regulatory framework initially established for fintechs did not adequately address these emerging scenarios. The existing rules applied particularly to Payment Institutions were designed solely to manage risks typically associated with payment services, such as operational and liquidity risks (Central Bank of Brazil, 2013a, 2013b). Moreover, only Payment Institutions exceeding a certain transaction volume were required to obtain formal authorization from the BCB.

Recognizing these regulatory gaps, the BCB progressively introduced stricter rules over the years. A significant milestone occurred in 2020, with the issuance of Resolution No. 24, dated October 22nd, 2020, which required prior authorization for Payment Institutions intending to operate as electronic money issuers. Prior to this regulation, authorization was only required after institutions reached certain transaction volumes or maintained significant balances in electronic money accounts. Under the new rule, any Payment Institution wishing to operate as an electronic money issuer must obtain prior authorization from the BCB. This change marked a strategic shift from reactive to preventive oversight, allowing risks to be anticipated before they materialized and reinforcing the alignment of Brazil's approach with the Basel Committee's principles of proportionality and early intervention (Basel Committee on Banking Supervision, 2018).

Subsequent developments deepened this trajectory. The next major step occurred in 2022 with the issuance of Resolution No. 197, through which the BCB established new prudential rules for Payment Institutions. This reform consolidated proportional regulation, a cornerstone of Brazil's approach, ensuring that smaller fintechs were not overburdened, while larger players became subject to standards similar to traditional financial institutions. Importantly, the rulemaking process was informed by extensive stakeholder consultation, reflecting the BCB's participatory regulatory model. This responsiveness strengthened compliance incentives and improved the predictability of supervisory expectations.

A similar principle of proportionality underpins Resolution No. 429, dated November 11th, 2024, which requires all institutions authorized to operate within the

instant payment system, PIX, to obtain formal operational authorization. Previously governed by simplified risk management rules and PIX-specific regulations, these institutions are now required to comply with all prudential and conduct requirements applicable to other institutions authorized by the BCB, while preserving the principle of proportionality that underpins BCB regulation. These requirements entered into force in January 2025, with phased implementation extending through December 2026.

In parallel, Brazil's anti-money-laundering and counter-terrorist financing (AML/CFT) framework, modernized through Circular No. 3,978 (2020) and Resolution No. 119 (2021), also played an important part of this transformation. These norms replaced the former, more prescriptive and rule-based regulation with a principles-based approach, giving institutions flexibility to design controls according to their specific risk profiles. The regulatory shift aimed to strengthen effectiveness over formality, reinforce Brazil's alignment with the FATF Recommendations, and address weaknesses previously identified in international assessments.

The new framework also reinforces accountability at the core of compliance: boards and senior management are explicitly responsible for approving AML/CFT policies, evaluating their effectiveness, and ensuring adequate governance. Furthermore, the rules at some level encourage the use of RegTech solutions, such as automated monitoring, pattern recognition, and big data analytics, to improve the detection of suspicious transactions. For supervisors, this has also created new opportunities for SupTech-driven oversight, enabling more dynamic and data-based risk assessment across fintech ecosystems.

Building on this regulatory modernization, the BCB continued to refine its approach to emerging risks. In 2025, in response to rising concerns about organized financial crime and the misuse of fintech platforms for illicit transactions, the BCB advanced the deadline for full implementation of the authorization requirement for Payment Institutions, from 2029 to May 2026. This adjustment sought to mitigate vulnerabilities associated with the rapid expansion of fintech activities, reinforcing obligations related to capital adequacy, corporate governance, and risk management.

These regulatory adjustments collectively carry critical implications for fintech supervision. By shifting from a more prescriptive to a risk-based and technology-enabled model, the BCB has not only strengthened Brazil's alignment with many important standards, such as those set by the Basel Committee on Banking Supervision (BIS) and the Financial Action Task Force (FATF), but also enhanced the country's reputation for regulatory credibility and innovation among emerging economies. This evolution demonstrates the BCB's proactive stance in integrating prudential and conduct rigor with technological adaptability, ensuring that the expansion of digital finance remains both inclusive and secure.

5.2 The Supervisory Approach

From a supervisory perspective, it is noteworthy that new risks have emerged alongside the growth of fintech. Not only have new risks emerged, but some have also shifted, at least at some level, towards new entrants. Also, it is important to note that new entrants often lack a strong compliance culture. Institutions subject to simplified regulatory requirements, or operating outside the supervisory perimeter, present challenges for supervisory action when prudential and conduct issues emerge.

To address these challenges, the BCB's supervisory model follows international best practices, using a risk-based approach. The framework is organized into prudential and conduct supervision, adopting a Twin Peaks model. Originating in the United

Kingdom and the Netherlands and discussed by Taylor (1995) and Llewellyn (1999), the Twin Peaks model distinguishes two complementary objectives:

- a) Prudential supervision, focused on solvency, liquidity, and systemic stability; and
- b) Conduct supervision, centered on financial consumer protection, fair treatment, and AML/CFT enforcement.

Within the BCB, this model was implemented gradually. In 2012, the Conduct Supervision Department was created to provide dedicated resources and strengthen the treatment of conduct-related risks, which had previously been addressed within prudential supervision. The process was consolidated in 2019, when this department was moved to a separate Deputy Governorship, granting it greater institutional independence from prudential supervision. Consequently, the Twin Peaks model at the BCB materializes through two Deputy Governorships: Difis, responsible for prudential supervision, and Direc, responsible for conduct supervision and financial citizenship. This institutional design enhances specialization and reduces potential conflicts of interest, ensuring that prudential soundness and market conduct receive balanced and coordinated attention (Basel Committee on Banking Supervision, 2018).

Building on this structure, the BCB has developed a comprehensive supervisory model composed of several complementary activities carried out by its specialized departments. The assignments of each department are specifically defined in the BCB Public Supervision Manual (Central Bank of Brazil, 2023b), and, in general terms, can be described as follows:

- a) Monitoring activities: this involves collecting data and information from the supervised entities and other external sources. The data is processed to analyze both macroprudential aspects related to financial stability and microprudential aspects related to individual entities. The aim is to support supervisory decision-making and proactively identify potential issues related to prudential or conduct matters.
- b) Supervisory activities: these are divided into prudential supervision and conduct supervision, according to their respective risk profiles.
- c) Strategic management and specialized supervision activities: this includes strategic planning for supervisory actions, human resources development, technological and logistical resource provision, technical advisory studies, inspections, prudential supervision of Financial Market Infrastructures (IMFs), and management of settlement agreements alternative to litigious sanctioning processes.

The governance of the supervision area is supported, in addition to strategic management activities, on coordinated and integrated work processes between the departments and on the performance of internal committees and technical networks, providing integration at strategic, tactical and operational levels.

Over recent years, as previously stated, prudential and conduct risks have increased due to the rise of the new market entrants. This evolving risk landscape has required increased attention from supervisors, who apply their risk-based frameworks to detect these changes and prioritize supervisory resources toward financial service providers posing higher risks.

Adjustments in supervisory practices have also responded to regulatory changes aimed at safeguarding the financial system's stability and integrity. The emergence and rapid growth of fintech entities have introduced several prudential and conduct-related concerns.

To address these concerns and achieve supervisory objectives, procedures have been enhanced, including conducting in-person activities with all payment arrangement providers. These activities promote conceptual alignment, improved data collection, and ensure comprehensive compliance with existing regulations.

More recently, throughout 2022, significant progress has been made in automating the on-site supervision process for nonbanking institutions and through the adoption of SupTech. To create a comprehensive inspection roadmap, automatable questions were identified in the areas of internal control, integrated risk and capital management, treasury, as well as the economic and financial situation of credit fintechs, as reported in the BCB's 2022 Annual Report (Central Bank of Brazil, 2023a).

In 2025, the FinCoNet Newsletter (September 2025) highlighted Brazil's advancements in enhancing risk-based supervision for consumer protection, including the development of analytics dashboards and early-warning indicators that allow for proactive detection of market misconduct.

However, the adoption of SupTech also brings challenges. According to BIS (2021b) and the IMF Working Paper AI Projects in Financial Supervisory Authorities (IMF, 2025), emerging markets face constraints such as legacy IT systems, data quality gaps, and limited supervisory capacity to interpret complex data outputs. Addressing these challenges requires not only technological investment but also capacity building, standardized data frameworks, and robust governance to safeguard data integrity and confidentiality.

Beyond technological considerations, structural limitations persist. Despite its operational autonomy, the BCB lacks financial, budgetary, and administrative independence. Unlike many supervisory authorities, it does not charge supervisory fees and relies on federal budget allocations. This funding model inherently ties the BCB's capacity to broader fiscal constraints, subjecting it to political and economic volatility and placing a disproportionate burden on its operational resources.

Nevertheless, BCB's supervisory approach continues to evolve in parallel with the financial market's developments, consistently updating its objectives, principles, and policies to align with international best practices and standards.

6. Conclusion

Brazil's fintech ecosystem has rapidly evolved into a global reference for innovation, financial inclusion, and market growth. The experience examined in this article demonstrates how a large emerging economy can foster innovation while maintaining financial stability and protecting consumers through a risk-based regulatory and supervisory approach. The Central Bank of Brazil (BCB) has progressively adapted its framework to address fintech-specific risks and opportunities, integrating prudential and conduct perspectives under Twin Peaks.

By combining proportional regulation, preventive authorization, and principles-based supervision, the BCB has managed to create an environment that encourages innovation without compromising safety or consumer trust. Initiatives such as Pix, Open Finance, and the modernization of the AML/CFT framework illustrate how regulatory innovation can serve inclusion and efficiency goals while remaining aligned with international standards, such as those of the Basel Committee and the FATF.

At the same time, Brazil's experience reveals the persistent challenges of balancing innovation with oversight. The rapid expansion of fintechs requires continuous vigilance, especially in relation to governance, cybersecurity, and data protection. Supervisory modernization through SupTech has improved monitoring capacity, but limitations in resources and institutional autonomy remain obstacles to full effectiveness.

Overall, the Brazilian case provides valuable insights for other jurisdictions seeking to scale technology-based financial services within a sound regulatory architecture. It shows that effective fintech governance in emerging economies depends on an adaptive, risk-based approach that integrates innovation, inclusion, and stability into a coherent framework.

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