How to lay the foundations of a competitive financial market in 10 steps

Zetta

EXECUTIVE SUMMARY

This document summarizes over a decade of experience in Latin America, focusing on transforming financial systems and their economic impacts. Combining theory with practical insights, it proposes measures for governments to enhance market attractiveness for new businesses, thereby boosting competition. **Zetta** and **Labrys** suggest ten independent but complementary actions, categorized into three groups: I. general considerations common to successful regulatory initiatives; II. measures to remove barriers to market entry and operation, whether in regulation or in anti-competitive practices in the market, and III. positive actions regulators can take to create conditions for competition by managing complexity and asymmetries to empower consumer choice:

I. GENERAL CONSIDERATIONS COMMON TO SUCCESSFUL REGULATORY INITIATIVES:

A. Financial regulation should be purpose-driven

B. Regulation on both financial services and technology should embrace a reasonable degree of uncertainty and complexity

C. Regulators should invite the market to collaborate in the regulatory process

---

II. REMOVE BARRIERS TO ENTER AND OPERATE IN THE MARKET

A. Regulators should adopt proportionate regulation

B. Regulation should welcome digital processes

C. Regulators should combat anti-competitive conducts

III. POSITIVE ACTION

A. Regulators should provide a legal framework for Open Finance, and financial services portability

B. Regulation should provide robust legal framework to protect credit collaterals

C. Regulators should provide Digital Public Infrastructures

D. Regulators should promote digital inclusion

These measures can be adopted separately with positive results, but they also have a mutual compounding effect, where each new measure enhances the impact of the others.

INTRODUCTION

INTRODUCTION

Competition in the financial system is crucial for improving service quality[1], pricing[2], innovation[3], efficiency[4], and inclusion[5].

Policies introduced to prevent catastrophic failures like the 2008 crisis have increased the cost of market entry and operation[8]. Consequently, bank concentration has significantly increased worldwide[9]. Many countries are now striving to boost competition and customer choice, particularly from fintech firms and digital neobanks[10], while maintaining the primary goal of prudential regulators: protecting the systemic stability of both local and global economies[11].

Over the past 15 years, studies have also shown that competition can enhance the stability of financial systems[6] and reduce supervision complexity[7]

Regulation can significantly impact competition levels in financial markets[12]. In the past decade, governments accelerated their actions to enhance competition with increasingly more sophisticated methods. Traditional methods of controlling concentration by overseeing mergers and acquisitions (M&A) often prioritize prudential concerns over competition metrics[13]. Conversely, regulators worldwide have embraced new regulatory interventions outside of M&A control to open markets to competition by influencing the underlying system and its inherent and artificial barriers[14].

This document draws on over a decade of experience in Latin America, redefining financial systems and their economic impact on the population. It leverages theory and practice to outline initiatives that governments can adopt to make markets more attractive to new entrants, thereby stimulating competition. Zetta and Labrys have proposed ten independent, incremental, and complementary measures that can help any country foster a more competitive financial market. These measures can be adopted separately with positive results, but they also have a mutual compounding effect, where each new measure enhances the impact of the others.

This document is organized into three parts. The first part outlines three general considerations common to successful regulatory initiatives. The second part discusses three measures to remove barriers to market entry and operation, whether in regulation or in anti-competitive practices in the market. The third part explores positive actions regulators can take to create conditions for competition by managing complexity and asymmetries to empower consumer choice[15].

I.1.
FINANCIAL REGULATION SHOULD BE PURPOSE-DRIVEN

The first measure to foster an open, inclusive, and efficient financial market is to be intentional about it. Regulating the financial market means managing complex settings that require cooperation between public and private actors, which rarely present themselves as a unified front. It also involves anticipating multiple levels of impact, with second-order effects and beyond[16] at every turn. In such settings, a special kind of planning is needed.

That's where purpose-driven planning comes into play. The concept is no stranger to the financial market. Since 2013 the Brazilian Central Bank has been advancing a programmatic agenda in Brazil[17]. In 2016, BACEN structured this agenda into a set of goals to guide proactive regulatory efforts in the following years. The Agenda BC+ was announced by BACEN's then-Governor Ilan Goldfajn as a work plan built around four pillars[18].

These pillars were structured as the four outcomes in Goldfajn's vision for the future of the Brazilian financial sector: (1) "more financial citizenship", (2) "more modern legislation", (3) "more efficiency in the financial system", and (4) "more affordable credit". After its launch, many successful regulatory initiatives aimed at improving metrics on these four pillars, including Pix, Brazil's real-time payment digital public infrastructure, and open finance. In 2019 and 2020, Roberto Campos Neto, Goldfajn's successor, expanded the original plan into Agenda BC#. The new dimensions of the agenda are now: inclusion, competitiveness, transparency, education, sustainability, and institutional excellence[19].

Publicizing both the principles and the outcomes that BACEN wanted to promote in the market helped both the regulators and the market to plan accordingly and cooperate toward those goals. The private sector collaborated with BACEN in designing Pix within the so-called Forum Pix[20], and later in the self-regulation model for the open finance initiative[21]. This transparency about the direction BACEN wanted to take the market also allowed new business models to emerge as the structural changes promised by the Central Bank came into force.

This approach is not unique to the Brazilian experience either. It's at the core of Mariana Mazzucato's theory for a new paradigm in the relationship between government and industry: the mission-oriented approach[22]. This view holds that governments should act to create and shape the market instead of just fixing its perceived broken parts.

Both in theory and practice, being intentional about the impact regulators want to make in the market — in principle and in outcomes — is a fundamental first step in having an effective impact. That's why we urge governments worldwide to implement this approach and structure their vision for the future of financial market competition in a tangible way.

I.2.

REGULATION ON BOTH FINANCIAL SERVICES AND TECHNOLOGY SHOULD EMBRACE A REASONABLE DEGREE OF UNCERTAINTY AND COMPLEXITY

The second recommendation still relates to the general approach regulators should take to foster an open, strong, and inclusive financial market. If the government's goal is to promote innovation and competition, it must first embrace uncertainty[23] and complexity[24]. By uncertainty, we mean the fact that no one knows the future and can anticipate perfectly the next movements of complex systems. In that sense, new uses, revenue models, needs, and solutions must be able to emerge and adapt to new trends and circumstances. By complexity, we mean the intricate nature of human and market behavior and its relationships to technology and regulation[25].

As a result, the intervention should be as limited in scope as possible and focused on the structural causes of market failures instead of trying to act on their consequences[26].

For example, efforts should aim to improve competition and facilitate new entrants (cause) instead of directly acting on interest rate caps (consequence). Another example is to avoid capping card network fees and instead focus on creating a cheaper alternative, allowing market players and customers to choose when they believe the benefits outweigh the costs of these payment rails.

Another way of embracing complexity and uncertainty is by adopting a risk-based approach where each company has the responsibility of defining how they will achieve the outcomes specified in regulation[27]. Consequently, from the start, the regulation can better adapt to the circumstances in the market that regulators cannot anticipate and adapt to new trends in the underlying market as they change.

When regulating technology, the approach that is more consistent with uncertainty and complexity is to regulate the use instead of the technology itself. This applies to AI and biometric technologies. Data privacy, consumer protection, and sector-specific legislation should be technology-neutral and regulate conduct regardless of the technique used[28]. This approach focuses on sanctioning violations committed using technology instead of limiting the use of the technology itself and its legitimate uses. It also enables society to apply to new situations what is already encoded in time-tested laws instead of creating new types of sanctions for violations committed with specific technologies. In that sense, financial fraud is still financial fraud regardless of whether it's committed with cash, debit cards, or cryptocurrencies.

I.3.

REGULATORS SHOULD INVITE THE MARKET TO COLLABORATE IN THE REGULATORY PROCESS

The third recommendation relates to the openness of regulators to market participation in the regulatory process. Collaboration between regulators and the market is the best way to leverage market knowledge and achieve public interest goals championed by the government[29], especially when it comes to measures that could represent interventions, and significantly impact access to credit and financial inclusion. There are many effective ways to do this, and the Brazilian Central Bank is a great example of commitment to this end, with impressive results.

The first way to open the regulatory process to market participation is by holding public consultations before enforcing new regulations. In the past 10 years, the Brazilian Central Bank has held more than 50 public consultations[30], where it published the full text of the proposed regulation on a platform and invited the market and citizens to submit comments. All submissions are public.

A second way to promote this kind of openness is by holding permanent discussion forums around specific themes and inviting trade associations, regulated entities, and other qualified entities to participate. This was the case with the Pix Forum, instated in early 2019, which works on the basis of requests for input from its members[31].

II

REMOVE BARRIERS TO ENTER AND OPERATE IN THE MARKET

The next few items will propose measures that regulators can take to remove barriers to entering and operating in the market. First, by making adjustments in the regulation itself, and then, in a more traditional sense, by taking action against anti-competitive conduct in the market.

II.1.

REMOVING BARRIERS IN THE REGULATION: REGULATORS SHOULD ADOPT PROPORTIONATE REGULATION

The fourth lever regulators can use to foster a more competitive market is adopting a proportionate regulation[32]. This worldwide trend[33] suggests that the regulatory burden on a financial institution should match the level of risk it poses to the financial system[34]. For example, the failure of an institution that doesn't hold third-party funds doesn't impact the market as much as an investment firm does. Similarly, a company that doesn't assume credit risk in its balance sheet is less likely to face certain failures compared to one that does. Therefore, there's less reason to limit firms' conduct in some cases than in others.

Beyond the issue of justice[35], the practical appeal of this approach is that it allows new entrants to join the market without having to meet the same regulatory requirements as an established bank. This enables companies to offer simpler services, like payments, and grow organically. In this scenario, regulatory oversight can increase as the company expands into riskier activities. This was the case for many companies associated with Zetta, like Nubank, Mercado Pago, and PicPay.

The proportionality of this approach can have many dimensions. One is creating different types of licenses to operate in the market.

Instead of a single, all-encompassing banking license, regulators should create modular licenses so that regulatory requirements scale with the risk level of the activity authorized by each license36. Additionally, the licensing process itself can be tailored to the risk level of each activity to limit bureaucracy and expedite approval.

With the institution's development, there should be a path to acquire more complex licenses on the conglomerate[37] or the conversion of a simpler license to a more complex one, with a process where the infrastructure already in place could be used.

To best utilize the resources of regulatory authorities, licenses for riskier activities should implicitly authorize less risky activities. For example, a license to operate account-to-account payments should also allow the company to initiate open finance payments without needing a separate license. Those who can do the greater can do the lesser.

In Brazil, the Central Bank created payment institution licenses[38] and fintech licenses[39] to allow new players to enter the market[40]. In some cases, these licenses can have lower prudential requirements for smaller players and, depending on the activity, may waive some requirements applicable to other institutions like commercial banks[41]. This led to a surge in the number of regulated entities, offering innovative services and competitive pricing, benefiting all Brazilians[42]. Today, Brazil is home to more than 2,000 fintech firms, three times the number in Mexico[43].

Another dimension of proportionate regulation distinguishes between companies offering similar services but of different sizes. The size and complexity of an operation also impact the systemic risk assessment each company presents to the market.

Typically, two strategies can achieve this: segmentation and risk-based regulation. Segmentation takes a tiered approach by categorizing the market based on well-defined numerical thresholds and adjusts regulation for each bracket[44]. For example, the Brazilian Central Bank divides financial institutions into five segments, from S5 to S1, and groups integrated by payment institutions into four segments, from S5 to S2[45], each with increasing prudential requirements[46]. Another example is the case of payment institutions, which enjoyed a waiver from applying for a license altogether until they reached a certain threshold[47], though this waiver was recently removed and now all companies who offer account services must apply for a license[48].

Risk-based regulation[49] takes proportionality to its finest granularity, allowing modular licenses to divide the market by activity and segmentation to create brackets of comparable companies. This approach reaches company-specific granularity.

Regulators should define regulatory goals and outcomes for institutions, leaving the how to each institution according to its size, risk level, and complexity.

Once the policy is in place, regulators can review internal policies to assess the adequacy of measures adopted to achieve desired outcomes, both at the time of license application and later. Regulators also have the authority to inspect and ensure institutions comply with their internal policies. This ultimate proportionate regulation is flexible enough to accommodate particular circumstances and is more open to uncertainty and complexity.

Some version of a risk-based approach is applied worldwide and is even in the formal recommendations from the Financial Action Task Force (FATF) in its AML/FT efforts[50]. It is worth noticing that a risk-based approach does not mean a lower level of control, but rather the opposite. Targeting the financial system's efforts on riskier activities means a stronger outcome for AML/FT standards, focusing on results instead of only on procedures. The Brazilian Central Bank adopted risk-based regulation in the terms proposed above for areas where specifying measures in regulations would be counterproductive, such as cybersecurity[51] and anti-money laundering[52].

We urge regulators to incorporate proportionate regulation in all its dimensions into their normative process. The better regulatory requirements match the systemic risk an activity brings, the easier it will be for new entrants to join and operate in the market. This will result in a stronger, more open, and more inclusive market.

II.2.

REMOVING BARRIERS IN THE REGULATION: REGULATION SHOULD WELCOME DIGITAL PROCESSES

A separate but equally important lever regulators can pull to foster competition in financial markets is embracing digital processes, either by removing outdated restrictions that are incompatible with new mediums or by adapting the regulation to explicitly incorporate them. It's the case of requirements of know-your-customer and anti-money laundering. Sophisticated technology[53] widely available today has been radically transforming the industry and opening up the financial market to greater inclusion and efficiency levels[54].

Another example is the use of cloud services, even those offered by foreign companies like AWS, GCP, and Azure. Cloud computing is what laid the ground for the emergence of pervasive mobile services[55]. Without it, mobile services and all its benefits like reach, cost-effectiveness, and scalability would not be viable.

Regulators everywhere should actively prioritize (1) updating the appropriate rules to accommodate and incentivize digital processes in the financial market and (2) adopting an interpretation of current rules that is agnostic to the technology used and that instead focuses on the desired outcome of improving the reach and quality of financial services while maintaining an adequate level of regulatory safeguards for a healthy financial system.

II.3.

REMOVING BARRIERS IN THE MARKET: REGULATORS SHOULD COMBAT ANTI-COMPETITIVE CONDUCTS

The perhaps more traditional lever to improve competition in a market, the removal of anti-competitive practices, is also an important step in the case of financial markets. Depending on the structure of the market, new entrants may see themselves in a tough position: they depend on the cooperation of incumbent firms to have access to essential infrastructure services in the market. That may be the case for ATM network services, clearing houses, card networks, bureau information, payment rails, and many others[56]. In these cases, financial and anti-trust regulators should join forces to prevent or revert this kind of abuse and guarantee access to essential services to all market players.

In other cases, exclusivity clauses in financial services contracts reduce customer mobility and effectively push new entrants away from certain markets. That was the case, in Brazil, of the exclusivity clauses in credit card receivables advance loans[57], in payroll advance loans[58], and in the relationship between acquirers and the card network[59]. In Brazil, these issues have led to corrective actions from both the Central Bank and the Competition Authority (CADE).

Finally, one additional situation worth mentioning is that anti-competitive practices from non-financial infrastructure providers may hinder competition in the financial market. That is the case when technology platforms[60] artificially limit the use of industry-standard "technical infrastructures" that are required to provide widespread payment services[61], effectively retarding innovation on the use of these technologies. Globally, big tech companies have been under increasingly high scrutiny on antitrust grounds[62]. When it comes to payments, the European Union has recently found that "to develop viable mobile payment apps, access to NFC technology is [..] essential" and that, in preventing developers from accessing it, Apple "abused its dominant position", negatively impacting innovation and customer choice[63].

The role of both the financial regulators and the competition authorities, therefore, is to collaborate, each leveraging their own attributions and jurisdiction, towards preventing or sanctioning anti-competitive practices that hinder innovation and the ability of new players entering or operating on the financial market.

III.
CREATING MATERIAL CONDITIONS TO COMPETE

The following items focus on aspects of the financial market that inherently favor concentration and the positive measures regulators can implement to address these issues, fostering a stronger and more open market for everyone.

III.1.

REGULATORS SHOULD PROVIDE A LEGAL FRAMEWORK FOR OPEN FINANCE, AND FINANCIAL SERVICES PORTABILITY

Open Finance is a global trend[64]. Many countries are developing regulatory frameworks to create or foster an Open Finance ecosystem. At its core, Open Finance facilitates the exchange of data between financial institutions[65]. This trend has far-reaching implications for the financial industry. When successful, it can empower customers by better informing their decisions and reducing the switching costs between service providers. By bringing their financial history with them, it becomes simpler and less expensive to switch to institutions offering better services or conditions. This is good news for market competition, as high switching costs make competition fragile[66].

Open Finance also has the potential to reduce another market intrinsic feature that favors concentration: the information asymmetry between incumbents and new entrants. Typically, incumbents have access to much more information about their customers than challenger firms. Open Finance can reduce this disparity, leveling the playing field and enabling new entrants to make more competitive offers, reinforcing the principle of consumer data ownership. It can also be a great source of innovation in the sector, allowing institutions to compete on new frontiers of experience, services, and conditions for customers. Finally, Open Finance can reduce the complexity of intra-financial system processes requiring data exchange, such as portability and regulatory reports. This push towards efficiency reduces the cost of operating in the market, making it more attractive to new entrants.

To enable these transformations, regulation plays a crucial role by providing the legal framework for the Open Finance ecosystem, defining rights and obligations related to scope, participation, user experience, and reliability[67].

Related to Open Finance are cases where service portability regulation can also reduce switching costs and empower customers. Examples include payroll account portability[68], loan portability , and investment broker portability[70].

Regulators should recognize portability as a customer right and define processes that allow customers to place requests with their institution of choice, letting the process flow between the original and the chosen institution without unnecessary customer interactions.

III.2.

REGULATION SHOULD PROVIDE A ROBUST LEGAL FRAMEWORK TO PROTECT CREDIT COLLATERALS

Generally speaking, protecting credit also goes a long way toward fostering competition[71]. By reducing the cost of credit, new entrants have one more tool in their toolbox to tackle the base of the customer pyramid, where credit is typically either too expensive or non-existent. One example where it can make a sizable impact on competition is recognizing and structuring collateral on intangible assets like credit card receivables.

In Brazil, the regulators created a framework where entities could operate under BACEN's supervision as receivable registries[72]. That should allow acquirers to register their clients' receivables to achieve consistency, transparency, and legal certainty over which receivables are serving as collateral and which are free to be leveraged for another loan[73]. The end goal of this kind of system is to open the market for any financial institution, not only the acquirer, to securely offer loans guaranteed by credit card receivables[74], with low register cost and effective systems.

III.3.

REGULATORS SHOULD PROVIDE DIGITAL PUBLIC INFRASTRUCTURES

Moving towards a more direct intervention from regulators, there is a number of Digital Public Infrastructures (DPIs) that can effectively change the competitive landscape for competition in the financial market in any country[75]. The study of DPIs has attracted the interest of many organizations focused on delivering the Sustainable Development Goals[76]. For the purposes of this study, it's enough to focus on the systemic aspects of DPIs, where regulators can build pieces of infrastructure to protect the public interest and change the dynamic of a market, delivering second-order effects that improve competition and ultimately create lasting results for all the affected population[77].

It is the case of real-time payment infrastructures, such as Brazil's Pix. Government-led real-time payment rails like Pix have a huge potential to open the payments and financial markets, improve the efficiency across the board, reduce costs, improve financial inclusion, and give billions of dollars back to the real economy[78]. Because they are government-led, regulators can set mandatory participation schemes, guaranteeing ubiquity of the new payment solution and effectively connecting any two accounts in the country. To ensure adoption, regulators can play an active role in promoting the use of these infrastructures among consumers and businesses. Being government-led, regulators can also control the technical decisions in the design of the new rail, protecting the public interest throughout the design. Finally, this kind of public payment scheme can mandate a minimum user experience to all payment apps in the country, guaranteeing a baseline experience to all users. Besides, digitalizing payments also improves account ownership and increases the size of the potential market for digital new entrants[79].

Brazil has been the stage to profound transformations in the market and the economy since Pix went live in 2020. Regarding competition, the rail had one major effect. It removed one of the greatest inherent market asymmetries in payments: its network effect. By allowing any institution, regardless of its size, to reach any account in any other institution in the country, Pix gave new entrants and small players the ability to enter the payments space without having to build a huge two-sided network first.

Incumbent's size and legacy client base used to be an important moat to keep competition away. After Pix, they became irrelevant when it came to the sole transfer of funds between accounts along with the appropriate metadata. Academic studies already observed this phenomenon in early data from Brazil[80]. The greater focus on digital services also rendered physical branch distribution much less relevant[81], also favoring competition from new entrants. It's worth noting that, by removing the network effect, Pix also protected the market against moves from big tech firms, whose client base otherwise posed a threat to the competition in the market. Now, since size is no longer a winning position, companies, big and small, need to compete on the base of service quality and, when appropriate, price[82].

Another example of DPI with huge potential for impact in competition in financial markets is digital identity. Identification is a key component of any digital payment service. A government-issued digital ID can bring many improvements to commerce and the economy as a whole. After all, identification is the first step in any commercial transaction with digital payment. Regarding specifically competition, it has the potential to improve the quality and reduce the cost of complying with know-your-customer requirements[83]. That is true not only for natural persons, but also for legal persons. In fact, one of the greatest obstacles for offering seamless digital financial services for companies is the complexity involved in documentation review, ultimate beneficial owner (UBO) analysis, and representation powers and mandates[84]. All of which government agencies could immensely benefit from aggregating under an identity service for companies[85].

Finally, the provision of an infrastructure of open APIs for access to government data and services also holds a huge potential for fostering competition in financial services. Governments frequently functions as custodians[86] of a great deal of data and information about its citizens across multiple agencies and organs. By allowing citizens and companies to share these data with third parties, a new frontier for competition over the quality of services and price is created. This data can be used to offer services to facilitate banking clients' lives and businesses and to function as an additional source of data to feedback into credit models.

Especially in the case of vulnerable populations, digital financial services can function as the first and sometimes only channel of contact with the formal power structures in a society. That became apparent, for example, in Brazil, when the COVID-19-related emergency relief program found no physical way of reaching a portion of the population. The emergency relieve went directly through their bank accounts[87].

Allowing citizens to access government services through their preferred interfaces could bring social inclusion to a much higher level. Additionally, having these governmental services accessible via API, the government can leverage the mobile service infrastructure instead of building physical infrastructure of their own. Finally, this approach of servicing APIs allows the government to focus on the part only they can provide: access to the data and services. Meanwhile, the private sector can compete to provide the best experience on the end-user interface to access such services and the best return on the use of the data.

III.4.

REGULATORS SHOULD PROMOTE DIGITAL INCLUSION

Finally, governments should also promote the digital inclusion of the population. That can take many flavors, including enabling mobile internet infrastructure and actively promoting the transition from physical services to digital ones accompanied by financial education initiatives in collaboration with digital firms. The first bit is self-explanatory. Fostering mobile internet infrastructure prepares the field for digital new entrants by expanding the potential market for these kinds of services. As mentioned above, digital financial services are the gateway for innovation, more efficiency, less cost, and more inclusion. By improving the serviceable market, it becomes more attractive to new entrants[88].

The second part of our recommendation centers the government as a potential driver of the digitalization of society. That means providing digital alternatives to physical government processes to incentivize and normalize digital services to the population at large. That doesn't mean, of course, forgoing all physical support to the population and leaving those who do not transition behind. The point to be made here is that every time the government offers a simpler, easier alternative to physical procedures, it creates incentives for the population to explore digital services. That is, of course, a gradual transformation, but one that compounds its positive effects at every small step.

Finally, another place governments can influence the digitalization of the economy is by providing digital payments of government benefits[89]. According to Findex 2021, almost 40% of adults and almost 60% of the banked population in developing countries opened their first bank account to receive wages or government payments[90]. Examples in Thailand[91], India[92], and more recently Brazil[93] also prove this point. Digitalizing these payments also have the potential of helping the most vulnerable population create a digital financial footprint, which is the basis for access to any other financial services, such as credit[94].

references

1. Financial Conduct Authority (UK), Promoting competition (2016), available at: https://www.fca.org.uk/about/what-we-do/promoting-competition, European Commission (EU), Why is competition policy important for consumers?, available at: https://competition-policy.ec.europa.eu/about/what-competition-policy/why-competition-policy-important-consumers_en, Competition Bureau (Canada), Strengthening Competition in the Financial Sector: Submission by the Competition Bureau (2024), available at: https://competition-bureau.canada.ca/how-we-foster-competition/promotion-and-advocacy/strengthening-competition-financial-sector-submission-competition-bureau; European Central Bank (EU), Competencia y Sector Financiero (2012), available at: https://www.ecb.europa.eu/press/key/date/2012/html/sp120323_1.es.html; Bank of England (UK), Why do we care about competition? (2019), available at: https://www.bankofengland.co.uk/explainers/why-is-competition-important-for-banks; Financial Conduct Authority (UK), Our approach to competition (2024), available at: https://www.fca.org.uk/publications/corporate-documents/approach-competition; Gustavo Joaquim, Bernardus F Nazar Van Doornik, José Renato Haas Ornelas, Bank competition, cost of credit and economic activity: evidence from Brazil, BIS Working Papers No 1134 (2023), available at: https://www.bis.org/publ/work1134.htm.

2. Financial Conduct Authority (UK), Promoting competition (2016), available at: https://www.fca.org.uk/about/what-we-do/promoting-competition; Consumer Financial Protection Bureau (USA), Promoting competition in our financial markets, (2022), available at: https://www.consumerfinance.gov/about-us/blog/promoting-competition-in-our-financial-markets/; European Commission (EU), Why is competition policy important for consumers?, available at: https://competition-policy.ec.europa.eu/about/what-competition-policy/why-competition-policy-important-consumers_en; Competition Bureau (Canada), Strengthening Competition in the Financial Sector: Submission by the Competition Bureau (2024), available at: https://competition-bureau.canada.ca/how-we-foster-competition/promotion-and-advocacy/strengthening-competition-financial-sector-submission-competition-bureau; European Central Bank (EU), Competencia y Sector Financiero (2012), available at: https://www.ecb.europa.eu/press/key/date/2012/html/sp120323_1.es.html; Bank of England (UK), Why do we care about competition? (2019), available at: https://www.bankofengland.co.uk/explainers/why-is-competition-important-for-banks; Financial Conduct Authority (UK), Our approach to competition (2024), available at: https://www.fca.org.uk/publications/corporate-documents/approach-competition; Gustavo Joaquim, Bernardus F Nazar Van Doornik, José Renato Haas Ornelas, Bank competition, cost of credit and economic activity: evidence from Brazil, BIS Working Papers No 1134 (2023), available at: https://www.bis.org/publ/work1134.htm.

3. Juan José Ganuza Fernández, Joaquín López Vallés, Reformas para impulsar la competencia en España (2023), available at: https://www.funcas.es/libro/reformas-para-impulsar-la-competencia-en-espana/; Yi Li , Wei Peng (China), Bank price competition and enterprise innovation: Based on empirical evidence of Chinese A-share listed companies (2023), available at: https://www.sciencedirect.com/science/article/abs/pii/S1057521923005203; Bank of England (UK), Why do we care about competition? (2019), available at: https://www.bankofengland.co.uk/explainers/why-is-competition-important-for-banks; Basel Committee on Banking Supervision (BIS), Literature review on financial technology and competition for banking services (2024), available at: https://www.bis.org/bcbs/publ/wp43.htm; Financial Conduct Authority (UK), Our approach to competition (2024), available at: https://www.fca.org.uk/publications/corporate-documents/approach-competition.

4. Juan José Ganuza Fernández, Joaquín López Vallés, Reformas para impulsar la competencia en España (2023), available at: https://www.funcas.es/libro/reformas-para-impulsar-la-competencia-en-espana/;Financial Conduct Authority (UK), Our approach to competition (2024), available at: https://www.fca.org.uk/publications/corporate-documents/approach-competition.

5. Financial Conduct Authority (UK), Promoting competition (2016), available at: https://www.fca.org.uk/about/what-we-do/promoting-competition; Competition Bureau (Canada), Strengthening Competition in the Financial Sector: Submission by the Competition Bureau (2024), available at: https://competition-bureau.canada.ca/how-we-foster-competition/promotion-and-advocacy/strengthening-competition-financial-sector-submission-competition-bureau; European Commission (EU), Why is competition policy important for consumers?, available at: https://competition-policy.ec.europa.eu/about/what-competition-policy/why-competition-policy-important-consumers_en; Basel Committee on Banking Supervision (BIS), Literature review on financial technology and competition for banking services (2024), available at: https://www.bis.org/bcbs/publ/wp43.htm; Financial Conduct Authority (UK), Our approach to competition (2024), available at: https://www.fca.org.uk/publications/corporate-documents/approach-competition; World Bank Group, The Global Findex Database 2021, available at: https://www.worldbank.org/en/publication/globalfindex/Report.

6. Juan Carlos Cuestas, Yannick Lucotte, Nicolas Reigl, Banking sector concentration, competition and financial stability: the case of the Baltic countries, Post-Communist Economies (2019), p. 1-35, available at: https://doi.org/10.1080/14631377.2019.1640981; Bank of England (UK), Why do we care about competition? (2019), available at: https://www.bankofengland.co.uk/explainers/why-is-competition-important-for-banks; Basel Committee on Banking Supervision (BIS), Literature review on financial technology and competition for banking services (2024), available at: https://www.bis.org/bcbs/publ/wp43.htm.

7. European Central Bank (EU), Competencia y Sector Financiero (2012), available at: https://www.ecb.europa.eu/press/key/date/2012/html/sp120323_1.es.html.

8. European Central Bank (EU), Competencia y Sector Financiero (2012), available at: https://www.ecb.europa.eu/press/key/date/2012/html/sp120323_1.es.html.

9. European Central Bank (EU), Competencia y Sector Financiero (2012), available at: https://www.ecb.europa.eu/press/key/date/2012/html/sp120323_1.es.html, Gustavo Joaquim, Bernardus F Nazar Van Doornik, José Renato Haas Ornelas, Bank competition, cost of credit and economic activity: evidence from Brazil, BIS Working Papers No 1134 (2023), available at: https://www.bis.org/publ/work1134.htm.

10. Juan José Ganuza Fernández, Joaquín López Vallés, Reformas para impulsar la competencia en España (2023), available at: https://www.funcas.es/libro/reformas-para-impulsar-la-competencia-en-espana/.

11. European Central Bank (EU), Competencia y Sector Financiero (2012), available at: https://www.ecb.europa.eu/press/key/date/2012/html/sp120323_1.es.html.

12. Fernanda Garibaldi, Sistema de Pagamentos Brasileiro (2023), available at: https://www.amazon.com.br/Sistema-Pagamentos-Brasileiro-Fernanda-Garibaldi/dp/8551926209.

13. European Central Bank (EU), Competencia y Sector Financiero (2012), available at: https://www.ecb.europa.eu/press/key/date/2012/html/sp120323_1.es.html.

14. Basel Committee on Banking Supervision (BIS), Literature review on financial technology and competition for banking services (2024), available at: https://www.bis.org/bcbs/publ/wp43.htm; Mariana Mazzucato, Mission-oriented Innovation Policy: Challenges and opportunities (2017), available at: https://www.thersa.org/globalassets/pdfs/reports/mission-oriented-policy-innovation-report.pdf; Mariana Cunha e Melo, O Papel Catalisador da Regulação nas Transformações do Open Banking: Competição, Qualidade e Preço, In: Perspectivas e Controvérsias da Inovação Regulatória no Sistema Financeiro de Pagamentos (2023), available at: https://idec.org.br/system/files/ferramentas/inovacao-regulatoria.pdf

15. About the theory behind these concepts, see, e.g.: Mariana Cunha e Melo, Jonas de Abreu, Regulation and competition: the case of the Brazilian fintech ecosystem, 2023, available at: https://doi.org/10.59262/fgyy58.

16. Mariana Cunha e Melo, Jonas de Abreu, Systemic Approach to Technology (SAT): The case for society-focused technology (2023), available at: https://doi.org/10.59262/tm58mc.

17. Saul Fine, The perfect storm for financial inclusion in Brazil (2022), available at: https://web.archive.org/web/20230926215528/https://labsnews.com/en/articles/experts/perfect-storm-financial-inclusion-brazil/.

18. Brazilian Central Bank (Brazil), Apresentação Presidente Ilan Goldfajn Agenda BC+ (2016), available at: https://www.bcb.gov.br/pec/appron/apres/Apresenta%C3%A7%C3%A3o_Presidente_Ilan_Goldfajn_Agenda_BC_Mais_20122016.pdf.

19. Brazilian Central Bank (Brazil), Agenda BC#, available at: https://www.bcb.gov.br/en/about/bcbhashtag?modalAberto=about_agenda.

20. Brazilian Central Bank (Brazil), Pix: BCB's Role, available at: https://www.bcb.gov.br/en/financialstability/pixcentralbanksrole#:~:text=BCB%20leadership%20%2D%20Pix%20Forum%20and%20working%20groups.

21. Brazilian Central Bank (Brazil), Open Finance, available at: https://www.bcb.gov.br/en/financialstability/open_finance.

22. Mariana Mazzucato, Mission-oriented Innovation Policy: Challenges and opportunities (2017), available at: https://www.thersa.org/globalassets/pdfs/reports/mission-oriented-policy-innovation-report.pdf.

23. Ben Thompson, Stratechery, Attenuating Innovation (AI) (2023), available at: https://stratechery.com/2023/attenuating-innovation-ai/.

24. Mariana Cunha e Melo, Jonas de Abreu, Systemic Approach to Technology (SAT): The case for society-focused technology (2023), available at: https://doi.org/10.59262/tm58mc.

25. Mariana Cunha e Melo, Jonas de Abreu, Systemic Approach to Technology (SAT): The case for society-focused technology (2023), available at: https://doi.org/10.59262/tm58mc; Clayton Christensen, Seeing What's Next: Using the theory of innovation to predict industry change (2003), available at: https://www.google.es/books/edition/Seeing_What_s_Next/SZQnfdM9O7wC?hl=en&gbpv= 1&printsec=frontcover.

26. Mariana Cunha e Melo, Jonas de Abreu, Systemic Approach to Technology (SAT): The case for society-focused technology (2023), available at: https://doi.org/10.59262/tm58mc.

27. Alliance for Financial Inclusion, KYC Innovations, Financial Inclusion and Integrity in Selected AFI Member Countries (2019), p.21, available at: https://www.afi-global.org/publications/kyc-innovations-financial-inclusion-and-integrity-in-selected-afi-member-countries/: "Lessons learnt from Brazil on the value of regulating for innovation: Key to the take-off of innovative techniques in KYC verification has been the concerted effort by the regulator to establish an enabling regulatory environment. The focus of the BCB on the outcomes, rather than the input of KYC procedures, has been instrumental in encouraging FinTech innovators and banks to capitalize on the high mobile phone penetration and innovate within tolerable risk bounds (stakeholder interview, 2018)".

28. Labrys, AI Regulation, backstage squabbles, and fear-mongering executives (2023), available at: https://www.labrys.one/public/ctpi-weekly/ai-regulation-backstage-squabbles-and-fear-mongering-executives.

29. Mariana Cunha e Melo, Jonas de Abreu, Regulation and competition: the case of the Brazilian fintech ecosystem (2023), available at: https://doi.org/10.59262/fgyy58.

30. Mariana Cunha e Melo, Jonas de Abreu, Regulation and competition: the case of the Brazilian fintech ecosystem (2023), available at: https://doi.org/10.59262/fgyy58.

31. Brazilian Central Bank (Brazil), Pix: BCB's Role, available at: https://www.bcb.gov.br/en/financialstability/pixcentralbanksrole#:~:text=BCB%20leadership%20%2D%20Pix%20Forum%20and%20working%20groups.

32. Basel Committee on Banking Supervision (BIS), Proportionality in bank regulation and supervision - a joint global survey (2021), available at: https://www.bis.org/bcbs/publ/d523.htm; Financial Stability Institute (BIS), Proportionality in banking regulation (2018), available at: https://www.bis.org/speeches/sp180704b.htm; European Central Bank (EU), Is small beautiful? Supervision, regulation and the size of banks (2017), available at: https://www.ecb.europa.eu/press/key/date/2017/html/ecb.sp171014.en.html.

33. According to a survey conducted by the BIS and the World Bank with 94 jurisdictions, "More than 80% of respondents currently implement proportionate approaches to at least one subset of their financial systems". See: Basel Committee on Banking Supervision (BIS), Proportionality in bank regulation and supervision - a joint global survey (2021), available at: https://www.bis.org/bcbs/publ/d523.htm; European Central Bank (EU), Is small beautiful? Supervision, regulation and the size of banks (2017), available at: https://www.ecb.europa.eu/press/key/date/2017/html/ecb.sp171014.en.html.

34. Financial Stability Institute (BIS), Proportionality in banking regulation (2018), available at: https://www.bis.org/speeches/sp180704b.htm; European Central Bank (EU), Is small beautiful? Supervision, regulation and the size of banks (2017), available at: https://www.ecb.europa.eu/press/key/date/2017/html/ecb.sp171014.en.html.

35. European Union Law (EU), Principle of proportionality, available at: https://eur-lex.europa.eu/EN/legal-content/glossary/principle-of-proportionality.html.

36. European Central Bank (EU), Regulation, proportionality and the sustainability of banking (2019), available at: https://www.bankingsupervision.europa.eu/press/speeches/date/2019/html/ssm.sp191121_1~a65cdec01d.en.html.

37. Folha de S. Paulo, BC quer estimular novos bancos montando Lego financeiro, available at: https://www1.folha.uol.com.br/colunas/painelsa/2022/11/bc-quer-estimular-novos-bancos-montando-lego-financeiro.shtml.

38. Banco Central do Brasil (Brazil), Fintech ecosystem, available at: https://www.bcb.gov.br/en/financialstability/fintechs_en.

39. Banco Central do Brasil (Brazil), Payment schemes, available at: https://www.bcb.gov.br/en/financialstability/paymentschemes.

40. Angela Strange, Flora Oliveira, Brazil's Surprising Fintech Tailwind (2022), available at: https://a16z.com/brazils-surprising-fintech-tailwind/.

41. Banco Central do Brasil (Brazil), Resolução BCB nº 25 (2020), available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Resolução%20BCB&numero=25; Banco Central do Brasil (Brazil), Resolução BCB nº 198 (2022), available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Resolução%20BCB&numero=198; Banco Central do Brasil (Brazil), Resolução BCB nº 80 (2021), available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Resolução%20BCB&numero=80.

42. Zetta, Impacto das fintechs para competição e inclusão financeira (2023), available at: https://somoszetta.org.br/wp-content/uploads/2024/01/Zetta_FINTECHS_DESKTOP_.pdf.

43. Zetta, Labrys, Lições para o Futuro do Open Finance, available at: https://somoszetta.org.br/wp-content/uploads/2024/07/Zetta_OpenFinance_DESKTOP.pdf.

44. Basel Committee on Banking Supervision (BIS), Proportionality in bank regulation and supervision - a joint global survey (2021), p. 3, available at: https://www.bis.org/bcbs/publ/d523.htm; Banco Central do Brasil (Brazil), Prudential Regulation, available at: https://www.bcb.gov.br/en/financialstability/regulation.

45. Banco Central do Brasil (Brazil), Resolução BCB nº 197, available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Resolu%C3%A7%C3%A3o%20BCB&numero=197. See also: Banco Central do Brasil (Brazil), Regulação Prudencial, available at: https://www.bcb.gov.br/estabilidadefinanceira/regprudencialsegmentacao.

46. Banco Central do Brasil (Brazil), Prudential Regulation, available at: https://www.bcb.gov.br/en/financialstability/regulation.

47. Banco Central do Brasil (Brazil), Circular nº 3.885 (2018), available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Circular&numero=3885.

48. Banco Central do Brasil (Brazil), Resolução BCB nº 80 (2021), available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Resolução%20BCB&numero=80.

49. Financial Action Task Force, Risk-Based Approach for the Banking Sector (2014), available at: https://www.fatf-gafi.org/en/publications/Fatfrecommendations/Risk-based-approach-banking-sector.html; International Monetary Fund, Risk-Based Banking Supervision (BSO), available at: https://www.imf.org/en/Capacity-Development/Training/ICDTC/Courses/BSO; European Banking Authority (EU), Guidelines on risk based supervision (2023), available at: https://www.eba.europa.eu/legacy/regulation-and-policy/regulatory-activities/anti-money-laundering-and-countering-financing/guidelines-on-risk-based-supervision, Sebastian Doerr, Leonardo Gambacorta, Thomas Leach, Bertrand Legros, David Whyte (BIS), Cyber risk in central banking (2022), p. 11, available at: https://www.bis.org/publ/work1039.pdf; McKinsey & Company, The risk-based approach to cybersecurity (2019), available at: https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/the-risk-based-approach-to-cybersecurity; Ernst & Young, How a risk-based approach to cybersecurity can help organizations (2023), available at: https://www.ey.com/en_iq/government-public-sector/how-a-risk-based-approach-to-cybersecurity-can-help-organizations.

50. Financial Action Task Force, Risk-Based Approach for the Banking Sector (2014), available at: https://www.fatf-gafi.org/en/publications/Fatfrecommendations/Risk-based-approach-banking-sector.html.

51. Banco Central do Brasil (Brazil), Resolução CMN nº 4.893 (2021), available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=RESOLUÇÃO%20CMN&numero=4893; Banco Central do Brasil (Brazil), Resolução BCB nº 85 (2021), available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Resolução%20BCB&numero=85.

52. Banco Central do Brasil (Brazil), Circular nº 3.978 (2020), available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Circular&numero=3978;

53. Association of Certified Fraud Examiners, 2024 Anti-Fraud Technology Benchmarking Report (2024), available at: https://www.acfe.com/-/media/files/acfe/pdfs/sas_benchmarkingreport_2024.pdf.

54. Alliance for Financial Inclusion, KYC Innovations, Financial Inclusion and Integrity in Selected AFI Member Countries (2019), available at: https://www.afi-global.org/publications/kyc-innovations-financial-inclusion-and-integrity-in-selected-afi-member-countries/; Joseph Moss, International Banker, Biometrics are Proving Increasingly Essential for Banking Security (2024), available at: https://internationalbanker.com/technology/biometrics-are-proving-increasingly-essential-for-banking-security/.

55. Ben Thompson, Stratechery, The End of the Beginning (2020), available at: https://stratechery.com/2020/the-end-of-the-beginning/.

56. Conselho Monetário Nacional (Brazil), Resolução CMN nº 449 (2018), available at: https://bcb.gov.br/pre/normativos/busca/downloadNormativo.asp?arquivo=/Lists/Normativos/Attachments/50562/Res_4649_v1_O.pdf; Redação Forbes, Reuters, Cade investiga bancos por discriminação contra Nubank (2019), available at: https://forbes.com.br/negocios/2019/04/cade-investiga-bancos-por-discriminacao-contra-nubank/.

57. Angela Strange, Flora Oliveira, Brazil's Surprising Fintech Tailwind (2022), available at: https://a16z.com/brazils-surprising-fintech-tailwind/, Google Cloud Platform, CERC processes 100,000 transactions per second with its infrastructure in Google Cloud, available at: https://cloud.google.com/customers/cerc, Banco Central do Brasil (Brazil), O que significa trava bancária e sua utilização pelos bancos nos registros de recebíveis? (2023), available at: https://www.bcb.gov.br/meubc/faqs/p/o-que-significa-trava-bancaria-e-sua-utilizacao-pelos-bancos-nos-registros-de-recebiveis.

58. Banco Central do Brasil (Brazil), Circular nº 3522 (2011), available at: https://www.bcb.gov.br/pre/normativos/busca/downloadNormativo.asp?arquivo=/Lists/Normativos/Attachments/49474/Circ_3522_v1_O.pdf

59. Angela Strange, Flora Oliveira, Brazil's Surprising Fintech Tailwind (2022), available at: https://a16z.com/brazils-surprising-fintech-tailwind/; Vinicius Marques de Carvalho, Fabiana Velloso, Panorama Concorrencial em Meios de Pagamento – O Debate no CADE, In: Perspectivas e Controvérsias da Inovação Regulatória no Sistema Financeiro de Pagamentos (2023), p. 58-59, available at: https://idec.org.br/system/files/ferramentas/inovacao-regulatoria.pdf

60. Ben Thompson, Stratechery, Tech CEOs on Trump, X and the E.U., Apple Settles with E.U. Over NFC (2024), available at: https://stratechery.com/2024/tech-ceos-on-trump-x-and-the-e-u-apple-settles-with-e-u-over-nfc/.

61. Scott McInnes et al., New German legislation allows access to the iPhone's NFC antena (2020), available at: https://www.twobirds.com/en/insights/2020/germany/new-german-legislation-allows-access-to-the-iphones-nfc-antenna. See also: Zahlungsdiensteaufsichtsgesetz – ZAG (Germany), Article 58a, available at: https://www.gesetze-im-internet.de/zag_2018/__58a.html; Ben Thompson, Stratechery, Integration and Monopoly (2019), available at: https://stratechery.com/2019/integration-and-monopoly/.

62. Ben Thompson, Stratechery, A Framework for Regulating Competition on the Internet (2019), available at: https://stratechery.com/2019/a-framework-for-regulating-competition-on-the-internet/; Victoria Song, The Verge, US v. Apple: everything you need to know (2024), available at: https://www.theverge.com/24107581/doj-v-apple-antitrust-monoply-news-updates; European Commission (EU), Antitrust: Commission opens investigations into Apple's App Store rules (2020), available at: https://ec.europa.eu/commission/presscorner/detail/es/ip_20_1073.

63. European Commission (EU), Remarks by Executive Vice-President Vestager on the decision to make binding commitments offered by Apple (2024), available at: https://ec.europa.eu/commission/presscorner/detail/en/speech_24_3746. See also: David Meyer, Fortune, Apple loosens its grip on iPhone payments to end EU antitrust case (2024), available at: https://fortune.com/2024/07/11/apple-pay-iphone-tap-payments-eu-antitrust-case/; Natasha Lomas, TechCrunch, EU ends Apple Pay antitrust probe with binding commitments to open up contactless payments (2024), available at: https://techcrunch.com/2024/07/11/eu-ends-apple-pay-antitrust-probe-with-binding-commitments-to-open-up-contactless-payments

64. Zetta, Labrys, Lições para o Futuro do Open Finance, available at: https://somoszetta.org.br/wp-content/uploads/2024/07/Zetta_OpenFinance_DESKTOP.pdf.

65. Zetta, Labrys, Lições para o Futuro do Open Finance, available at: https://somoszetta.org.br/wp-content/uploads/2024/07/Zetta_OpenFinance_DESKTOP.pdf.

66. Consumer Financial Protection Bureau (USA), Promoting competition in our financial markets, (2022), available at: https://www.consumerfinance.gov/about-us/blog/promoting-competition-in-our-financial-markets/.

67. Zetta, Labrys, Lições para o Futuro do Open Finance, available at: https://somoszetta.org.br/wp-content/uploads/2024/07/Zetta_OpenFinance_DESKTOP.pdf.

68. Zetta, Panorama da portabilidade: uma visão sobre modelos atuais, impactos e potenciais aprimoramentos (2023), available at: https://somoszetta.org.br/wp-content/uploads/2024/01/Zetta-Panorama-da-Portabilidade-desktop.pdf.

69. Banco Central do Brasil (Brazil), Portabilidade de crédito (2024), disponível em: https://www.bcb.gov.br/meubc/faqs/s/portabilidade-de-credito.

70. ANBIMA (Brazil), Como investir (2023), disponível em: https://comoinvestir.anbima.com.br/noticia/portabilidade-de-investimentos-o-que-e-como-funciona-e-como-fazer-2/.

71. Banco Central do Brasil (Brazil), Concorrência no sistema financeiro, available at: https://www.bcb.gov.br/estabilidadefinanceira/concorrenciasfn; Halmilton Ferrari, João Manoel Pinho de Mello defende maior concorrência no setor bancário (2019), available at: https://www.correiobraziliense.com.br/app/noticia/economia/2019/02/26/internas_economia,739868/joao-manoel-pinho-de-mello-defende-maior-concorrencia-no-setor-bancari.shtml; Ministério da Economia (Brazil), Novo Marco de Garantias vai facilitar a concessão de crédito e estimular o crescimento (2022), available at: https://www.gov.br/economia/pt-br/assuntos/noticias/2022/junho/novo-marco-de-garantias-vai-facilitar-a-concessao-de-credito-e-estimular-o-crescimento.

72. Banco Central do Brasil (Brazil), O que significa trava bancária e sua utilização pelos bancos nos registros de recebíveis? (2023), available at: https://www.bcb.gov.br/meubc/faqs/p/o-que-significa-trava-bancaria-e-sua-utilizacao-pelos-bancos-nos-registros-de-recebiveis; Google Cloud Platform, CERC processes 100,000 transactions per second with its infrastructure in Google Cloud, available at: https://cloud.google.com/customers/cerc.

73. Angela Strange, Flora Oliveira, Brazil's Surprising Fintech Tailwind (2022), available at: https://a16z.com/brazils-surprising-fintech-tailwind/.

74. Angela Strange, Flora Oliveira, Brazil's Surprising Fintech Tailwind (2022), available at: https://a16z.com/brazils-surprising-fintech-tailwind/.

75. International Monetary Fund, For technology to benefit everyone, private sector innovation needs to be supported by public goods (2021), available at: https://www.imf.org/external/pubs/ft/fandd/2021/03/making-financial-innovation-more-inclusive-frost.htm.

76. United Nations Development Programme (UN), Accelerating The SDGs Through Digital Public Infrastructure: A Compendium of The Potential of Digital Public Infrastructure (2023), available at: https://www.undp.org/publications/accelerating-sdgs-through-digital-public-infrastructure-compendium-potential-digital-public-infrastructure; United Nations Development Programme (UN), Digital Public Infrastructure, available at: https://www.undp.org/digital/digital-public-infrastructure.

77. International Monetary Fund, For technology to benefit everyone, private sector innovation needs to be supported by public goods (2021), available at: https://www.imf.org/external/pubs/ft/fandd/2021/03/making-financial-innovation-more-inclusive-frost.htm.

78. International Monetary Fund, Pix: Brazil's Successful Instant Payment System (2023) available at: https://www.elibrary.imf.org/view/journals/002/2023/289/article-A004-en.xml.

79. World Bank Group, The Global Findex Database 2021, available at: https://www.worldbank.org/en/publication/globalfindex/Report.

80. Sergey Sarkisyan, Instant Payment Systems and Competition for Deposits (2022, revised 2024), Jacobs Levy Equity Management Center for Quantitative Financial Research Paper, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4176990.

81. About the relationship between banks physical infrastructure and the adoption of digital financial services, see: Lucas Argentieri Mariani, Jose Renato Haas Ornelas, Bernardo Ricca, Banks' Physical Footprint and Financial Technology Adoption (2023), Central Bank of Brazil Working Paper n 576, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4079061.

82. Banco Central do Brasil (Brazil), Resolução BCB nº 19 (2020), available at: https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Resolução%20BCB&numero=19; Banco Central do Brasil (Brazil), Quanto o cidadão (pessoa física) paga para usar o Pix (2024), available at: https://www.bcb.gov.br/meubc/faqs/p/quanto-o-cidadao-paga-para-usar-o-pix; Banco Central do Brasil (Brazil), Quanto a pessoa jurídica paga para usar o Pix (2024), available at: https://www.bcb.gov.br/meubc/faqs/p/quanto-a-pessoa-juridica-paga-para-usar-o-pix.

83. International Monetary Fund, For technology to benefit everyone, private sector innovation needs to be supported by public goods (2021), available at: https://www.imf.org/external/pubs/ft/fandd/2021/03/making-financial-innovation-more-inclusive-frost.htm: "In India, public provision of foundational infrastructure has been the main driver, with a far-reaching impact. The digital identity (ID) initiative Aadhaar (Hindi for "foundation" or "base") has given 1.3 billion, available at: https://uidai.gov.in/aadhaar_dashboard/index.php; people access to a trusted ID so that they can open a bank account and access other services. Building on the initiative, a new system lets users make low-cost payments in real time. As Bank for International Settlements (BIS) research shows (D'Silva and others 2019), available at: https://www.bis.org/publ/bppdf/bispap106.htm; India has increased bank account access from 10 percent of the population in 2008 to more than 80 percent today. Technology achieved in a decade what might have taken half a century with traditional growth processes". The European Union is also working on that direction. See: European Commission (EU), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a Digital Finance Strategy for the EU (2020), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0591

84. In 2017, Serpro, Brazil's public technology company, launched a service that allowed companies to verify some legal persons information, such as corporate structure: Serpro (Brazil), Consulta CNPJ já verificou mais de 25 milhões de cadastros (2020), available at: https://www.serpro.gov.br/menu/noticias/noticias-2020/consulta-cnpj-ja-verificou-25-milhoes-de-cadastros. The Brazilian government also offers a free API to access information about company registration information. See: Receita Federal do Brasil (Brazil), Consulta CNPJ, (2021), available at: https://www.gov.br/conecta/catalogo/apis/consulta-cnpj. Information on representation powers and scopes still requires manual analisys.

85. Considering that natural persons KYC verification cost was substantially reduced in India with the addition creation of an e-KYC service by UIDAI, we'd expect that a similar service for legal persons can have a similar impact as UBO analysis can be costly for complex comporate structures. See: Shishir Sinha, Aadhaar brought down KYC cost to ₹3 from as high as ₹700, says Nirmala Sitharaman (2023), available at: https://www.thehindubusinessline.com/economy/aadhaar-brought-down-kyc-cost-to-3-from-as-high-as-700-says-nirmala-sitharaman/article66740192.ece.

86. Mozilla Insights, What Does it Mean? | Shifting Power Through Data Governance (2020), available at: https://foundation.mozilla.org/en/data-futures-lab/data-for-empowerment/shifting-power-through-data-governance/.

87. Fernanda Garibaldi, Zetta e FGV Direito Rio: Debate para uma economia mais competitiva (2024). See also: World Bank Group, Auxílio Emergencial: Lessons from the Brazilian experience responding to COVID-19, p. 48, available at: http://documents.worldbank.org/curated/en/099255012142121495/P1748361b302ee5718913146b11956610692e4faf5bc; World Bank Blog, Responding to crisis with digital payments for social protection: Short-term measures with long-term benefits (2020), available at: https://blogs.worldbank.org/en/voices/responding-crisis-digital-payments-social-protection-short-term-measures-long-term-benefits.

88. Here, once again we turn to India as a great case study. After Jio took the country by storm, India became #3 fintech ecosystem. The country's fintech market size wen from USD 65 billions in 2019 to USD 584 billions in 2022. See: Niharika Sharma, Reliance Jio's cheap data turned India's internet dreams into reality (2021), available at: https://qz.com/india/2055771/reliance-jios-cheap-data-turned-indias-internet-dreams-into-reality; Invest India, A Global FinTech Superpower (2019), available at: https://web.archive.org/web/20191223162159/https://www.investindia.gov.in/sector/bfsi-fintech-financial-services; Invest India, A Global FinTech Superpower (2024), available at: https://www.investindia.gov.in/sector/bfsi-fintech-financial-services; Ben Thompson, Stratechery, India, Jio, and the Four Internets (2020), available at: https://stratechery.com/2020/india-jio-and-the-four-internets/; Center for Global Development, Can Digital G2P Transfers Drive Financial Inclusion and Digital Payments? Evidence from India (2022), available at: https://www.cgdev.org/publication/can-digital-g2p-transfers-drive-financial-inclusion-and-digital-payments-evidence-india.

89. World Bank Blog, Responding to crisis with digital payments for social protection: Short-term measures with long-term benefits (2020), available at: https://blogs.worldbank.org/en/voices/responding-crisis-digital-payments-social-protection-short-term-measures-long-term-benefits.

90. World Bank Group, The Global Findex Database 2021, p. 121, available at: https://www.worldbank.org/en/publication/globalfindex/Report.

91. In Thailand, the government got to the point of offering 50% subsidy on digital purchases in several establishments for usign mobile payments dutring the COVID-19 pandemic. See: Waranpong Boonsiritomachai, Ploy Sud-On, Promoting habitual mobile payment usage via the Thai government's 50:50 co-payment scheme (2023), available at: https://doi.org/10.1016/j.apmrv.2022.07.006.

92. Center for Global Development, Can Digital G2P Transfers Drive Financial Inclusion and Digital Payments? Evidence from India (2022), available at: https://www.cgdev.org/publication/can-digital-g2p-transfers-drive-financial-inclusion-and-digital-payments-evidence-india.

93. World Bank Group, Auxílio Emergencial: Lessons from the Brazilian experience responding to COVID-19, p. 48, available at: http://documents.worldbank.org/curated/en/099255012142121495/P1748361b302ee5718913146b11956610692e4faf5bc.

94. World Bank Group, The Global Findex Database 2021, available at: https://www.worldbank.org/en/publication/globalfindex/Report.