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Fintechs and Traditional Banks: Regulation, Competition, and Cooperation in Brazil

FINTECHS E BANCOS TRADICIONAIS: REGULAÇÃO, COMPETIÇÃO E COOPERAÇÃO NO BRASIL

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Abstract
This article aims to analyze the characteristics, limitations and contradictions involving financial technology companies (fintechs) and traditional banks in Brazil. The paper describes the two new categories aimed at regulating fintechs in Brazil: the so-called Direct Credit Company (Sociedade de Crédito Direto) and the Personal Loan Company (Sociedade de Empréstimo entre Pessoas). The paper challenges the idea that financial technology inevitably introduces competition into the financial market, as it describes relevant mechanisms of cooperation between financial technology companies and traditional banks, with potentially high gains for both of them. Finally, using the data provided by the Central Bank, we compare interest rates charged by a local fintech and by its major shareholders, which are traditional banks. Although our analysis is still exploratory, it shows that the fintech controlled by large traditional banks charges higher interest rates than their controllers, suggesting a fruitful research agenda to investigate whether this occurs systematically or not.

Keywords
Fintech; direct credit company; personal loan company; traditional banks; interest rates.

Resumo
Este artigo tem o objetivo de analisar as características, as limitações e as contradições que envolvem fintechs *e bancos tradicionais no Brasil. Descreve as duas novas categorias destinadas a regular as* fintechs *no Brasil – a Sociedade de Crédito Direto (SCD) e a Sociedade de Empréstimo entre Pessoas (SEP) –, e questiona a noção de que as* fintechs *necessariamente introduzem competição no mercado financeiro, ao descrever relevantes mecanismos de cooperação entre* fintechs *e bancos tradicionais, com ganhos potencialmente elevados para ambos. Por fim, utilizando dados disponibilizados pelo Banco Central, são comparadas as taxas de juros praticadas por uma* fintech *nacional e por seus acionistas, que são bancos tradicionais. Embora nossa análise seja ainda exploratória, ela revela que a* fintech *controlada pratica juros mais elevados do que seus bancos controladores, sugerindo uma proveitosa agenda de pesquisa para investigar se isso ocorre sistematicamente.*

Palavras-chave
Fintechs*; Sociedade de Crédito Direto; Sociedade de Empréstimo entre Pessoas; bancos tradicionais; taxas de juros.*

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Introduction[1]

This article describes the entrance of financial technology companies (fintechs) into the loans market without collaterals in Brazil. We analyze the two categories, Direct Credit Company ("Sociedade de Crédito Direto" or SCD) and Personal Loan Company ("Sociedade de Empréstimo entre Pessoas" or SEP), that were created to regulate these new companies. The work highlights the complex relations – sometimes of competition, sometimes of cooperation – between fintechs and traditional banks, including some of the largest banks in Brazil. The paper questions if the creation of SCDs and SEPs results in any substantial changes for the local long-established strategies of loans without collaterals. Finally, we compare the interest rates of a fintech that is an affiliate of two traditional major banks in Brazil. The result suggests that fintechs may not represent cheaper loans in comparison to traditional banks.

The SCD and the SEP are the new species of a broad category called financial institutions, which includes commercial banks, investment banks, credit unions, and other businesses related to the banking and financial sector in Brazil. These two categories were created in Brazil to regulate the fintechs. These legal species are said to promote innovation and security. They are praised as the appropriate regulation to increase competition in the local banking sector. Our paper suggests that such ambitions may reveal a wishful thinking.

Not only does financial technology allows the entrance of new actors in the banking market, but also creates opportunities for traditional banks. Traditional banks rely on technology to access new and old clients in a more intimate way (by using a cell phone, as opposed to visiting the bank branch, for instance). They also offer their clients new and old products and services by using two channels: technological initiatives marketed with their old brand and the new fintech companies, which traditional banks control, acquire, or establish partnerships with.

In some situations, fintechs controlled by or in partnership with traditional banks may charge higher interest rates for the same types of loans. We cannot state that this is a widespread phenomenon, as we investigate one single case. However, our findings provide a new agenda for quantitative research involving the differences between the companies (fintechs and traditional banks) that belong to the same economic groups.

This article is divided into three sections, in addition to this introduction, and a conclusion. The first section discusses the central characteristics of the rise of fintechs in the Brazilian loans market in Brazil, as well as their disruptive potential. In the second section, we discuss the characteristics of the new Direct Credit and Personal Loan Companies, and the challenges they may face. Finally, the third section compares the interest rates from Banco Digio and its indirect controlling shareholders, Banco do Brasil and Bradesco, in three

1 This research was financed by University of São Paulo (Programa Unificado de Bolsas – PUB).

different types of loans: credit card revolving credit, non-payroll loans, and payroll loans. Our data is provided by the Central Bank of Brazil.

1. The Emergence of Fintechs in the Brazilian Loans Market

In May 2014, Banco do Brasil and Bradesco, through holding company Elo Participações, created Banco CBSS, later converted into Digio Bank (CONFEDERAÇÃO NACIONAL DAS INSTITUIÇÕES FINANCEIRAS, *s.d.*), a digital financial services platform.[2] According to the description in its official website, Digio's aim is to associate the strength of banks and the agility of fintechs (DIGIO BANK, *s.d.*). In March 2019, Santander, also a big and traditional bank in Brazil, launched PI, its digital platform for investments (COTIAS, 2019). These initiatives are described as a response from the traditional banks to the competition that the fintechs may create (GAZZONI, 2016).

According to the Central Bank, "fintechs are companies that introduce innovations in financial markets through the intensive use of technology, with the potential to create new business models. They operate through online platforms and offer innovative digital services related to the financial sector."[3]

The use of intense information technology to supply financial services may potentially increase the speed of transactions, create less bureaucratic channels of access to credit, and provide greater flexibility and personalization of services. Such qualities are prone to attract new customers and are mentioned as the most common reasons to explain the growth of fintechs in international markets. Darolles (2016, p. 87) argues that, before, consumers were used to a narrow set of pre-defined products and services, whereas the current banking client expects customized solutions. In July 2019, a research institution stated that 529 fintechs operated in Brazil.[4] Philippon (2016) states that not only may fintechs bring deep changes to the financial market, but also create regulatory challenges.

The Central Bank of Brazil launched an initiative called the Laboratory of Financial and Technological Innovations (LIFT) on May 9th, 2018. It aims to encourage the development of innovative ideas with a positive impact on the local banking system. The laboratory works with the voluntary subscription of partners. The partners promote discussions about how

2 In October 2021, Bradesco announced the purchase of 49,99% of the shares that used to belong to Banco do Brasil. Since then, Bradesco has been the only controller of Banco Digio.

3 Available at: https://www.bcb.gov.br/estabilidadefinanceira/fintechs. Accessed on: January 20th, 2020.

4 The data are from Radar FintechLab, published by Exame Magazine. Available at: https://exame.abril.com.br/pme/nove-fintechs-ja-tem-aval-do-banco-central-para-ofertar-credito/. Accessed on: January 20th, 2020.

to adapt the local institutional arrangements toward technological innovation. The process occurs with the coordination of the following agents: (i) the management committee, composed especially by the Central Bank and the National Federation of Central Bank Civil Servants' Associations (Fenasbac): (ii) the monitoring group, approved by the management committee for each project; (iii) technology suppliers, who make the virtual laboratory environment available; and (iv) proponents of financial innovation projects (SIQUEIRA *et al.*, 2019, p. 6-13).

Theoretically, fintechs are prone to have a disruptive potential due to their core characteristics. This means that fintechs devise credit negotiation models that differ from traditional banking practices, by offering simpler products and/or finding new ways to appeal to clients. The process of disruptive innovation begins with techniques and products considered less attractive by clients, companies with fewer resources, and focusing on needs that have been poorly met by dominant market players. This may occur because, while dominant players focus on increasing their products, as well as on the needs of their target audience, new players focus on new features and break into new customer niches (CHRISTENSEN *et al.*, 2006; CHRISTENSEN, RAYNOR, and MCDONALD, 2015).

Thus, in general, fintechs tend to foster change in the global banking sector. However, these changes do not necessarily mean losses for traditional banks. In Brazil, fintechs grow alongside the growth and profitability of large banks. In an oligopolistic market context and high-interest rates, fintechs are potentially able to establish innovative strategies for diversification and penetration of banking services. There is great hope that they can also lower interest rates on loan contracts. On the other hand, traditional banks protect their market by mimicking fintech financial products and routines, incorporating fintech technology into their practices (GOLDMAN SACHS, 2017, p. 26), or creating subsidiaries that operate as fintechs.

No only does the transformation in information technology allow the introduction of competitors into the market, but also creates new possibilities for traditional banks, including new risk management strategies and reduction of administrative costs. Therefore, we claim that it is a reductionist interpretation to identify advances in information technology with the emergence of fintechs only as competitors of traditional banks. Dombret (2016, p. 80) supports the thesis that technological changes tend to lead to a heterogeneous context of competition and cooperation among agents.

The "financial inclusion" derived from information technology has generated new capital accumulation strategies. The potential for capturing and organizing data about clients provides new possibilities for risk management, but that is not all. It is also able to influence consumer behavior. Fintechs can minimize their risks by acquiring data from consumers (KAMINSKA, 2015; GARBOR and BROOKS, 2017, p. 19).

World Development Report 2015, published by the World Bank, recognizes that the way financial products are presented is capable of shaping consumerist behaviors and generating

harmful consequences for lower-income households. The contributions of behavioral economics have drawn attention to limitations that prevent perfectly rational credit decisions, such as the tendency to simplify decisions, the aversion to uncertainty, and the desire for immediate satisfaction (WORLD BANK, 2015, p. 112-117). At the same time, it suggests the need for certain public policies and regulations to improve financial decisions (WORLD BANK, 2015, p. 117-123).

2. Fintechs and Their New Regulatory Categories: The Direct Credit Company and the Personal Loan Company

The insertion of fintechs in the market creates regulatory difficulties (VERÍSSIMO, 2019, 50-52). After all, credit fintechs operate in markets with traditional banks, but use different strategies and tend to be relatively smaller (AGATHOKLEOUS, 2019).

Why regulate markets? No doubt the debate surrounding this question is extensive and would require a separate study. The literature points out several and widely discussed reasons for regulating markets, such as *natural monopolies, externalities, information asymmetries, excessive profit, excessive competition, rationalization and coordination, moral hazard,* and *bargaining inequality* (BREYER, 1982, p. 15-35). Chang (1997, 21, p. 716-723) also sustains the importance of further studies on the following topics in the field of economic regulation: the need for *rigidity* in complex economies, the need to create markets, distributive issues, dynamic considerations (such as technological progress and productivity growth), and regulation policies.

In the specific case of financial technology companies, the regulatory challenge is, expressed in broad terms, to make innovation and safety compatible. On the one hand, unnecessary barriers faced by new players to enter the market should be avoided, favoring innovation and competition in the sector. In contrast, the regulator must not ignore any risk that the entry of these agents may create for consumer safety and the stability of the financial system (DAROLLES, 2016, p. 89-92). Expressing a similar view, Yadav and Brummer (2019), while providing a valuable framework to analyze the regulation of fintechs, argue that financial regulation faces a trilemma between the following objectives: market integrity, clearer rules, and financial innovation.

For these reasons, the Central Bank of Brazil developed the Public Consultation number 55/2017, as of August 30th, 2017, which aims to discuss a draft regulation for credit fintechs to "increase legal security in the segment, increase competition among banks and expand opportunities for economic agents to access the credit market".[5] This document

5 Public Consultation Call 55/2017, as of August 30th, 2017.

opened the doors for the formal creation of two different companies,[6] which are theoretically appropriate to the characteristics of these new fintech agents: the Direct Credit Company (SCD) and the Personal Loan Company (SEP), both regulated by the Brazilian National Monetary Council (*Conselho Monetário Nacional* or CMN) Resolution no. 4,656, as of April 26th, 2018.

Direct Credit Companies (SCDs) have the purpose of carrying out loan operations, financing, and acquiring credit rights with their own capital. Besides, they may carry out credit analysis to third parties, collection to third parties, distribution of insurance related to their operations, issuance of electronic currency,[7] and issuance of post-paid payment instruments.[8] To reinforce the impact of SCDs on the financial system, the CMN opened the possibility for SCDs to obtain funds to finance their credit operations through transfer and loan operations from the National Bank for Economic and Social Development (Banco Nacional de Desenvolvimento Econômico e Social or BNDES).[9]

In addition to allowing the financing of SCDs operations with funds from BNDES, the Central Bank authorized the SCDs to issue credit cards. According to the Central Bank of Brazil, these measures are intended to provide credit to customers with less access to financial services, including small companies. Such measures were announced as part of a broad set of policies aimed to respond to the economic impacts of the COVID-19 pandemic.[10]

On the other hand, Personal Loan Companies (SEPs) perform financial intermediation (peer-to-peer lending) in loan and financing transactions, a service for which they may charge fees. In addition to this, SEPs are allowed to do almost all the same accessory activities allowed for SCDs: credit analysis services, distribution of insurance related to their transactions, and issuance of electronic currency.[11] Both companies (SCDs and SEPs) operate solely through the electronic platform, that is, the connection between creditors and debtors occurs necessarily and exclusively via a website or app.[12]

Thus, the fundamental distinction between the two categories lies in the ownership of the resources which they operate with. SCDs carry out operations only with their own capital

6 According to the Central Bank of Brazil, they are two new financial institutions. Available at: https://www.bcb.gov.br/publicacoes/valorfinanceiro. Accessed on: January 20th, 2020.

7 Article 3rd, § 1, and items of Resolution CMN No. 4,656, of April 26th, 2018.

8 Added by Resolution CMN 4,792, of March 26th, 2020.

9 Resolution CMN 4,792, of March 26th, 2020.

10 Available at: https://www.bcb.gov.br/acessoinformacao/medidasdecombate_covid19. Accessed on: July 7th, 2020.

11 Article 7, § 1, and items of Resolution CMN No. 4,656, of April 26th, 2018.

12 Article 2nd, item II, of Resolution CMN No. 4,656, of April 26th, 2018.

and are prohibited from raising funds from the public, except through the issuance of shares.[13] Thus, as a rule, SCDs do not directly capture people's savings. However, they can finance their credit operations by selling or assigning their credit to financial institutions, investment funds, or securitization companies, in addition to obtaining funds from the BNDES.[14] In contrast, the SEPs carry out loan and financing intermediation between people, a process in which resources from creditors are directed to debtors after trading on an electronic platform (peer-to-peer lending). SEPs are also forbidden to offer loans with their own capital.[15]

The operations between people (peer-to-peer lending) conducted by the SEPs are a form of crowdfunding, a way to raise resources from society by benefiting from the tools of the internet (LYNN *et al.*, 2019, p. 2). Peer-to-peer lending fintechs connect creditors and borrowers, reducing information asymmetries and transaction costs, and, although peer-to-peer lending platforms, as a rule, do not participate in the final decision to lend, they can remunerate themselves through fees charged on transactions (LYNN *et al.*, 2019, p. 17-19). The list of lenders able to use the services of a SEP is broad:

> I – natural persons; II – financial institutions; III – credit rights investment funds whose quotas are exclusively destined to qualified investors, as defined by the regulations of the Securities Commission; IV – securitization companies that distribute the securitized assets exclusively to qualified investors, as defined in the regulations of the Securities Commission; or V – non-financial legal entities, except securitization companies that do not fit into the hypothesis of item IV.[16]

Reducing information gaps is a central point of SEPs activity. Under articles 17 and the following articles of the CMN Resolution 4656 of April 26th, 2018, the SEPs must, for example, include warnings on risky transactions, inform potential creditors of the determining factors for the expected return rate, and impartially reflect the risk of potential debtors, among other obligations.

In order to operate, SCDs and SEPs must obtain authorization from the Central Bank of Brazil, which is subject to comply with a minimum limit of R$1,000,000.00 (one million reais) regarding paid-in capital and shareholders' equity.[17]

13 Article 5th, item I, of Resolution CMN No. 4,656, of April 26th, 2018.

14 Resolution CMN 4,792, of March 26th, 2020.

15 Articles 8th, 9th e 14, item I, of Resolution CMN No. 4,656, of April 26th, 2018.

16 Article 8th, § 1, items I to V, of Resolution CMN No. 4,656, of April 26th, 2018.

17 Articles 25 and 26 of CMN Resolution No. 4,656, of April 26th, 2018.

The authorization to incorporate an SCD or SEP provides greater autonomy to fintechs to operate and introduce new products, as they no longer need a banking partner. Without the conversion into an SCD or SEP, fintechs can act as banking correspondents, requiring a financial institution to support them. Bank correspondents are service providers for financial institutions, intermediating their relationship with customers. Under the terms of Resolution CMN No. 3,954 of February 24th, 2011, correspondents may perform service activities, including receiving and forwarding proposals for credit operations, and also receiving and making payments of any nature.

Several studies have addressed the advantages that these correspondents provide for banks, such as the connection between the network of bank correspondents and the geographic expansion of credit supply, the focus on new segments of the consumer market, and the supply of products without the need for having their own facilities (MAS and SIEDEK, 2008, p. 8-9). The Central Bank of Brazil (2015, p. 50) explains that bank correspondents expand banking services without the cost of installing branches and posts.

Some credit fintechs have converted into SCDs and SEPs. As of November 12th, 2019, 14 companies were authorized to operate in the new modalities, although not all of them were active.[18] In 2020, the Central Bank announced the approval of new SCDs and SEPs, reaching a total of 30 of these institutions authorized to operate in Brazil.[19] There were 24 SCDs and 6 SEPs at the moment this article was first submitted. There was undoubtedly an acceleration in the approval rate of these fintechs in 2020. This is an expressive growth, considering that Resolution No. 4,656 of the National Monetary Council was issued in 2018, which created these two modalities. Central Bank's data show that SEPs and especially SCDs have the fastest growth among financial institutions, while other segments have maintained their number of institutions.[20]

Despite that, the SCDs and SEPs are just a small fraction of the financial institutions when compared to traditional banks. According to the Central Bank of Brazil, in May 2020, there were 134 multiple banks, 59 credit, financing, and investment companies, and 901 credit

18 The data were provided by the Central Bank on November 12th, 2019, in response to a request based on the Access to Information Act (Act nº 12.527 of 2011). We have analyzed shareholder composition data for these companies.

19 Central Bank of Brazil. Available at: https://www.bcb.gov.br/detalhenoticia/463/noticia. Accessed on: July 7th, 2020.

20 Central Bank of Brazil. Available at: https://www.bcb.gov.br/content/estabilidadefinanceira/evolucaosfnmes/202005%20-%20Quadro%2001%20-%20Quantitativo%20de%20institui%C3%A7%C3%B5es%20por%20segmento.pdf. Accessed on: July 7th, 2020.

unions authorized to operate in Brazil.[21] Besides that, most fintechs choose not to operate as SCDs or SEPs. According to the Brazilian Association of Fintechs (Abfintechs), in 2020, there were more than 100 credit fintechs in Brazil. As we have seen, most of them operate without SCD or SEP status.[22]

Although data presents a minor role for SCDs and SEPs, the literature has attributed an immense importance to the new regulation, as if it represented an instrument capable of reconciling regulatory challenges and giving rise to substantive changes in the credit market. The comments of Ferraz and Oliveira (2019, p. 72) illustrate this position:

> In fact, by consecrating fintechs as financial institutions, and by agreeing to operate in the financial market, the National Monetary Council has played an influential modifying role, especially for banks and technological financiers, since it has conducted a new orientation of the sector's activity by establishing interoperability, financial inclusion, and the drive for the progress of disruptive solutions, given the options offered by the conventional market.

Nevertheless, it is still uncertain if SCDs and SEPs are worthy of so many compliments, and it is hasty to state they do imply great changes.

In the end, why do most fintechs operate without SCD or SEP status? Is the operational autonomy provided by these new financial institutions counterbalanced by certain burdens and barriers to their incorporation? Why do many credit fintechs, even after the possibility of setting up an SCD or a SEP, continue to act in partnership with banks or credit, financing, and investment companies? Does the incorporation of an SCD or a SEP necessarily imply abandoning banking partnerships? These are questions whose answers may need to mature over time. This article outlines some possible interpretations.

First, we must call attention to the fact that in the absence of the SCD and SEP categories, the fintechs were not in a normative vacuum. Regardless of the debate about the adequacy of these legal qualifications, fintechs could run under the status of bank correspondents, as ruled by Resolution CMN No. 3,954, of February 24th, 2011.

It is important to emphasize that, more than —and perhaps contrary to — a possible replacement of traditional agents by new ones in the credit market, there is an increased

21 Central Bank of Brazil. Available at: https://www.bcb.gov.br/content/estabilidadefinanceira/evolucaosfnmes/202005%20-%20Quadro%2001%20-%20Quantitativo%20de%20institui%C3%A7%C3%B5es%20por%20segmento.pdf. Accessed on: July 7th, 2020.

22 Available at: https://valorinveste.globo.com/produtos/credito/noticia/2020/04/23/fintechs-de-credito-vivem-1a-crise-e-se-viram-nos-30-para-emprestar-a-juro-baixo.ghtml. Accessed on: July 7th, 2020.

complexity in the relationships among these agents. The incorporation of an SCD or SEP does not necessarily imply abandoning old partnerships with traditional banks. Some fintechs maintain the status of banking correspondent, even after becoming an SCD or SEP. This is the case of Creditas Sociedade de Crédito Direto S.A.[23] As stated in article 18 of CMN's Resolution No. 3,954 of February 24th, 2011, there is no regulation against two traditional financial institutions being parties in a bank correspondent agreement.

Traditional banks are making more intensive use of technological resources to supply their products. There is the recent example of "Vivo Money", which offers personal credit exclusively through digital channels and with personalized proposals. The product was created due to a partnership between Vivo and Ibi Promotora de Vendas Ltda. Ibi is also a correspondent bank of Banco Digio[24] (former CBSS bank), indirectly controlled by the giants Banco do Brasil and Bradesco. "Vivo Money" is precisely characterized by the flexibility, agility, and personalization that would expect from a fintech; however, it is linked to two of the most traditional banks in Brazil, even if indirectly.

Interactions between old and new agents are significantly more complex than mere competition. Drasch, Schweizer, and Urbach (2018) examined 136 cases of cooperation between European and US banks and fintechs, involving 13 dimensions and 106 characteristics. Among several aspects, the taxonomy developed by the authors allows us to assess the types of coordination and innovation and to identify the agent responsible for innovation, as well as the banks' objectives and strategies.

> In the taxonomy development, we dissected and classified 136 real-world cooperations cases. Our dataset encompasses European and U.S. banks as well as international fintechs. Overall, the most cooperations are alliances (78%) and focus on product innovation (72%) in the customer-oriented financial market infrastructure (39%). Acquisition (5%) and incubation (9%) play only minor roles, while joint ventures are only represented in one case (1%) in our sample. In most cases (91%), the innovation remains with the fintech. (DRASCH, SCHWEIZER, and URBACH, 2018, p. 13-14)

Drasch, Schweizer, and Urbach (2018, p. 5) reinforce that there are strong reasons to justify cooperation between banks and fintechs, as the latter benefit from the banks' financial

23 According to its official website, Creditas operates as a banking correspondent for the following institutions: Familia Paulista Companhia Hipotecária, Companhia Hipotecária Piratini (CHP), Santana Financeira, Sorocred Crédito Financiamento e Investimento S/A and Creditas Sociedade de Crédito Direto S/A. Available at: https://www.creditas.com.br/. Accessed on: January 20th, 2020.

24 Available at: https://www.vivomoney.com.br/. Accessed on: January 20th, 2020.

resources, infrastructure, access to clients, and solid reputation, while banks profit with access to new clients, products, services, capabilities and technologies achieved by fintechs. Therefore, it is understandable that a similar phenomenon would also exist in Brazil.

Dombret (2016, p. 80) explains:

> After all, IT-based innovations promise more than a zero sum game among new entrants and traditional banks: some innovations are targeted at previously untapped market segments like big-data-driven lending to demographic groups which were previously difficult to rate or convenient extra services. Long-established banks may themselves discover profitable new lines of business. Through innovative IT they, too, may save [on] administrative costs and improve their risk management. While the above list of driving forces is not exhaustive, it does demonstrate that technological change should lead to a heterogeneous landscape in which competition and cooperation among traditional and innovative credit institutions, investment firms, payment services and non-regulated fintechs exist side by side.

In Brazil, cooperation between banks and fintechs may have different legal features. One of them, as already explained, is the bank correspondent's contract, even though the creation of SCDs and SEPs has given fintechs the possibility to act autonomously. Banks may also directly or indirectly control other institutions with similar characteristics or that are effectively fintechs, as in the example of Banco Digio.

Such situations raise questions as to whether the new Central Bank of Brazil regulation actually implies structural consequences for the operation of fintechs or not. As mentioned, the number of SCDs and SEPs is small, and not all authorized companies are even active. Perhaps this can be partially attributed to the novelty of Resolution CMN 4,656, of April 26th, 2018, and to the time of due adaptation. On the other hand, perhaps the reduced number of SCDs and SEPs reveals that, for many fintechs, it is sufficiently advantageous to act as a bank correspondent in association with a traditional bank.

In addition to that, the costs involved in the incorporation of an SCD or SEP, such as the minimum limit of paid-in capital and net equity, even if lower than those of traditional banks, may represent barriers to the adaptation of smaller fintechs to the new categories of the Central Bank of Brazil. Conversely, these capital requirements precisely configure a prudential regulation component to ensure that financial institutions are secure and have sufficient liquid assets (LOESCH, 2018, p. 18-19).

Thus, the initiative of regulating credit fintechs seems to face serious difficulties in dealing with the multiplicity of these agents and, at the same time, making innovation and security compatible.

3. Digio, Bradesco, and Banco do Brasil: Interest Rates Comparison

We affirmed that traditional banks also benefit from financial technology, often imitating, developing, controlling, or establishing partnerships with fintechs. This statement is confirmed, for example, in the study of Banco Digio, a digital platform controlled by the giants and traditional Banco do Brasil and Bradesco. As stated above, Digio is a digital bank within a digital financial services platform. Its objective is described as combining the solidity of banks and the agility of fintechs in a compatible manner. It was created in May 2014 by Banco do Brasil and Bradesco through the holding company Elo Participações.

Fintechs have the potential to charge very high-interest rates. Sometimes, fintechs may charge higher interest rates than the ones practiced by their traditional controlling or partner banks. In this case, there is cooperation – not competition – between classic banks and fintechs, with benefits for both. From the customers' perspective, the benefits may be small. Indeed, Di Maggio andYao (2020), using individual-level data covering fintech and traditional lenders, conclude that, for similar borrowers, fintech lenders tend to offer larger average loan sizes and charge higher interest rates.

Our data does not include the characteristics of fintech and bank borrowers, so we cannot control borrowers' characteristics. However, we present preliminary findings that, in the Brazilian context, fintechs may behave in similar ways as documented by Di Maggio and Yao (2020). Although we cannot control borrowers' credit scores, we show that the analyzed fintech stands out for practicing higher interest rates compared to their controllers (traditional banks) in most of the historical series. Since we present data for a single fintech, we cannot generalize these findings. Nevertheless, these results stimulate future research to verify whether this phenomenon holds in other settings or not.

The following data compares interest rates practiced by Digio and its controlling shareholders, Banco do Brasil and Bradesco, in the period between April 2015 and April 2020.[25] The data used in order to prepare the comparison tables are public and available at the Central Bank of Brazil website, according to Resolution CMN n. 4581, of May 2017. However, the data, as disposed on the Central Bank of Brazil website, is daily updated, making it impossible to provide comparisons in the long run. To prepare a time series, we have developed a methodology to capture and organize the limited pieces of information.[26] The monthly and

25 The five-year period corresponds to almost the entire existence of Banco Digio, since it was launched in the first half of 2014, still under the name of CBSS Bank.

26 Available at: https://www.bcb.gov.br/estatisticas/reporttxjuros/?path=conteudo%2Ftxcred%2FReports%2FTaxasCredito-Consolidadas-porTaxasAnuais Historico.rdl&nome=Hist%C3%B3rico%20Posterior%20a%2001%2F01%2F2012&exibeparametros=true. Accessed on: April 28th, 2020. The data on the Central Bank's website must be provided by the financial institutions themselves, constituting the Credit Infor-

annual interest rates are the averages of the rates in several operations carried out by traditional banks or fintechs, in each kind of loan.[27] We have compared the most common types of loans: credit card revolving credit, non-payroll loans, and payroll loans.

Comparing traditional banks and fintechs is important to support the general idea that cooperation between the banks may exceed competition. However, data made available by the Central Bank of Brazil refer only to the financial institutions listed in article 4 and items of Resolution CMN No. 4,571 of May 26th, 2017,[28] which include traditional banks, SCDs, and SEPs, but exclude the vast majority of fintechs, as they work under the category of bank correspondents.

It is likely that the interest rates provided by both fintechs (SCDs and SEPs) and traditional banks indistinctly incorporate the data from the bank correspondents that operate for them. Rigorously, it is the financial institution, and not the correspondent, that charges the fees. The correspondent is responsible for customer relationship services. However, it is reasonable to think that certain aspects of the relationship between correspondent and consumers – a specialization in a certain niche market and its degree of risk, for example, – have

mation System (SCR), through which the regulator monitors credit operations in the Financial System. SCR is outlined in Resolution No. 4571 of May 26th, 2017, and in Circular No. 3870 of December 19th, 2017. In response to a request based on the Access to Information Law (Law No. 12,527 of 2011), the Central Bank informed that "the quality control of information occurs at several levels, starting with automatic verification of data that must meet pre-established validation criteria. Then it undergoes a second level of verification by analysts in relation to suspect data (outliers) and finally, there is a third analysis concerning consolidated data for the financial system as a whole".

27 The Central Bank explains that "in the same modality, interest rates differ among clients of the same financial institution and vary according to several risk factors involved in the operations, such as value and quality of the guarantees presented when contracting the credit, amount of the payment given as entry in the operation, history and registration status of each client, and term of the operation, among others". Available at: https://www.bcb.gov.br/estatisticas/txjuros. Accessed on: April 28th, 2020.

28 "Art. 4 The following institutions must send to the Central Bank of Brazil information regarding credit operations: I – development agencies; II – savings and loan associations; III – the National Economic and Social Development Bank (BNDES); IV – commercial banks; V – exchange banks; VI – development banks; VII – investment banks; VIII – multiple banks; IX – savings banks; X – mortgage companies; XI – credit cooperatives; XII – securities brokerage firms; XIII – leasing companies; XIV – microenterprise and small business credit companies; XV – credit, financing and investment companies; XVII – securities distribution companies; XVIII – other classes of institutions subject to the regulations of the Central Bank of Brazil, authorized to carry out or acquire credit operations dealt with in this Resolution, pursuant to the regulations issued by the Central Bank of Brazil; and XIX – other classes of institutions authorized to carry out or acquire credit operations dealt with in this Resolution and subject to the regulations of a different body of the Central Bank of Brazil, with due regard for the requirements set forth in paragraphs 2 and 3" (translated).

a direct influence on the interests charged. The comparisons formalized in this paper are only possible due to the fact that Digio is a bank and not a bank correspondent.

In the credit card revolving credit – total (Table 1 and Graphic 1), [29] Banco Digio presents substantially higher interest rates than Banco do Brasil and Bradesco. Between April 2017 and April 2018, Bradesco features the highest rates, sometimes higher than 700% per year (the highest in the series). However, from June 2018 to April 2020, Banco Digio again shows the highest interest rates. It is worth noting that only in June and August 2017 Banco do Brasil's rates are higher than Digio's rates. Therefore, Banco Digio presents higher interest rates than both of its controlling shareholders during four of the five years analyzed. Digio's interest rates are higher than Banco do Brasil's in almost the entire period. It is also important to highlight the behavior of Bradesco's interest rates curve, with a high growth between 05/2015 and 12/2017, followed by an even faster decrease from 04/2018 to 06/2018.

TABLE 1 – **CREDIT CARD REVOLVING CREDIT – TOTAL**

PERIOD (MM/DD/YYYY)	INTEREST RATES PER FINANCIAL INSTITUTION					
	BANCO DO BRASIL S.A.		BANCO BRADESCO S.A.		BANCO DIGIO	
	% PER MONTH	% PER YEAR	% PER MONTH	% PER YEAR	% PER MONTH	% PER YEAR
04/01/2015 – 04/08/2015	10,37	226,74	14,92	430,35	17,18	570,35
06/01/2015 – 06/08/2015	10,83	243,28	14,93	431,08	17,06	562,30
08/03/2015 – 08/07/2015	11,44	266,73	15,31	452,86	17,64	602,79
10/01/2015 – 10/07/2015	13,27	346,10	15,93	489,19	17,92	623,10
12/01/2015 – 12/07/2015	14,32	398,03	15,95	490,59	17,83	616,62
02/01/2016 – 02/05/2016	14,65	415,58	16,00	493,34	17,87	618,90
04/01/2016 – 04/07/2016	15,25	449,13	16,03	495,45	18,06	633,15
06/01/2016 – 06/07/2016	15,31	452,43	16,05	496,47	17,95	625,17
08/01/2016 – 08/05/2016	15,10	440,77	17,02	559,37	17,87	618,95

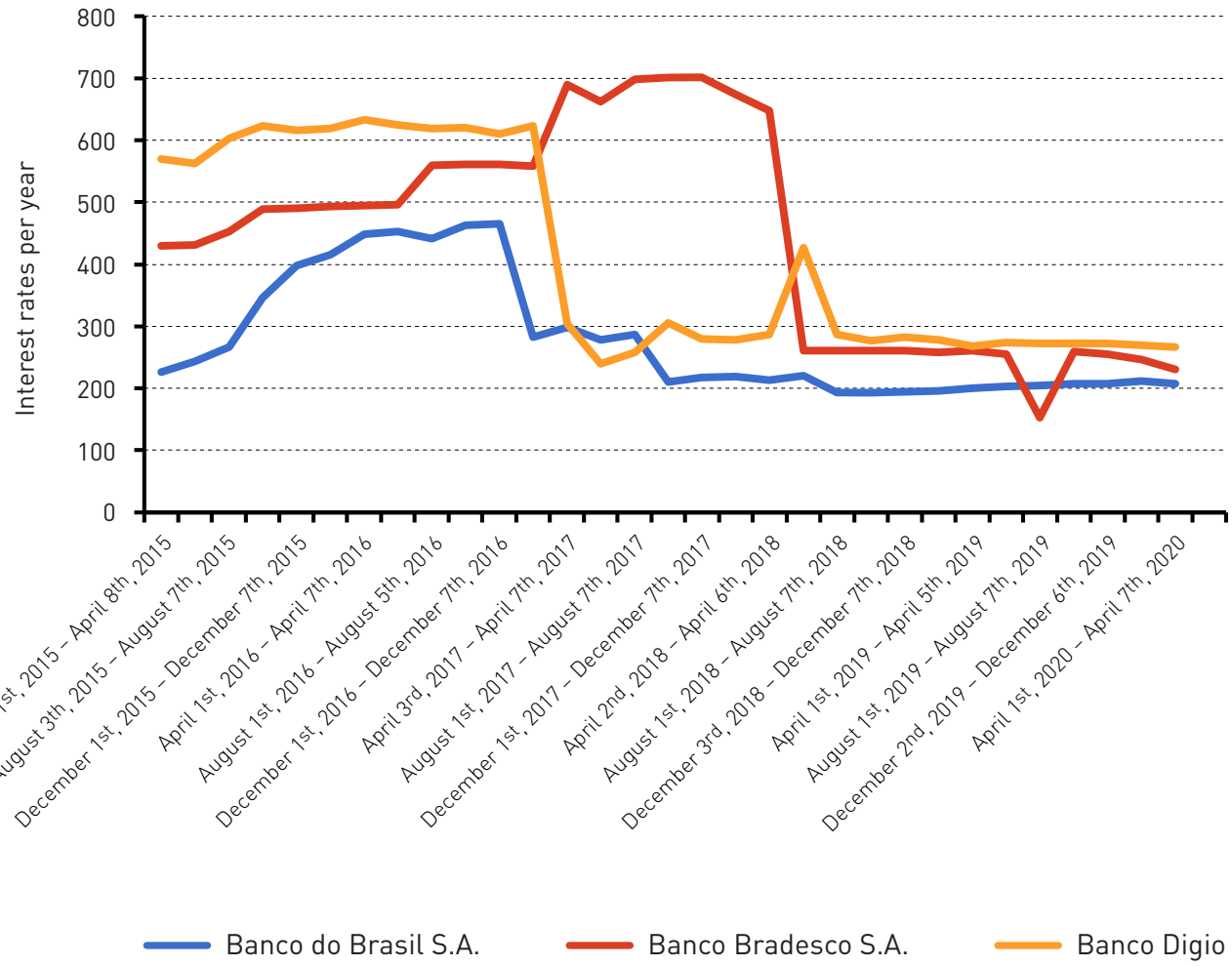
(it continues)

29 This type of credit includes "operations to finance the remaining debit balance after partial payment of credit card invoices. It includes cash withdrawals with the use of the card in the credit function". Available at: https://www.bcb.gov.br/content/estatisticas/docs_estatisticasmonetariascredito/glossariocredito.pdf. Accessed on: May 6th, 2020.

10/03/2016 – 10/07/2016	15,49	462,90	17,04	560,61	17,89	620,51
12/01/2016 – 12/07/2016	15,53	465,31	17,04	560,80	17,75	610,08
02/01/2017 – 02/07/2017	11,82	282,13	17,00	557,91	17,93	623,26
04/03/2017 – 04/07/2017	12,22	299,07	18,78	688,94	12,33	303,73
06/01/2017 – 06/07/2017	11,73	278,55	18,44	662,23	10,73	239,70
08/01/2017 – 08/07/2017	11,94	287,24	18,90	698,23	11,23	258,61
10/02/2017 – 10/06/2017	9,90	210,33	18,93	700,65	12,39	306,36
12/01/2017 – 12/07/2017	10,10	217,14	18,94	701,46	11,77	279,91
02/02/2018 – 02/08/2018	10,15	218,98	18,60	674,19	11,73	278,45
04/02/2018 – 04/06/2018	9,98	213,02	18,25	647,69	11,93	286,58
06/01/2018 – 06/07/2018	10,20	220,73	11,28	260,42	14,87	427,62
08/01/2018 – 08/07/2018	9,38	193,40	11,29	261,10	11,94	287,09
10/01/2018 – 10/05/2018	9,39	193,42	11,31	261,61	11,69	277,03
12/03/2018 – 12/07/2018	9,41	194,20	11,29	261,07	11,82	282,06
02/01/2019 – 02/07/2019	9,48	196,40	11,23	258,61	11,74	278,76
04/01/2019 – 04/05/2019	9,61	200,76	11,30	261,47	11,48	268,40
06/03/2019 – 06/07/2019	9,70	203,74	11,14	255,08	11,61	273,47
08/01/2019 – 08/07/2019	9,72	204,33	8,04	152,80	11,58	272,50
10/01/2019 – 10/07/2019	9,80	207,06	11,25	259,55	11,57	272,17
12/02/2019 – 12/06/2019	9,82	207,83	11,14	255,09	11,58	272,22
03/02/2020 – 02/07/2020	9,95	212,12	10,90	245,93	11,50	269,30
04/01/2020 – 04/07/2020	9,82	207,80	10,48	230,53	11,42	266,05

Source: Authors' own elaboration.

GRAPHIC 1 – **CREDIT CARD REVOLVING CREDIT – TOTAL**



Source: Authors' own elaboration.

In the non-payroll type (Table 2 and Graphic 2),[30] Banco Digio presents higher interest rates than Banco do Brasil and Bradesco throughout the period. The difference starts as quite substantial and decreases over the five years. Banco do Brasil features the lowest rates, whereas Bradesco occupies an intermediate position.

30 This type of credit includes "personal credit transactions without payroll deduction". Available at: https://www.bcb.gov.br/content/estatisticas/docs_estatisticasmonetariascredito/glossariocredito.pdf. Accessed on: May 6th, 2020.

TABLE 2 – **NON-PAYROLL LOANS**

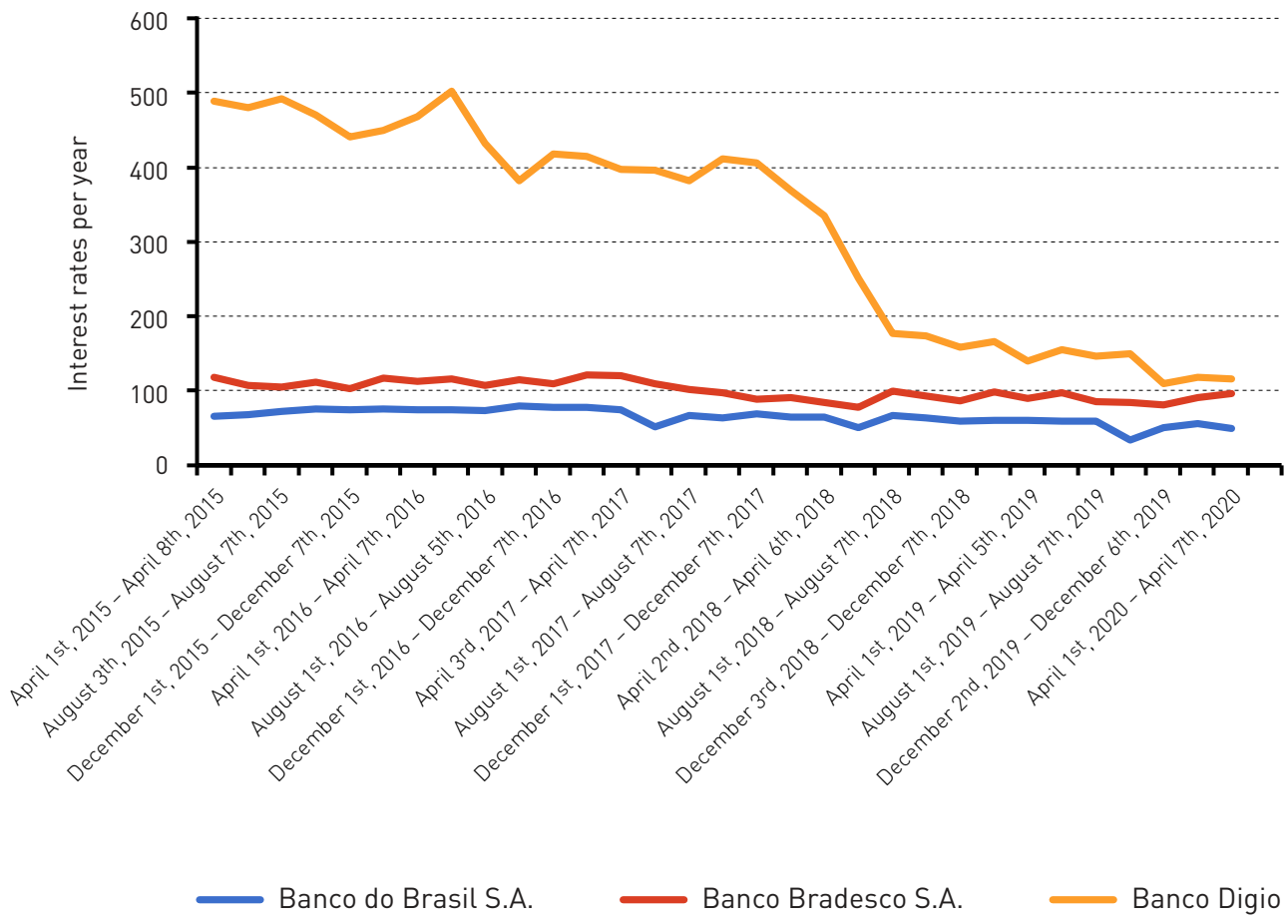
PERIOD (MM/DD/YYYY)	INTEREST RATES PER FINANCIAL INSTITUTION					
	BANCO DO BRASIL S.A.		BANCO BRADESCO S.A.		BANCO DIGIO	
	% PER MONTH	% PER YEAR	% PER MONTH	% PER YEAR	% PER MONTH	% PER YEAR
04/01/2015 – 04/08/2015	4,28	65,34	6,71	118,00	15,91	487,87
06/01/2015 – 06/08/2015	4,41	67,86	6,28	107,67	15,77	479,64
08/03/2015 – 08/07/2015	4,65	72,43	6,18	105,25	15,96	491,26
10/01/2015 – 10/07/2015	4,78	75,10	6,42	111,06	15,60	469,73
12/01/2015 – 12/07/2015	4,73	74,20	6,08	103,00	15,09	440,17
02/01/2016 – 02/05/2016	4,80	75,60	6,68	117,35	15,26	449,67
04/01/2016 – 04/07/2016	4,76	74,75	6,51	113,09	15,57	467,94
06/01/2016 – 06/07/2016	4,73	74,10	6,63	116,05	16,13	501,82
08/01/2016 – 08/05/2016	4,70	73,58	6,25	107,08	14,94	431,60
10/03/2016 – 10/07/2016	5,00	79,65	6,59	115,07	14,00	381,86
12/01/2016 – 12/07/2016	4,92	77,86	6,35	109,27	14,68	417,23
02/01/2017 – 02/07/2017	4,93	78,15	6,84	121,26	14,62	414,07
04/03/2017 – 04/07/2017	4,74	74,28	6,79	119,88	14,30	397,03
06/01/2017 – 06/07/2017	3,55	52,03	6,37	109,89	14,26	395,29
08/01/2017 – 08/07/2017	4,36	66,83	6,02	101,77	14,00	381,71
10/02/2017 – 10/06/2017	4,19	63,68	5,85	97,91	14,57	411,48
12/01/2017 – 12/07/2017	4,47	69,00	5,44	88,89	14,45	405,27
02/01/2018 – 02/07/2018	4,25	64,84	5,55	91,10	13,75	369,05
04/02/2018 – 04/06/2018	4,26	64,98	5,20	83,79	13,03	334,97
06/01/2018 – 06/07/2018	3,47	50,66	4,92	77,85	11,02	250,74
08/01/2018 – 08/07/2018	4,35	66,61	5,91	99,23	8,84	176,47
10/01/2018 – 10/05/2018	4,18	63,39	5,65	93,42	8,76	173,77
12/03/2018 – 12/07/2018	3,98	59,68	5,35	86,80	8,25	158,87
02/01/2019 – 02/07/2019	3,99	59,96	5,87	98,19	8,51	166,50

(it continues)

04/01/2019 – 04/05/2019	4,03	60,73	5,47	89,43	7,56	139,76
06/03/2019 – 06/07/2019	3,94	58,93	5,83	97,34	8,13	155,38
08/01/2019 – 08/07/2019	3,93	58,75	5,29	85,53	7,81	146,68
10/01/2019 – 10/07/2019	2,47	33,96	5,22	84,09	7,92	149,48
12/02/2019 – 12/06/2019	3,48	50,71	5,09	81,44	6,36	109,59
03/02/2020 – 02/07/2020	3,79	56,22	5,55	91,15	6,72	118,33
04/01/2020 – 04/07/2020	3,41	49,46	5,79	96,49	6,61	115,49

Source: Authors' own elaboration.

GRAPHIC 2 – **NON-PAYROLL LOANS**



Source: Authors' own elaboration.

Finally, the payroll-loans – INSS modality (Table 3 and Graphic 3)[31] do not present big differences, as the interest rates are regulated by the Federal Government. Even so, it is certain that, from October 2017 to April 2020, Banco Digio presented somewhat higher rates. Although the interest rates of the three institutions remain similar throughout the series, Banco Digio practices higher rates during most of the period in which it operates. From April 2015 to April 2016, Banco Digio did not present data for this modality of loans. The absence of data from Banco Digio in this period can be explained either by the non-operation in the modality throughout this period or by the absence of information provided by the institution to the Central Bank of Brazil.

TABLE 3 – **PAYROLL-LOANS**

PERIOD (MM/DD/YYYY)	INTEREST RATES PER FINANCIAL INSTITUTION					
	BANCO DO BRASIL S.A.		BANCO BRADESCO S.A.		BANCO DIGIO	
	% PER MONTH	% PER YEAR	% PER MONTH	% PER YEAR	% PER MONTH	% PER YEAR
04/01/2015 – 04/08/2015	2,13	28,76	2,17	29,38	X	X
06/01/2015 – 06/08/2015	2,13	28,78	2,02	27,08	X	X
08/03/2015 – 08/07/2015	2,13	28,78	2,13	28,70	X	X
10/01/2015 – 10/07/2015	2,13	28,77	2,13	28,70	X	X
12/01/2015 – 12/07/2015	2,23	30,30	2,35	32,17	X	X
02/01/2016 – 02/05/2016	2,34	31,96	2,36	32,25	X	X
04/01/2016 – 04/07/2016	2,34	31,93	2,35	32,14	X	X
06/01/2016 – 06/07/2016	2,34	31,93	2,12	28,68	2,25	30,58
08/01/2016 – 08/05/2016	2,33	31,90	2,25	30,66	2,25	30,57
10/03/2016 – 10/07/2016	2,33	31,90	2,26	30,80	2,25	30,65
12/01/2016 – 12/07/2016	2,33	31,91	2,33	31,88	2,24	30,50

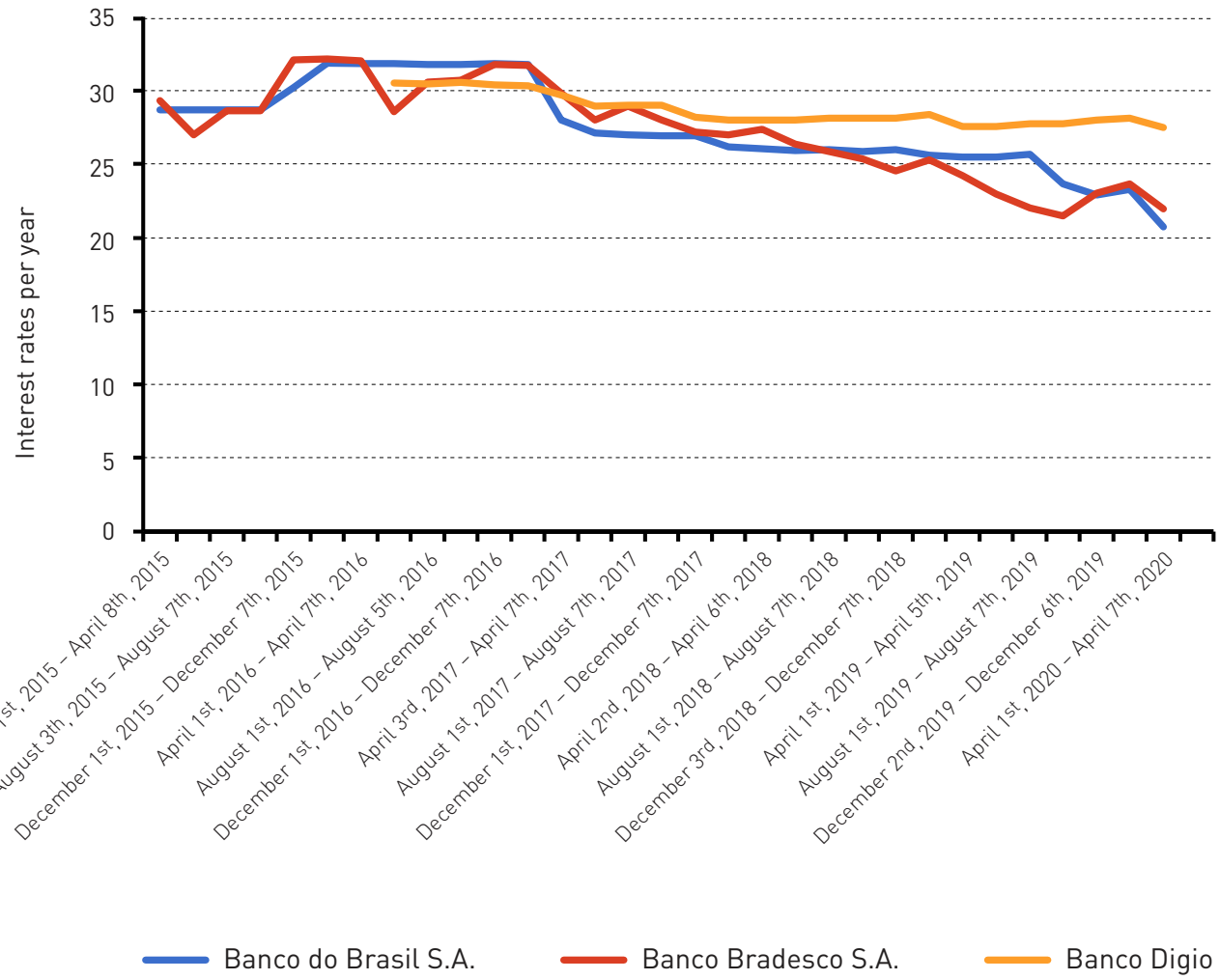
(it continues)

31 Payroll-loans refer to "personal loans with payroll deduction". Specifically, consigned personal loans for INSS beneficiaries comprise "consigned personal loans for retirees and pensioners of the National Institute of Social Security (INSS)". Available at: https://www.bcb.gov.br/content/estatisticas/docs_estatisticasmonetariascredito/glossariocredito.pdf. Accessed on: May 6th, 2020.

02/01/2017 – 02/07/2017	2,33	31,89	2,33	31,83	2,24	30,42
04/03/2017 – 04/07/2017	2,08	28,06	2,21	29,94	2,20	29,78
06/01/2017 – 06/07/2017	2,03	27,22	2,08	28,06	2,15	29,01
08/01/2017 – 08/07/2017	2,02	27,09	2,15	29,05	2,15	29,06
10/02/2017 – 10/06/2017	2,01	27,03	2,08	28,06	2,15	29,09
12/01/2017 – 12/07/2017	2,01	27,02	2,03	27,23	2,10	28,25
02/01/2018 – 02/07/2018	1,96	26,22	2,02	27,09	2,08	28,06
04/02/2018 – 04/06/2018	1,95	26,10	2,04	27,44	2,09	28,11
06/01/2018 – 06/07/2018	1,95	26,02	1,97	26,42	2,08	28,06
08/01/2018 – 08/07/2018	1,95	26,06	1,94	25,94	2,09	28,23
10/01/2018 – 10/05/2018	1,94	25,93	1,90	25,41	2,09	28,18
12/03/2018 – 12/07/2018	1,95	26,04	1,85	24,58	2,09	28,21
02/01/2019 – 02/07/2019	1,92	25,69	1,90	25,34	2,11	28,49
04/01/2019 – 04/05/2019	1,91	25,56	1,83	24,32	2,05	27,61
06/03/2019 – 06/07/2019	1,91	25,54	1,74	23,06	2,05	27,61
08/01/2019 – 08/07/2019	1,93	25,74	1,68	22,07	2,07	27,86
10/01/2019 – 10/07/2019	1,79	23,75	1,64	21,54	2,07	27,86
12/02/2019 – 12/06/2019	1,74	22,98	1,75	23,12	2,08	28,08
02/03/2020 – 02/07/2020	1,76	23,35	1,79	23,73	2,09	28,23
04/01/2020 – 04/07/2020	1,59	20,79	1,67	22,05	2,05	27,57

Source: Authors' own elaboration.

GRAPHIC 3 – **PAYROLL LOANS – INSS**



Source: Authors' own elaboration.

By analyzing the comparisons, we may conclude that Banco Digio, a digital platform controlled by two of the largest and most traditional banks (Banco do Brasil and Bradesco) has practiced higher interest rates in the three credit modalities, at least for most of the analyzed period.

Conclusion

The discourses that identify fintechs as competitors to traditional banks present a rather partial picture. A more adequate view of this scenario reveals several mechanisms of cooperation and reciprocal benefits that arise from the interaction between new and old lenders. In Brazil, these cooperation mechanisms may present themselves in several ways, mainly through the banking correspondent's contract, but also as stock control of fintechs by traditional banks.

Facing regulatory difficulties involving the compatibility of innovation and security in the banking sector, the Central Bank of Brazil intended to regulate credit fintechs by creating two new legal enterprises: the Direct Credit Company (SCD) and the Personal Loan

Company (SEP). These two new legal arrangements allegedly aim to "increase legal security in the segment, increase competition among financial institutions and expand opportunities for economic agents to access the credit market".[32]

However, we argue that the new regulatory categories of the Central Bank of Brazil face challenges becoming effective and suitable instruments for the objectives proposed by the Central Bank itself. We note that the number of credit fintechs that have taken the form of SCDs or SEPs is still small. Moreover, some fintechs maintain partnerships with banks – the status of bank correspondent – even after converting into SCDs or SEPs. If, on the one hand, this may be related to the need for more time to adapt, on the other hand, it may suggest that, for many fintechs, it is sufficiently advantageous to act as a bank correspondent in association with a traditional financial institution. This reality may also reveal that the incorporation of a SCD or SEP presupposes too high investment for the adaptation of smaller fintechs to the new categories. Without a doubt, the answers to these questions await a longer period of maturation and research effort.

Finally, through a comparison of interest rates based on data provided by the Central Bank of Brazil, summarized and organized by us, we demonstrate that fintechs can even practice higher interest rates than the traditional financial institutions with which they cooperate. The comparison involved interest rates practiced by Banco Digio, a digital platform, and the traditional banks that controlled it (Banco do Brasil and Bradesco) in three modalities: credit card revolving credit – total, non-payroll loans, and payroll loans – INSS, from April 2015 to April 2020. Although each type of credit presents a different progression of interest rates, in all of them, Banco Digio stands out for practicing the highest interest rates, at least in most of the historical series.

We also explain that the analysis developed here does not have – nor could have – a generalizing purpose. In fact, as the raw data published by the Central Bank of Brazil refer only to the institutions of article 4 and items of Resolution No. 4,571, of May 26th, 2017, as the immense majority of credit fintechs operate as banking correspondents, these comparisons are difficult to access. Since we present data for a single fintech, we cannot generalize our findings. Nevertheless, and perhaps for this very reason, our empirical analysis serves as a warning to approaching the fintech phenomenon more thoroughly and cautiously.

32 Public Consultation Notice 55/2017, August 30th, 2017.

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