

Financial Citizenship

Report

2021



*Understanding the past, analyzing
the present, and helping to shape
the future of financial citizenship
in Brazil*

cidadania
financeira



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DO BRASIL**

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Introduction

The first edition of the Financial Citizenship Report (RCF), released in 2018 by Banco Central do Brasil (BCB), innovated by presenting the first outlook of financial citizenship in Brazil. Three years later, in its second edition, the RCF proposes to identify the advances, gaps and main challenges when promoting financial citizenship¹ in the country and to contribute to the advancement of BC# Agenda, the BCB's strategic agenda.

The BC# Agenda aims at financial democratization: lasting low interest rates, better financial services, and participation of everyone in the market. To this end, it focuses on five dimensions: Inclusion, Competitiveness, Transparency, Education, and Sustainability. The RCF contributes to this goal by presenting an overview of the financial system from the citizen's perspective, showing how the evolution of this agenda has been affecting people's lives, as well as highlighting the technological agenda that is helping to transform the current structure of the financial system.

financial citizenship

is the exercise of rights and duties that enables citizens to well manage their financial resources.

The dimensions of financial citizenship are cross-cuttingly assessed throughout the text, and hashtags (#) are used to reference and highlight them:

- Financial inclusion: **#inclusion**, which considers the aspects of **#access**, **#use**, and **#quality**;
- Financial education: **#education**;
- Consumer protection: **#protection**;
- Citizen participation: **#participation**.

In this edition, the RCF looks at the various aspects of financial citizenship between 2018 and 2020, a period when profound transformations occurred in the increasingly digital financial system, all in an environment impacted by the Covid-19 pandemic. To offer subsidies for a better understanding of the speed and depth of these transformations, and how they impact the financial citizenship of Brazilians, this Report sought to explore them based on three axes:

¹ The complete definition of financial citizenship and its dimensions are available at: https://www.bcb.gov.br/content/cidadaniafinanceira/documentos_cidadania/Informacoes_gerais/conceito_cidadania_financeira.pdf (Portuguese only).

- (a) analyzing the past;
- (b) understanding the main challenges of specific segments of the population; and
- (c) highlighting the innovations in the National Financial System (SFN) that will help shape the future of financial citizenship in Brazil.

» Analyzing the past

Chapter 1 assesses advances in financial citizenship from 2018 to 2020. This chapter highlights the Covid-19 pandemic, due to its significant impact on access and use of financial services. It assesses the main transformations resulting from the Federal Emergency Aid (*Auxílio Emergencial*), a benefit intended for individuals and families in vulnerable situations due to the pandemic, as well as the digital financial inclusion, strongly accelerated in the period. The Financial Citizenship Index,² which seeks to portray the levels of financial citizenship in Brazil through indicators, updates data from the previous report, showing a new comparison between the Federation units. At the end, there is a special study on financial resilience, an even more relevant issue in times of crisis.

» Understanding the main challenges of specific segments of the population

Different people face different challenges in their relationship with the financial system. For this reason, **Chapter 2** seeks to identify different segments of the population in order to better investigate their particularities. The approach is divided into three clusters. The first one evaluates young people, analyzing their first steps in interacting with the SFN, with their peculiarities in accessing, using and understanding this environment. The second group corresponds to individual micro-entrepreneurs (MEIs), with growing relevance in the labor market and their particularities while interacting with the financial system. Finally, the elderly, a segment of the population that demands specific attention, especially in aspects related to digitalization and consumer protection.

» Highlighting the innovations in the SFN that will help shape the future of financial citizenship in Brazil

The Brazilian Financial System (SFN) is undergoing intense transformation. In this digitalization scenario, **Chapter 3** highlights recent innovations in the SFN that already impact – and will continue to progressively transform – the financial lives of Brazilian citizens. The report addresses the new types of institutions that offer new ways for citizens to interact with the financial system, the innovations in the regulatory and payments environment, and their respective impacts on citizens.

Through the analyses and evidence presented, this report seeks to contribute to the construction of public policies whose objectives are financial democratization and the full exercise of financial citizenship in the country. Enjoy your reading!

² The Financial Citizenship Index was introduced in the 2018 Financial Citizenship Report (RCF). Further information about the index development and methodology are available at the 2018 RCF- Chapter 5 (https://www.bcb.gov.br/content/cidadaniafinanceira/documentos_cidadania/RIF/Relatorio%20Cidadania%20Financeira_BCB_16jan_2019.pdf).



Chapter 1

Financial Citizenship Outlook in Brazil

In recent years, the changes in financial citizenship could be noticed in several areas. This chapter evaluates the evolution of financial citizenship indicators between 2018 and 2020, emphasizing the digital financial inclusion and the impacts of the Covid-19 pandemic on how the Brazilian population interacts with the financial system.

1.1 Advances in financial citizenship in Brazil between 2018 and 2020

» Expanded access to financial services

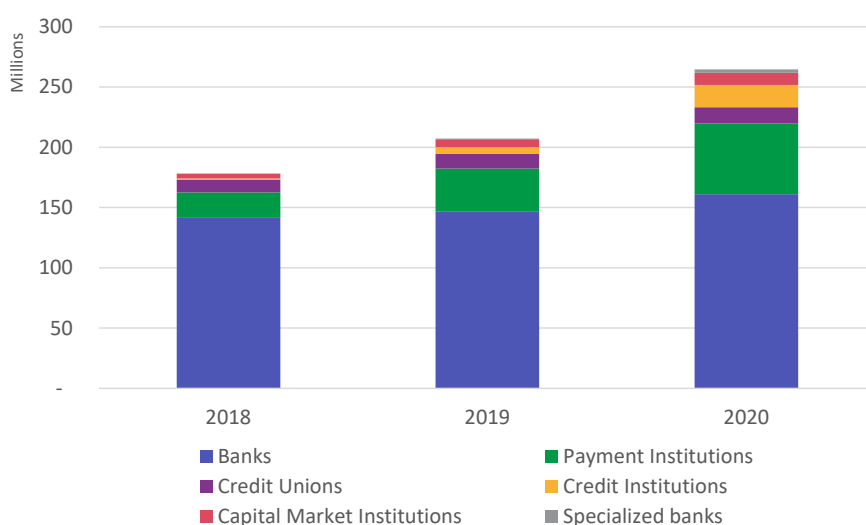
#inclusion #access

As in the previous edition of this Report, the percentage of adults with relationships with financial institutions³ remained above 85% during this period, reaching 96% in 2020.

This high percentage is partly due to the inclusion of all accounts still open, even those with very low balances or that have not registered any withdrawals, deposits, and transfers for long periods. Based on information provided by the financial institutions themselves, data disclosed by the Banco Central do Brasil (BCB) unveil the universe of account holders registered in the National Financial System (SFN). By contrast, the survey *O brasileiro e os hábitos de uso de meios de pagamento* (Brazilians and their habits of using the means of payment),⁴ conducted by the BCB in 2019, pointed out that 77% of adults maintained a relationship with the SFN.

Between 2018 and 2020, there were great diversification in the types of institutions used by the population, with a significant increase in the share of payment institutions (IPs). The number of relationships with IPs grew 179%, while, considering the entire SFN, the growth was 49% in this period, as shown in Figure 1.1.1.

Figure 1.1.1 – Individuals' relationships with the SFN by segment⁵



Note: Data referring to the number of relationships by institution type.

Source: BCB

3 Data from the Financial System Customer Register (CCS). See glossary for further details about this indicator's methodology.

4 Further survey's details available at (Portuguese only): https://www.bcb.gov.br/content/estabilidadefinanceira/Publicacoes_SPB/Relatorio_Decem_2157_2021.pdf.

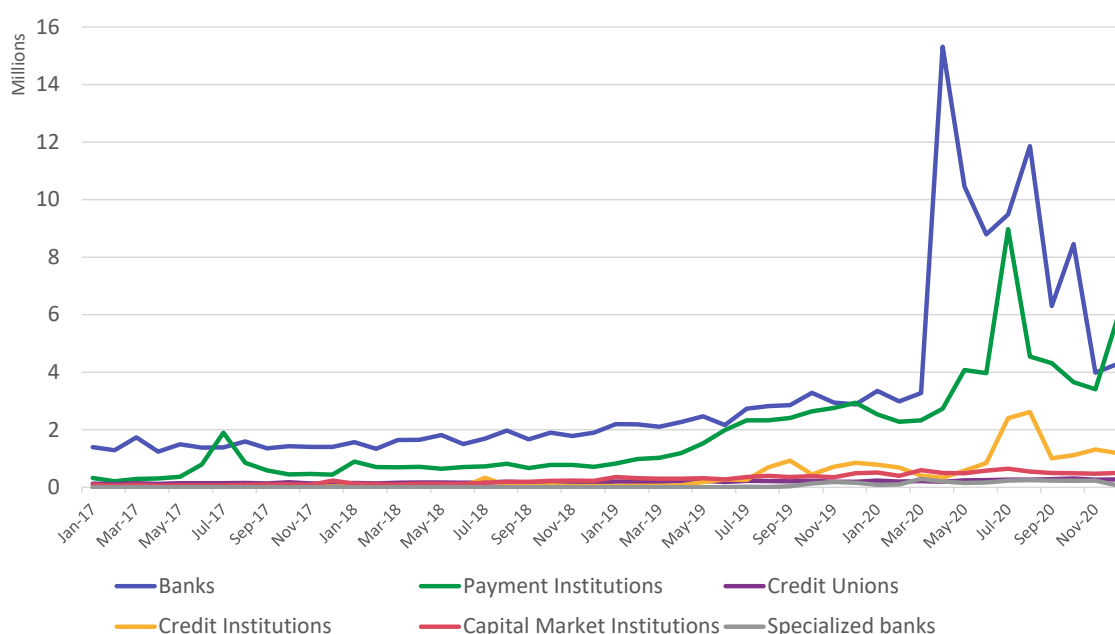
5 The classification by segments results from the following bank groupings: **banks** comprise commercial banks, multiple banks with a commercial portfolio, and savings banks (segment b1), except the cooperative multiple banks; **specialized banks** comprise multiple banks without a commercial portfolio, investment banks (segment b2), and development banks (segment b4); **credit unions** comprise credit unions (segment b3) and cooperative multiple banks (controlled by credit unions). The non-banking sector, on the other hand, aggregates the following segments: (n1), **credit institutions** (non-banking credit institutions); (n2), **capital market institutions**; and (n4), **payment institutions**.

Many relationships with the SFN resulted from the Covid-19 pandemic and the Federal Government Emergency Aid

The Covid-19 pandemic has brought huge challenges to the Brazilian society, requiring actions from the public authorities to address its economic effects. Brazil introduced, among other initiatives, a financial aid for part of the population: the Federal Emergency Aid.⁶ An immediate effect of this initiative was the opening of millions of new accounts to receive the benefit, which explains, in part, the significant increase in new relationships with the SFN in 2020 (Figure 1.1.2). Throughout the year, nearly fourteen million people started to use the SFN.

Between 2018 and 2020, 261 million new relationships were established, 139 million of these by banks and 80 million by IPs. These new relationships include individuals who already had some relationship with the SFN and opened an account with another institution in the period. The increased participation of IPs highlights the growing demand for digital relationship channels.

Figure 1.1.2 – New relationships of individuals with the SFN by segment



Note: Data referring to the number of new relationships created on each base date by institution type.

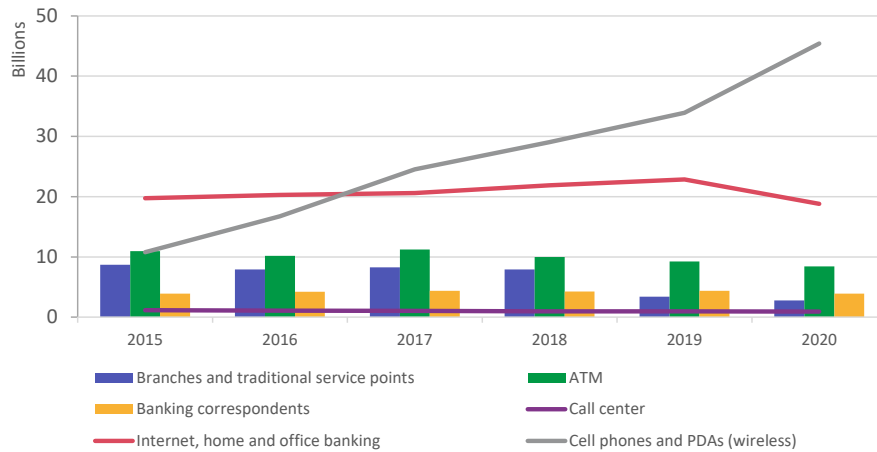
Source: BCB

Digital access channels continue to be widely used. In 2019, the number of internet banking transactions dropped 14%, while transactions conducted via mobile phones (smartphones) increased 56% in the 2018-2020 period (Figure 1.1.3). This trend shows that the population, especially the youth,⁷ is increasingly connected to the financial system through mobile phones, using apps to carry out their transactions.

⁶ Emergency Aid (*Auxílio Emergencial*): Law 13,982, of April 2, 2020, allowed the granting, initially for three months, of an emergency aid for 18+ years old Brazilians who were neither formally employed nor receiving a social security benefit, and who also met income requirements. The benefit is detailed in section 1.3.

⁷ The September 2020 *Observatório Febraban* survey, called *Brasil Online*, pointed out that the group aged between 16 and 24 is the one most mentioning the use of apps to perform banking transactions (46%). This is also the group that mostly believes that will continue using mainly digital services after the pandemic (54%). The group of individuals aged 25 to 44 has also a similar behavior, with slightly lower figures than young individuals. The full report is available at (Portuguese only): https://cmsportal.febraban.org.br/Arquivos/documentos/PDF/200926_iD_%20OBSERVAT%C3%93RIO%20FEBRABAN%20IV_%20SETEMBRO%202020%2023BRASILONLINE_final.pdf.

Figure 1.1.3 – Number of transactions by access channel



Source: BCB

All Brazilian municipalities continue to have physical service points for financial services

The financial system strengthened its physical presence by increasing the number of service points (PAs) and banking correspondents, despite the reduction in the number of bank branches (Table 1.1.1).

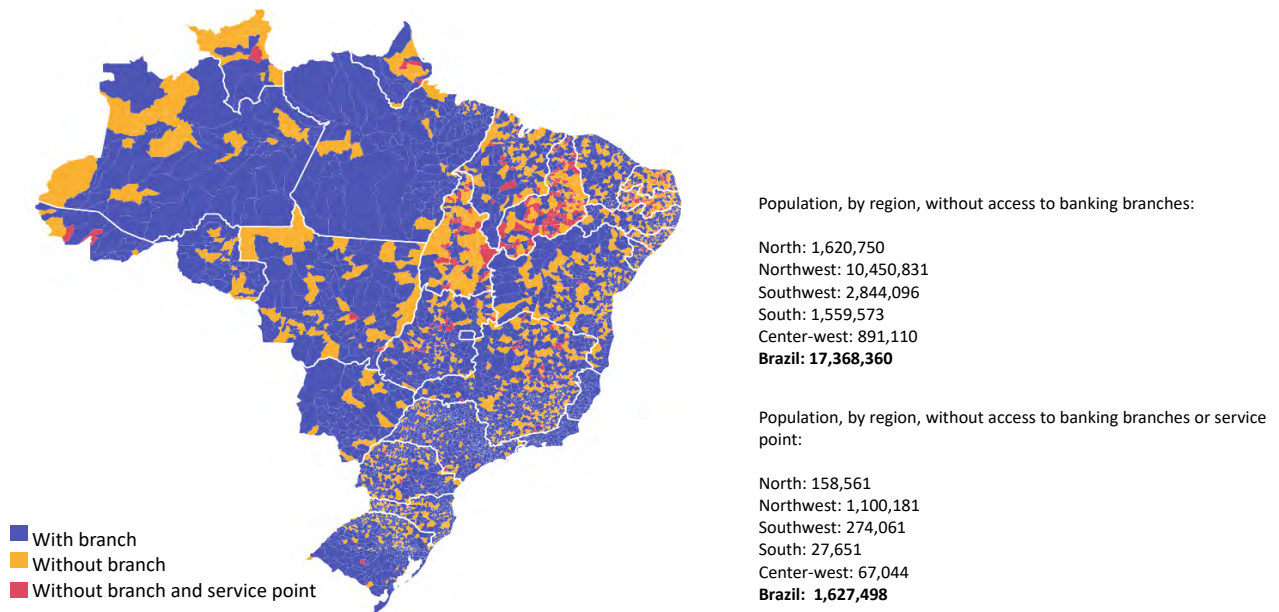
Table 1.1.1 – Number of service channels

	2018	2019	2020
Total of service channels	256,091	266,448	276,272
Branches	21,184	20,308	18,901
Service Points	15,898	17,201	18,050
Eletronic Service Points	30,650	30,533	28,682
Banking Correspondents	188,359	198,406	210,639

Source: BCB

Brazil continues to have at least one service channel in every municipality. In 2020, 408 municipalities had correspondents only. The following map highlights the municipalities with no bank branches, as well as those with correspondents only.

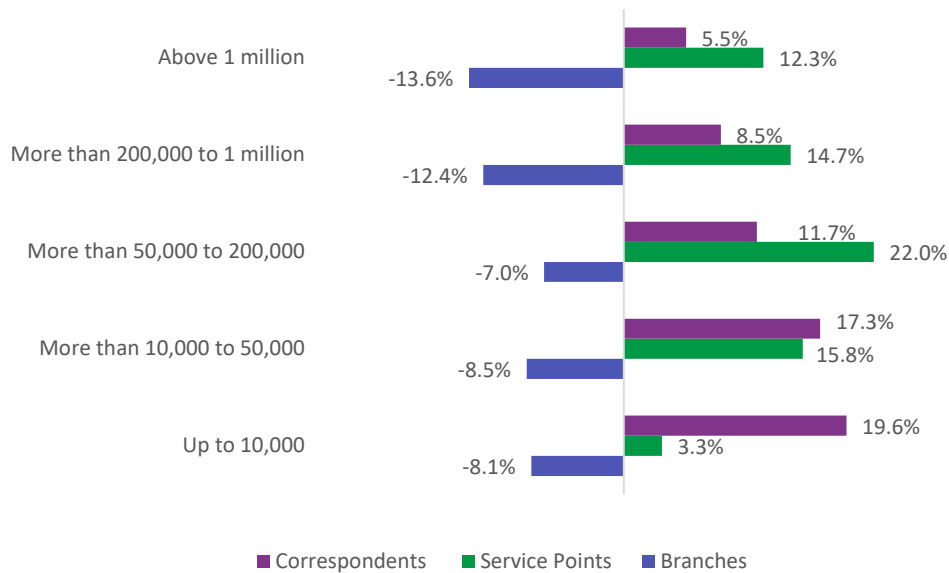
Figure 1.1.4 – Service points per municipality in 2020



Source: BCB

Figure 1.1.5 presents the variation in the number of service channels from 2018 to 2020 by size of municipality. The drop in the number of branches is observed for all groups, but is less accentuated in the smaller municipalities, with up to 200,000 inhabitants. By contrast, there was a significant increase, almost 20%, in the number of correspondents in municipalities with up to 10,000 inhabitants and a positive variation in the number of PAs and correspondents for all size ranges of municipalities.

Figure 1.1.5 – Variation in the number of branches, service points and correspondents between 2018 and 2020 per municipality size



Source: BCB

Despite the drop in the number of branches in the country, competition for relationships has increased

The difference in the territorial distribution of branches may distinctly affect financial inclusion since there may be banking concentration in municipalities with little face-to-face service. To check this hypothesis, one can analyze the evolution of the concentration of relationships with the financial system over recent years at the municipal level.

The antitrust literature uses the normalized Herfindahl-Hirschman Index (HHIn)⁸ as an auxiliary tool to evaluate economic concentration. This index was used to perform an analysis of banking concentration in Brazil and in its municipalities, based on bank relationships.

The analysis encompassed financial institutions from both the banking and the non-banking segments.⁹ It is possible to see that, between 2017 and 2020, there was a reduction in the index, i.e., a decrease in market concentration in the country.¹⁰

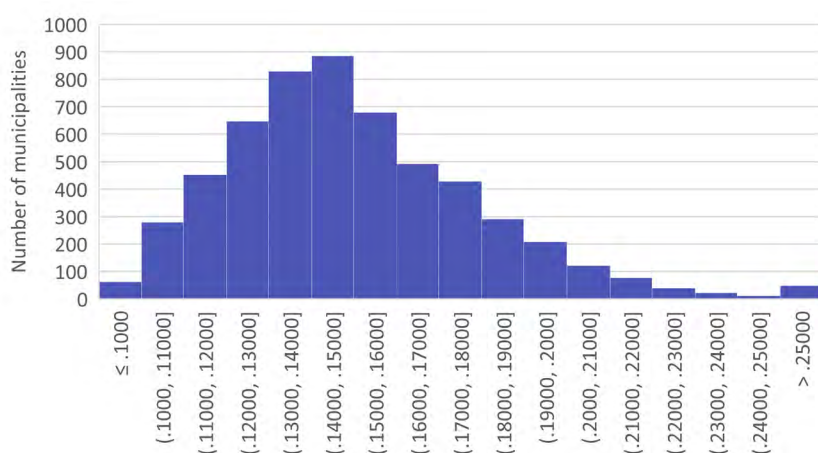
Table 1.1.2 – HHI Index by year

Year	2017	2018	2019	2020
HHI	0.1593	0.1465	0.1208	0.1072

Source: BCB

The histogram of the concentration index shown in Figure 1.1.6 reveals different levels of concentration at the municipal level across the country. In this analysis, only 96 of the 5,570 municipalities showed increased concentration between 2017 and 2020. By the end of 2020, about 4,500 municipalities showed low index levels¹¹ (between 0.1 and 0.187), while 815 municipalities showed indexes higher than 0.18, signaling high concentration.

Figure 1.1.6 – Municipal HHI - Relationships with the SFN



Source: BCB

⁸ In its normalized version, the HHIn is obtained by the sum of the square of the participation, in decimal form, of each financial institution (FI) in the market, that is, $HHIn = (FI_1)^2 + (FI_2)^2 + \dots + (FI_n)^2$, resulting in a number between 0 and 1.

⁹ The analysis covers the four segments of the banking sector and the three segments of the non-banking sector described in footnote 1.

¹⁰ The reduction in the concentration index was also seen in the 2020 Banking Economy Report (Table 6.1) for assets, deposits, and credit operations within the SFN.

¹¹ Based on the Guide for Merger Analysis, disclosed by Communiqué 22,366, of April 27, 2012, the BCB considers that markets with HHIn values between 0 and 0.10 are deemed of low concentration; between 0.10 to 0.18, of moderate concentration; and from 0.18 to 1, of high concentration.

» The use of savings and credit

#inclusion #use #quality

An increasingly number of individuals had savings accounts in 2020, but with lower average balances than in 2018

Information about current accounts, term deposit accounts, and savings accounts¹² is relevant for the analysis of how financial services are being used, because they are basic services offered by banks that guarantee the safekeeping and transaction of resources conveniently. Table 1.1.3 shows the evolution in the number of customers and in the balance of deposits. Figures include both individuals and companies.

Both the number of customers¹³ and the balance of deposits grew in the three services, with special emphasis on term deposit accounts. Within this category, there was a great increase in the number of customers (145%), pointing to an expansion of the public accessing this financial instrument.

Regarding savings accounts, in 2020 there was a significant increase in the number of customers (50%) and in the total balance of deposits – the latter, however, with an average value 15% lower than in 2018. Both the increase in the number of customers and the drop in the average amount of deposits may be related to the Federal Emergency Aid, made available through digital savings accounts, a topic that will be discussed in section 1.3 of this chapter.

Table 1.1.3 – Evolution of deposits

	2018	2019	2020	Evolution 2018 - 2020
Term Deposits				
Number of Clients	20,504,455	28,743,634	50,267,802	145%
Deposits Balance (BRL Thousand)	919,752,010	955,869,734	1,581,317,289	72%
Average Balance (BRL per depositor)	44,856	33,255	31,458	-30%
Cash Deposits				
Number of Clients	109,594,621	108,397,569	112,745,557	3%
Deposits Balance (BRL Thousand)	182,783,598	201,830,317	291,169,098	59%
Average Balance (BRL per depositor)	1,668	1,862	2,583	55%
Savings Deposits				
Number of Clients	158,121,715	164,851,466	237,632,483	50%
Deposits Balance (BRL Thousand)	783,353,137	824,183,888	1,005,172,871	28%
Average Balance (BRL per depositor)	4,954	5,000	4,230	-15%

Source: Fundo Garantidor de Créditos - FGC

The habit of saving is an important tool to strengthen financial resilience. The increased number of individuals having savings accounts does not necessarily imply a strengthening of this habit. To complement the analysis, it is important to evaluate information obtained directly from the population.

A survey conducted by the Brazilian Financial and Capital Markets Association (Anbima)¹⁴ between 2017 and 2019 sought to answer some questions about the investment profile of Brazilians. This survey reported that, in 2017, only 32% of respondents saved money during the year. The survey's most recent edition, in 2019, revealed that 38% of respondents had made some kind of savings.

¹² See Glossary for definition of demand and time deposits, and savings deposits.

¹³ Account holder clients: information obtained from the Credit Guarantor Fund (FGC), showing the number of customers for the various types of products guaranteed. The FGC data considers individuals and companies (of any age); for this analysis, however, only individuals are considered. It should be noted that the same customer may have a deposit account and a savings account, or have accounts in more than one financial institution, generating double counting in the aggregate.

¹⁴ https://www.anbima.com.br/en_us/special/x-ray-of-the-brazilian-investor-3rd-edition.htm.

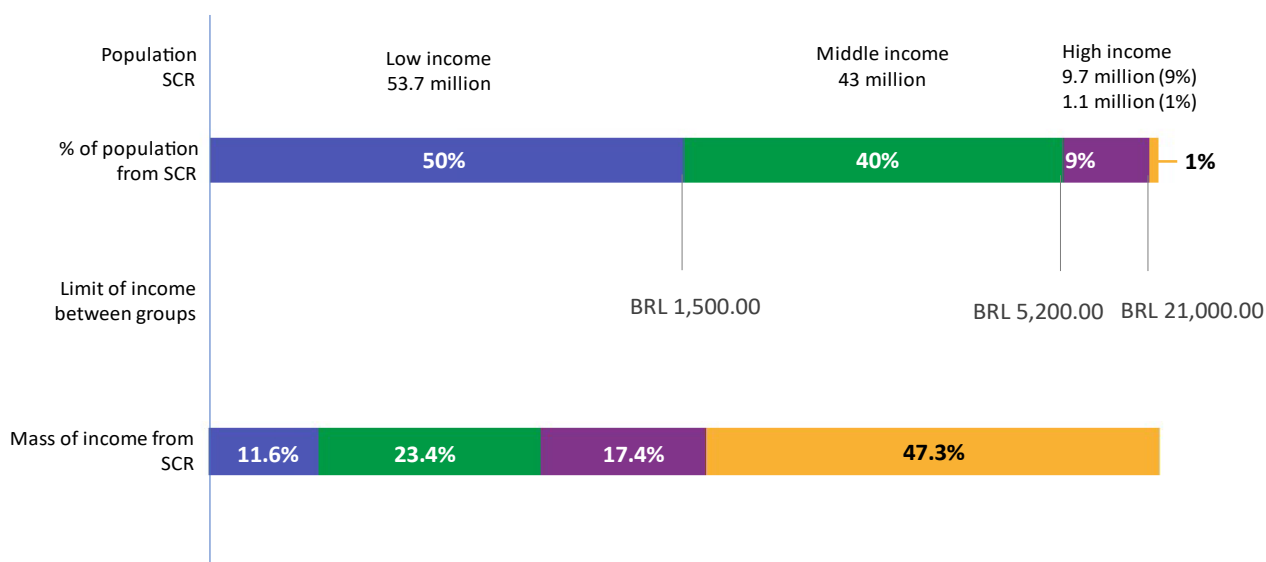
Access to credit reflects income inequality

Credit is an important aspect of financial citizenship, in addition to an important service for people's financial management. One may note that, between 2017 and 2020, the percentage of the adult population with access to credit rose from 44% to 49%.

To enable an analysis that better portrays the socioeconomic differences in Brazil, and considering the country's high income inequality situation, it is important to analyze access to and use of credit from the perspective of income distribution. Brazil, according to the World Bank's income inequality report, had a Gini index¹⁵ of 53.4 in 2019.¹⁶

The segmentation of the population by income groups considered the universe of borrowers whose information on individual income is recorded in the BCB's Credit Information System (SCR).¹⁷ The definition of the upper and lower limits of each group were based on the World Inequality Laboratory and the FGV's Center for Social Policies¹⁸ works, as follows: the 50% with the lowest income (53.7 million people earning up to BRL 1,500 per month); the 40% with middle income (43 million people who earn more than BRL 1,500 to BRL 5,200 per month); and the 10% with the highest income (10.8 million people who earn more than BRL 5,200 per month), in which stands out the 1% in the highest income range – 1.1 million people who earn more than BRL 21,000 per month). Thus, half of the low-income borrowers represent 11.6% of the reported total income, while the high-income group (1%) represents 47.3% (Figure 1.1.7).

Figure 1.1.7 – Income distribution of the SCR population in 2020



Source: BCB

Access to and use of credit reflects income inequality. Figure 1.1.8 presents the credit portfolio *per capita* for each income group, as well as the income limits separating these groups. The credit portfolio *per capita* grew between 2018 and 2020 across all income groups, with a 23% growth for the groups representing low-income and high-income individuals, and 26% for the middle-income ones.

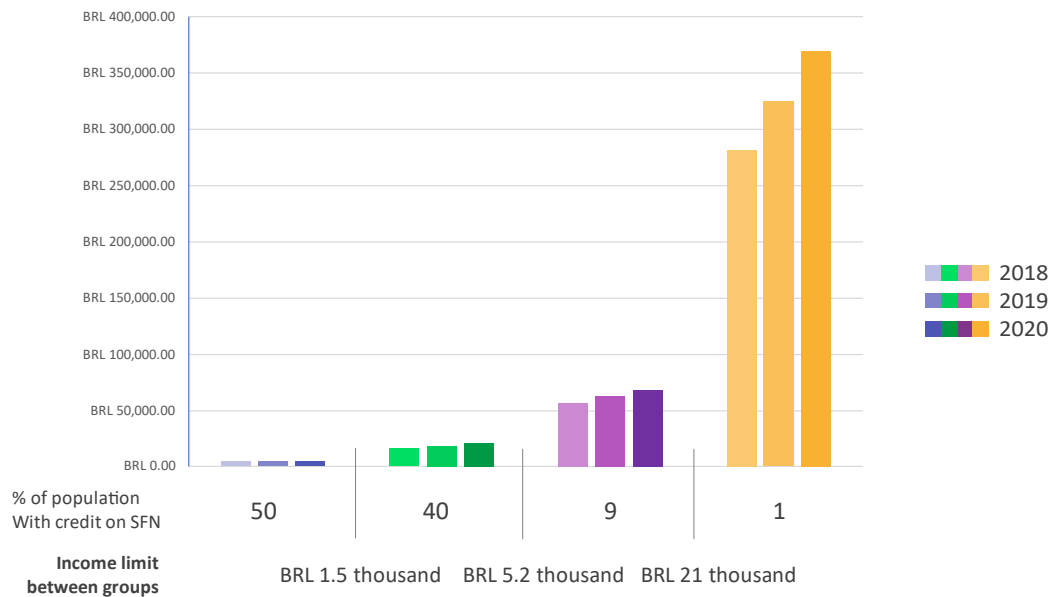
¹⁵ The Gini Index measures the degree of one country's income concentration. Numerically it ranges from 0 to 100, with lower values (close to 0) showing a better distributed income while higher values (close to 100) indicate high income concentration.

¹⁶ This number places Brazil among the ten worst countries in the world in terms of income inequality. <https://data.worldbank.org/indicator/SI.POV.GINI?locations=BR>.

¹⁷ Information on borrowers' income in the SCR is provided by financial institutions. See glossary for further details on the SCR methodology.

¹⁸ Publications from these research centers used as reference were the "World Inequality Report" (Facundo Alvaredo, Lucas Chancel, Thomas Piketty, Emmanuel Saez, and Gabriel Zucman, 2018), available at <https://wid.world/wid-publications/> and "The Escalation of Inequality" (Marcelo Neri, 2019), available at <https://cps.fgv.br/desigualdade>.

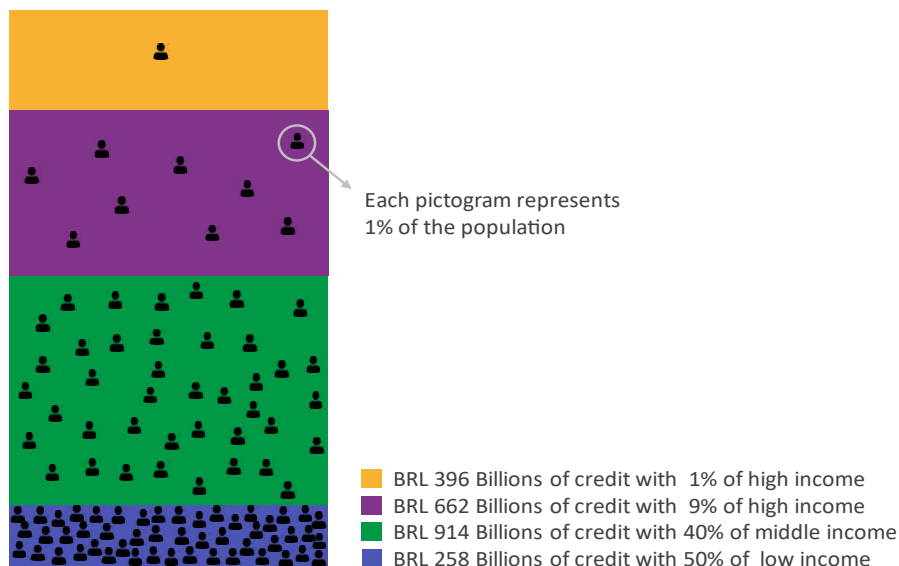
Figure 1.1.8 – Per capita credit portfolio by income range



Source: BCB

By the end of 2020, as shown in Figure 1.1.9, the credit balance reached BRL 258 billion for the low-income population and BRL 914 billion for the middle-income population. The credit balance accumulated by the top 10% of the population was approximately BRL 1 trillion, about four times the portfolio of the low-income group. The balance of the top 1% reached BRL 396 billion.

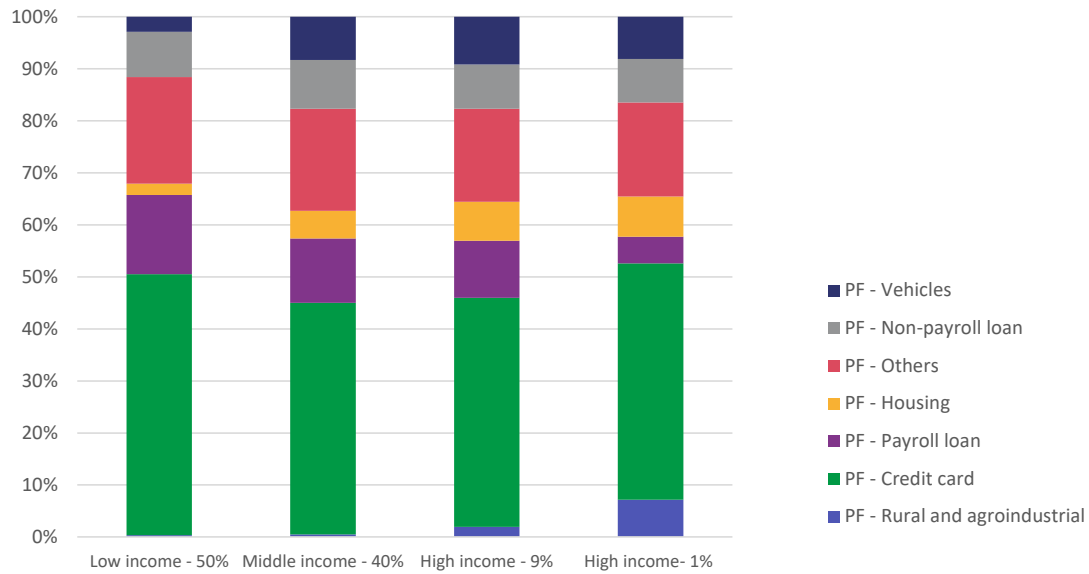
Figure 1.1.9 – Credit portfolio balance in 2020 (BRL billion)



Source: BCB

In terms of the number of customers, one may realize a greater participation of the low-income population in the credit card and payroll-deducted credit types. As for the upper-income group, it is noteworthy the participation of housing, vehicles, rural, and agro-industrial credit types in relation to other population's groups (Figure 1.1.10).

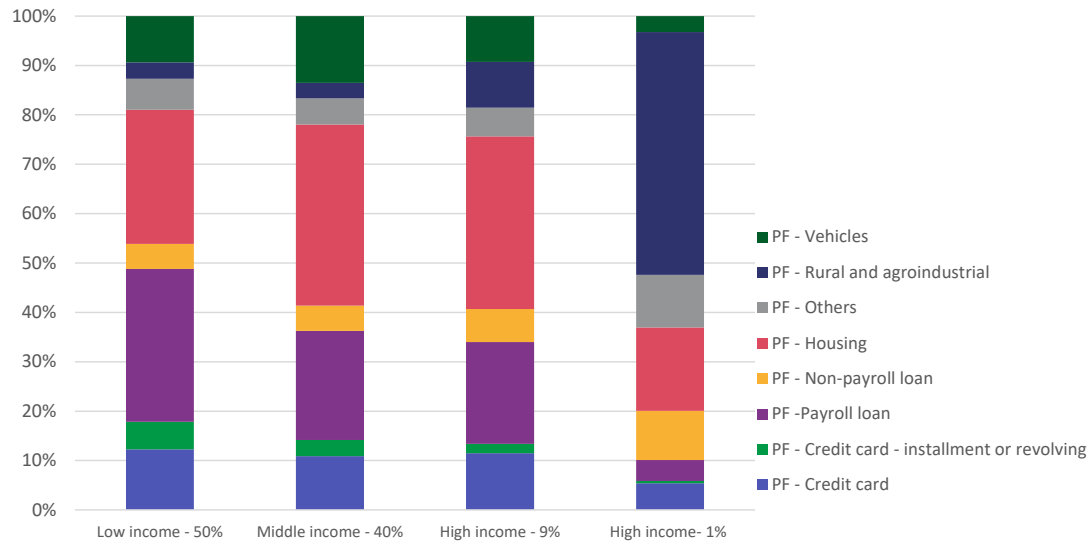
Figure 1.1.10 – Proportion of customers by credit type and income range – 2020



Source: BCB

As for the credit portfolio, one may observe that the credit card and the installment and revolving credit card types represent the largest volumes for the low-income population. As for the higher income group, it is noticeable that the volume of payroll loan is small, highlighting the participation of rural and agro-industrial credit types (Figure 1.1.11).

Figure 1.1.11 – Proportion of credit portfolio by credit type and income range – 2020

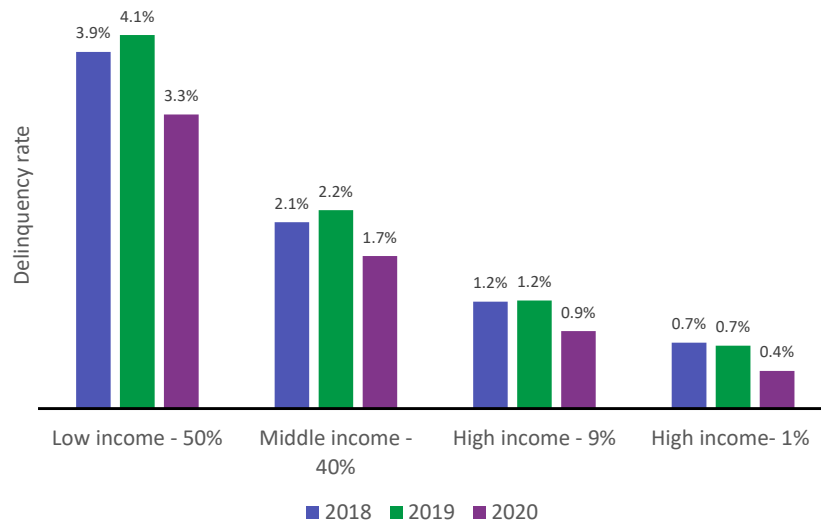


Source: BCB

Lower delinquency and income commitment for all

Figure 1.1.12 shows the delinquency decline for all percentiles of the population in 2020, likely reflecting the high restructuring of debts discussed in section 1.3 of this chapter (effects of the Covid-19 pandemic).

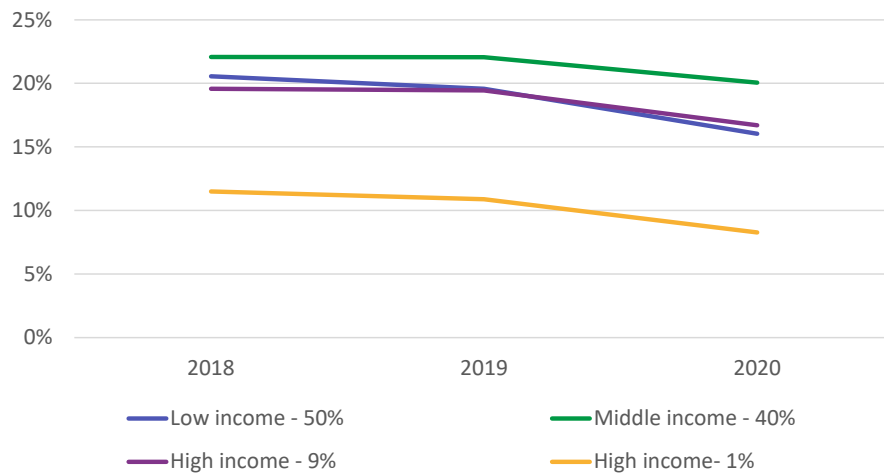
Figure 1.1.12 – Delinquency rate by population percentiles



Source: BCB

Household debt ratio, which measures how much of the income should be allocated to interest payments and debt repayment, decreased for individual borrowers in all income percentiles during the period under analysis (Figure 1.1.13).

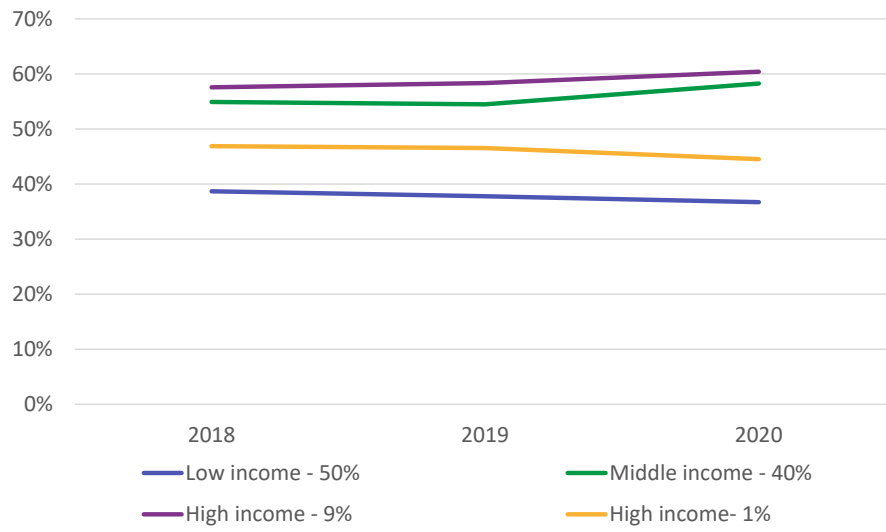
Figure 1.1.13 – Household debt ratio by income percentile



Source: BCB

As for indebtedness, which is the ratio between the total debt balance and the borrower's annual income, the behavior was somehow different. For the middle- and upper-income groups, indebtedness increased slightly, from 54.91% in 2018 to 58.29% in 2020 and from 57.59% in 2018 to 60.42% in 2020, respectively. For the other groups, there was a slight decrease (Figure 1.1.14).

Figure 1.1.14 – Total indebtedness by income percentile



Source: BCB

What is the role of the SFN in expanding the supply of financial products and services suitable for citizens and in promoting the conscious use of such resources by the population?

A fundamental issue in the consumer relationship of the population with the financial system is to expand the supply of products and services suitable to each individual and to consider what suppliers should do to promote the responsible use of such resources. In addition, another normative challenge, imposed on the market, is to deal with the difficulties inherent to citizens who have different levels of understanding about how to establish a healthy relationship with such products and services.

The topic of consumer vulnerability has been addressed by many countries through various laws and regulations aimed at somehow recognizing the challenge for citizens to understand and advantageously use financial products and services of several categories and features. In recent years, the topic has gained importance on the global agenda of conduct supervision. Changes in the population profile and faster digitalization of financial services provide additional obstacles to the understanding and correct use of such services.

Although the theme often receives the denomination of treatment for ‘vulnerable publics’, further analysis has shown that there is not only a single public to be acknowledged, identified, and treated as ‘vulnerable’. Financial institutions must acknowledge their exposure to the risk of engaging a wide range of customers, with an equally considerable variety of vulnerabilities and their intersections.

In the clients’ different stages of relationship with financial products and services (offer, acquisition, use, service, and termination), it is the suppliers’ role to map their customers touching these probable vulnerabilities and prioritize initiatives that seek fair and equitable treatment, as well as mitigate risks related to those customers’ lack of understanding and knowledge of financial analysis and decision making.

Within the scope of the duties of institutions supervised by the BCB, this strategy derives mainly from the management of the customer relationship policies of each institution, as determined by CMN Resolution 4,539 of 2016. From the scope of this management level that must emerge the institutional effort to map the probable vulnerabilities arising from such variables as age, income, and education, as well as more behavioral and specific elements, such as indebtedness levels and digital skills and maturity. The intersections of these vulnerabilities will more clearly indicate which customers should be prioritized when adopting increasingly careful and assertive relationship strategies. Two customers with equivalent age and education, for instance, may have different ease in interacting with electronic financial channels, as measured by the frequency and ability with which one customer uses digital channels and another remains restricted to face-to-face channels. Simple actions such as developing service teams that specialize in serving customers with high vulnerabilities, easier option menus, and intensive care with transparency when offering products and services can make a big difference in building truly fair relationships.

In this context, the BCB’s role is to ensure compliance with the CMN Resolution 4,539 of 2016, demanding and monitoring the development of institutional models for managing customer vulnerabilities and, in particular, their consequential actions, ensuring quality and consistency standards regardless of the approaches used. This strategy fosters innovation in the financial system and allows institutions to move towards an organizational culture that encourages a cooperative and balanced relationship with customers, maintaining a strong link with strategic planning.

In 2020, the main institutions of the SFN started to implement their management models and a set of actions aimed at various topics, such as innovations in product design or inception, improvements in communication provision and transparency, improvements in customer service and after-sales processes, alignments in the management of sales force consequences, among others. Proposals are still maturing – the result of extensive supervisory work – but they already demonstrate the market’s engagement and the perception that the path towards a new paradigm in the provision of financial services reached a point of no return.

In a little less than two years of BCB's actions, the topic has grown strongly, and quickly became a priority in the SFN, based on the acknowledgment of the vulnerabilities that exist in Brazilian society and the necessary market evolution towards a more competitive and responsible scenario. Over the coming years, it is expected that the consolidation of models of customer vulnerability management will promote an increasingly healthy and balanced relationship between citizens and financial institutions, contributing to the strengthening of financial citizenship, regardless of the social, economic, physical, and cultural conditions of each Brazilian.

» Advances in the population's financial education

#education

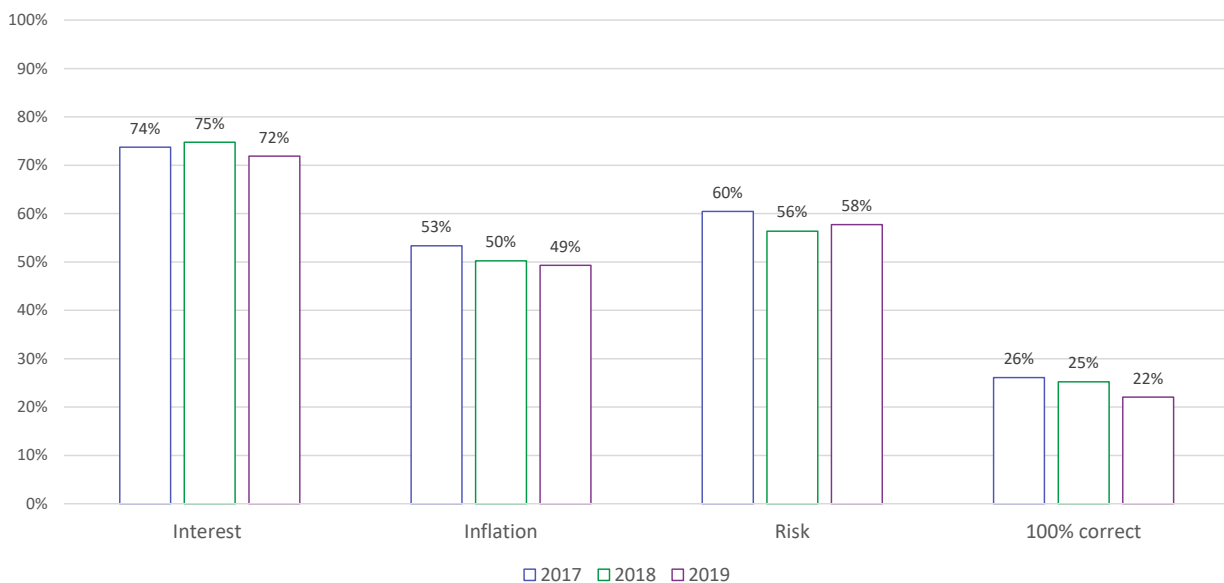
Financial education is a process that enables citizens to improve their understanding of financial products, concepts, and risks. In this process, they must develop the skills and confidence to make the right choices, to know where to look for help, and to take other effective actions to improve their financial well-being. The tools that underpin this process are information, instruction, or objective advice. The concept of financial education as a process was introduced by the Organization for Economic Cooperation and Development (OECD – 2005) and retrieved by the BCB in the construction of the concept of financial citizenship and its pillars (Banco Central do Brasil, 2018).¹⁹

The measurement of this process has been occurring through several tests that seek to quantify the financial literacy of the population. Financial literacy is one of the outcomes of the financial education process, as well as the financial confidence and the financial well-being. Therefore, it is important to monitor the level of financial knowledge of Brazilian citizens.

The financial literacy of the Brazilian population remains low

The aforementioned Anbima's survey also assessed financial knowledge using questions about inflation, interest rates, and risk. In that survey, only one third of the respondents answered correctly all three questions. This scenario remained unchanged between 2017 and 2019. The question with the highest percentage of correct answers was that regarding interest (Figure 1.1.15).

Figure 1.1.15 – Percentage of correct answers about financial knowledge



Source: Anbima

¹⁹ https://www.bcb.gov.br/content/cidadaniafinanceira/documentos_cidadania/Informacoes_gerais/conceito_cidadania_financeira.pdf (Portuguese only).

Conversely, Brazil's score on the financial literacy assessment of the Program for International Student Assessment (PISA)²⁰ improved from 2015 to 2018. In 2018, Brazil scored 420 points, significantly higher than the 2015's score of only 393 points, the worst among countries assessed in that edition. Despite this relevant improvement, Brazil's performance remains statistically lower than OECD's countries, indicating that there is still a long way to go in advancing the financial literacy of our students and of our population.

²⁰ PISA is an international comparative study conducted every three years by the OECD. Full report on financial literacy available at <https://www.oecd-ilibrary.org/docserver/48ebd1ba-en.pdf?expires=1620152171&id=id&accname=guest&checksum=9D5CD61106CFB49E4F734F567A6874EE>. Further details on the research may be found in section 2.1 of this RFC Report.

Financial Education Actions by members of the National Financial System

The National Financial System (SFN) has a relevant role in promoting financial education actions, taking advantage of the inherent features of the services already provided by the institutions – such as capillarity, direct contact with citizens, favorable moments for financial decision-making, and the ability to compile and measure data – to effectively bring financial education to millions of customers and users of financial services.

The initiative ‘Promoting Financial Education Actions in the National Financial System’, which is part of the #Education dimension of the BC# Agenda, aims to foster good practices and prompt financial institutions to develop actions that increase the impact and reach of financial education in the country.

For the BCB, financial education is achieved when ‘citizens have the opportunity to develop skills and self-confidence in well managing their financial resources’. This concept of financial education is broad, not limited to classes and lectures on finance. In this context, financial education can be provided through initiatives that may be:

- conventional, such as courses, lectures, textbooks, and workshops;
- digital, with content offered through some technological element, such as websites, blogs, and social media publications; and
- automatic, at times of contact between customers and financial institutions, when financial products and services are being used. Examples are categorization of credit card spending, push messages when ATMs are being used, advice on family budget at the time of a debt renegotiation, among others.

The BCB published Release 34,201, of September 12, 2019, which introduces principles for the promotion of financial education by financial or other institutions authorized to operate by the BCB, besides determining the monitoring of such initiatives. To start such monitoring, the first mapping of financial education actions performed by banks and payment institutions was carried out in 2020. Overall, 68 institutions were contacted, including large, medium and small banks, as well as payment institutions. Sixty institutions responded the questionnaire, reporting 176 financial education actions in total. The mapping intended to acknowledge both the governance structure of the institutions that favored financial education and the actions themselves.

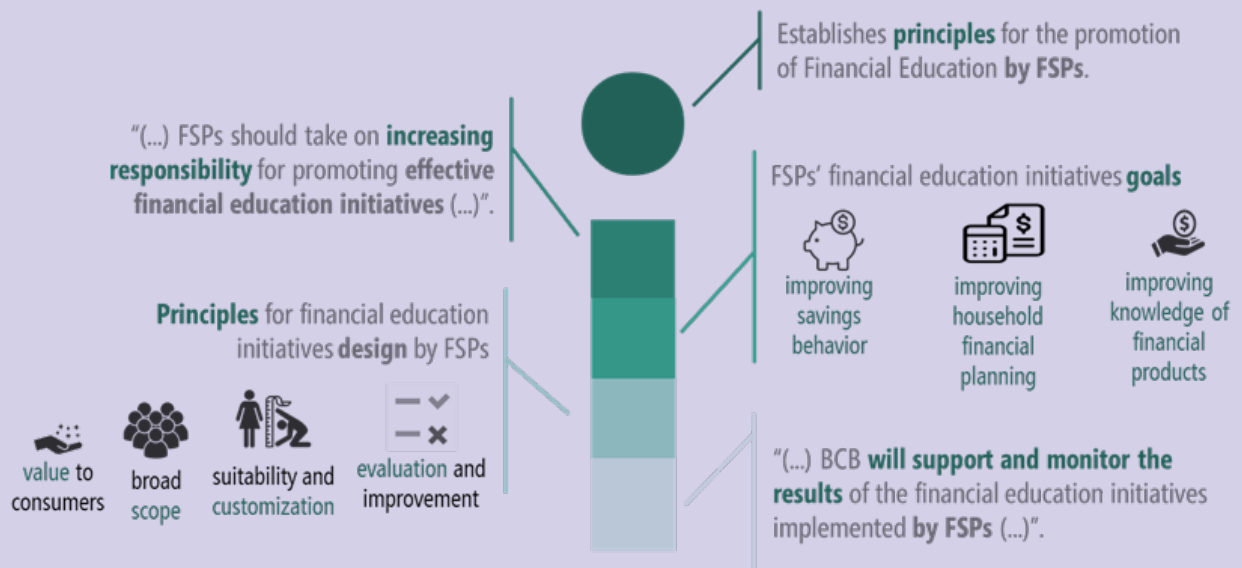
Based on the results of the mapping, the BCB’s actions for the sector in the coming years prioritize two areas:

(i) Increasing the strategic relevance of financial education in institutions. Financial education is not exclusively a social responsibility issue. It is an essential part of achieving greater efficiency in the SFN and should be seen, fundamentally, as an integral part of the institutions’ business, which should be reflected both in their strategic planning and in policies and other elements of governance. Thus, the increase in the strategic relevance became necessary when the mapping found that most of the responding institutions do not mention financial education in their policies (53%) or in their strategic planning (60%);

(ii) The use of instruments to assess the impact of financial education actions. Prioritizing the use of tools for assessing the impact of financial education actions will make it possible to know which of their features make them more effective in changing customer behavior. Financial and payment institutions are in a favorable position to perform this kind of analysis since they have access to customers and their data and can assess the actual financial behavior. Even though 69% of the financial education actions reported as planned for 2020 had some sort of assessment, only 19% incorporated an impact evaluation into their design.

The priorities selected by the BCB were informed to the sector during the Financial Health Summit held by Febraban in September 2020. The BCB, through the Department for Financial Citizenship Promotion, will continue to monitor the developments in the institutions, so their actions are increasingly aligned with the objectives and purposes of BCB’s Release 34,201 of 2019.

In 2021, a similar mapping was under way on the financial education initiatives of the credit unions sector, another relevant partner in the expansion of financial education’s impact and reach in Brazil.



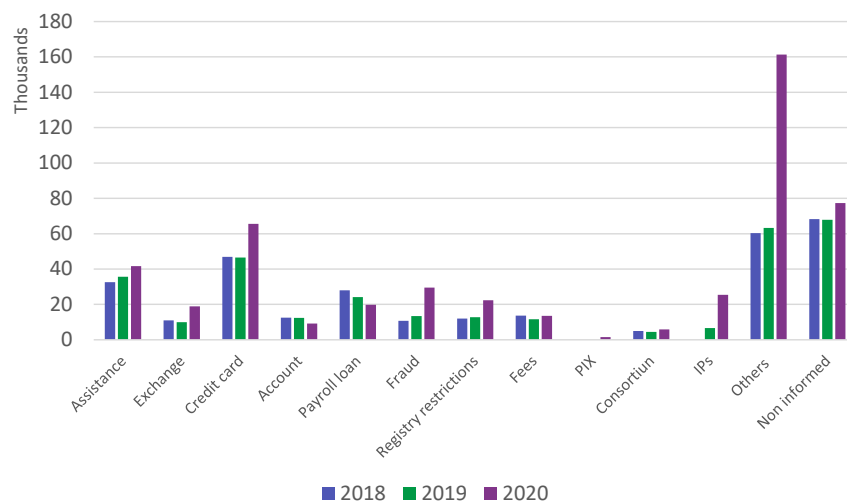
» Financial products and services deserving attention

#protection

A problem-solving system increases consumer confidence in the National Financial System and reduces government costs by avoiding litigation. Currently, the three main complaint channels outside financial institutions are: the BCB's System for Registration of Citizen's Claims (RDR); the Consumer.gov.br²¹ platform; and the National Consumer Defense System (SNDC) – which brings together Procons,²² the Public Prosecutor's Office, the Public Defender's Office, and civil consumer defense entities, acting in an articulated and integrated way with the National Consumer Secretariat (Senacon).

Analyzing the information from these channels helps to understand which financial products are the primary causes of complaint. The BCB receives complaints via the RDR and has a mandate to act only on regulated complaints²³ (related to a law or regulation whose supervisory competence lies with the CMN or the BCB). Figure 1.1.16 shows the most frequent types of complaints opened in the period from 2018 to 2020, according to the citizen's initial classification. The amount of complaints increased every year, with a strong growth in 2020, especially in the "credit card" and "other" categories. In the "other" category, one notices an increase in complaints linked to the Covid-19 pandemic, such as the payment of the Federal Emergency Aid, a subject not regulated by the BCB.

Figure 1.1.16 – Main types of complaints made to the BCB



Another complaint channel that is gaining importance is the Consumidor.gov.br platform.²⁴ Complaints regarding financial services on this platform represent the third largest group of complaints. As with the complaints made directly to BCB, credit card and payroll loan stand out. Figure 1.1.17 shows the evolution between 2018 and 2020 of the five issues concerning financial services with the most complaints. By the end of 2020, payroll loans exceeded credit cards to become the financial services issue with the most complaints.

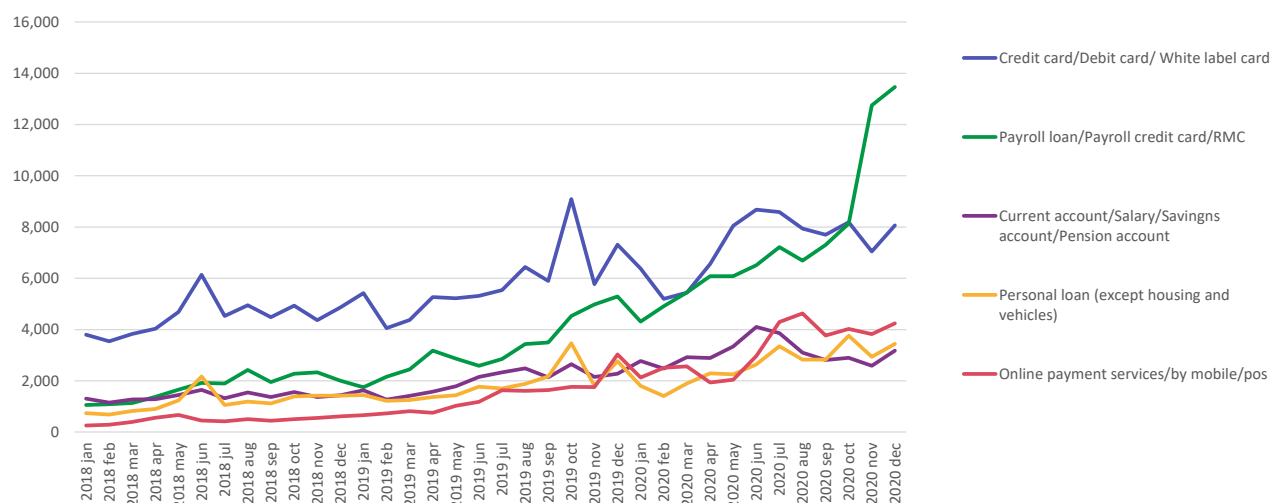
21 A public and free service that allows a direct dialogue between consumers and companies for alternative resolution of consumer conflicts on the internet: <https://www.consumidor.gov.br/pages/conteudo/publico/1>.

22 State Departments of Consumer Protection and Defense, responsible to guide consumers in their complaints, give information about their rights and verify the consumption relations.

23 Each complaint registered with the BCB is analyzed and classified as: (i) valid regulated complaints: number of occurrences (irregularities), associated with complaints closed in the reference period, in which there was evidence of non-compliance by the institution with a law or regulation for which the BCB is responsible for supervision; (ii) regulated complaints – others: number of occurrences (irregularities), associated with complaints closed in the reference period, in which there was no evidence of non-compliance by the institution with a law or regulation for which the BCB is responsible for supervision; or (iii) unregulated complaints: number of occurrences (irregularities), associated with complaints closed in the reference period, which are not related to a law or regulation for which the BCB is responsible for supervision.

24 <https://consumidor.gov.br/>.

Figure 1.1.17 – Complaints about financial services – Consumidor.gov.br

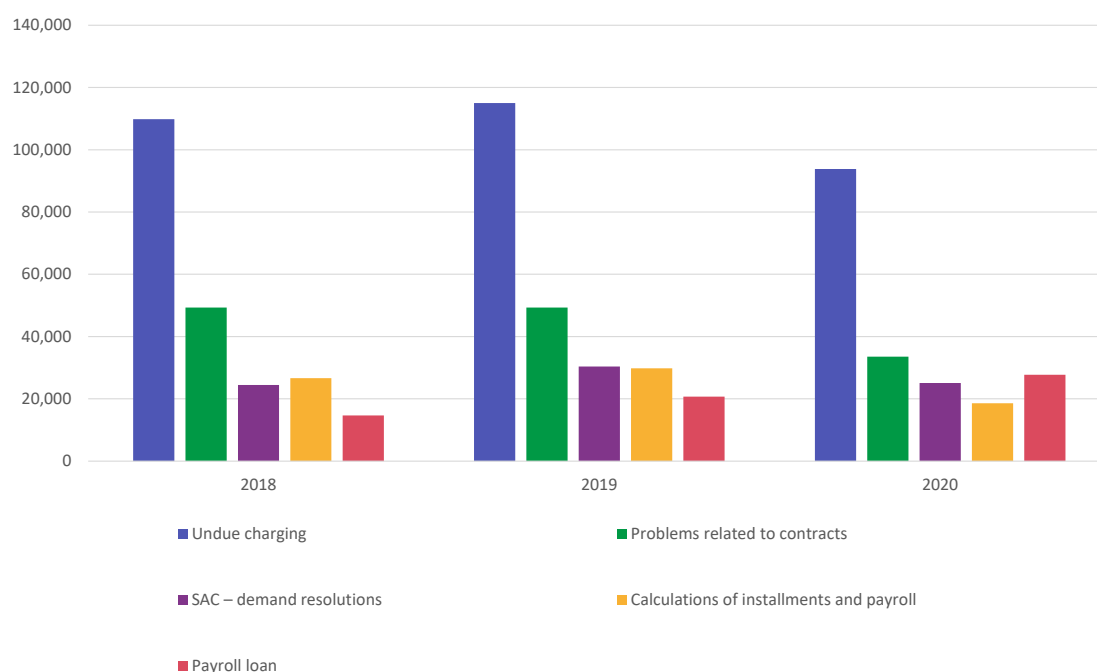


Source: Consumidor.gov

The pandemic generated a drop in complaints in physical services channels

Finally, citizens can rely on the network of Procons distributed throughout Brazil. The five topics with most complaints related to financial services are: undue charging, problems related to contracts, SAC, calculation of installments and payroll loans, the last of these being the only one among the five topics to register an increased number of complaints between 2019 and 2020 (Figure 1.1.18).

Figure 1.1.18 – Complaints about financial services by type – Procon



Source: Senacon

Figure 1.1.19 shows the flow of complaints in the Procons during 2020, with a sharp drop in April. This drop can be attributed to the social distancing measures associated with the Covid-19 pandemic. Although the number of complaints increased gradually during the subsequent months, it remained at lower levels than in the previous year.

Figure 1.1.19 – Complaints about financial services in 2020 – Procons



Source: Senacon

BCB Transparency from a citizen's perspective

Throughout 2020, the BCB, through its Ombudsman Office, and in the context of its Integrity Committee, worked on the construction of the Institutional Transparency Policy, a result of several initiatives developed in parallel, with emphasis on structuring and conducting research²⁵ on transparency applied to the relationship with the external public.

The anonymous survey was applied to two groups:²⁶ first, to the public that receives the Focus report (about 50 thousand people), and then to the public that accesses the BCB's website and the other institutional social media vehicles, in February and March 2020, respectively. A total of 6,006 responses were received, of which 5,217 were from the Focus audience and 789 from the open survey.

These external surveys sought to evaluate the degree of transparency of the various activities performed by the BCB, identifying possible actions for improvement. In this context, it is worth mentioning that the goal was also to raise suggestions for databases and information of public interest to be made available on the Open Data Portal or on the institution's website.

The assessments covered 18 themes or core activities of the BCB, identified on the basis of its value chain, as follows: 1) monetary policy; 2) foreign exchange policy; 3) financial stability; 4) regulation; 5) supervision; 6) international relationships; 7) administration of international reserves; 8) accountability; 9) strategic planning; 10) institutional organization; 11) banks liquidation and restructuring; 12) public service; 13) financial education; 14) rankings' definition; 15) money supply; 16) authorizing processes; 17) Brazilian payment system; and 18) availability of reports via Registrato.²⁷

For each of these topics, an evaluation was asked, on a scale of 1 to 5, about three dimensions of transparency: (1) quality; (2) availability of databases and information; and (3) ease of access to such data and information. The results of the survey, in summary form, are presented in Table 1.

25 Predominantly closed-ended, multiple-choice questionnaire, with a few open-ended questions. It is important to note that the research respondents only evaluated the topics of their interest and knowledge. To this end, the first question was precisely to define, with the survey respondents, what would be the themes of research interest on the website, or any other BCB social media. The open fields resulted in numerous suggestions for opening databases to be made available, in addition to praise, criticism, and comments regarding the transparency of the BCB and the survey itself. Both external surveys were structured on the LimeSurvey platform.

26 Profile studies between the two samples allowed us to verify their main differences, which, however, in the end generated quite coincident evaluations, statistically similar, with more convergent than divergent aspects.

27 Registrato is a system maintained by BCB where citizens can consult, for free, information about loans in their names, in which banks they have an account, registered Pix keys, debts with federal public agencies, bad checks and data on the purchase or sale of foreign currency.

Table 1 – Transparency Survey Results

Item	FOCUS survey				Open survey			
	Availability	Ease of access	Quality	Average	Availability	Ease of access	Quality	Average
1 Public service (Fale conosco)	4.08	4.06	4.15	4.10	3.74	3.74	3.78	3.75
2 Reports via Registrato (SCR reports, CCS e de Exchange operations/Transf. Int.)	4.24	4.02	4.24	4.17	3.98	3.91	4.09	4.00
3 BCB Rankings (Ranking of complaints and Ranking of Ombudsman quality)	4.24	4.15	4.31	4.23	4.13	3.99	4.22	4.11
4 Monetary policy and credit data(including market reports)	4.31	4.17	4.36	4.28	4.12	3.91	4.28	4.10
5 Foreign exchange policy data and information	4.21	4.07	4.29	4.19	3.95	3.73	4.07	3.92
6 Administration of international reserves data and information	4.02	3.92	4.14	4.03	3.54	3.64	4.00	3.73
7 Financial stability policy data and reports	4.22	4.09	4.29	4.20	4.05	3.88	4.13	4.02
8 Regulation, includency policies towards financial system efficiency	4.16	3.98	4.22	4.12	4.20	3.93	4.24	4.12
9 Data and information about supervision	3.94	3.86	4.13	3.98	3.47	3.44	3.66	3.52
10 Data and information about Authorizing processes	3.88	3.81	4.06	3.92	3.55	3.68	3.77	3.67
11 Data and information about banks liquidation and restructuring	3.94	3.80	4.09	3.94	3.88	3.75	4.04	3.89
12 Data and information about the Brazilian payment system	4.10	3.98	4.19	4.09	3.89	3.90	4.14	3.98
13 Data and information about money supply	4.17	4.12	4.27	4.19	4.15	4.01	4.18	4.11
14 Financial education matters, including the Monetary value Museum	4.05	4.07	4.19	4.10	4.13	4.01	4.15	4.10
15 Data and information about institutional organization	3.94	3.89	4.10	3.98	3.69	3.52	3.77	3.66
16 Data and information about strategic planning	3.92	3.96	4.13	4.00	3.77	3.76	3.83	3.79
17 Data and information about accountability	4.00	3.93	4.15	4.02	3.84	3.65	3.91	3.80
18 Data and information international relationships	3.88	3.82	4.04	3.91	3.98	3.94	3.90	3.94
19 Others	4.46	4.31	4.45	4.41	3.96	3.98	4.07	4.00
Average (excluding " 19-Others")	4.07	3.98	4.19		3.89	3.80	4.01	
Average	4.09	4.00	4.20	4,23*	3.90	3.81	4.01	3,98*

* Overall score on BCB transparency given by respondents considering the three dimensions (Availability, Ease of access, Quality) together.

In summary, it can be observed that:

1. the BCB's transparency index was high, reaching 4.23 in the public Focus report and 3.98 in the open survey;
2. the evaluated themes obtained, in general, positive indexes in the order of 4, with emphasis on monetary policy, foreign exchange, financial stability and rankings of the BCB in the survey with the public of the Focus report; and for monetary policy, regulatory affairs and rankings of the BCB in the open survey, suggesting that the agency has been very effective in the transparency related to its institutional mission, especially regarding monetary and financial stability;
3. among the evaluated dimensions, on average, "quality" received the highest scores, followed by "availability" and "ease of access".

These surveys helped build the BCB's Transparency Policy, instituted through BCB Resolution 37, of November 4, 2020. This policy presents, in general terms, its set of principles, guidelines, and institutional objectives.

The BCB believes that such initiative also contributes to the improvement of management, allowing the mapping and prioritizing of social demands, especially in terms of improving and deepening the availability of new databases and information that is useful to society.

Moreover, it is relevant to remember that transparency is a fundamental value for the BCB. It contributes to further strengthening its institutional credibility, enhances the fulfillment of its legal missions related to the maintenance of the monetary and financial stability of the country, mitigates the risk of information asymmetry and favors greater convergence of policies, i.e., generates a positive environment for its management, based on an even broader institutional vision.

Finally, it should be noted that the BCB is one of the main providers of public data and information to society,²⁸ enabling the creation of new services and facilitating innovation by generating applications that can contribute to back up the decisions of citizens when managing their financial resources, positively reinforcing the financial citizenship.

²⁸ Data from March/2021 show that about 33% of the datasets in the Brazilian Open Data Portal originate from the BCB, with an accentuated growth in the number of views (+146%), accesses (+158%) and users (+153%) in 2020 compared to 2019.

» Some dialogue channels between Brazilians and the SFN

#participation

Ombudsman, public consultations, and social networks are forms of dialogue between the BCB and society

The Ombudsman channel is open to all citizens. In these channels can be registered complaints, suggestions, and compliments related to the services provided by the BCB itself and complaints against its employees. Table 1.1.4 summarizes the complaints received between 2018 and 2020.

Table 1.1.4 – Complaints received by the Ombudsman – 2018 to 2020

Type of demand	2020	Δ%	2019	Δ%	2018
1. Suggestions	372	4.5%	356	32.8%	268
2. Compliments	74	-27.5%	102	-13.6%	118
3. Whistleblowing	9	-50.0%	18	28.6%	14
4. Complaints	753	-6.8%	808	-2.8%	831
Total of demands to the Ombudsmanship	1,208	-5.9%	1,284	4.3%	1,231
5. Incorrect channel (a)	3,030	101.7%	1,502	50.0%	1,001
6. Request for information (b)	4,581	92.8%	2,376	0.3%	2,368
Demands Total	8,819	70.8%	5,162	12.2%	4,600

(a) Related to demands concerning the performance of other public agencies or to relations of consumption between financial institutions and their clients, both outside the scope of action of the BCB Ombudsman.

(b) Demands referring to requests, information or guidance and complaints against FIs are transferred to the Institutional Relations Department (Deati).

In 2019 and 2020, the total of complaints was impacted by the higher volume of complaints received through the Ombudsman System of the Federal Executive Branch (Fala.BR). This registration system did not have the same filters available in the “Contact Us” system of the BCB’s website, which seek to direct citizens to register their demand in the correct service channel. Thus, complaints registered outside the scope of the ombudsman increased 101.7% in the item “Inappropriate Channel” and 92.8% in the item “Request for Information and Complaints against Financial Institutions (FI)”.

Regarding the typical Ombudsman demands observed in 2020, items 1 to 4 in Table 4, it is noteworthy the growing trend of suggestions forwarded by citizens related to the support of society, impacted by the Covid-19 pandemic. These, among other suggestions in general – in addition to the complaints themselves – have served as input for studies related to the issue of norms and the improvement of services provided by the BCB.

Citizens may also contribute to the improvement of the SFN by participating in the public consultations promoted by the BCB on the norms about to be published. Eighteen public consultations were opened between 2018 and 2020. This type of channel indicates that the institution is increasingly seeking dialogue and the participation of society.

The Laboratory of Financial and Technological Innovations as a channel for participation of society in the National Financial System

The Financial and Technological Innovations Laboratory (LIFT) is a BCB initiative within a technical cooperation with the National Federation of BCB Employees' Associations (Fenasbac) that implements an ecosystem to foster innovation focused on the National Financial System (SFN). This initiative is presented as another channel for society's participation in the development of the SFN.

The initiative was launched on May 9, 2018, and selected a total of 63 project proposals in its 2018, 2019 and 2020 editions. This resulted in 50 innovative prototypes for the SFN. LIFT ecosystem comprises the following products:

- **LIFT Lab** – Laboratory for development of new prototypes of innovative products by the society under the coordination of BCB and Fenasbac with support from technology partners;
- **LIFT Learning** – An environment for bringing together the regulator, academia, and the market. The companies present a set of problems, within the strategic priorities of the BCB, and the academia is brought in to help studying solutions, enhancing the training, and maturity of students and researchers on SFN issues;
- **LIFT Talks** – Series of bi-weekly presentations, held by BCB and Fenasbac for presentation and discussion of topics related to BCB's innovation initiatives;
- **LIFT Papers** – Specialized magazine for publishing the results of LIFT projects and specialized articles about innovation;
- **LIFT Day** – Event to share the results of LIFT editions with the whole society.

Innovation proposals from society are received through **LIFT Lab**. Each edition of the Lab lasts 90 days, involving BCB employees, researchers, developers, experts, and technology partners.

The proposals are submitted to a selection committee that evaluates the innovative impact and potential benefits of each project to citizens. Each selected project, before being launched, goes through a stage of engagement with BCB's employees, market specialists, and academics. Once selected, the projects move on to a maturation phase, in which discussions and corrections produce a working prototype in ninety days of teamwork. LIFT is part of the BC# Agenda initiatives, focused on fostering innovation to prepare the SFN for a technological and inclusive future.

Since 2018, and throughout the following editions, the ecosystem has produced:

- **LIFT Lab** – Fifty new products delivered to the market, resulting from the selection of 57 participating projects;
- **LIFT Learning** – Four projects resulted from the pilot edition, introduced in the ecosystem in 2020, with the University of Brasília and the DF Research Support Foundation;
- **LIFT Talks** – 24 live streams with more than forty thousand views on Youtube;
- **LIFT Papers** – Three editions detailing each project developed in the LIFT Lab;
- **LIFT Day** – Three annual events to present the results to the market and society.

In the context of financial education, one of the pillars of the BCB's strategic agenda, it is worth highlighting the projects specifically focused on this initiative:

- **Poupix** – Aims at introducing new people in the investment market by directing the rounding of purchase values to financial applications;

- **Caishen** – Financial platform to assist the management of micro and small entrepreneurs and focused on the pillars of financial education and competitiveness;
- **Julius** – A tool that blends financial education with a practical financial control tool;
- **Meu Primeiro Cartão (My First Card)** – A system to help young people, from the age of ten, develop financial education skills. The tool serves as a behavior monitor and triggers educational stimuli in a feedback cycle under parental supervision.

The following table shows important LIFT projects that have evolved into products available in the SFN.



It is worth highlighting projects such as Nobli, Gavea Marketplace, Provi, Antecipafácil, among others, which received significant investments from the market after participating in the LIFT Lab. This has become commonplace throughout the editions of the BCB's Innovation Lab.

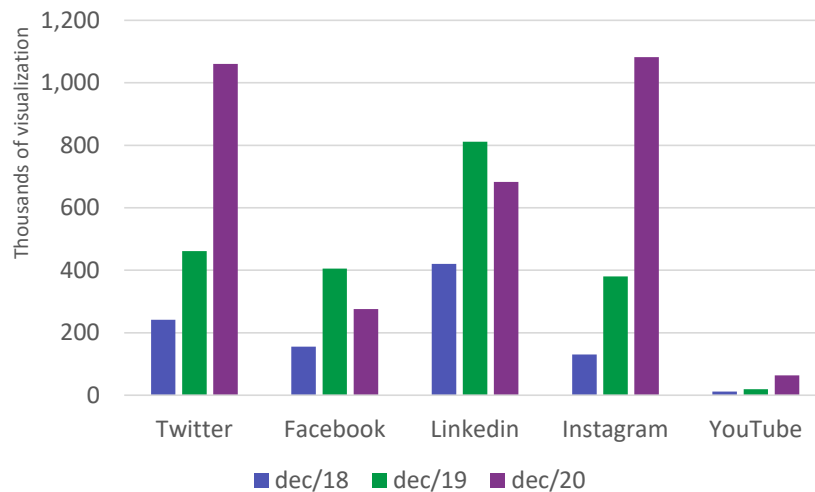
LIFT will go on in the next years. The project has received support from the University of São Paulo (USP). The goal is to develop a specific LIFT Learning module for the university's communication. The 2021 LIFT Lab already has received 43 proposal applications and will move on to the project selection phase, after which the laboratories will start.

BCB is increasingly present in social networks

Social networks have the potential for great reach and direct communication with society. As a result, the BCB has been increasing its presence on these platforms, which have become an important space for dialogue between the BCB and the Brazilian population.

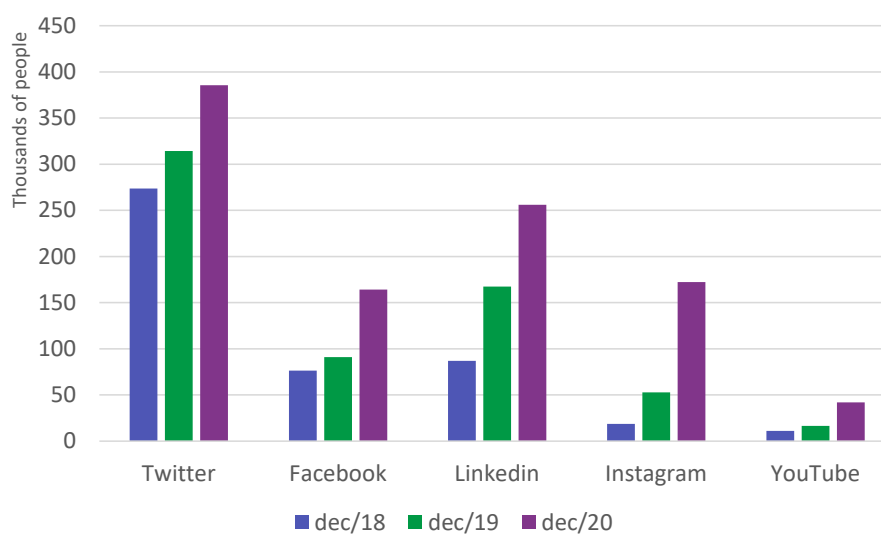
Figure 1.1.20 shows the evolution between 2018 and 2020 of the reach of posts through the social network. Reach is characterized by all the times the post appears on the users' screen. During this period, reach increased on three of the five major social networks, especially in Twitter and Instagram, reaching more than one million people each by the end of 2020.

Figure 1.1.20 – Reach of the BCB's posts per social media



Another figure that is becoming significant is the number of people following BCB on social networks. The number of followers grew in all social networks, especially in Twitter, reaching 385,000 in 2020, as shown in Figure 1.1.21.

Figure 1.1.21 – Reach of the BCB's posts per social media



BCB's followers on social networks are concentrated in São Paulo, Rio de Janeiro, and Brasília

Regarding the followers' profile, some differences and characteristics that are specific to each network may be viewed. In all networks, followers are concentrated in São Paulo (SP), Rio de Janeiro (RJ), and Brasília (DF).

On Facebook, men represent 58% of the followers. Most of the page's audience is in the 25-34 age group. On Twitter, the followers are mostly women (61%).

On Instagram, most are aged between 25 and 34, accounting for 45% of the total. On this platform, the number of men and women is a little more balance: 43% of the public is female and 47% is male.²⁹ The countries with most followers are Brazil, the United States, and Portugal.

Finally, the audience for BCB's YouTube channel was split between male, 68.2%, and female, 31.8%. The countries that most accessed the channel in December 2020 were Brazil, the United States, Portugal, Angola, and South Korea. The age group that most accessed the channel in that month was that between 25 and 54.

1.2 Digital financial inclusion

In 2020, the outbreak of the Covid-19 pandemic highlighted the importance of the digitalization of financial services, both with the creation of digital accounts for the payment of the Federal Emergency Aid and the need for digital transactions in view of the mobility restrictions and social distancing. Digital financial inclusion concerns the use of digital means to advance financial inclusion.

The G20 Global Partnership for Financial Inclusion (GPFI) defines digital financial inclusion as the use of digital means to reach financially excluded or underserved populations with a variety of formal financial services tailored to their needs, delivered with responsibility at an affordable cost for customers, and sustainable for providers.³⁰ The term "digital" in the context of financial inclusion regards the means of access and use of formal financial services.

» The role of internet access in the digital financial inclusion

#inclusion #access

The level of digital access of the Brazilian population has been increasing recently. However, there are differences when digital access is analyzed by social classes. Between 2017 and 2020, the number of households of classes D and E with internet access rose from 30% to 64%. Class A remained stable, with 99% of households with internet access in the period, reaching 100% in 2020 (Figure 1.2.1). In terms of individual users, 92% of Class A Brazilians above 10 years old were internet users in 2020, as opposed to only 67% of classes D and E (*TIC Domicílios*).³¹

The 2019 IBGE survey *Continuous PNAD*³² also presents a significant difference of average *per capita* income between households with and without internet access (BRL 1,527 and BRL 728, respectively).

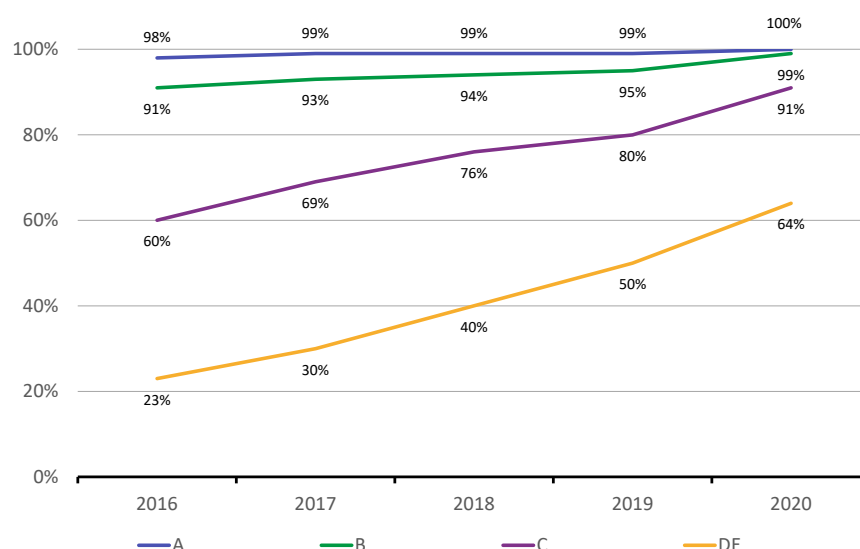
²⁹ Users of this platform can choose not to disclose their gender.

³⁰ G20 Global Partnership for Financial Inclusion, 2016. "Global Standard-Setting Bodies and Financial Inclusion: the evolving landscape".

³¹ Comitê Gestor da Internet no Brasil (CGI.br). *Pesquisa sobre o Uso das Tecnologias de Informação e Comunicação nos Domicílios Brasileiros: TIC Domicílios 2020*. Available at (Portuguese only): <https://cetic.br/pt/pesquisa/domicilios/indicadores/>.

³² BRAZILIAN INSTITUTE OF GEOGRAPHY AND STATISTICS (IBGE). National Household Sample Continuous (*Continuous PNAD*): access to internet and television and proprietorship of a mobile phone for personal use in 2019. Available at (Portuguese only): https://biblioteca.gov.br/visualizacao/livros/liv101794_informativo.pdf.

Figure 1.2.1 – Percentage of households with internet access by classes



Source: CGI.br

Geographic differences are also reflected in Brazilians' digital access. The Northeastern region presented the lowest proportion of households with internet access in 2019 (65%), despite a significant growth over 2018 (57%). As a complement, the *Continuous PNAD* also surveyed the reasons for the lack of internet access. Among users, only 0.6% claimed that this service was not available in urban areas, as opposed to 19.2% of users in rural ones.

Even though there is some sort of financial service in every municipality of the country, the importance of digital access to such services increases when one considers that not every municipality has a bank branch (with a wide range of services offered) to serve its residents, as shown in the item 1.1 of this chapter.

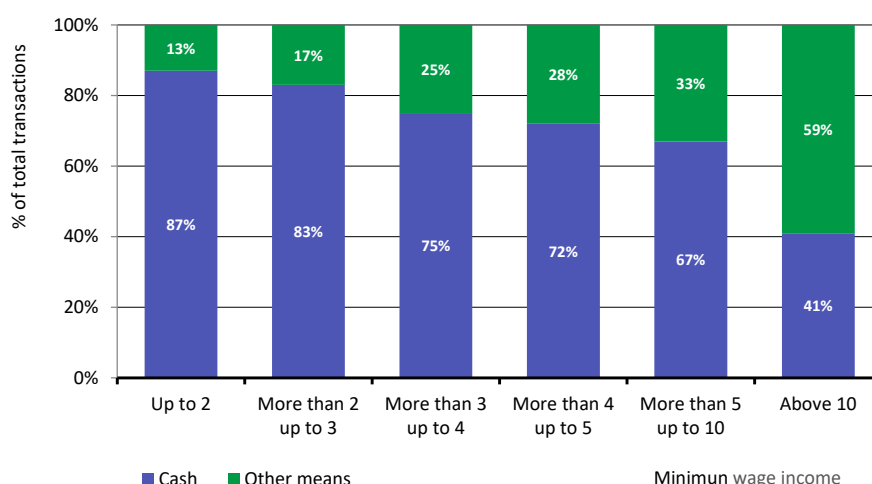
Considering all Brazilian municipalities, 92.8% were covered with the 4G technology³³ in 2020, comprising 98.3% of the Brazilian population. Of the 355 municipalities without 4G coverage, 219 do not have a bank branch, even though all municipalities have at least one bank service point.

Income surpasses regional issues as Brazilians' main obstacle to internet access

Data reveal that, despite the geographic obstacle for the Brazilians' digital access, the main obstacle concerns income. It comes as no surprise that, in 2019, the BCB's survey "Brazilians and their habits of using the means of payment" revealed that cash is the main means of payment for citizens with income up to 2 minimum wages, totaling 87% of overall transactions within this income group. This figure drops to 41% for the income group above 10 minimum wages (Figure 1.2.2).

³³ "Teleco: inteligência em telecomunicações". Available at (Portuguese only): https://www.teleco.com.br/4G_cobertura.asp.

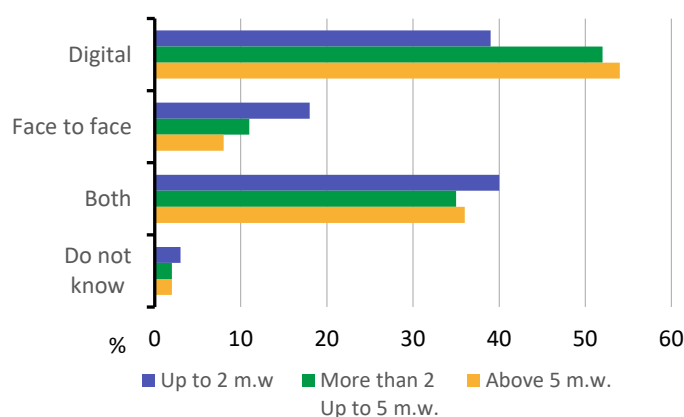
Figure 1.2.2 – Use of the means of payments according to the income group



Source: BCB

When looking at the trend for financial services in the future, a Febraban survey³⁴ carried out in 2020 revealed that, for lower income respondents, the type of banking service more often used in the post-pandemic period will be hybrid, needing both digital and face-to-face services. By contrast, higher income respondents consider exclusively digital services to be the most used in the post-pandemic period (Figure 1.2.3). It is noteworthy that the survey's sample comprised only Brazilian internet users, and the appeal for face-to-face services is certainly preponderant in the Brazilian population without internet access.

Figure 1.2.3 – Expected use of banking services by access channel in the post-pandemic period



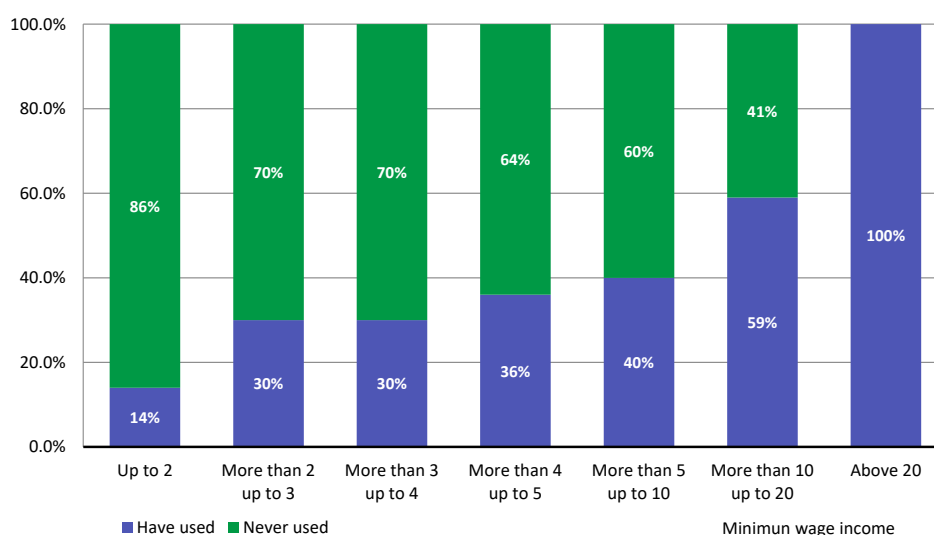
Source: Febraban

Mobile phone is becoming popular in classes C, D, and E as a major propeller of internet access. *TIC Domicílios* survey shows that, in 2020, 58% of internet users in the class C and 90% in the classes D and E used exclusively the mobile phone to access the internet. Conversely, in the class A, internet users with exclusive access by smartphones corresponded to only 11% of the total.

Despite the growing use of smartphones to access the internet, the use of these devices to make payments is lower in the low-income group (Figure 1.2.4).

34 Observatório Febraban (survey carried out in September 17-22, 2020). Available at (Portuguese only): https://cmsportal.febraban.org.br/Arquivos/documentos/PDF/200926_iD_%20OBSERVAT%C3%93RIO%20FEBRABAN%20IV_%20SETEMBRO%202020%20%23BRASILONLINE_final.pdf.

Figure 1.2.4 – Use of smartphone to make payments



Source: BCB

The mobile phone consolidates as the main mean of digital access to financial services

Following the same line of influence of income over the access to digital services, Febraban identified that 24% of internet users reported that bank apps are those more often used in their daily routine. When broken down by income group, this figure falls to 18% for users in the group up to 2 minimum wages and increases to 30% for users in the group above 5 minimum wages. The survey also shows that, for internet users with bank accounts, the smartphone app is the more often used channel to carry out bank operations in all surveyed income groups. This trend had already been highlighted in the item 1.1 of this chapter. Nevertheless, the use of apps is greater in the higher income groups, whereas physical channels are more often used in the low-income groups, as shown in Table 1.2.1.

Table 1.2.1 – Most used channels for bank operations in the main bank, according to income

1 st mentioning	Income up to 2 m.w.	Income from 2 up to 5 m.w.	Income above 5 m.w.
Apps	35%	46%	49%
Internet banking	20%	22%	25%
ATMs	16%	12%	9%
Banl branch	15%	10%	9%
E-mail	4%	3%	3%
Call center or bankfone	3%	2%	2%
Chat with manager	1%	2%	1%
Other	1%	0%	0%
Do not know	5%	3%	1%

Source: Febraban

» Digitalization for the low-income population

#inclusion #protection

In the advent of the Covid-19 pandemic and the payment of the Emergency Aid through digital accounts, millions of low-income Brazilians started to access digital financial services. A deeper analysis of the relationship of these citizens with the SFN may indicate the way for a more effective digital financial inclusion. However, there were some obstacles for the digital access for those benefiting from the Emergency Aid. The pandemic also highlighted a great potential for a broader digital financial inclusion of citizens with little (or no) access to financial services.

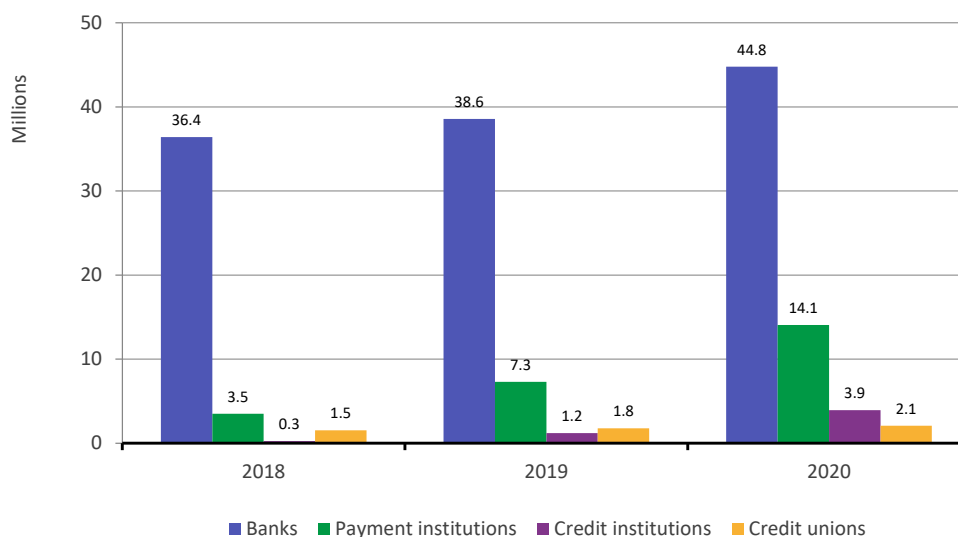
The *Unique registry for social program from the Federal Government (CadÚnico)* was created in 2001 and is currently regulated by Decree 6,135, of June 26, 2007. It is an instrument that identifies and characterizes low-income households, allowing the government to better understand the socio-economic reality of this population. Thus, it becomes the main instrument for the Brazilian government to select and include low-income households in federal programs and it is compulsorily used for the granting the *Bolsa Família* Program benefits, among others.³⁵

This analysis used part of the *CadÚnico*, considering beneficiaries aged 15+ years, which represents a population of nearly 52 million people. Of this total, 86% maintained a relationship with the financial system in 2020, ten percentage points lower when compared with the overall Brazilian adult population (96%), that indicates the distance in the banking access between the low-income group and the overall population.

Providers of financial services with digital interfaces are becoming increasingly relevant for the low-income population

One may realize that the diversification of institutions with which the population maintains a relationship, mentioned in the item 1.1 of this chapter, also happened within the low-income segment. Figure 1.2.5 shows the *CadÚnico* population with accounts by institution type. It is clearly noticeable the absolute growth in the number of individuals with relationship with Payment Institutions (IPs).

Figure 1.2.5 – CadÚnico – Number of individuals with relationship by segment



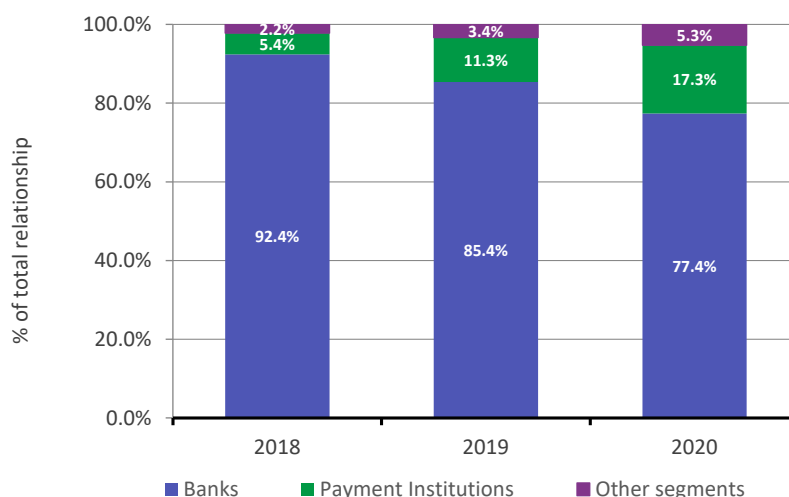
Source: Ministry of Citizenship/BCB

³⁵ Further information at (Portuguese only): <https://www.gov.br/cidadania/pt-br/acoes-e-programas/cadastro-unico/o-que-e-e-para-que-serve-1/>.

In 2020, 30.9% of the adult population of *CadÚnico* maintained a IP account. In 2018, this percentage was 9.4%. It is also noteworthy that, in addition to the expanded relationship with the IPs, almost all individuals with some relationship in the SFN maintained bank accounts (98.4%) in 2020.

Considering only the relationships started by *Bolsa Família* beneficiaries, it should also be highlighted the number of relationships with IPs. Figure 1.2.6 shows the percentage of relationships by segment in relation to total relationships in the last three years.³⁶

Figure 1.2.6 – Bolsa Família beneficiaries – Relationship by segment



Source: Ministry of Citizenship/BCB

The growth of new IPs accounts might have been associated to the search for remote access channels during the pandemic. This search also seems to have occurred by the low-income population who already maintained a relationship with financial institutions. Chapter 3 brings further details about IPs' operations.

The implementation of Pix has a great potential to boost digital financial inclusion

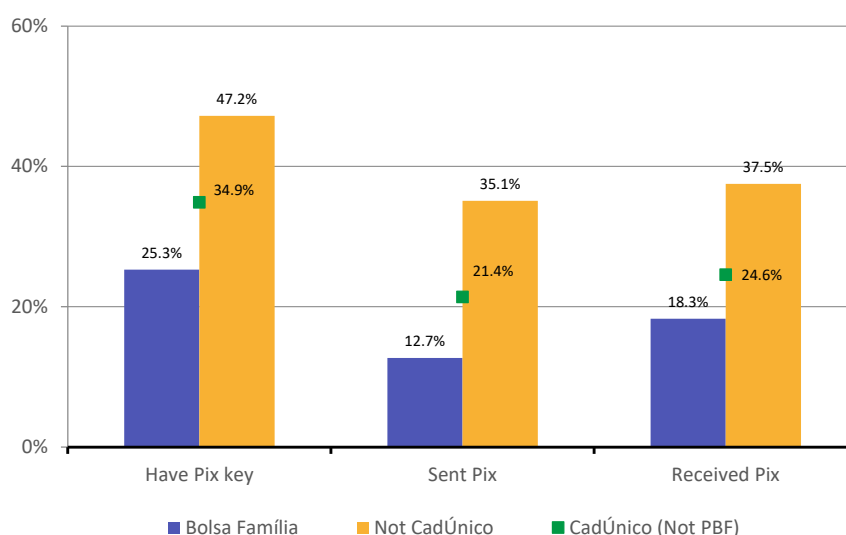
In November 2020, BCB launched the Pix,³⁷ with a potential to democratize the access to electronic payment services in the country and encourage even further the delivery of financial digital services to the low-income population (see an analysis about the Pix in chapter 3).

A few months after its implementation, data concerning the use of Pix by the low-income population already show the potential of change. In March 2021, 34.9% of the adult population in the *CadÚnico* had already registered at least one Pix key, 21.4% had already sent a Pix transfer, and 24.6% had already received one (Figure 1.2.7). This figure shows data for the *Bolsa Família* beneficiary groups and individuals registered in the *CadÚnico* not benefited by the Program, as well as the remaining Brazilian adult population (not registered in the *CadÚnico*), for the sake of comparison.

³⁶ In Figure 1.2.6, "Other Segments" includes credit unions, specialized banks, credit institutions, and capital markets.

³⁷ Means of payment created by the BCB in which resources are transferred between accounts in just seconds, at any time of the day. Further information at: https://www.bcb.gov.br/en/financialstability/pix_en.

Figure 1.2.7 – Use of Pix by the *CadÚnico* public (March/2021)



Source: Ministry of Citizenship/BCB

Despite a reasonable percentage of beneficiaries of federal government social programs already with some relationship with Pix (considering the very short time since its implementation), there was still some difference with the other groups of the Brazilian population. The lowest identified usage percentages involved the *Bolsa Família* beneficiaries, which may indicate a path yet to be covered in the digital financial inclusion of the low-income population.

Access to digital financial services provides opportunities to overcome some of the financial exclusion impediments, which might be related to face-to-face service infrastructure and high costs. There is a huge potential of digital financial inclusion through Pix, with the supply of fast, safe, convenient, and low-cost financial transactions. Chapter 3 details how the SFN modernization may contribute to a greater financial inclusion in Brazil.

1.3 The impacts of the Covid-19 pandemic on financial citizenship

Foreign shocks or unexpected events may affect households' economic situation, altering labor dynamics, and changing consumption and leisure habits. Therefore, the Covid-19 pandemic, which hit the country more intensely as of March 2020, became one of the most relevant events of recent times. This section aims to describe its impacts on the access to and the use of financial services in Brazil throughout 2020, when restrictions imposed by the pandemic affected the income of most of the population.

» The pandemic and the credit use

#inclusion #use

The number of borrowers decreased in the beginning of the pandemic

Throughout 2020, the total number of Brazilians with new credit grants fell significantly, from 39 million in January to 36 million in July (Table 1.3.1). Consumer-related credit types such as credit card, revolving/ installment credit card, and personal loans had the greatest impact upon this reduction (Table 1.3.2) –

which was reverted by December, when the number of customers with new grants returned to 2019 levels. The number of Brazilians with any type of credit also decreased, albeit less intensely. By the end of 2020, however, the total number of customers with credit balance returned to the level of the end of 2019, with about 85 million individuals.

Between April and July 2020, there was an increase in the number of defaulters with credit overdue for more than 90 days, reaching 11.7 million Brazilians. However, actions to fight against the pandemic and the increase in debt restructuring,³⁸ which peaked in June, helped to reduce this figure. At the end of 2020, 8.9 million individuals had credit overdue for more than 90 days, a lower number than in the same period of the previous year.

The total number of individuals with loans written-off as losses by financial institutions for more than 48 months totaled around 27 million since December 2019. A slight increase occurred as of June, totaling 28 million at the end of the period.

Table 1.3.1 – Use of credit in 2020

	million of individuals												
	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
Credit balance													
Number of costumers	85.3	85.5	85.6	85.7	85.0	84.4	84.1	84.1	84.3	84.5	84.9	85.3	85.5
Costumers in overdue	10.8	10.8	10.7	10.9	11.4	11.7	11.7	11.3	10.7	10.1	9.5	9.2	8.9
Written-off costumers	27.0	27.2	27.4	26.8	27.0	27.2	27.5	27.6	27.8	27.9	28.1	28.0	28.0
Credit grants													
Number of costumers	39.8	39.6	39.2	39.6	37.5	36.6	36.6	36.1	36.8	37.2	38.0	38.1	39.1
Renegotiations													
Number of costumers	0.35	0.29	0.29	0.28	0.34	0.47	0.66	0.52	0.44	0.41	0.34	0.34	0.40

Source: BCB

Throughout 2020, as the use of consumer-related credit types decreased due to the pandemic, the number of households with vehicle and real estate financing increased slightly (Table 1.3.2). The reduction of the use of overdraft facilities by households may be related to both the pandemic and the effects of Resolution 4,765 of 2019.³⁹

Table 1.3.2 – Number of individuals with credit balance by type (million)⁴⁰

	million of individuals												
Credit types	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
Credit balance													
Credit card	60.5	60.4	60.8	60.7	58.2	57.7	56.8	56.8	57.6	58.0	58.3	59.5	62.2
Revolving/installments credit card	36.6	37.6	38.0	38.3	38.1	36.7	35.4	34.7	34.2	34.3	34.1	34.9	34.0
Overdraft	22.0	22.9	23.0	23.1	21.8	20.7	20.4	20.4	20.5	20.6	20.7	20.7	19.7
Payroll-deducted credit	19.6	19.7	19.8	19.8	19.7	19.6	19.5	19.5	19.5	19.4	19.4	19.4	19.3
Personal credit	14.8	14.5	14.6	14.7	14.4	14.1	13.7	13.4	13.4	13.3	13.4	13.5	13.3
Vehicle financing	9.2	9.2	9.3	9.3	9.2	9.2	9.1	9.1	9.2	9.2	9.3	9.4	9.3
Real estate financing	6.6	6.6	6.6	6.6	6.6	6.7	6.7	6.7	6.7	6.7	6.8	6.8	6.8
Rural financing	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Microcredit	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

Source: BCB/SCR

38 The increase in debt restructuring, in response to the effects of the pandemic, had already been captured by the Financial Stability Report in [October 2020](#), due to the expansion of Troubled Assets in 2020Q2 (Figure 1.2.6.1).

39 Resolution 4,765/2019, which came into effect in January 2020, regulated overdraft facilities granted by financial institutions in current accounts, limiting interest rates charged on the amount used for overdraft facilities to a maximum of 8% per month.

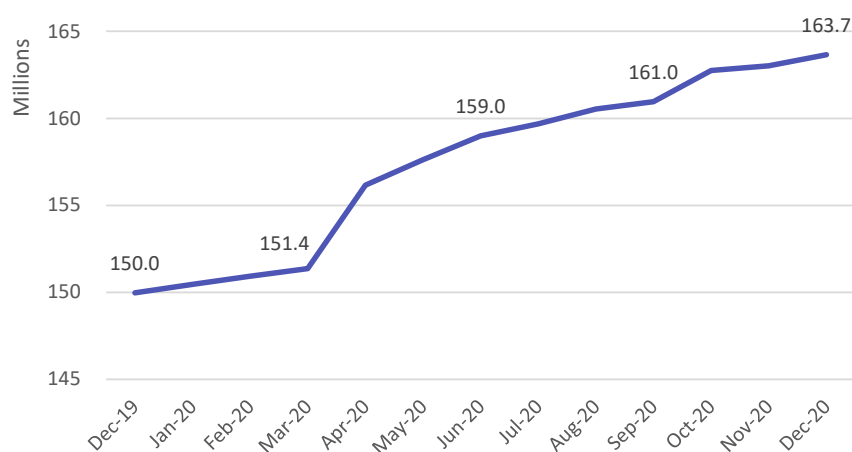
40 The sum of customers in each type of credit may exceed the total of individuals with credit grants since each customer may have more than one type of credit.

» Emergency Aid accelerated financial inclusion

#inclusion #access

In 2020, the number of individuals with a relationship with the SFN in Brazil increased significantly by almost 10% throughout the year. In total, almost 14 million people started a relationship with an institution in the SFN. May and July were the months of the strongest expansion when almost ten million people joined the SFN for the first time (Figure 1.3.1).

Figure 1.3.1 – Total of individuals with at least one relationship with the SFN



Source: BCB

A relevant part of this expansion seems to be related to another factor impacting the financial life of Brazilians in 2020: the Emergency Aid Program,⁴¹ which generated relevant effects for the financial citizenship of its beneficiaries, as analyzed below.

Different profiles of the Emergency Aid beneficiaries

According to the Ministry of Citizenship, 68 million Brazilians received the Emergency Aid in the first phase of the program, between April and August 2020. For this analysis, open data from 65.5 million of these beneficiaries (96.2% of the total) were used.⁴² They were placed into three groups: almost twenty million are beneficiaries of *Bolsa Família*, just over ten million came from the *CadÚnico*, but were not receiving *Bolsa Família*, and 38 million claimed the Emergency Aid through the app *CaixaTem* of *Caixa Econômica Federal* (the financial institution paying the benefit) and were not part of any of these records (denominated ExtraCAD). Table 1.3.3 displays these groups.

⁴¹ Law 13,982, of 2020 allowed a three-month granting of a BRL 600 for Brazilians of legal age who neither were in formal active employment nor received any social security benefit and who met income requirements. Women provider of a single-parent family received the double of this amount. For the beneficiaries of *Bolsa Família*, the Emergency Aid replaced it when it was more advantageous. Payments started in April. As of August, Provisional Measure 1,000 extended the Emergency Aid until the end of 2020 (Extended Emergency Aid), reducing the value of the benefit by half. Caixa acted as the paying agent for the Emergency Aid, while the Ministry of Citizenship selected who would be eligible to receive it.

⁴² Available at (Portuguese only) <http://www.portaltransparencia.gov.br/download-de-dados/auxilio-emergencial>. The identification of beneficiaries was possible by joining information (name and part of the beneficiary's CPF) from the Open Data and from the Brazilian Federal Revenue Office.

Table 1.3.3 – Emergency Aid Beneficiaries by record origin (million)

Type of the beneficiaries	Open data	Identified data	%
<i>Bolsa Família</i>	19.5	18.5	95.3%
<i>Cadastro Único</i> ⁴³	10.5	10.2	96.9%
ExtraCad ⁴⁴	38.2	36.9	96.5%
Emergency Aid	68.2	65.6	96.2%

Source: Open Data – Transparency Portal

The analysis of these groups indicates different profiles (Table 1.3.4). Women are predominant among beneficiaries of *Bolsa Família* and *CadÚnico*, while men are the majority among ExtraCAD. Moreover, one of ten beneficiaries of the Emergency Aid was a microentrepreneur at the end of 2020. This proportion increases progressively among the *Bolsa Família* and *CadÚnico* groups and reaches 15.3% among the ExtraCAD.

Profile of the identified base of Emergency Aid

(Open Data Transparency Portal and The Brazilian Revenue Office)

**Table 1.3.4 – Profile of the Emergency Aid beneficiaries (%)**

Type of the beneficiaries	Men	Women	Individual micro entrepreneurs
<i>Bolsa Família</i>	29.8%	70.2%	4.2%
<i>Cadastro Único</i>	39.0%	61.0%	8.5%
ExtraCAD	54.0%	46.0%	15.3%
Emergency Aid	44.9%	55.1%	11.1%

Source: Open Data – Transparency Portal and The Brazilian Revenue Office

Emergency Aid beneficiaries diversified their access to the SFN

With the Emergency Aid, the number of individuals that maintained a relationship with the SFN has expanded. Almost all the beneficiaries of the Emergency Aid paid throughout 2020 had a relationship with the SFN (97%), an important advance in comparison with the previous year, when 81.8% maintained an account in a financial institution (Table 1.3.5). Even among *Bolsa Família* beneficiaries, the proportion of individuals maintaining a relationship with the SFN rose from 75.1% to 89.6%.

⁴³ In this section, *Cadastro Único* are the beneficiaries of this program registered in *CadÚnico* that are not also beneficiaries of the *Bolsa Família* program.

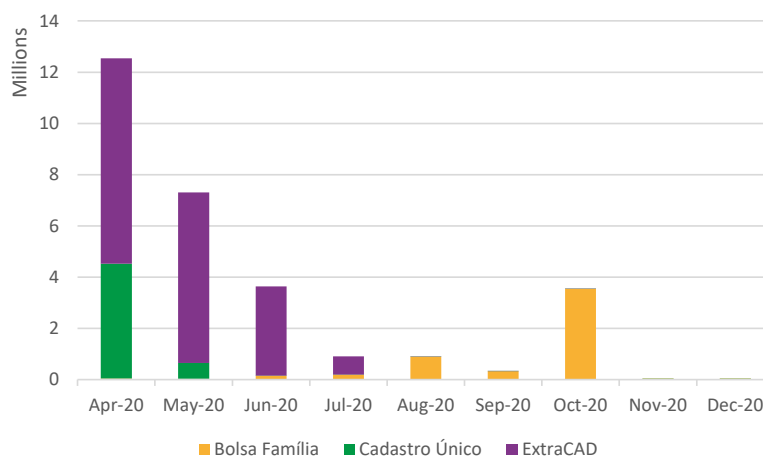
⁴⁴ It was required that beneficiaries that are not registered in *CadÚnico* shall access *CaixaTem* app and create a social savings account to receive this grant.

Table 1.3.5 – Relationships with the SFN among the Emergency Aid beneficiaries

Type of beneficiaries	Beneficiaries (million)	Total of relationships		Relationship with SFN (%)		Relationships <i>per capita</i>	
		2019	2020	2019	2020	2019	2020
<i>Bolsa Família</i>	18.5	29.9	43.9	75.1%	89.6%	1.61	2.37
<i>CadÚnico</i>	10.2	20.6	33.2	81.4%	99.9%	2.03	3.26
ExtraCAD	36.9	91.5	142.7	85.3%	100.0%	2.48	3.87
Emergency Aid	65.6	142.0	219.8	81.8%	97.0%	2.16	3.35

Source: BCB

Of the nearly eighty million relationships started in 2020 by this public, about thirty million accounts were opened with the institution paying the Emergency Aid. Figure 1.3.2 shows a concentration of accounts opened for the payment of this benefit in 2020Q2, especially for the beneficiaries classified as ExtraCAD and *CadÚnico*, while five million *Bolsa Família* beneficiaries effectively started a banking relationship with the paying institution between June and October 2020.

Figure 1.3.2 – New accounts started to the payment of the Emergency aid, by beneficiary classification

Source: BCB

It should also be mentioned that the relationship between the beneficiary of the program and the SFN was not limited to the payment of the Emergency Aid. Table 1.3.6 details the total number of beneficiaries in each SFN segment at the end of 2020. About a quarter of the *Bolsa Família* beneficiaries and almost half of the ExtraCAD public maintained a relationship with a payment institution, whose expansion in recent years was shown in the previous sections. Furthermore, approximately 10% of the beneficiaries maintained a relationship with a credit institution, such as credit societies for micro-entrepreneurs. It should also be highlighted the importance of credit unions for the ExtraCAD public.

Table 1.3.6 – Emergency Aid beneficiaries by segment of relationship with the SFN⁴⁵

Type of beneficiaries	<i>Bolsa Familia</i>		<i>Cadastro Único</i>		ExtraCAD		Emergency Aid		
Segment	Millions	%	Millions	%	Segment	Millions	%	Millions	
Banks	16.3	88.1%	10.1	99.9%		36.9	100.0%	63.4	96.6%
Credit Unions	0.4	2.3%	0.5	5.0%		2.5	6.7%	3.4	5.2%
Specialized Banks	0.2	1.2%	0.2	1.6%		0.7	2.0%	1.1	1.7%
Credit Institutions	1.1	5.9%	1.1	10.7%		5.0	13.4%	7.1	10.9%
Capital Market Institutions	0.2	1.0%	0.3	2.7%		1.9	5.1%	2.3	3.6%
Payment Institutions	4.9	26.6%	4.0	39.2%		17.8	48.2%	26.7	40.7%
SFN	16.6	89.6%	10.2	99.9%		36.9	100.0%	63.6	97.0%

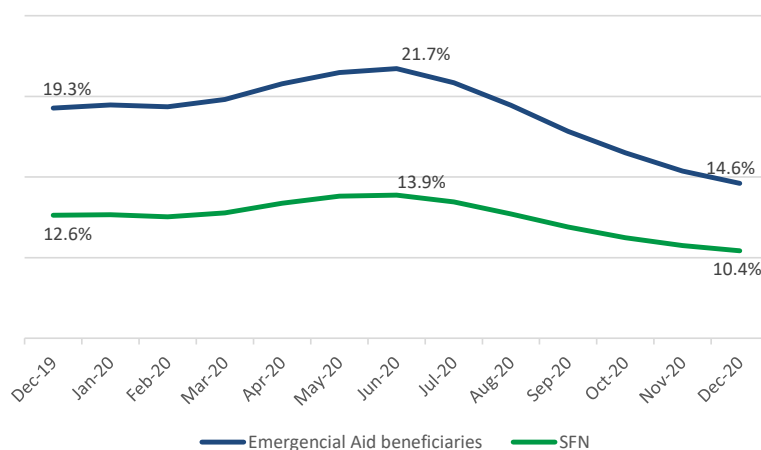
Source: BCB

Credit default decreases among the Emergency Aid beneficiaries

Despite the strong expansion of relationships with the SFN among the Emergency Aid beneficiaries, such expansion did not happen in the use of credit. The number of Emergency Aid beneficiaries exposed to credit kept practically unchanged in 2020, except for the slight drop between April and July, mainly due to the reduction in consumer-related credit types, as observed in the entire SFN population. About one third of the beneficiaries had some type of credit in 2020, well below the amount of credit grants observed among the overall population, from which almost half (49%) contracted some formal credit operation. The percentage is higher among the ExtraCad beneficiaries (40%) and lower among the *Bolsa Família* beneficiaries (20%).

The proportion of defaulters (people with credit overdue for more than 90 days), despite the increase in the first half of 2020, especially for the ExtraCAD beneficiary, decreased at the end of the year (Figure 1.3.3). The reduction in the percentage observed between June and December 2020 was higher for Emergency Aid beneficiaries (from 21.7% to 14.6%) when compared with the entire SFN (from 13.9% to 10.4%). The drop in the percentage of defaulters was even more significant among the *Bolsa Família* beneficiaries (from 24% to 15.8%) and the *CadÚnico* (from 20% to 13.2%).

Figure 1.3.3 – Comparison of the default rate between the Emergency aid beneficiaries and the entire population



Source: BCB

⁴⁵ The sum of customers maintaining relationship with the SFN per segment exceeds the number of customers with relationships with the SFN because individuals may maintain relationships in more than one segment.

In short, the payment of the Emergency Aid increased the number of Brazilians maintaining relationships with the SFN. Although most of this expansion regards this benefit's payment, one also notices a greater relevance of the relationship with IPs. Crossing data of this program with the BCB's databases revealed that there was no significant change in the use of credit by the Emergency Aid beneficiaries. However, the program seems to have influenced the decrease in the default rates among those who already used credit, considering the duration of the benefit and changes in the credit composition of the beneficiaries, especially the low-income group comprised in the *CadÚnico*.

1.4 Financial Citizenship Index

This section presents the monitoring of the **financial citizenship in Brazil** through an indicator of national coverage, the **Financial Citizenship Index (ICF)**. This index seeks to assess the main features of the various dimensions of financial citizenship and represent them by a numeric scale. It is an aggregate index, capable to show general trends and to allow the comparison among national states, identifying advances and obstacles in each of them.

This is the third edition of this index, which was initially meant to be a Financial Inclusion Index, introduced by the Financial Inclusion Report of 2011. In the 2018 Report on Financial Citizenship, besides the **financial inclusion**, the dimension **financial education** was included, leading to the current ICF. In this edition, there are no changes in the index composition, neither in its methodology,⁴⁶ but, due to changes in the calculation of some variables, the 2017⁴⁷ index was recalculated for the sake of comparability. Thirteen indicators were maintained in its composition, aggregated in two dimensions: nine indicators for the Financial Inclusion Index (IIF) and four indicators for the Financial Education Index (IEF), as shown in Table 1.4.1.

Table 1.4.1 – Indicators comprising the Financial Citizenship Index

Indicators of the Financial Inclusion Index (IIF)

- Number of bank stations by 10 thousand adults
- Number of POSs by 10 thousand adults
- % of the population with internet access
- % of adults maintaining a relationship with the SFN
- Percentage of adult borrowers
- Average interest rate of non-earmarked credit operations - households - non-payroll-deducted credit - % p.a.
- Population registered in the *CadÚnico* maintaining a relationship with financial institutions - %
- Population registered in the *CadÚnico* with credit card cash/ installments - %
- Population registered in the *CadÚnico* with credit operations - %

Indicators of the Financial Education Index (IEF)

- Credit portfolio delinquency - Total - %
- Deposits *per capita*
- % of the adult population contributing to the INSS
- Indebtedness indicator (excluding real estate financing)

⁴⁶ Despite maintaining the same methodology for the ICF calculation reported in the 2018 RCF, the measurement of some indicators has been changed. Thus, 2017 ICF values previously released have been recalculated to be compared with the current index.

⁴⁷ Recalculated values are shown in Table 1.4.2.

The measurement of the IIF and IEF was elaborated based on a change proposed by Sarma and Pais (2010),⁴⁸ aggregating the variables of each indicator through Principal Component Analysis.⁴⁹ Further details about the calculation, weighting, and methodology are described in the 2011 RIF. The ICF, in turn, consists in a simple average of these indexes represented in a scale from 0 to 100, in which 100 means to reach the maximum score in all financial citizenship dimensions considered.

The index's value for each state considers not only its performance in the indicators, but also the performance of the other states. Therefore, it should be analyzed from the perspective of a comparison among states, emphasizing the variation of relative positions.

Despite the broadening of the scope of financial citizenship represented by the pillars **financial protection** and **participation in the dialogue about the financial system**, in this RCF there are still challenges involving the achievement of unbiased variables related to these pillars by each state. For this edition, indicators have been recalculated considering the average values from 2018 to 2020.

» ICF results

Differences in financial citizenship persist across the country

The ICF reached 45.1 in 2020 in Brazil, against 43.3 in 2017. Figure 1.4.1 details the ICF index across the country, highlighting regional differences. The Federal District and São Paulo were the states that achieved the best results. All the states from Central-West, Southeast, and South regions remained above the ICF national average. In the Northeastern region, only Sergipe surpassed the national average. The states with the lowest ICF belong to the Northern region.

Figure 1.4.1 – Financial Citizenship Index in Brazil



Table 1.4.2 shows the variation in the ICF ranking of the Brazilian states from 2017 to 2020. One third maintained their previous positions, while only five of the 27 states changed more than one position in the ICF ranking.

48 SARMA, M.; PAIS, J. Financial Inclusion and Development. *Journal of International Development*, 23(5), 2010, p. 613-628.

49 Available at: <https://www.bcb.gov.br/Nor/reincfin//RIF2011.pdf>.

Table 1.4.3 details the IIF and IEF indexes comprised in the ICF and show their evolution. The Federal District maintained the first ranking position, both in the IIF and IEF, followed by São Paulo, Santa Catarina, and Rio de Janeiro, which also maintained their top-ranking positions in the period. States in the Northern region were in the last IIF ranking positions, which affected their overall result.

Table 1.4.2 – Financial Citizenship Index

States	Financial Citizenship Index (ICF)				2017 × 2020
Year	2017		2020		
	Value	Position	Value	Position	
Distrito Federal	77.3	1	75.6	1	=
São Paulo	69.5	2	69.9	2	=
Santa Catarina	60.9	3	60.4	3	=
Rio de Janeiro	59.3	4	58.7	4	=
Mato Grosso do Sul	52.8	8	56.5	5	▲
Rio Grande do Sul	58.4	5	56.4	6	▼
Paraná	57.2	6	55.6	7	▼
Espírito Santo	54.4	7	54.8	8	▼
Mato Grosso	49.5	11	53.6	9	▲
Minas Gerais	51.5	9	53.3	10	▼
Goiás	49.7	10	51.6	11	▼
Sergipe	41.4	12	46.6	12	=
Rio Grande do Norte	35.5	14	41.1	13	▲
Roraima	33.9	15	40.6	14	▲
Paraíba	33,7	16	39.8	15	▲
Piauí	30.8	21	39.1	16	▲
Bahia	33.6	17	37.0	17	=
Ceará	32.0	19	35.7	18	▲
Tocantins	32.4	18	35.1	19	▼
Pernambuco	31.0	20	33.1	20	=
Alagoas	29.9	22	32.9	21	▲
Rondônia	35.5	13	27.7	22	▼
Acre	23.7	23	22.0	23	=
Maranhão	17.6	26	18.8	24	▲
Amapá	21.2	24	16.2	25	▼
Amazonas	18.8	25	15.7	26	▼
Pará	15.7	27	15.5	27	=
Brazil	43.3		45.1		

Table 1.4.3 – Financial Inclusion and Financial Education Indexes

States	Financial Citizenship Index (ICF)			Financial Citizenship Index (ICF)		
Year	2017	2020	Position	2017	2020	Position
			2017 × 2020			2017 × 2020
Distrito Federal	81.4	77.2	=	73.3	74.0	=
São Paulo	77.5	69.2	▼	61.5	70.5	=
Santa Catarina	74.3	71.3	=	47.4	49.5	▲
Rio de Janeiro	68.7	69.8	▲	50.0	47.7	▼
Mato Grosso do Sul	70.0	73.3	▲	35.7	39.7	▲
Rio Grande do Sul	64.7	56.0	▼	52.1	56.8	=
Paraná	66.0	64.0	▼	48.3	47.2	▼
Espírito Santo	63.7	68.0	▲	45.1	41.6	▼
Mato Grosso	60.4	69.7	▲	38.5	37.4	▼
Minas Gerais	59.1	60.8	=	43.9	45.7	▲
Goiás	61.8	62.9	▼	37.6	40.2	▲
Sergipe	51.0	63.2	▲	31.9	30.0	▼
Rio Grande do Norte	42.7	53.1	▼	28.3	29.0	▲
Roraima	43.5	55.7	=	24.3	25.5	▲
Paraíba	41.6	51.7	=	25.9	27.8	▲
Piauí	39.1	54.8	▲	22.5	23.3	▲
Bahia	38.5	48.2	▲	28.7	25.7	▼
Ceará	35.3	46.2	▲	28.7	25.3	▼
Tocantins	36.4	40.8	▼	28.5	29.3	▲
Pernambuco	31.7	38.1	▲	30.2	28.1	▼
Alagoas	35.4	41.2	▲	24.3	24.6	=
Rondônia	42.2	24.9	▼	28.9	30.6	▲
Acre	25.2	20.9	▼	22.3	23.1	▲
Maranhão	19.8	22.2	▲	15.4	15.4	▲
Amapá	23.9	17.4	▼	18.4	15.1	▼
Amazonas	14.4	9.2	▼	23.1	22.2	▼
Pará	9.4	12.0	▲	21.9	19.0	=
Brasil	50.0	52.9		36.6	37.2	

Despite some limitations,⁵⁰ the continued measurement of this index is relevant for the consolidation of public policies, to measure gaps and to serve as the guideline for discussions about the challenges related to financial citizenship in a country with continental dimensions such as Brazil. This becomes especially relevant in a year strongly affected by the Covid-19 pandemic, in addition to allow the dialogue between organizations, academia, government, and other SFN players based on data and evidence.

⁵⁰ The 2018 RCF presented a discussion about the limitations of the ICF calculation, in addition to those already discussed herein, such as the impossibility of measuring the protection and participation pillars. The work of research and identification of new data points to improve the index has been constant since its creation.

1.5 A study on the financial resilience of Brazilians

Financial resilience is a multidimensional concept related to the ability of individuals or households to recover from financial shocks. Resilient individuals or households need to be able to withstand a financial shock, whether it is a decrease in income or a major unexpected expense, such as a medical bill or a home repair. Lack of resilience may be caused by tight budgets, lack of emergency reserves, lack of access to affordable credit or insurance, formal or informal support networks. Furthermore, high indebtedness levels that consume the financial capability of individuals and households also reduce the space for shock absorption.

To start a discussion about this subject, a brief bibliography survey is presented,⁵¹ as well as a preliminary classification of the Brazilian population concerning this topic. For this purpose, data from the Febraban's survey about the Financial Health Indicator of Brazilians (I-SFB) were used since it covered a question about financial resilience.

» Measurement of resilience in the international context

Financial resilience is a concept whose importance has been consolidated in the last decade. Efforts to define, measure, and track this concept were incorporated into international surveys, such as the Global Findex of the World Bank, the OECD/INFE International Survey of Adult Financial Literacy,⁵² and in household surveys in the European Union.⁵³ Some countries make their own efforts to measure the financial resilience of their citizens, most notably the United Kingdom and the United States.⁵⁴ All these measurements reveal the multidimensionality of resilience, as different approaches are found. The terms financial **resilience**, **vulnerability**, and **fragility** have been used interchangeably or complementarily, and distinct measures are used to assess the drivers that lead to the ability to withstand or quickly recover from financial shocks. Table 1.5.1 presents self-reported resilience indicators.

51 Complete references are shown in Table 3 of the annexes.

52 The Global Findex and the OECD/INFE approaches are further detailed throughout this study.

53 The survey EU statistics on income and living conditions (EU-SILC) from the Eurostat; and the Household Finance and Consumption Survey (HFCS), managed by central banks and released by the ECB. These indicators have been explored by researchers both inside government (see a report in this study) or in the academia. A comprehensive work may be found in McNight, Abigail; Rucci, Mark (2020), The financial resilience of households: 22 country study with new estimates, breakdowns by household characteristics and a review of policy options. Centre for Analysis of Social Exclusion, London School of Economics.

54 Some of these measures developed in the U.S. are further discussed in this study. In addition to individual work of the financial system regulators, the United Kingdom published, in 2019, a report of the Resilience Task Force group, that explores what can be done to quantify the problem and understand the drivers. Further details at: <https://www.fincap.org.uk/en/articles/resilience-task-force>.

Table 1.5.1 – Self-reported resilience indicators

Concept	Measures	Answer options by the non-resilient group	Who collects this measure?
Financial fragility: inability to deal with a medium-sized shock in a short period of time	How confident are you that you could come up with \$2,000 if an unexpected need arises within the next month?	I could probably not come up...; I am certain I could not come up....	TIAA Institute GFLEP -FIN Index FINRA – US National Financial Capability
	Now, imagine that you have an emergency, and you need to pay [1/20 of GNI per capita in local currency]. Is it possible or not possible that you could come up with [1/20 of GNI per capita in local currency] within the NEXT MONTH?	Not possible	World Bank – Global Findex
	If you had an unexpected expense or someone in your family lost a job, got sick or had another emergency, how confident are you that your family could come up with money to make ends meet within a month?	Part of the Financial Capability – does not indicate a cut-off point: Not at all confident (0); Somewhat confident (1); Very confident (2)	University of Wisconsin Madison, Center for Financial Security – Financial Capability Scale
Financial confidence: availability of a financial cushion	Can your household afford an unexpected, required expense (1/12 of the annual national income at-risk-of-poverty threshold) and pay through its own resources?	No	European Union Statistics on Income and Living Conditions (EU-SILC)
	If you lost your main source of income, how long could you continue to cover living expenses, without borrowing any money or moving house?	1. Less than a week; 2. At least a week, but not one month; 3. At least one month, but not three months	OECD/INFE – Toolkit measuring financial literacy and financial inclusion
	If you lost your main source of household income, how long could your household continue to cover living expenses, without having to borrow any money or ask for help from friends or family?	Less than a week	FC – Financial Lives Survey: Low resilience as one of the financial vulnerability characteristics
	At your current level of spending, how long could you and your household afford to cover expenses, if you had to live on only the money you have readily available, without withdrawing money from retirement accounts or borrowing?	Part of the Financial Health Score – does not indicate a cut-off point: 6 months or more (100); 3-5 months (75); 1-2 months (50); 1-3 weeks (25); Less than 1 week (0)	Financial Health Network (previously CFSI) – Financial Health
Low financial resilience: high indebtedness levels	Over indebted: positive at K1 or K2 K1: To what extent do you feel that keeping up with your domestic bills and credit commitments is a burden? K2: In the last 6 months, have you fallen behind on, or missed, any payments for credit commitments or domestic bills?	K1: It is a heavy burden K2: Yes	FCA – Financial Lives Survey Low resilience as one of the financial vulnerability characteristics
Low financial resilience: low or uncertain incomes	Thinking about your mortgage payments and rent, by how much could they increase before you would struggle to pay them?	1. £ 0; 2. Up £ 50	FCA – Financial Lives Survey: Low resilience as one of the financial vulnerability characteristics
	How much do you agree or disagree with this statement: 'I do not have difficulty paying for day-to-day expenses since I retired'	Strongly disagree	
	Which of these statements best describes how often you are overdrawn on your current account(s)?	1. 1. I am constantly overdrawn; 2. I am usually overdrawn by the time I receive my monthly income.	

In 2009, the work of Lusardi, Schneider, and Tufano developed a self-reported approach widely used so far (LUSARDI *et al.*, 2011; Global Financial Literacy Excellence Center – GFLEC, 2020). They define **financial fragility as the inability to deal with a mid-size shock in a short period**. It is a self-assessment of the ability to deal with financial shocks, regardless of the resources used. These resources can be the citizens’ own assets, as an emergency reserve, loans from the formal financial system, or family, friends or institutions support networks. This approach is used in periodical surveys measuring the household financial fragility, as the National Financial Capability Survey (NFCS) (Global Financial Literacy Excellence Center – GFLEC, 2020), TIAA Institute – GFLEC Personal Finance Index (P-Fin Index), both in the U.S., and the household survey conducted annually in the Netherlands (WIERSMA *et al.*, 2020). The Global Findex, coordinated by the World Bank, measures the resilience through a similar approach (DEMIRGUC-KUNT *et al.*, 2018).

The University of Wisconsin’s financial capability scale directly addresses the resilience issue in one of its six items. It asks if the respondent had an unexpected expense or if a family member lost their job, got ill, or had another type of emergency, how confident they would be that the family would get the money to cover these expenses in a month (COLLINS; COLLIN, 2013).

The survey EU Statistics on Income and Life Conditions (EU-SILC)⁵⁵ also addresses the resilience considering the ability to absorb an unexpected expense, although restricting the source of resources, not admitting any type of support by third parties (see Table 1.5.1). The survey considers even the payment in installments of expenses usually paid in cash to be outside the use of your own resources.⁵⁶

The adult financial literacy survey conducted by the OECD/INFE measures financial resilience by focusing on the emergency reserve, considering the life standard. Individuals are considered resilient when they can support themselves **for three months or more without borrowing money, should they lose their main income source** (OECD, 2020).⁵⁷ The survey about how long a household can support itself with an emergency reserve is also used by the Financial Health Score elaborated by the Financial Health Network (see Table 1.5.1).

The United Kingdom Financial Conduct Authority (FCA) measures low resilience as one of the characteristics making an individual **financially vulnerable**⁵⁸ (FINANCIAL CONDUCT AUTHORITY, 2020), attributed to individuals with high debt levels, low reserve levels, or low or uncertain income (see Table 1.5.1).

Indebtedness levels have been core elements tracked by central banks researchers. However, they have tested combinations of quantitative and qualitative measures to create **financial vulnerability** indicators for households beyond debt. In the combination used by the European Central Bank (ECB) researchers, households that met two or more of five indicators (see Table 1.5.2) are considered vulnerable (BAŃKOWSKA *et al.*, 2017).

⁵⁵ This survey collects half-early data on income, poverty, social exclusion, and life conditions in the European countries since 2003.

⁵⁶ The survey’s methodological document thoroughly explains the calculation of the unexpected expenditure and the conditions underlying the term “use of own resources”: https://circabc.europa.eu/sd/a/e9a5d1ad-f5c7-4b80-bdc9-1ce34ec828eb/DOCSILC065%20operation%202018_V5.pdf.

⁵⁷ Furthermore, the OECD/INFE lists five behaviors other than the emergency reserve as financial resilient elements: maintaining control over money, being careful with expending, dealing with financial difficulties, planning finance, and being alert to frauds. Each is measured separately and have not been analyzed together.

⁵⁸ In addition to the low financial resilience, they also consider poor health conditions, recent troublesome life situations, and low financial capacity.

Table 1.5.2 – Vulnerability indicators used by ECB researchers

Indicators	Measures	Cut-off point
Ratio debt service/income (DSI)	Total monthly debt payments over gross monthly income	30%
Ratio debt/income (DI)	Total debt balance over gross annual income	300%
Ratio debt/assets (DA)	Total household debt level over total gross household assets	90%
Low income	Income in the last 12 months was unexpectedly low compared to the annual income normally expected	Affirmative answer
High expenses	Regular expenditures higher than income over the last 12 months	Affirmative answer

Source: Bańkowska *et al.* (2017)

Researchers from the Italian central bank also tested two measures based on the indebtedness level combined with measures of disposable income (Table 1.5.3) (MICHELANGELI; RAMPAZZI, 2016).

Table 1.5.3 – Vulnerability indicators used by researchers from the Central Bank of Italy

Indicators	Measures	Cut-off point
Debt service indicator – income and average income (DSIMI)	Ratio of debt service to household income net of debt payments and imputed rent	>30%
	Equalized ⁵⁹ net household income	<Median of the population
Financial margin and net assets indicator (FMLAI)	The household's financial margin is the net disposable income per month after paying debts and basic expenses	<0
	Absolute value of the negative financial margin multiplied by the number of months is lower than the total household assets in 4 months	4 months

Source: Michelangeli and Rampazzi (2016)

The monitoring of these indicators over time seeks to inform how vulnerable are households regarding their finance and their ability to honor debts and regular expenditures.

Researchers from the Indonesia Central Bank proposed two measures to analyze household financial vulnerability, one objective and another subjective, both based on data from the central bank's household budget survey. The indexes were calculated based on self-reported indicators on indebtedness, overdue payments, budgeting abilities, emergency reserve, and disposable income for leisure. Subjective vulnerability used household perception indicators about these aspects of their financial life (NOERHIDAJATI *et al.*, 2020).

Finally, the ability to withstand shocks is also related to several measures of financial health and well-being. Financial well-being was defined by the CFPB, the U.S. financial consumer protection agency, in 2015 and 2017, when a measurement tool was established. Both the concept and the tool comprise four elements of a person's financial life centered on security and freedom of choice experienced in the present and for the future, as shown in Table 1.5.4 (CFPB, 2017).

⁵⁹ The equalized net income is the total household income adjusted by the OECD modified scale to achieve a representative income. Further details on the OECD modified scale at <https://www.oecd.org/economy/growth/OECD-Note-EquivalenceScales.pdf>.

Table 1.5.4 – Four well-being elements according to the CFPB

	Present	Future
Safety	Control of daily finance	Capability to absorb financial shocks
Freedom of Choice	Financial freedom to make choices to enjoy life	Within the planning to reach your personal financial goals

Source: CFPB, 2017

Both the well-being score and the financial abilities developed by the CFPB considered for their validation the correlation with the financial fragility indicator of Lusardi, Schneider, and Tufano (2011).⁶⁰ The financial security experienced in the future is the ability to absorb financial shocks perceived by the individual, an element explored in the well-being concept closely related to the idea of resilience.

The definition of financial health that underpins the Financial Health Score of the Financial Health Network states that health exists when your day-to-day financial systems allow you to be resilient and pursue opportunities over time (Financial Health Network, 2020). The score is calculated from eight indicators, one of which specifically measures the existence of an emergency reserve (Table 1.5.1).⁶¹

The BCB has recently mapped Brazilian individuals in a risky indebtedness situation, that is, citizens whose debt volume would potentially exceed their payment capability, whose persistence and low credit quality could jeopardize the management of their financial resources and, ultimately, their life quality. The criteria used to classify risky indebtedness coincide with some vulnerability indicators more focused on debt levels⁶² and reinforce the relationship of this phenomenon and the financial vulnerability or lack of resilience.

» Resilience profile of the Brazilian population

As observed in the literature, financial resilience is directly associated with financial well-being and health measures. Under the Technical Cooperation Agreement celebrated in November 2019 between Febraban and the BCB, the Financial Health Indicator of Brazilians (I-SFB) was elaborated. To this end, Febraban applied a questionnaire to a representative sample of the Brazilian population comprising 5,000 people. This index was built from the adaptation of four international protocols⁶³ and assesses the financial health of Brazilians from six dimensions: security, freedom, ability, behavior, proficiency, and financial background.⁶⁴ The I-SFB questionnaire also assesses the self-perception dimension, but this is not included in the index calculation. The security dimension, in the case of I-SFB, is related to the ability to meet financial commitments and perception of one's financial situation, whether or not it is a source of concern and stress.

60 Spearman correlation coefficients are calculated for the ten-well-being scale and the fragility indicator was 0.64, with $p < 0.0001$ (CFPB, 2017). The ability coefficient was 0.38, with the same significance level (CFPB, 2018).

61 This item asks how long a household could afford to cover their expenses if they had to live only on their existing savings, without withdrawing money from retirement accounts or taking loans, considering their current level of spending.

62 The criteria adopted to classify a risky indebted individual were overdue credit installments, i.e., payments overdue for more than ninety days; commitment of monthly income above 50%; simultaneous exposition to the following credit types: overdraft facility, non-payroll-deducted personal credit, and revolving credit (multiple types); and having monthly disposable income (after the payment of debt services) below the poverty line. The full report is published on the *Série cidadania financeira: estudos sobre educação, proteção e inclusão. Edição 6* (Portuguese only). https://www.bcb.gov.br/content/cidadaniafinanceira/documentos_cidadania/serie_cidadania/serie_cidadania_financeira_6_endividamento_risco.pdf.

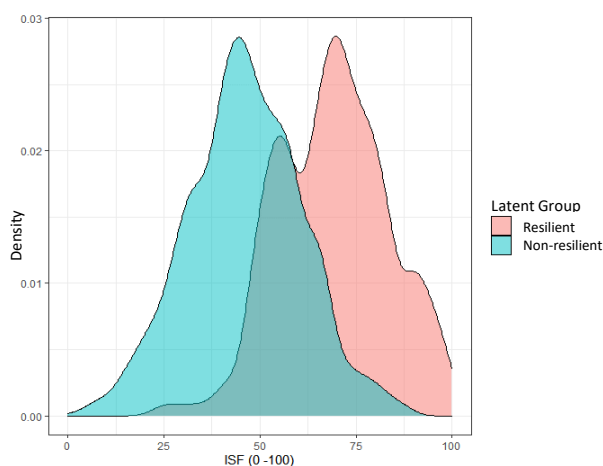
63 CFPB Well-Being Scale and CFPB Skill Scale reports are available at: https://files.consumerfinance.gov/f/documents/201705_cfpb_financial-well-being-scale-technical-report.pdf and https://files.consumerfinance.gov/f/documents/bcbp_financial-well-being_measuring-financial-skill_guide.pdf. The CFSI Financial Health Score is available at: <https://finhealthnetwork.org/score/score-methodology/>. The University of Wisconsin's Financial Capability Score was published in Collins, J. Michael, and Collin O'Rourke. (2013) Financial Capability Scale (FCS), University of Wisconsin Madison, Center for Financial Security.

64 Further details about this study and these dimensions available at the [survey](#) and the [methodological manual](#) of the I-SFB.

Furthermore, this questionnaire included a specific self-reported resilience item⁶⁵ that evaluates the agreement regarding the phrase “I would cope with a large, unexpected expense”. According to it, 22%⁶⁶ of Brazilians would be able to cope with a financial shock.⁶⁷

Considering the strong connection between resilience and financial health, the survey sought to identify groups of individuals with different resilience levels by considering the answers to the self-reported item and the overall financial health indicator through a statistical technique called latent class analysis. The analysis identified two groups: the first, encompassing 49.8% of the population, whose average I-SFB⁶⁸ was 69.2 points; and the second, with 50.2% of the population, with an average I-SFB of 46.1 points (Figure 1.5.1).

Figure 1.5.1 – ISF distribution of respondents according to resilience



When comparing this classification with self-reported resilience, it is possible to see that the group with the lowest I-SFB (2nd group) is exclusively composed of individuals who indicated low resilience.⁶⁹ This group is herein referred to as “non-resilient”. In the 1st group, which has a higher I-SFB level, there is, besides the individuals who indicated high resilience, a sub-group corresponding to 56% of them who had the perception that they would not cope with a large unexpected expense (Table 1.5.5).

Table 1.5.5 – Congruence between resilience classification and the self-reported indicator

<i>Perception about the ability to absorb a shock</i>		<i>I would be able to cope with a large, unexpected expense</i>		Total
		<i>None/A little/More or less</i>	<i>High/Totally</i>	
Latent Classes Group	Resilient	1,391 (56%)	1,088 (44%)	2,479 (49.5%)
	Non-resilient	2,532 (100%)	0 (0%)	2,532 (50.5%)
<i>Total</i>		3,923 (78.3%)	1,088 (21.7%)	5,011

65 The self-reported resilience, in this case, refers to the answer to the following item: “I would be able to cope with a large, unexpected expense”, included in the questionnaire and not included in the calculation of any of the I-SFB dimensions.

66 Answers “a lot” or “totally”.

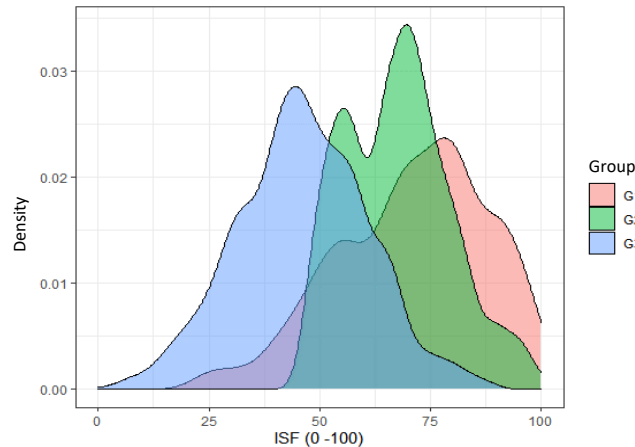
67 In the U.S., according to data collected by the GFLEC in January 2021 for the elaboration of the P-Fin Index, 70% of respondents reported that they could come up with \$2,000 if an unexpected need arises within one month. Using a similar self-related indicator, the OECD measured that, on average, 60% of respondents would continue to cover a large expense, equivalent to their monthly income, without borrowing any money nor asking help to family members. Data were collected in 2019 and refer to a more restrictive measure, excluding some strategies to deal with a financial shock.

68 This study’s analysis considered the I-SFB score calculated by excluding the financial background dimension.

69 Answers: “none”, “a little” or “more or less”.

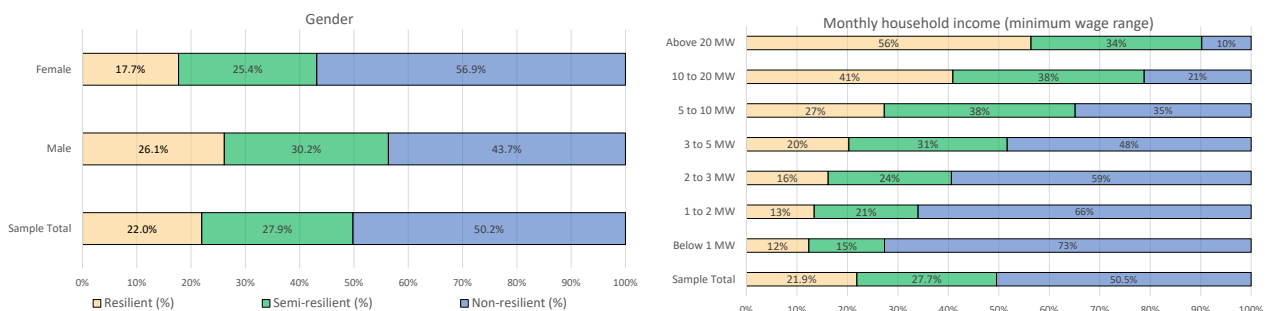
In order to characterize each group, the population was divided into three categories: group 1, composed of resilient individuals, both in terms of I-SFB and the self-reported resilience (which, for simplicity, will be referred to only as “resilient”); group 2, encompassing resilient individuals according to the I-SFB, however, with no self-reported resilience (called “semi-resilient”); and group 3, which aggregates non-resilient individuals, both in relation to the I-SFB and in relation to the self-reported resilience (called “non-resilient”). Figure 1.5.2 displays the distribution of the I-SFB for each group.

Figure 1.5.2 – ISF distribution of respondents according to resilience and congruence



Household income and gender were the factors with the greatest influence on the probability of an individual being included either in the resilient or in the semi-resilient group.⁷⁰ Being male increased the chance of belonging to the resilient group by 67%, and to the semi-resilient group by 36%. Differences between monthly household income groups indicated that a person with an income of two to three minimum wages is 77% more likely to belong to the semi-resilient group and 60% more likely to belong to the resilient group when compared with those with income up to one minimum wage. This percentage increases progressively, reaching a 23 times greater chance of being resilient when it comes to a person with an income equivalent to 20 minimum wages or more.

Figure 1.5.3 – Profile of respondents by resilience classifications



Age seemed to be related to resilience. Being young, between 18 and 29 years old, increases the chances of a person belonging to the resilient and semi-resilient groups by at least 35% when compared with the probability of people aged 60 years or older. The probability of young people increases when considering the resilient group alone, for which being 18-24 years old increases the probability of being resilient by 70%. In addition, individuals aged 30-34 have a 50% greater chance of belonging to the resilient group compared to the age group over 60. The other age ranges did not present significant statistical differences.

⁷⁰ To identify the most relevant characteristics together, a multinomial regression model was used, based on the non-resilient group (3).

The level of education, when controlled by income and other characteristics included in the model, did not influence the probability of being resilient. The socio-economic classification influenced only the probability to belong to the semi-resilient group. In this case, belonging to the B2 class or above, when compared with classes D-E, increased the probability of being semi-resilient between 64% and 87%.

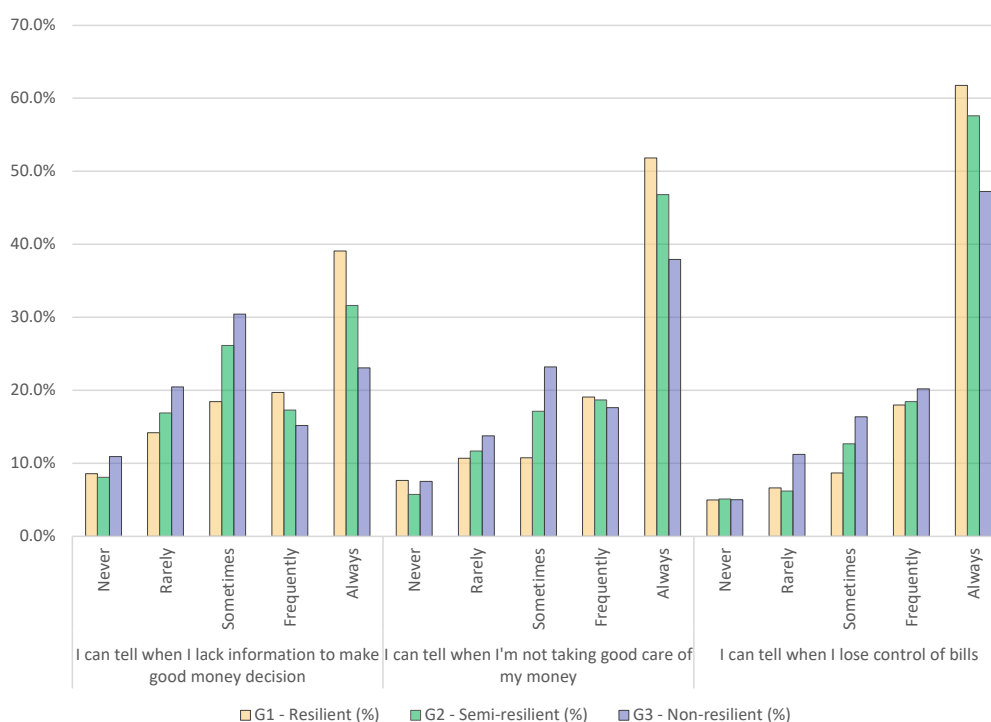
The differences between resilient and semi-resilient groups indicate that, semi-resilient groups have more individuals who are not the main household provider. Among resilient individuals, 42.5% are main providers, whereas, among the semi-resilient, only 35.5% assume this role.

Interestingly, the analysis of the self-perception of participants does not indicate a statistical difference among resilience sub-groups, but points to a gradation, from the non-resilient to the resilient group, with the semi-resilient ones as intermediate.

The lowest self-perception indexes associated with lower resilience may point to a subjective component of the resilience of individuals and households, related to a lack of awareness about their financial situation.⁷¹ Awareness is the correct understanding of one's financial commitments to available assets.

The self-perception about lack of information, careless money management, and loss of control over accounts improves the resilience rating (Figure 1.5.4). The self-perception dimension may represent an opportunity window for financial education since the awareness about their own vulnerability influences the willingness of individuals to seek solutions to improve their financial situation.

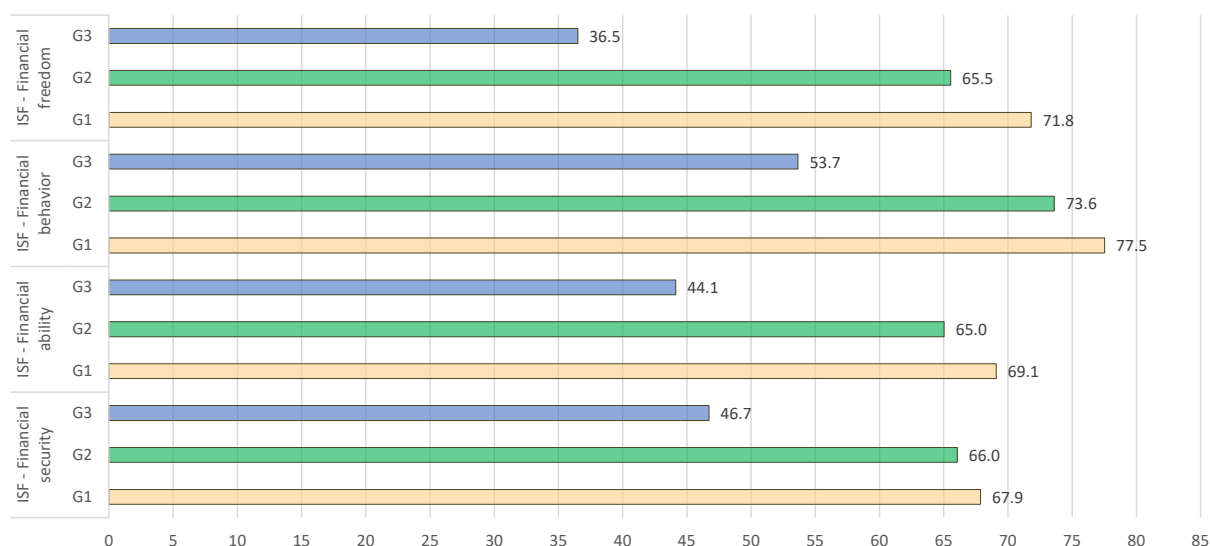
Figure 1.5.4 – Dimension of the self-perception by resilience group



Evaluating the behavior of each group, according to the I-SFB dimensions (Figure 1.5.5), it is possible to see that the greatest difference among these groups concerns the financial freedom: the resilient group presents a score of 71.8 points, while the semi-resilient group has 65.5 points, and non-resilient group only 36.5 points. As for the other dimensions, despite a similar gradation, differences are relatively smaller, with financial security dimension having the smallest differentials.

⁷¹ The subjective financial vulnerability is discussed by O'Connor et al. in the article Conceptualizing the multiple dimensions of consumer financial vulnerability. Available at: <https://doi.org/10.1016/j.jbusres.2018.12.033>.

Figure 1.5.5 – Resilience groups and ISF dimensions



In conclusion, it is possible to observe that factors such as household income, age, and gender can influence the degree of resilience of citizens. Being male, young, and from households with income progressively higher increases the chances of being able to cope with financial shocks. Moreover, self-perception of one's financial situation seems to be a window of opportunity for financial education policies with the purpose to increase resilience. These results point preliminary to aspects that deserve attention in subsequent studies to support measures to strengthen the financial resilience of groups such as women, individuals over 30 years old, and those with lower household income.

Moreover, performing other indicators analyzes, such as risky indebtedness, can provide a better identification of these groups in relation to their effective behavior. The evaluation of the performance of both groups in the event of shocks can provide important elements for the definition of public policies.

Finally, it should be highlighted the importance of implementing similar measures periodically, allowing not only a specific evaluation of the population's resilience, but also, and mainly, the evolution of these measures over time.



Chapter 2

Different Populations Demand Different Approaches to Financial Citizenship

Beyond the overall financial citizenship outlook in Brazil, some populational groups have been identified to better investigate their needs. The goal is to discuss and highlight whether these populational groups encounter different barriers in their relationship with the SFN and whether they demand specific approaches to financial citizenship. For that matter, different aspects of access, use, and suitability of the supply of financial services were analyzed.

Thus, this chapter is divided into three sections: the first one assesses young public, showing the first steps of the Brazilian citizen's relationship with the financial system and the challenges for understanding this environment; the second one analyzes individual microentrepreneurs, whose relevance in the labor market has been growing recently; and the third one contemplates the elderly population, which presents specific demands of financial services compared to the rest of the population.

Together, these three groups account for about half of the adult Brazilian population, which highlights the importance of knowing the differences among them to monitor financial citizenship from a wide and inclusive perspective.

2.1 Youth

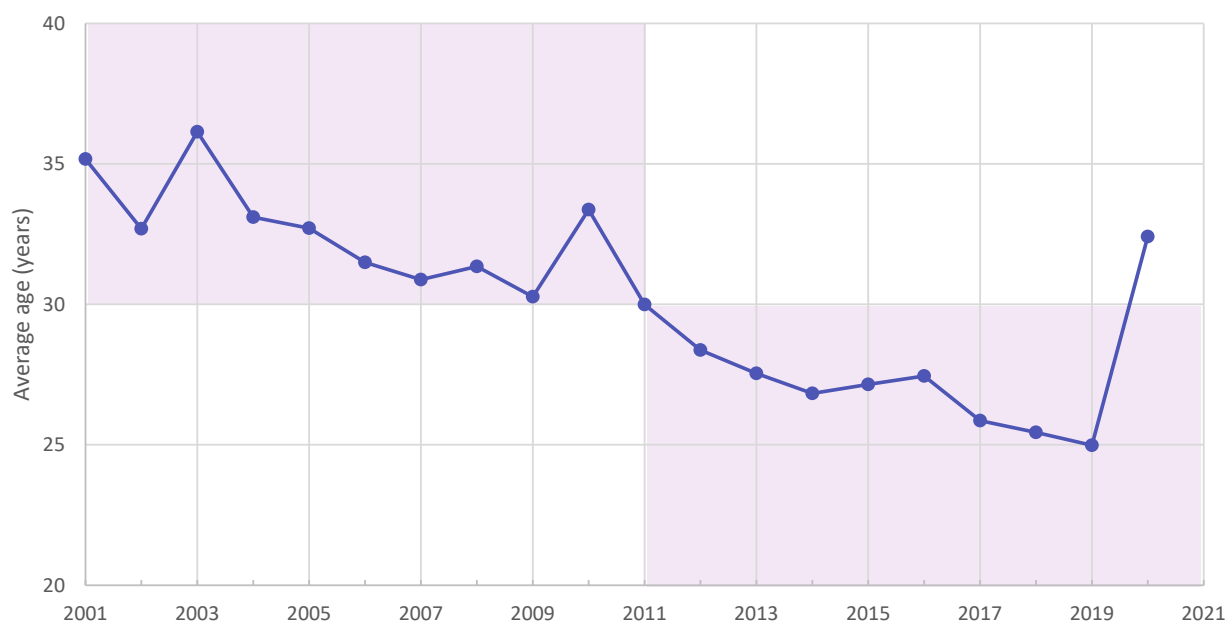
» Diversification in the access to the financial system

#inclusion #access

In the first decade of the millennium (2001 to 2010), the first relationship of Brazilians with the SFN started, on average, at 32 years old; in the last decade (2011 to 2020), the average age dropped to 28 years old⁷² (Figure 2.1.1) and with a much wider range of providers. Currently, forty million young individuals⁷³ participate in the SFN with at least one relationship with a financial or payment institution: they represent 81% of the young population in Brazil and a quarter of the citizens within the SFN.

Of the 55 million Brazilians who began their relationship with the SFN as of 2011, 68% belonged to the group aged 29 or less. On average, 3.7 million young individuals enter in the SFN for the first time every year. It is worth reflecting on which institutions receive the youth population, how they are received, how they use the financial system, and how they are prepared in terms of financial literacy to interact and navigate in this environment.

Figure 2.1.1 – Brazilians' average age at their first SFN relationship



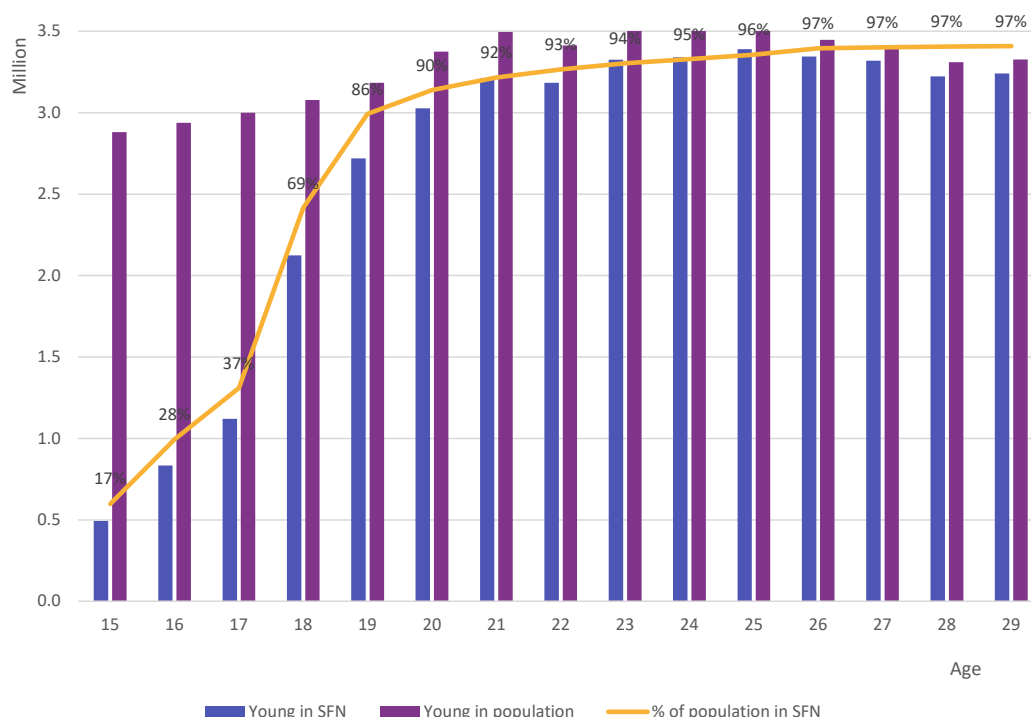
Source: BCB

Young individuals access the SFN for the first time mostly between 15 and 21 years old. In 2020, 17% of Brazilians aged 15 had already started their relationship with the SFN; aged 18, 69%; and aged 21, almost all people (92%) maintained a SFN relationship.

⁷² The inflection in the average age occurred in 2020 is related to the large number of first relationships started because of the payment of the Emergency Aid. A thorough analysis is presented in section 1.3 of this Report.

⁷³ In this Report, Brazilians aged between 15 and 29 are classified as young individuals.

Figure 2.1.2 – Brazilian youth with SFN relationship – Dec/2020



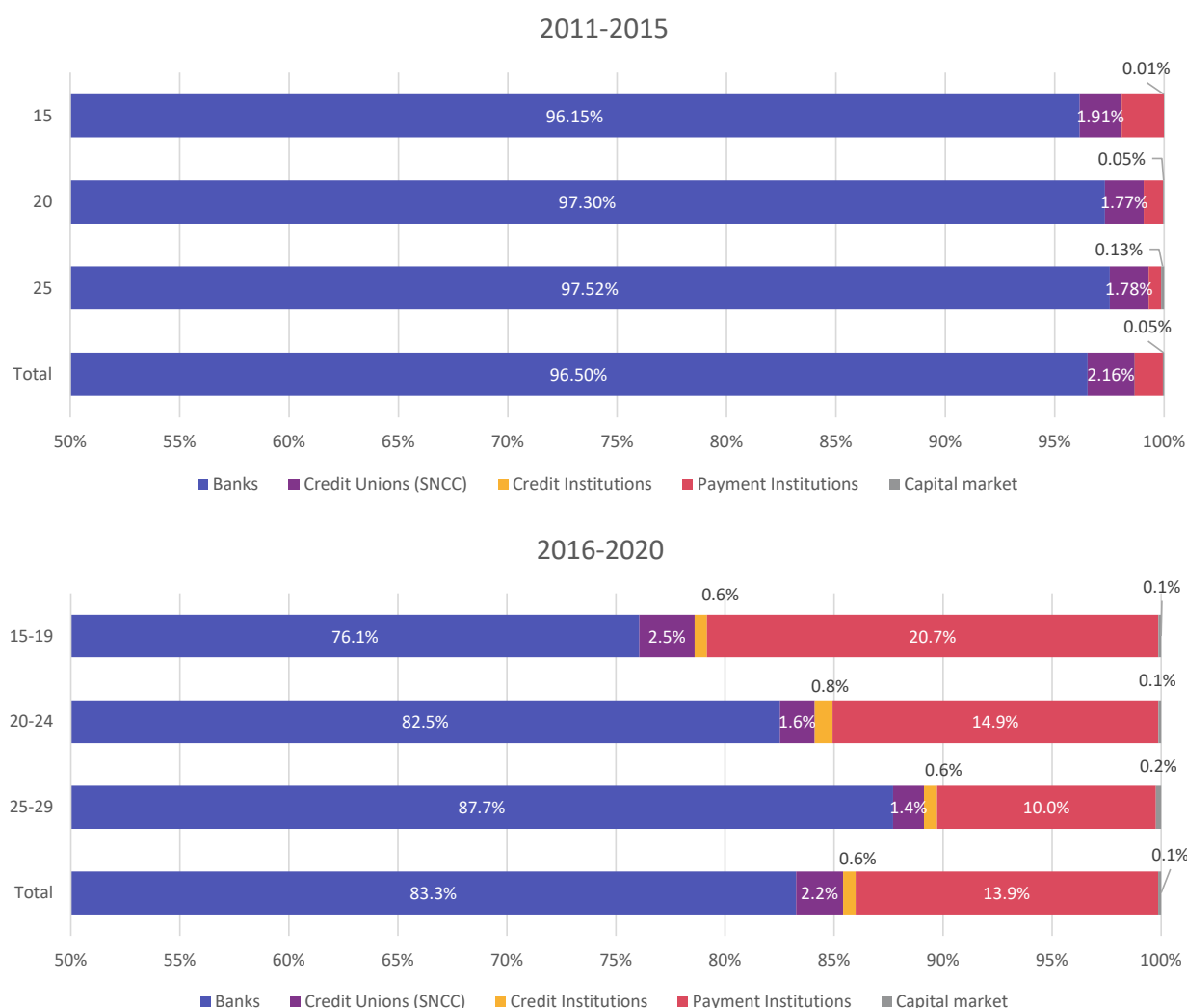
Note: the total of young individuals was calculated with data from the Brazilian Federal Revenue Board.

Source: BCB

Youth first account: first SFN relationship used to be almost exclusively with banks but now starts with a diversity of providers

In the last decade, Brazilians have diversified their financial relationships (see section 1.1), and this was especially remarkable for the youth population. An analysis of the entry of citizens into the SFN indicated that in the first half of the last decade, between 2011-2015, banks accounted for 96% of young individual's first relationships, similar with the population in general. Between 2016 and 2020, banks began to share an important part of this gateway into the SFN with other types of institutions (Figure 2.1.3). Notably, one out of four individuals started their first relationship in non-banking institutions in the bracket from 15 to 19-years-old. This was also the age group that registered the greatest increase in the number of accounts opened in the cooperative system and in payment institutions (IPs) between both periods.

Figure 2.1.3 – Youth first relationship with the SFN, by type of institution



Note: between 2011 and 2015, some financial institutions later classified as IPs as of 2017 were already operating in the SFN, therefore this category appears in that period. Since credit institutions accounted for only 0.001% of new accounts, they do not appear in this Figure.

Source: BCB. Only the first relationship opened by each citizen is contemplated.

Financial services providers with digital interfaces are an important part in the relationship between youth and the SFN

The relationship between young individuals and IPs reveals a reciprocal importance. Considering the total number of relationships registered in the SFN (Figure 2.1.4), one out of four relationships of young individuals is maintained with a IP, and 40% of payment accounts in IPs portfolios belong to this age group (Table 2.1.1). The interaction of young people with these services, which have increasingly digital interfaces, reinforces the intuition that the involvement of this segment of the population with technology influences the way they have entered and interacted with the financial world.

Figure 2.1.4 – Youth total financial relationships by segment



Note: the category *, in gray, corresponds to Specialized Banks, with 0.7% of the total number of relationships opened by young individuals.
Source: BCB. The total number of relationships of young individuals is contemplated.

Table 2.1.1 – Youth representativeness in SFN segments

Segment	Young individuals Million	% of total number of clients
Payment institutions	43.8	42%
Credit institution	8.9	42%
Specialized banks	1.2	39%
Capital market	5.4	32%
Banks	97.9	22%
Credit Unions (SNCC)	3.9	20%

Source: BCB

Besides IPs, the number of relationships of young individuals in institutions offering services related to the capital market is also noticeable. It is the fourth most important type of institution for youth, ahead of credit unions. These FIs have also expanded their activities in highly technology-based interfaces. Despite the important diversification, most of the relationships of young people (60%) are still with banks (Figure 2.1.4).

The presence of young men and women is balanced in the SFN

In terms of representativeness in the SFN, young men and women are equally present in all age groups. It is worth noting that, on average, young men maintain a larger number of relationships with the SFN (4.6) than women (4.2), a difference that persists in all age groups. Furthermore, a significant gender disproportion in relationships with capital market FIs (71% men) is observed. This pattern is maintained not only among young individuals, but also among the entire population within the SFN (71.6%). As for the relationship of youth with credit unions, the proportion of men (55%) is also higher than of women.

» Challenges for financial literacy

#education

The huge number of young people that enters the SFN is introduced to various products and services that may help them achieve their personal projects. Financial literacy increases their ability to interact with the SFN, improves their capability to take advantage of opportunities, and helps to minimize risks present in the system.

The participation of young Brazilians in a financial education program was associated with positive impacts on credit use in the long-term

A joint assessment by the BCB and the World Bank⁷⁴ indicated that the participation of young Brazilians in a financial education program during high school between 2011 and 2012 resulted in a systematical reduction in the use of more expensive credit types in the long term. Four years after the program, the young participants reduced the average probability of using overdraft facilities from 10.95% to 9.96% and the probability of using revolving credit from 22.98% to 21.43% when compared with young individuals who did not participate in the financial education program.⁷⁵ The assessment also indicated that the use of credit cards by these young individuals was reduced by 1.95 p.p.

A significant proportion of young Brazilians still lack financial literacy proficiency according to the Pisa test

According to the Pisa test, Brazil has improved its financial literacy performance both in absolute terms and in the comparative ranking between 2015 and 2018 (section 1.1). However, there is still a long road ahead.

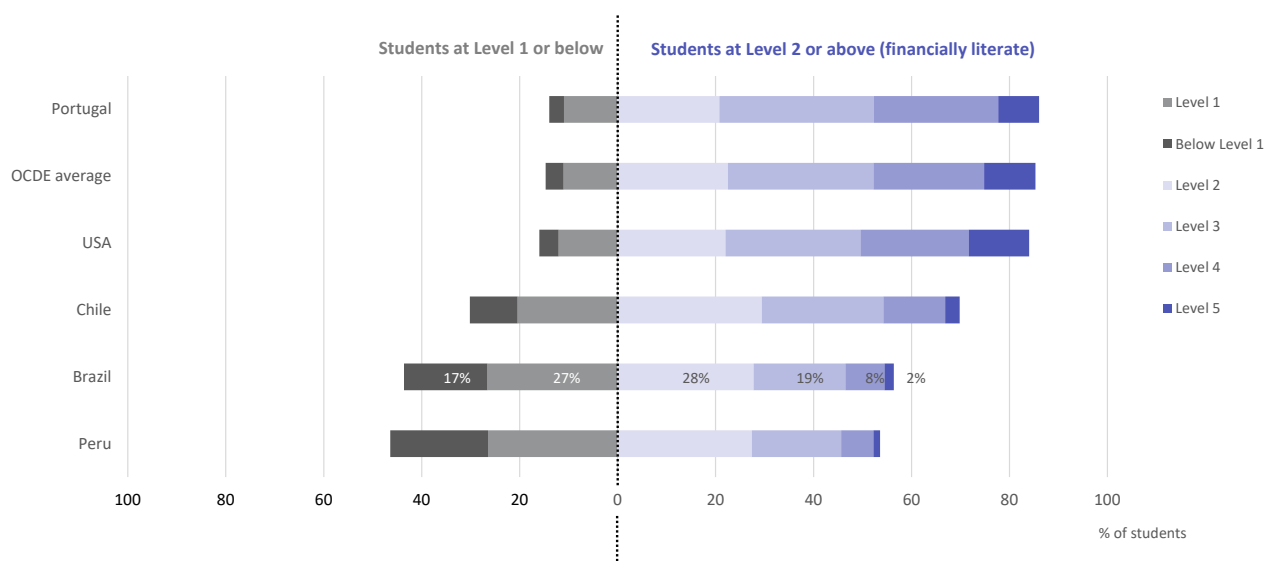
The 2018 Pisa test assessed 15-year-old students enrolled in 596 public and private schools all over Brazil. The results classify young individuals into five proficiency levels, with students at level 2 or above being considered financially literate (Table 2.1.2). In 2018, 44% of Brazilian students were ranked below the minimum level of proficiency in financial literacy.⁷⁶ This means that they were not able to identify common financial terms and concepts, interpret everyday financial documents, or work on a simple budget – they can only identify simple financial products and terms, recognize the difference between needs and wants, and make simple decisions about everyday spending in contexts they have already personally experienced. On the other hand, less than 2% of Brazilian students reached level 5, compared with an average of 10% in OECD member countries (Figure 2.1.5). The most common performance for Brazilian students was the level 2 in financial literacy: about 28% of students reached this minimum level of proficiency.

74 Long-term effects of financial education in Brazilian schools: evidence from educational action from 2010-2011. Special Study No. 82/2020 – Originally released as a box of the Banking Report (2019). Available at (Portuguese only): https://www.bcb.gov.br/conteudo/relatorioinflacao/EstudosEspeciais/EE082_Efeitos_de_longo_prazo_da_educacao_financeira_em_escolas_brasileiras_evidencias_de_acao_educacional_de_2010-2011.pdf.

75 Credit use was tracked between June 2016 and December 2019, period when data was available for the analysis.

76 For Brazil, this percentage was 50% for reading and 68% for math according to the Pisa 2018 Report published by Inep (Portuguese only): <https://www.gov.br/inep/pt-br/areas-de-atuacao/avaliacao-e-exames-educacionais/pisa/resultados>.

**Figure 2.1.5 – Percentage of students at each level of proficiency of Pisa 2018
(Brazil and selected countries)**



Source: OECD, Pisa 2018 Data-base, Table IV.B1.2.4. Only selected countries have been displayed in the Figure. Full data available at the source.

Table 2.1.2 – Proficiency levels of the Pisa financial literacy tests and ranking of Brazilian students⁷⁷

Level	% in this level	What students at this proficiency level are typically able to do
1	27%	- Terms and concepts: identify common terms and interpret information related to basic financial concepts. - Context: apply basic numerical operations in contexts that they are likely to have personally experienced. - Products and documents: identify common financial products and terms, and interpret information related to basic financial concepts, such as recognizing the purpose of an invoice. - Financial decisions: can make simple decisions on everyday spending and recognize the difference between needs and wants. - Can apply basic single numerical operations – addition, subtraction, or multiplication – to solve problems in contexts that they are likely to have personally experienced.
2	28%	- Terms and concepts: knowledge of basic financial terms and concepts. - Context: begin to apply their knowledge on basic terms and concepts to make financial decisions in contexts that are immediately relevant to them. - Financial products and documents: knowledge of most common financial products and interpretation of the most prominent parts of everyday financial documents. - Financial decisions: can recognize the value of a simple budget. - Can apply a narrow spectrum of basic single numerical operations, including division, to answer financial questions. Understand the relationship between different financial elements, such as used amount and the costs incurred.

⁷⁷ The description of the proficiency levels and further details about the production and analysis of test results are available in the OECD Pisa report 2018 Results – Volume IV: Are students smart about money? available at: <https://www.oecd.org/finance/financial-education/pisa-2018-results-volume-iv-48ebd1ba-en.htm>. The classification of Brazilian students is described at https://www.oecd.org/pisa/publications/PISA2018_VolIV_LATAMcountrynote.pdf.

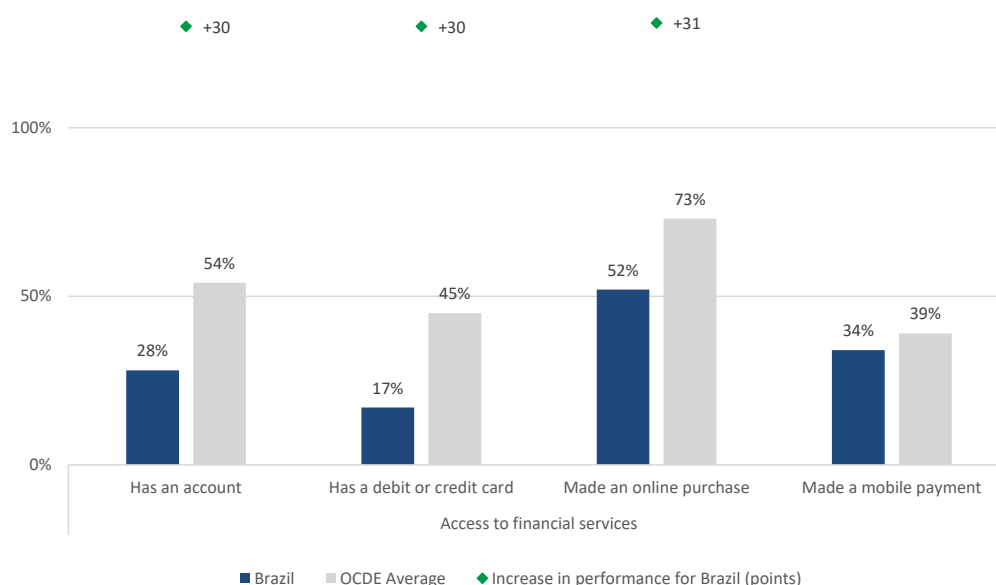
3	19%	- Terms and concepts: comprehend and apply their knowledge of commonly used financial concepts. - Context: apply their knowledge in situations that are relevant to them. - Financial products and documents: can make straightforward interpretations of a wider range of financial documents - Financial decisions: begin to consider the consequences of financial decisions, and they make simple financial plans in common contexts. - Can apply a wider range of basic numerical operations, including percentage calculation, to financial scenarios that are relatively common to them, such as those involved in making budget calculations.
4	8%	- Terms and concepts: apply their knowledge of less common terms and concepts. - Context: apply their knowledge to contexts that will be relevant to them as they move into adulthood, such as bank account management and compound interest. - Financial products and documents: can interpret and evaluate a range of detailed financial documents and explain the functions of less commonly used financial products. - Financial decisions: can take into account longer-term consequences, such as the impact of the duration of the loan on its cost. - Can solve everyday problems in less common financial scenarios.
5	2%	- Terms and concepts: understand a wider range of financial terms and concepts - Context: apply their knowledge to contexts that may only become relevant to their lives later on. - Products and documents: can analyze complex financial products and consider features of financial documents that are significant but unstated or not immediately evident, such as transaction costs. - Financial decisions: can describe the potential outcomes of financial decisions. - Work with a high level of accuracy, solve non-routine problems, and understand the broader financial picture, such as income taxation..

Source: elaborated by the authors based on OECD data, Pisa 2018 report and country score.

Some factors, such as parental participation in the financial education of children and access to financial services (particularly current accounts and payment or debit cards), were positively associated with the performance achieved by students. The Pisa survey also highlighted some aspects of the financial lives of these 15-year-old students in Brazil.

In Brazil, students who reported to maintain an account at a financial institution scored on average thirty points higher on the test. These students accounted for 28% of total respondents in 2018, almost the same proportion as in 2015 (27%). Another factor positively associated with the performance of students was to have a debit card. Seventeen percent of respondents reported owning a card, and the impact on their performance increased by thirty points.

Figure 2.1.6 – Access to financial services and financial literacy (Pisa performance)

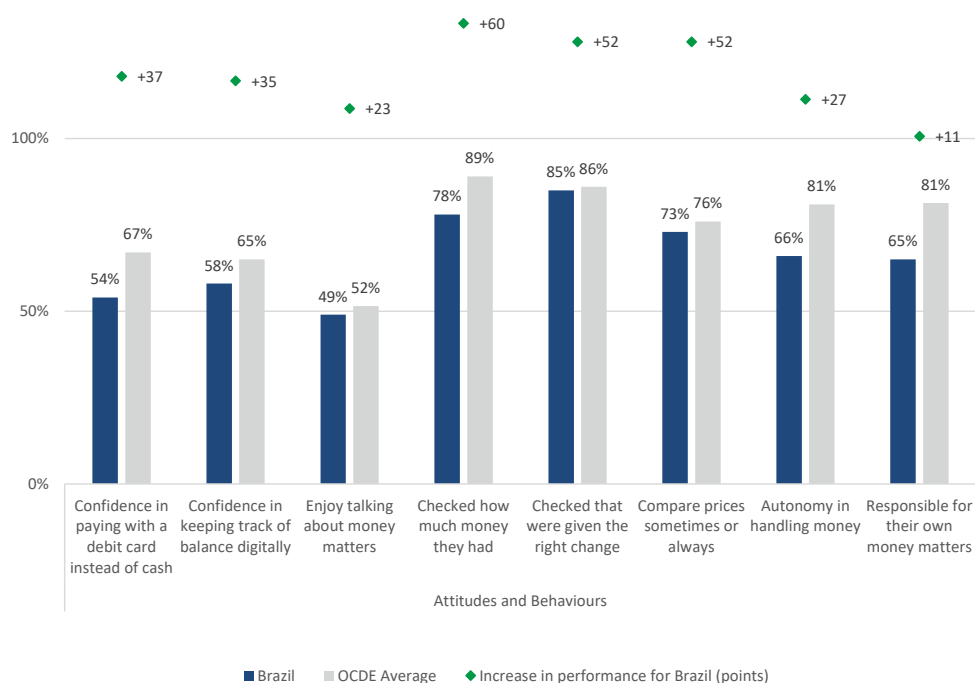


Note: behaviors (for example, making online purchases and checking the change) were reported for the 12 months prior to the test.

Source: OECD, Pisa 2018 Report and country score

In addition to the access to financial services and products, behaviors and attitudes were also associated with better performance: in Brazil, feeling confident to pay with a card rather than cash implied additional 37 points: 54% of students acted like that compared with 67% of the OECD average. Behaviors such as checking the change and the account balance and comparing prices were also associated with a better performance (Figure 2.1.7).

Figure 2.1.7 – Behavior and attitudes and financial literacy (Pisa performance)



Note: behaviors (for example, making online purchases and checking the change) were reported for the 12 months prior to the test.

Source: OECD, Pisa 2018 Report and country score

Getting information about financial issues from parents was associated with additional 36 points in the performance in Brazil, reported by 90% of students. In addition, 81% said they seek financial information on the internet, and 46%, with teachers. As for working with money-related topics at school, 52% of students in Brazil said they encountered this type of contents in math classes, and 35% in other classes, which was associated with an increase of thirteen points in the performance in math and a decline of seventeen points in other classes.

Finally, socioeconomic status (16%) explained the variation in the financial literacy performance of Brazilian students. Young individuals with better socioeconomic conditions scored, on average, 98 points higher on the financial literacy assessment than students in poorer conditions. In the OECD member countries, this difference, on average, was 78 points. The impact of socioeconomic inequality on learning is another challenge to the effort aimed at increasing financial education for young people in the country.

Financial Education in elementary school in Brazil



Financial Education is the process of developing individual skills that contribute to making decisions about the use of money. With financial planning, active savings, and the responsible use of credit, future generations with access to financial education will be better able to manage risks and to seize opportunities.

Today, the level of financial education among young Brazilians is low. The most recent assessment conducted by the Organization for Economic Cooperation and Development (OECD) within the scope of the Program for International Student Assessment (Pisa) reveals that almost half of the young Brazilians tested were classified as financially illiterate. Moreover, a substantial portion of our students have difficulties in Mathematics and Portuguese⁷⁸, two competencies closely related to financial literacy.

The BCB's strategic work agenda has Education as one of its dimensions. By prioritizing Financial Education in the BC# Agenda – a set of broader proposals for the modernization of the SFN – the BCB embraces a movement also followed by other countries and supranational bodies. The most relevant international organization in this field, INFE/OECD,⁷⁹ advocates that financial education 'should start at school. People should be educated about financial matters as early as possible in their lives'.⁸⁰ In this spirit, and seeing

78 https://download.inep.gov.br/educacao_basica/porta_ideb/documentos/2020/Apresentacao_Coletiva_Imprensa_Saeb_2019.pdf.

79 International network for financial education working within the OECD.

80 OECD. Recommendation on Principles and Good Practices for Financial Education and Awareness: Recommendation of the Council. 2005. Available at: <https://www.oecd.org/daf/fin/financial-education/35108560.pdf>. Access on: Apr. 28 2021.

in the National Common Curricular Base (BNCC),⁸¹ approved in 2017, an opportunity to put into practice financial education for children and youth, the BCB created, in 2019, the program **Aprender Valor**,⁸² which seeks to support education secretariats, schools, and teachers in implementing financial education teaching as a cross-cutting topic in the country.

Aprender Valor was designed to transform the relationship that Brazilian children and teenagers have and will have with money, seeking to encourage students to develop their financial skills, so that they can establish a conscious, responsible, and autonomous relationship with their financial resources from childhood on, and, therefore, obtain better quality of life throughout their lives for themselves and their families.

Based on the BCB's concept of Financial Citizenship,⁸³ Aprender Valor has elected the following competencies as priorities: planning the use of financial resources (**PLA**); active saving (**POU**) and credit use management (**CRÉ**).

The program is aimed at children and young people from grade 1 to 9, aged 6 to 15. However, aware that teachers do not always have the necessary knowledge or confidence to promote the financial education of their students, the BCB also considers teachers, school managers, and technicians from the education secretariats to be a direct audience for *Aprender Valor*.

To reach its audiences, the program is developed on three major fronts: (i) training managers and teachers; (ii) making educational resources available for classroom use (in person or remotely); and (iii) performing learning and impact evaluations.

Online training for managers and teachers, including a financial education module

Teachers face countless challenges in their daily professional lives, and it is not easy to insert a new program or a new theme in their class schedule. Preparing and supporting them is fundamental for them to feel secure and comfortable in dealing with the topic with their students. Thus, on the one hand, Aprender Valor offers specific training for teachers, in a light, useful and practical way, bringing benefits also for their personal lives. On the other hand, the program has a training track to guide school managers on how to guide teachers and give them support. Available online, and certified by the Federal University of Juiz de Fora (UFJF), the trainings are composed of:

- a. **managers** – Principals, school coordinators and technicians and managers from the state and municipal education networks are trained in learning management, collaborative work, curriculum management with an emphasis on transversal contemporary themes, and in working with school projects with financial education. The training recognizes the importance of school management in the implementation of public policies and seeks to contribute so that the managers assume the leading role in pedagogical management, beyond the administrative management of their schools; and
- b. **teachers** – They are fundamental partners of the program in the mission of bringing financial education to children and young people. Teachers know the reality of each student, the language best fit to teach, and the examples appropriate to the context and culture of their classes. For them, *Aprender Valor*

81 In December 2017, the Ministry of Education ratified the BNCC. The *BNCC-Base Nacional Comum Curricular* (National Common Curriculum Base) represented a milestone in Brazilian education, as a document that defines the set of essential learning experiences that students must develop throughout Basic Education. It presents teaching guidelines, regulating what are the key learnings for public and private schools, to ensure the right to learning and the full development of all students. Both financial and consumer education are included in the BNCC as Cross-cutting Contemporary Topics that should be a part of the curricula. The explicit inclusion of these topics represented an achievement and an opportunity to develop programs that bring financial education to our children and youth.

82 Learning Value was made possible by the sponsorship of the Fund for the Defense of Diffuse Rights of the Ministry of Justice and Public Safety (FDD/MJ). Further details at <https://aprendervalor.caeddigital.net/>.

83 Financial citizenship is the exercise of rights and duties that enable citizens to well manage their financial resources. For the purposes of this definition, well managing your financial resources means planning the use of your resources, managing the use of credit, and actively saving. https://www.bcb.gov.br/content/cidadaniafinanceira/documentos_cidadania/Informacoes_gerais/conceito_cidadania_financeira.pdf.

has created a training program that approaches financial education in a practical way, dealing with topics that are part of their daily lives. In a lighthearted manner and supported by examples from everyday life, the three thematic pillars of the program (PLA, POU, CRÉ) are explored for teachers to take ownership of what will later be addressed with students and to benefit from the proposed reflections and the content presented.

Provision of Educational Resources – School Projects for classroom application

The school projects of *Aprender Valor* were designed by teachers, for teachers, with simple language and appropriate pedagogical basis. The projects are the central tool of the program, aimed at the classroom, where the teaching-learning process takes place. Their role is to support teachers in the financial education of students, providing quality activities and resources that are easy to use, interesting, and meaningful to students.

The school projects are didactic sequences in which financial education is presented in a transversal way and integrated to Portuguese language, mathematics, and human sciences. Financial education also seeks to contribute to the learning skills of these subjects, by bringing the lessons closer to practical situations in the daily lives of students and their families. Thus, the teacher relies on financial education to give more concrete meaning to the contents as they teach the mandatory curricular components, without it representing an additional workload. The logic of *Aprender Valor* is, therefore, that financial education is developed based on learning the contents of the mandatory curricular components, with reflections, tips, lessons, and questions associated with the PLA-POU-CRÉ tripod, present in a way that underlies the content of the subjects.

Through the activities proposed in the school projects, students will learn about financial planning, priority setting, definition of short-, medium- and long-term goals, spending control, active saving, financial resilience, conscious consumption, and responsible use of credit. Such knowledge can and should be taken home. Thus, children and young people can be an important catalyst for transforming the use of money within their families and communities.

In school projects, socio-emotional skills are also developed:⁸⁴ self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. By working with a more behavioral approach to financial education, *Aprender Valor* believes that socio-emotional skills are fundamental to each person's relationship with their financial resources.

The program offers materials for the nine years of elementary school to teachers in its digital library. Each project was originally conceived for classroom application and has from eight to ten lessons. All the projects present a step-by-step guide for conducting the classes and include as attachments all the necessary files and documents for their application. The projects come ready for classroom use, without, however, limiting teachers' freedom to make the adaptations they deem necessary.

In response to the Covid-19 pandemic, part of the *Aprender Valor* projects was adapted to facilitate the interactions between teachers and students, seeking to offer alternatives for the operation of distance learning, even in a scenario in which an expressive contingent of schools, teachers and students had immense difficulties for remote access. Thus, six school projects⁸⁵ have been adapted for distance learning, with reduced workloads and detailed guidelines for three different modalities of non-face-to-face interaction between teachers and students: synchronous online, asynchronous online, and, in the case of students or schools without Internet access, the distribution of printed material. In addition, the General Guide to Adapted Projects has been made available to teachers to help them adapt other school projects to non-face-to-face formats.

84 The teaching of socio-emotional skills in the *Aprender Valor* Program is based on the Collaborative for Academic, Social, and Emotional Learning (CASEL).

85 Portuguese language and math projects for the 5th, 7th, and 9th grades.

Learning Assessment and Impact Evaluation

An important step in *Aprender Valor* is to conduct learning and impact assessments. Learning assessments in Portuguese language, mathematics and financial literacy will be carried out regularly based on reference matrices and assessment items specific to Brazilian elementary school students.

Aprender Valor has gone through a pilot implementation stage, which, in addition to providing practical experience in the use of the available tools, has produced the first evaluation data, allowing the necessary adjustments for the implementation of the program in the national expansion that begins in the second half of 2021 and should be consolidated in 2022. Finally, the impact evaluation that will be carried out in 2022 will allow us to know the results achieved by the program, to base future decisions about financial education policies in the country's schools.⁸⁶

Management challenges and next steps

Aprender Valor has financial resources from the Fund for the Defense of Diffuse Rights (FDD) of the Ministry of Justice and Public Safety, and it is carried out with the partnership of the UFJF's Center for Public Policy and Education Evaluation (CAEd). Together, the BCB, with its experience in the field of financial education, the FDD, with its financing of projects focused on education and consumption, and CAEd, a reference in the evaluation and implementation of public policies in education, form the tripod that promotes and sustains the program.

The three fronts (training, educational resources, and assessments) deliver content and tools to professionals and students registered in the program through a Management and Monitoring Platform. Engagement and interactive communication with participants throughout the process are indispensable to the success of the program. In this sense, in addition to the Management and Monitoring Platform, several online events and constant communication campaigns via text messages and social media reinforce the engagement of all participants in *Aprender Valor*.

Today, Brazil has about 22 million⁸⁷ students and 1.2 million teachers in public Elementary Education, in more than 100 thousand state and municipal schools. In addition, there are more than five thousand municipalities, in 27 states of the Federation, each with its own organization of education networks.

The continental dimensions of the country and the complexity of its public education network highlight the challenge of bringing the benefits of financial education to children and young people, their families, teachers, and other participants in the school universe. The expansion⁸⁸ of *Aprender Valor* to all public elementary schools will be a huge step towards transforming this reality.

Aprender Valor in numbers

A total of 429 schools were invited to participate in the pilot stage of the program, in six units of the Federation: Ceará, Distrito Federal, Mato Grosso do Sul, Minas Gerais, Pará and Paraná. In total, more than 14 thousand 5th, 7th and 9th grade students took the first evaluation of the program, in financial literacy or Portuguese language and mathematics. More than 1,900 professionals participate in the training offered by the program for managers, teachers, and technicians. Of these, more than a thousand have already completed the trainings, as part of the preparation process for financial education to be taken to the students. Approximately six hundred school projects were applied in elementary school classes, which represents the potential reach of more than ten thousand students during the pilot period alone. The national expansion

86 Some important evidence has already been produced about financial education programs in schools in Brazil and in other countries. See impact assessments conducted in Brazil and Peru, respectively published at <https://publications.iadb.org/en/impact-school-based-financial-education-high-school-students-and-their-teachers-experimental> and <https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-6723>.

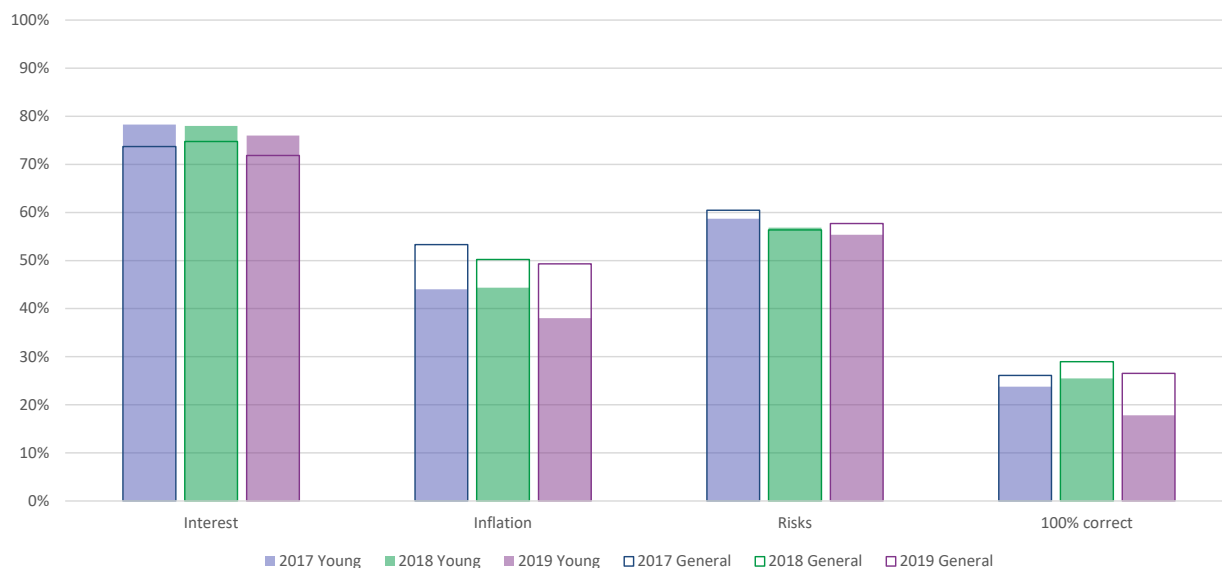
87 Data from the Inep 2020 school census.

88 The National Council of Secretaries of Education (Consed) and the National Union of Municipal Managers of Education (Undime) are BCB's partners in this expansion.

of *Aprender Valor*, which started recently, already includes nearly ten thousand schools, and is present in almost one third of the Brazilian municipalities (about 1,700 municipalities). There are more than 60 thousand education professionals and six hundred thousand students registered in the *Aprender Valor* platform, able to have access to financial education in their schools in this new stage of the program.

In addition to school-age young people, the financial education process of Brazilians that begin a SFN relationship also deserves attention. In an evaluation of the financial knowledge of young individuals⁸⁹ conducted between 2017 and 2019 by Anbima,⁹⁰ less than a third of the respondents answered correctly all three questions on interest rates, inflation, and risk diversification. The performance of young people only exceeded that of the population in general on the question about simple interest.

**Figure 2.1.8 – Percentage of correct answers about financial knowledge –
Young people (16-29) × population in general**



Source: Anbima/Datafolha

89 The 2019 sample comprised 950 young individuals aged between 16 and 29 from classes A, B, and C in the five Brazilian regions.

90 The survey X-Ray of the Brazilian Investor is conducted by Anbima with the support of Datafolha. Further information at https://www.anbima.com.br/en_us/special/x-ray-of-the-brazilian-investor-3rd-edition.htm.

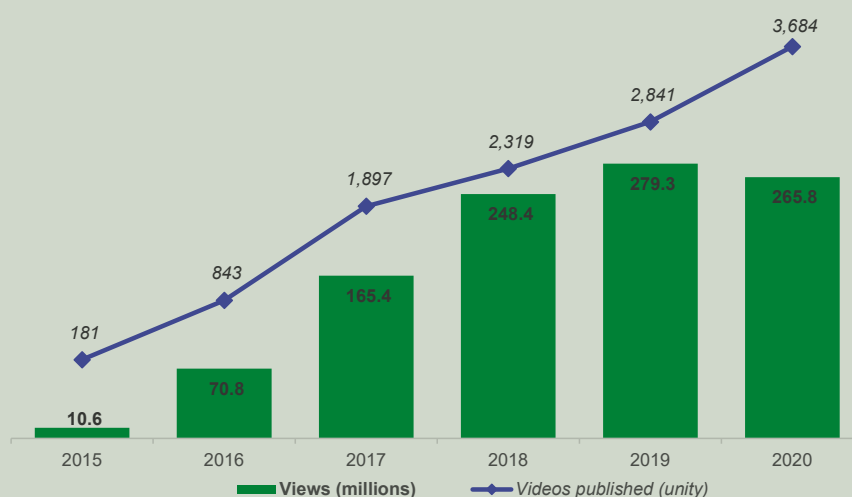
New players in financial education – The multiplication of personal finance influencers

Searching for information on the Internet is a growing habit. According to data from the 2018 OECD/Pisa test,⁹¹ focused on 15-year-olds, 81% of Brazilian students said they search for information about money on the Internet. The Febraban Observatory Survey⁹² conducted in September 2020 captured that the habit of following digital influencers is more present among 16- to 24-year-olds than any other age group: 65% said they follow some influencer, versus 44% of the total population. Among these young people, 58% said they use products and services based on information conveyed by influencers.

In the financial education area, it is no different. In recent years, several personal finance channels have appeared on video platforms such as YouTube. From the following analysis of the content of 25 personal finance channels, among the most popular on this platform,⁹³ one intends to understand what is offered by digital influencers and which is the audience interest in the topics covered.

The period of analysis chosen covers the years 2015 to 2020. In the first year of the series, only nine of the 25 channels were already active, a number that doubled the following year to 18 channels. The most recent channel among those analyzed appeared in 2019. The total number of videos published annually on personal finance has grown more than a twentyfold. This trend seems in line with the audience interest. In 2020, there were more than 265 million views, up from just over ten million five years before (Figure 1).

Figure 1 – Evolution of videos about personal finance – Views and publications



Note: Data for the top 25 channels in total number of views.

Source: YouTube

91 A detailed analysis of the participation of Brazilian students is described in Pisa 2018- Latam Country Note published by the OECD at: https://www.oecd.org/pisa/publications/PISA2018_VolIV_LATAMcountrynote.pdf.

92 The Febraban Observatory Survey, Brazil Online, heard a sample of 3,000 respondents, aged 16 or older, who access the Internet, considering gender, age, and location quotas, with an error of 1.8 p.p. and 95.5% confidence. Available at: https://cmsportal.febraban.org.br/Arquivos/documentos/PDF/200926_iD_%20OBSERVAT%C3%93RIO%20FEBRABAN%20IV_%20SETEMBRO%202020%20%23BRASILONLINE_final.pdf.

93 For the selection of the channels, a search was conducted with the keywords “personal finance” and “financial education”, selecting those with the highest total number of views between 2015 and 2020.

Some analysis on the content of the videos is possible based on automatically generated audio transcripts⁹⁴. The word cloud shown in Figure 2 shows the main words used in the analyzed videos in Portuguese. A first analysis allows the identification of words most used by influencers in the content they produce, so that the higher the font of the word in the figure, the greater the frequency with which it appears in the videos.

Figure 2 – Main words of the analyzed videos (in Portuguese)



Source: YouTube – BCB elaboration

To analyze what topics are covered by digital influencers, a machine learning-based text mining technique⁹⁵ was used: probabilistic topic modeling. By this technique, the words from a set of text transcripts (documents) are separated into groups, called topics,⁹⁶ and the probability of each topic occurring in each document is calculated by the model algorithm.⁹⁷

Table 1 shows the top words for each topic generated in a 35-topic model. After the topics were created by the algorithm, the words were analyzed, and a theme related to personal finance was assigned by the researcher to each of the topics. The choice of theme was made subjectively, based on the analysis of the main words of each topic. Topics for which a predominant theme could not be identified were labeled with the theme "Undefined" (most often these are slang or jargon used by youtubers).

94 An interesting aspect of YouTube is that the platform makes available in its videos the automatically generated audio transcripts, using ASR (automatic speech recognition) technology. Improvements implemented in ASR algorithms in recent years have allowed for a 50% increase in the accuracy of transcripts, approaching the error level of human-made transcripts. Further details on One Billion Captioned Videos. *Official YouTube Blog*. 16 Feb. 2017. Available at: <https://youtube.googleblog.com/2017/02/one-billion-captioned-videos.html>.

95 Text mining is the process of extracting and analyzing relevant information from a set of textual documents.

96 The number of topics was chosen by the researcher, who tested models with 25, 35 and 50 topics. Several topics can be grouped into a single theme, and it was up to the researcher to perform the aggregation based on the analysis of the main words of each topic.

97 For a more detailed approach to the methodology used, see: MOTA, Daniel Castro. Financial education on YouTube: a machine learning-based content analysis with topic models. 2019. Available at: <http://repositorio.ufba.br/ri/handle/ri/30817>.

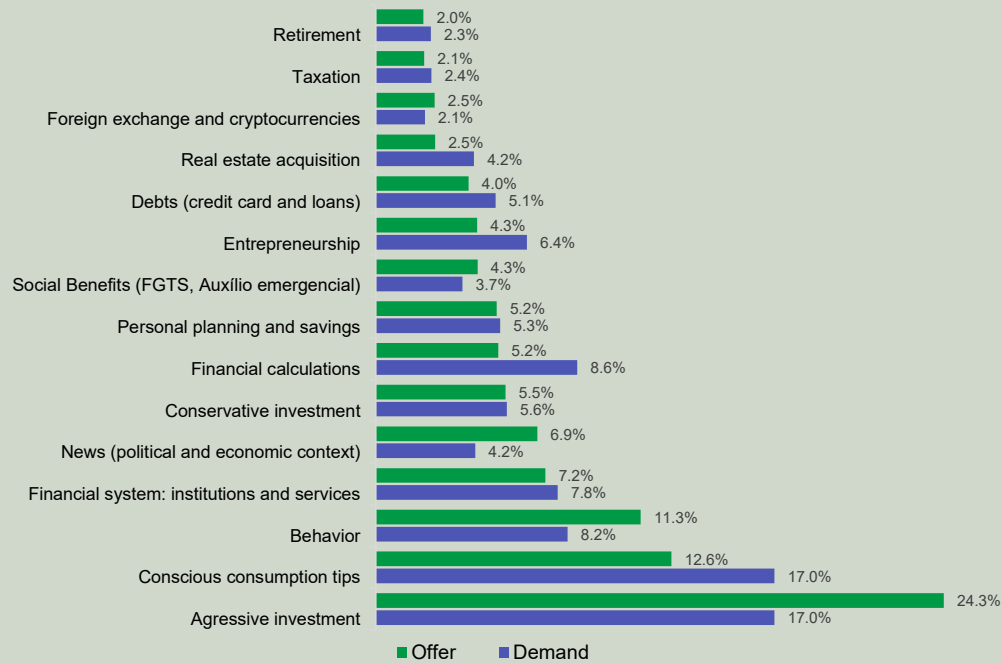
Table 1 – Main words of each topic and associated theme

Theme (in Portuguese)	Theme (translation)	Words (in portuguese)
Aposentadoria	Retirement	previdência, privada, pgbl, aposentar, inss, seguro, vgbl
Aquisição de imóveis	Real estate acquisition	imóvel, aluguel, alugar, apartamento, primo, bruno, terreno
Benefícios (FGTS, Auxílio Emergencial)	Social Benefits (FGTS, Auxílio emergencial)	fgts, emergencial, auxílio, aniversário, calendário, kleber, sacar
Cálculos financeiros	Financial calculations	real, mil, centavo, milhão, mês, simulação, planilha
Câmbio e criptomoedas	Foreign exchange and cryptocurrencies	bitcoin, moeda, dólar, unidos, ouro, americano, estados
Comportamento	Behavior	criança, educação, sonho, filho, pai, reinaldo, família
Comportamento	Behavior	riqueza, mentalidade, hábito, prosperidade, liberdade, sucesso, pensamento
Dicas de consumo consciente	Conscious consumption tips	organizar, desafiar, maravilhoso, realizar, minimalista, minimalismo, simplicidade
Dicas de consumo consciente	Conscious consumption tips	carro, economizar, promoção, friday, viagem, supermercado, viajar
Dicas de consumo consciente	Conscious consumption tips	cozinhar, lavar, comida, cachorro, água, banhar, maquiagem
Dívidas (cartão de crédito e empréstimos)	Debts (credit card and loans)	cartão, fatura, checar, dívida, crédito, consórcio, milha
Empreendedorismo	Entrepreneurship	empreendedor, empreender, marketing, empreendedorismo, faculdade, negócio, cliente
Investimento conservador	Conservative investment	título, tesouro, selic, cdi, cdb, vencimento, poupança
Investimento de risco	Agressive investment	investir, corretora, fixa, perfil, conservador, aplicação, variável
Investimento de risco	Agressive investment	setor, indicador, trimestre, líquido, margem, setores, crescimento
Investimento de risco	Agressive investment	clube, ramiro, estratégia, alocação, classe, ativos, gomes
Investimento de risco	Agressive investment	ações, ação, dividendo, etf, bolsa, acionista, negociada
Investimento de risco	Agressive investment	fundo, imobiliário, cotar, cotista, gestor, mobiliário, multimercado
Investimento de risco	Agressive investment	trade, operar, day, gráfico, tendência, stop, comprador
Investimento de risco	Agressive investment	companhia, leitura, visão, abordagem, circulante, buffet, premissa
Notícias (contexto político e econômico)	News (political and economic context)	crise, varejo, coronavírus, queda, magazine, luiza, pandemia
Notícias (contexto político e econômico)	News (political and economic context)	político, eleição, candidato, inflação, economia, pib, lula
Planejamento pessoal e poupança	Personal planning and savings	reservar, emergência, independência, poupar, orçamento, gastar, viver
Sistema financeiro: instituições e serviços	Financial system: institutions and services	cadastrar, transferência, aplicativo, pics, senha, boleto, transferir
Sistema financeiro: instituições e serviços	Financial system: institutions and services	banco, inter, fgc, instituição, garantidor, central, nubank
Tributação	Taxation	declarar, imposto, subscrição, tributar, tributação, mei, impostos
Indefinido	Undefined	grana, dinheiro, rico, cometer, errar, amigo, erro
Indefinido	Undefined	andré, bona, pactual, btg, beleza, blog, acumulação
Indefinido	Undefined	anderson, excelência, aluno, professor, bolso, gonçalves, marcação
Indefinido	Undefined	menino, nati, nat, natália, jobs, mulher, obrigada
Indefinido	Undefined	livro, ler, leitura, patricia, blindada, blog, inglês
Indefinido	Undefined	escolhas, inteligência, gustavo, cerbasi, consultor, recurso, automóvel
Indefinido	Undefined	cara, ó, tava, galera, botar, ah, bota
Indefinido	Undefined	bilionário, fabricação, telegram, camiseta, bora, tamo, porrada
Indefinido	Undefined	pergunta, responder, chat, noite, curso, youtube, módulo

In topic modeling, a probability of occurrence is assigned to each of the identified topics for each document analyzed. Aggregating the probabilities of each topic across all documents results in the frequency with which each topic appears in the set of videos analyzed. In addition, the aggregation of the frequencies of topics of the same theme presents us with the frequency in which the themes are addressed. This frequency can be used as a rough measure of the supply of financial education content on YouTube.

To measure the demand for content, in turn, simply weight the number of views of each video by the frequency of occurrence of the themes. Thus, we can understand what content is being covered more within the videos by the influencers and whether this content is associated with higher or lower demand by people. In general, supply and demand are aligned for most themes, with a few exceptions (Figure 3).

Figure 3 – Supply and demand for personal finance topics



Source: calculated based on YouTube data

Aggressive investments is the most offered topic by influencers (24.3%). These are videos about the stock market, the performance of listed companies, real estate funds, and tips on strategies for operating in the financial market. Although it is a topic with plenty of content available, it attracts proportionally less attention from users. The videos that deal with behavior and news also have this characteristic.

The second most offered theme is conscious consumption (12.6%), with tips for saving money on purchases, taking advantage of promotions, and spending less daily. These videos attract proportionally more views, as do the topics of financial calculations and entrepreneurship.

It seems that themes related to the short term, that is, topics more connected to people's day-to-day needs ("How do I spend less?", "How do I calculate an installment?", "How to open a business?"), attract more views and are simpler to explain. Therefore, they have proportionally higher popularity. They are "conscious consumption tips" (17%), "financial calculations" (8.6%), "behavior" (8.2%), and "financial system: institutions and services" (7.8%). Another theme that shares the first place with conscious consumption by demand is "aggressive investment" (17%), which may also be related to this short-term profile and the desire to obtain higher returns quickly.

Topics that are more focused on complex, long-term issues ("How does this investment work?", "Where to invest?", "How does the political scenario affect my investments?", "How do I change my behavior regarding money?"), besides being less popular, require more video time to be analyzed and explained to the ordinary public. Topics such as retirement (2.3%), personal planning and saving (5.3%), conservative investing (5.6%), and news (4.3%) have lower demand rates. In addition, topics of greater complexity also attract fewer views, as is the case with foreign exchange and cryptocurrencies (2.1%), and taxation (2.4%).

Given the reality of high social inequality of the Brazilian economy, where many depend on social security and state assistance, it is natural that short-term concerns and more basic knowledge issues dominate the agenda. In any case, it is possible to see that personal finance influencers deal with a diversity of topics in their videos, increasing the presence of this subject in the daily life of the Brazilian population.

» Credit, savings, and investments

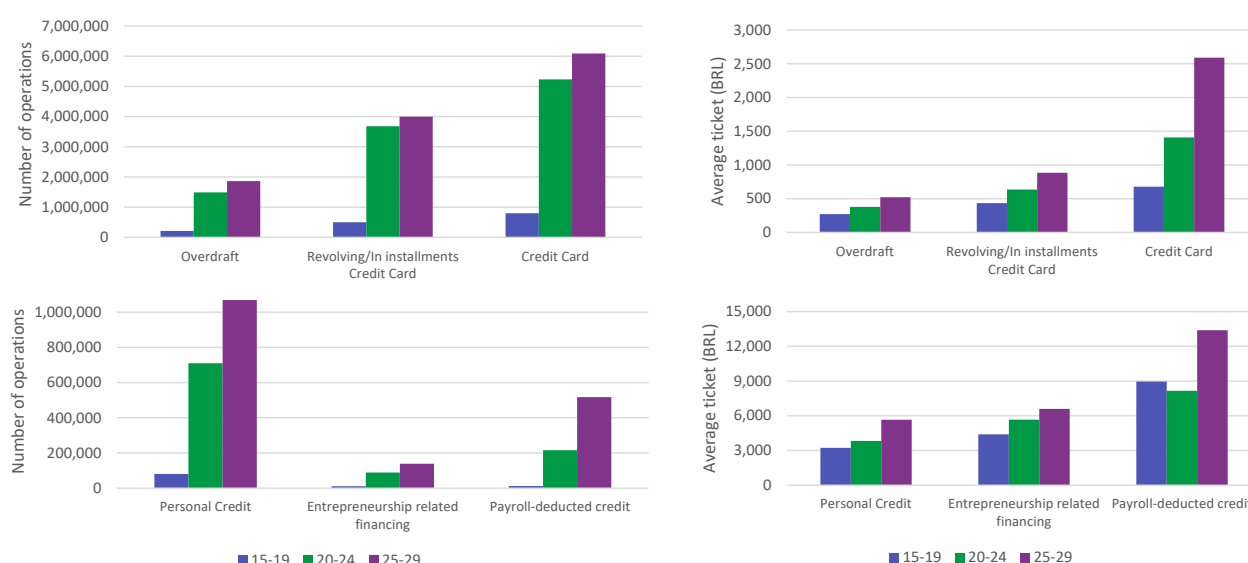
#inclusion #use

Considering data from 2020, young citizens maintain an average of four SFN relationships, and 41% of them also have some type of outstanding credit operation, with an average of two operations.

Credit cards continue to be the most used credit type among young people

Credit card, the credit type most used among young people, represents 38% of operations and 13% of the outstanding portfolio of this public. Credit card operations with the charge of interest (including installments, withdrawals, and revolving credit) represent more than 26% of total operations. For all credit types, the average tickets grow with age, with the only exception being payroll-deducted loans.

Figure 2.1.9 – Use of credit types by young people: number of operations with low average tickets

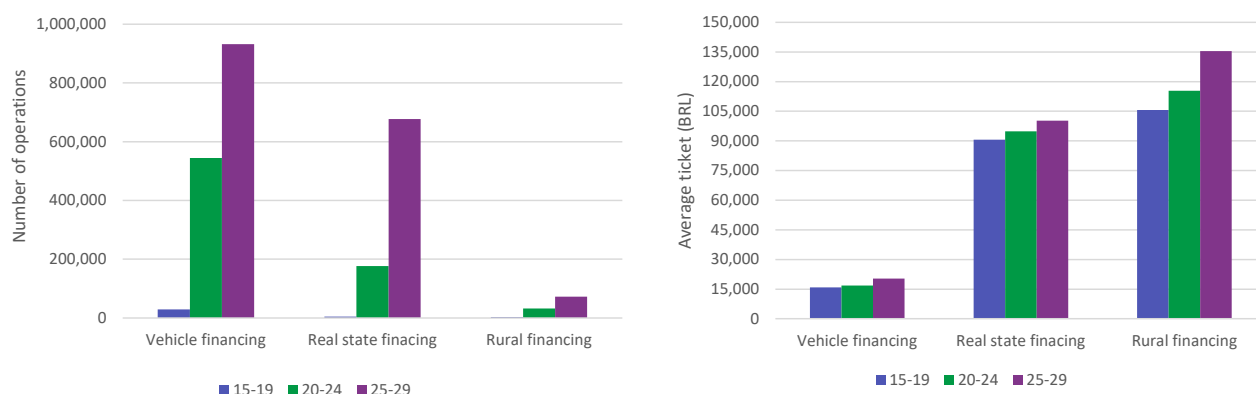


Source: BCB

Another three credit types with higher average ticket values⁹⁸ account for 8% of credit operations of young people: vehicle financing, real estate financing, and rural credit (Figure 2.1.10). In 2020, young individuals contracted almost one and a half million vehicle financing operations and 860,000 real estate financing operations. They represented the main amounts of credit types contracted by young people, accounting for 46% and 15% of their outstanding portfolio, respectively. Rural credit, despite having the highest average ticket, registered a very small number of operations (0.4% of the total).

⁹⁸ Operations with higher average tickets were those beginning at BRL 15,000.00.

Figure 2.1.10 – Use of credit types by young people: number of operations with high average tickets

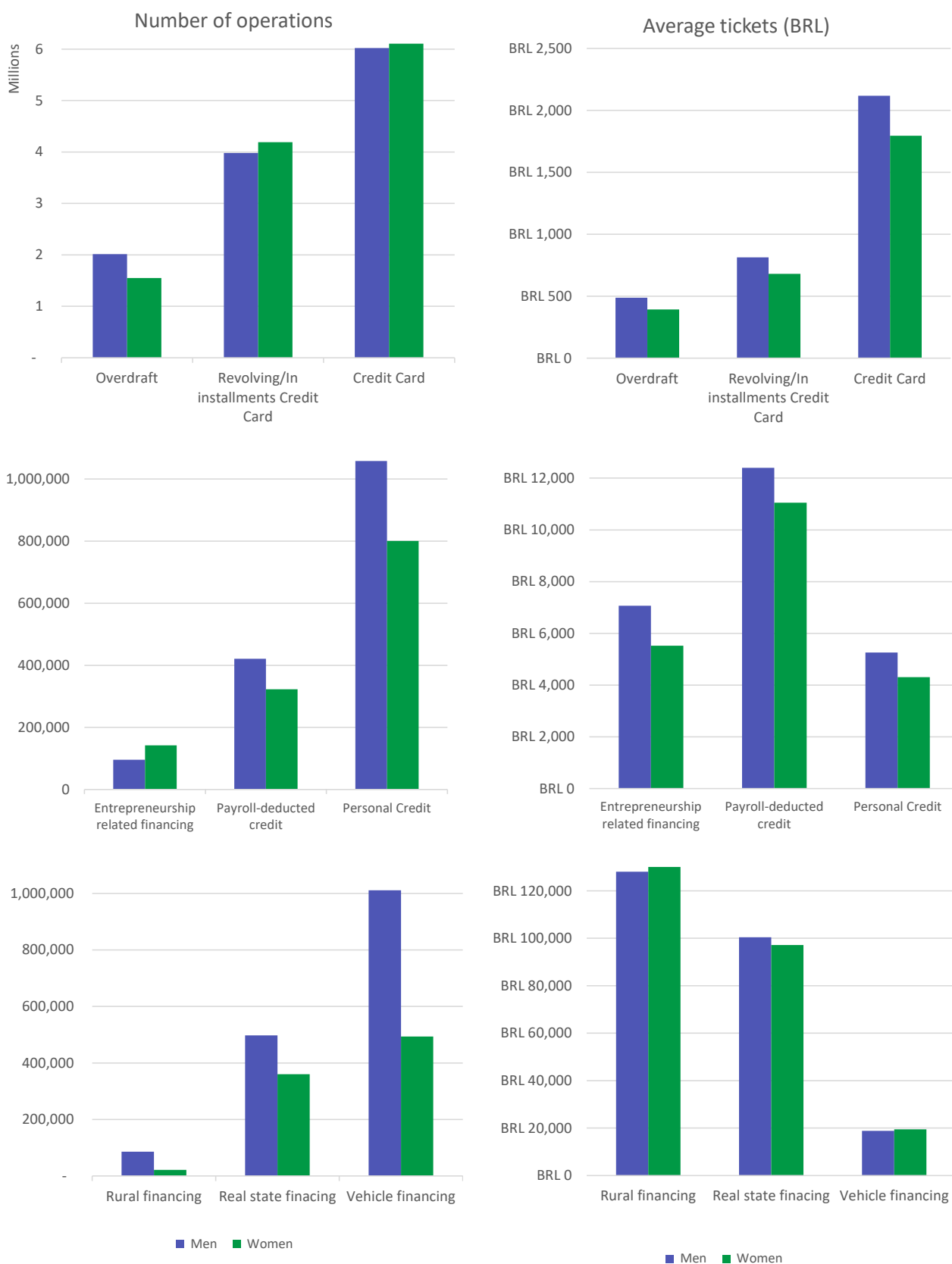


Source: BCB

In youth, men use credit in a more diversified way than women

In general, the number of operations is equally distributed among young men and women. However, the analysis by credit types indicates that men use credit in a more diversified way: they account for most operations in all credit types, except credit card and credit for entrepreneurship. Young men account for 60% of the non-payroll-deducted personal loans and real estate financing operations, 70% of the vehicle financing, and 80% of the rural credit. Young women account for the largest number of operations with credit card (53%) and represent 60% of the operations related to entrepreneurship. For all credit types, men have higher average tickets than women (Figure 2.1.11), except vehicle financing and rural credit.

Figure 2.1.11 – Different credit types used by men and women



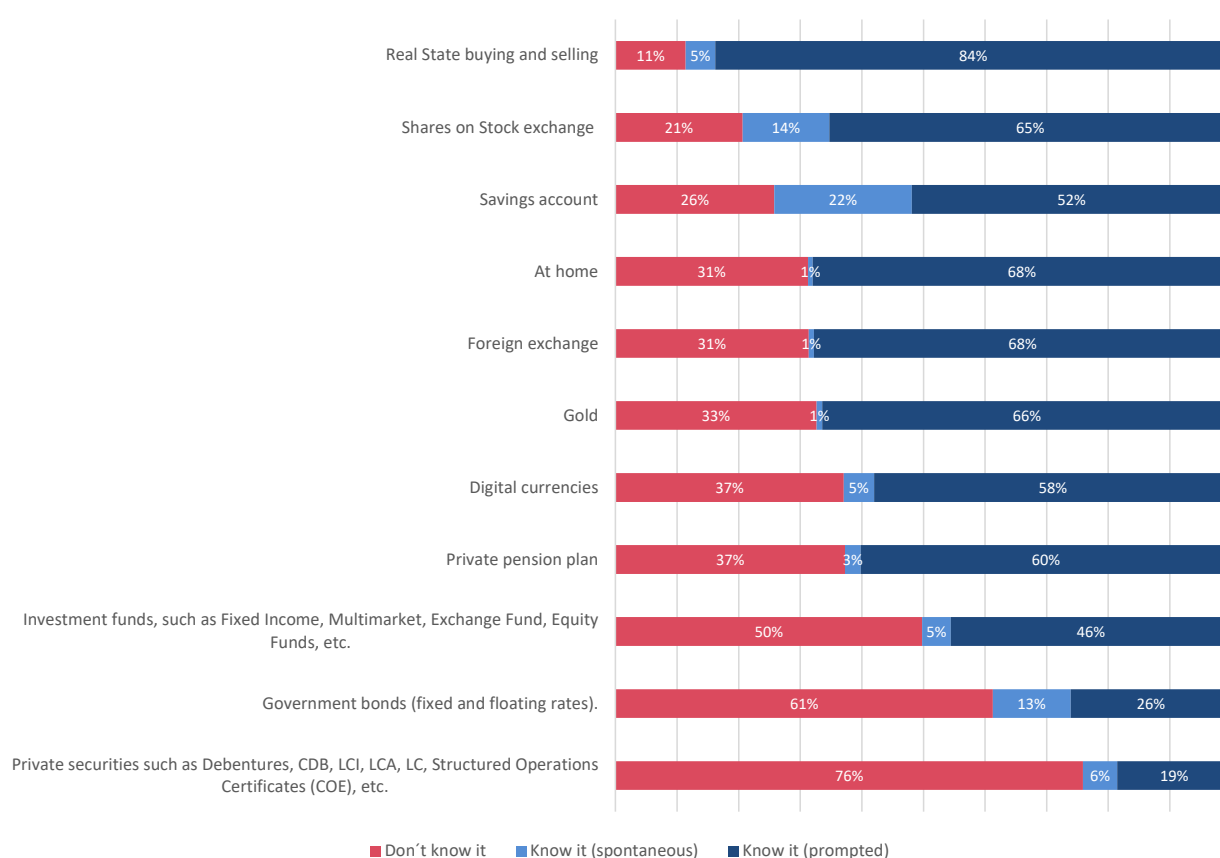
Source: BCB

Savings and investments are a fundamental part of the financial lives of young people

In addition to credit operations, savings and investment products should also be an important part of the financial lives of citizens in their youth. According to data published by Anbima for November 2019, 32% of the young individuals in the sample were considered investors.⁹⁹ Among the 68% who were not investors, 45% saved money, but they did not use financial products to do so; they saved at home, for example. As for the products they sought, 30% of young people used the savings accounts, while the use of other investment products varied between 1% and 3% among the young individuals surveyed. It is worth noting that the sample includes only people with some source of income, excluding young individuals from classes D and E.

Savings, stock market shares, and foreign currencies were the most well-known financial products among young people (Figure 2.1.12). Still, 26% of respondents could not tell what a savings account is, and 31% what foreign currencies are. In relation to stock market shares, four out of five young individuals in Brazil know this product, and 89% of the young individuals recognize buying and selling real estate as a form of investment.

Figure 2.1.12 – Familiarity of young people (16-29 years old) with savings and investment instruments



Source: Anbima/Datafolha

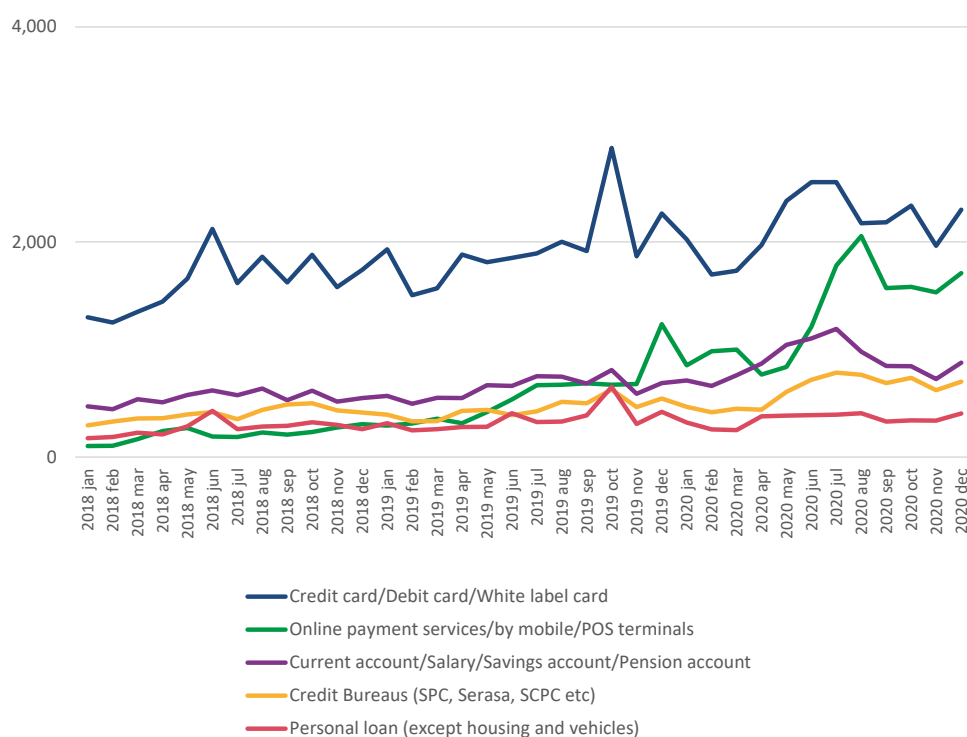
⁹⁹ X-Ray of the Brazilian Investor, 3rd edition, conducted by Anbima with the support of Datafolha. The classification of investors was made based on the response to the item: "Did you make any type of investment in 2019?".

» The profile of youth complaints

#protection

Between 2018 and 2020, young Brazilians registered almost 185,000 complaints about financial services on the Consumidor.gov.br platform, representing 25% of the total. The relationship profile and the use of financial services is reflected in the complaints registered. Credit and debit cards are the main subject of complaints, followed by issues related to current accounts, salary, or savings accounts. Online payment services, via mobile phones or POS have grown rapidly among complaints from young people, especially in 2020. This type of service is among those with the highest number of complaints for this age group.

Figure 2.1.13 – Youth complaints about financial services: five services with most of complaints on Consumidor.gov.br



Note: including complaints by young people up to 30 years old.

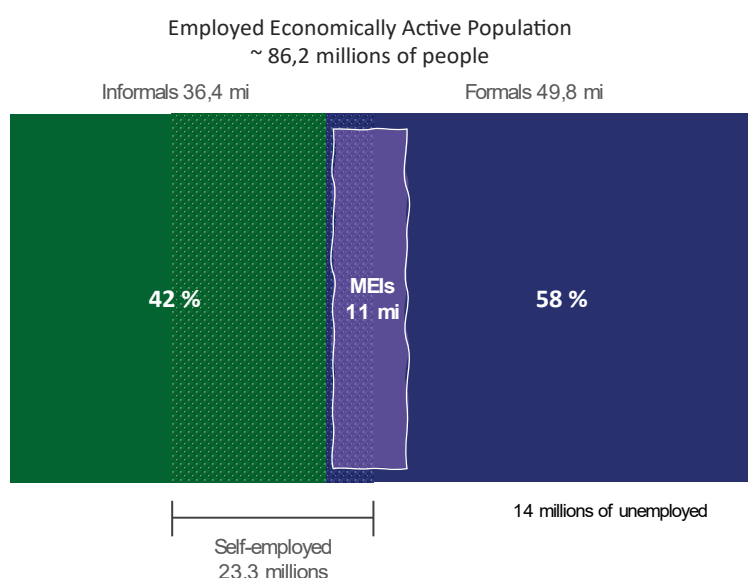
Source: Consumidor.gov

2.2 Individual Micro-entrepreneurs

The Individual Micro-entrepreneur (MEI) legal entity was created by Complementary Law 128, of December 19, 2008.¹⁰⁰ Since then, the number of MEIs has grown consistently. In December 2020, they represented about 56% of the companies in the country, with more than eleven million registrations.¹⁰¹ According to data from the Entrepreneur Portal¹⁰² and the Brazilian Quarterly Continuous National Household Sample Survey (PNADC/T),¹⁰³ MEIs represented about 11% of the Brazilian economically active population (EAP) and 12.87% of the employed EAP in 2020 quarter trimester. Below is presented the participation of MEIs in the employed EAP (Figure 2.2.1), and the distribution of MEIs throughout the country considering the EAP as reference (Figure 2.2.2), showing its greater concentration in the Southern and Southeastern regions.

The analysis of the behavior of MEI in the financial system should also include individuals linked to the Corporate Taxpayer Register Numbers (CNPJ) because, in small businesses, it is common for the individual to overlap with the legal entity in its relationship with the financial system. This is evident in the MEIs case since these legal entities are composed of one person or, at most, two (the entrepreneur and an employee). In 2017, the BCB carried out a survey with the publication of the *Panorama do Crédito Concedido a Microempreendedores Individuais* (Outlook of Credit Granted to Individual Micro-entrepreneurs).¹⁰⁴ This Report intends to continue that analysis.

Figure 2.2.1 – Number of MEIs in relation to the employed EAP



Note: data from PNADC/T 2020Q4 and *Portal do Empreendedor*.

Source: IBGE

100 MEI is a self-employed person who is recognized by law as a small businessman (according to Complementary Law 139, of November 10, 2011). The MEI can earn a maximum of BRL 81,000 per year, according to Complementary Law 155, of October 27, 2016. MEI cannot participate in another company as a partner or owner and can have only one hired employee, who must receive the category's wage or the national minimum wage.

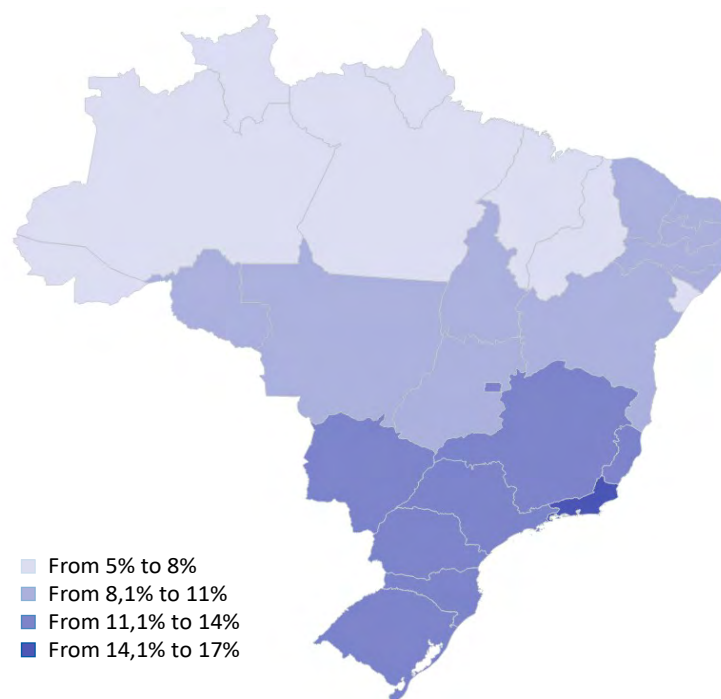
101 *Mapa das empresas – Boletim do 3º quadrimestre/2020*. Available at (Portuguese only): <https://www.gov.br/governodigital/pt-br/mapa-de-empresas/boletins/mapa-de-empresas-boletim-do-3o-quadrimestre-de-2020.pdf>.

102 *Portal do Empreendedor* (The Entrepreneur Portal) is a federal government website with guidelines and statistics concerning MEIs. Available at (Portuguese only): <https://www.gov.br/empresas-e-negocios/pt-br/empreendedor>.

103 PNAD Contínua is a sample survey conducted by IBGE that produces indicators to monitor quarterly fluctuations and the evolution, in the medium and long term, of the workforce, as well as other information required for the study and for the country's socioeconomic development. Available at (Portuguese only): <https://sidra.ibge.gov.br/pesquisa/pnadct/tabelas>.

104 *Panorama de Crédito Concedido a Microempreendedores Individuais* (2017). *Série Cidadania Financeira – Estudos sobre Educação, Proteção e Inclusão*. Available at (Portuguese only): https://www.bcb.gov.br/content/cidadaniafinanceira/documentos_cidadania/serie_cidadania/serie_cidadania_financeira_4_credito_concedido_mei.pdf.

Figure 2.2.2 – Map of the percentage of MEIs in relation to the EAP by Federation Unit



Note: data from the Brazilian Federal Revenue Board and PNADC/T 2020Q4.

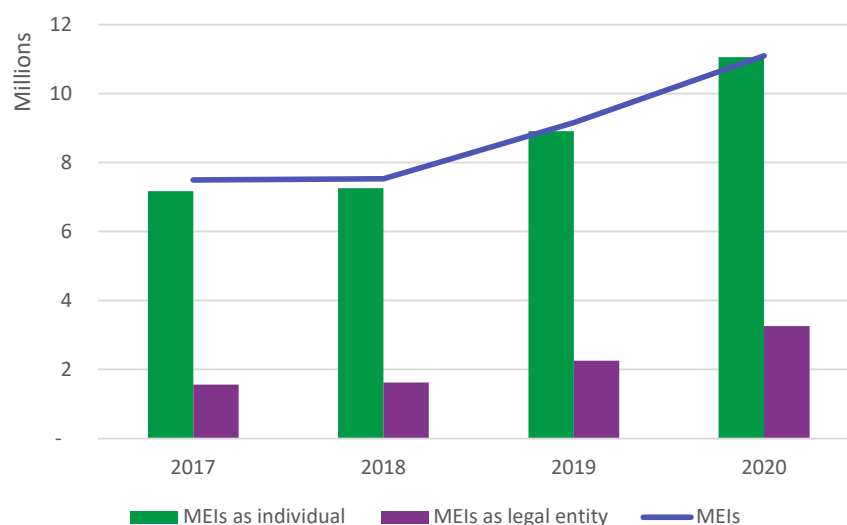
Source: RFB/IBGE

» Relationship of MEIs with the SFN

#inclusion #access

MEIs maintain relationships with the SFN primarily as individuals (via personal accounts). By the end of 2020, the number of relationships as individuals was 4.6 times greater than relationships as companies (Figure 2.2.3). However, these entrepreneurs are increasingly seeking to establish relationships with the SFN as legal entities: the percentage of relationships as legal entities grew from 21%, in 2017, to 29% in 2020.

Figure 2.2.3 – Number of MEIs with SFN relationship



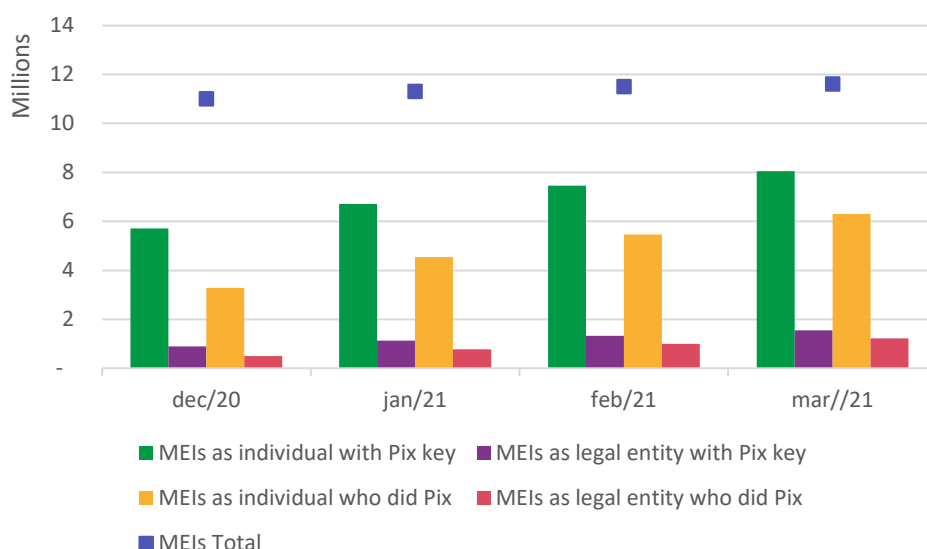
Source: BCB

» MEI and Pix

#inclusion #use

The intensive use of Pix right after its implementation indicates that the Brazilian population, in general, has been receptive to this new means of payment, with a rapid adoption also among individual micro-entrepreneurs (Figure 2.2.4).

Figure 2.2.4 – Use of Pix by MEIs



Source: BCB

Figures indicate that MEIs have quickly benefited from the Pix's advantages. In March 2021, almost 70% of these entrepreneurs had a registered Pix key as individuals (through their personal accounts), totaling 128.1 million transactions. The registration of Pix keys as legal entities is still low if compared with the registration of keys as individuals, although already reaching 48% of all MEIs at that time. Table 2.2.1 shows that the number of Pix transactions increased significantly in the first months after its implementation, with the average number of keys remaining constant:

Table 2.2.1 – Adoption of Pix among MEIs

Date	Average of Pix keys by MEIs as individual	Average of Pix transactions by MEIs as individual	Average of Pix keys by MEIs as legal entity	Average of Pix transactions by MEIs as legal entity
Dec 2020	2.7	5.5	1.9	4.6
Jan 2021	2.8	6.3	1.9	4.7
Feb 2021	2.9	7.2	1.9	5.1
Mar 2021	3.1	8.7	1.9	6.1

Source: BCB

» Credit outlook for MEIs

#inclusion #use #quality

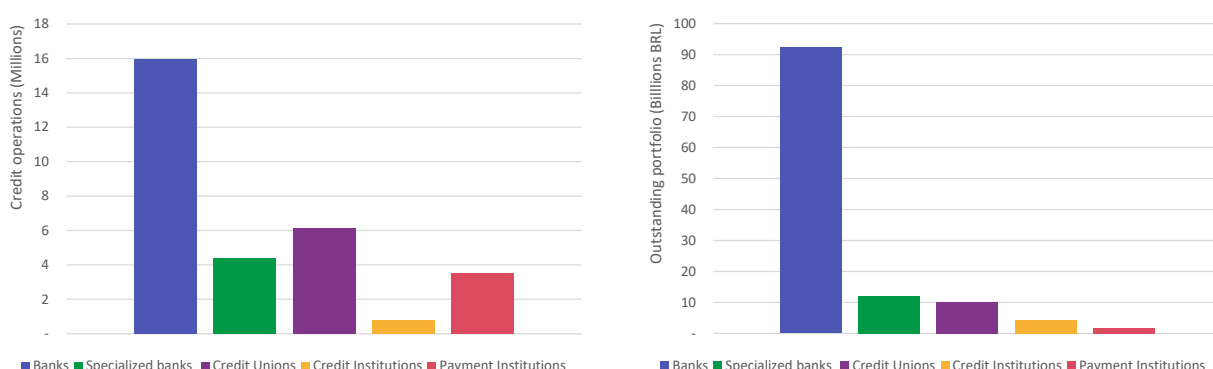
The analysis of the use of credit by MEIs was carried out by type of institution, type of credit, and the origin of resources, always in terms of individuals and legal entities.

Credit Unions has strengthened as one of the main MEI credit sources

The first analysis, by type of institution, considers the number of operations and the total balance of the outstanding portfolio existing in each segment at the end of 2020 (Figures 2.2.5 and 2.2.6). Regarding the number of operations, banks are the main segment used for credit grant: for individuals, banks hold account for nearly 52% of operations and 77% of the outstanding portfolio; for legal entities, this picture is inverted, with banks holding around 70% of operations and 56% of the outstanding portfolio. Considering other financial and payment institutions, if, on the one hand, as legal entities, most of MEIs credit operations are carried out with credit unions, on the other hand, as individuals, most MEIs credit operations are carried out with specialized banks, credit institutions, and payment institutions (IPs).¹⁰⁵

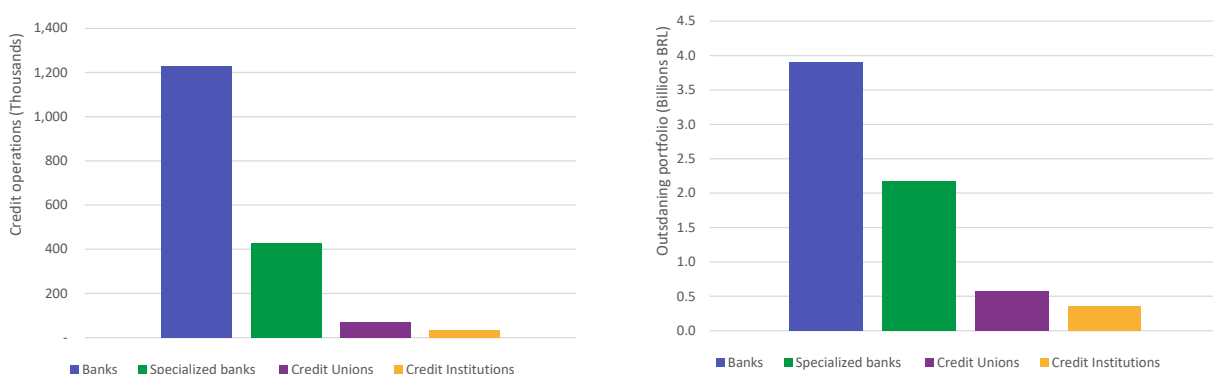
Regarding the outstanding portfolio of MEIs as legal entities, it is noteworthy that credit unions more than doubled their share in the total credit volume, from 14.5% in 2016 to 31% in 2020. When determining how much of the outstanding portfolio of each segment is earmarked to MEIs as legal entities, credit unions are also the main type of institution, with 2.23% of their entire portfolio channeled to them.

Figure 2.2.5 – Credit operations and outstanding portfolio by segment to MEIs as individuals in 2020



Source: BCB

Figure 2.2.6 – Credit operations and outstanding portfolio by segment to MEIs as legal entity in 2020



Source: BCB

Credit card as the most used credit type by MEIs as both individuals and legal entities

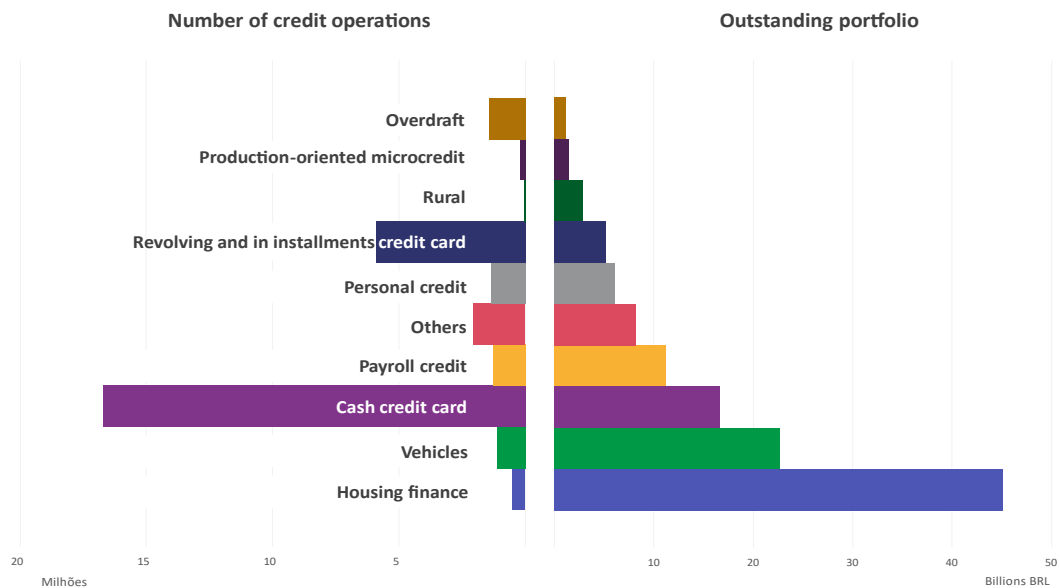
The second approach considers the most used credit types by MEIs. Analyzing the number of operations for MEIs as individuals (by use of their personal credit cards), credit card stands out in its three types: cash, revolving and in installments, representing 74% of total operations (Figure 2.2.7).

¹⁰⁵ IPs are not qualified to offer credit, but in this Report the analysis considers financial conglomerates. Thus, some IPs are conglomerate leaders and offer credit from financial institutions belonging to their conglomerates.

As for MEI as legal entities, credit card also stands out in the number of operations (Figure 2.2.8). However, considering MEI as individuals the concentration in this type of credit is even higher. Working capital with a maturity over 365 days, in turn, was the type of credit with the largest outstanding portfolio balance (BRL 2.3 billion), which is consistent with the entrepreneurial activity of borrowers. Revolving and in installment credit cards are also among the most used credit types, besides overdraft facility.

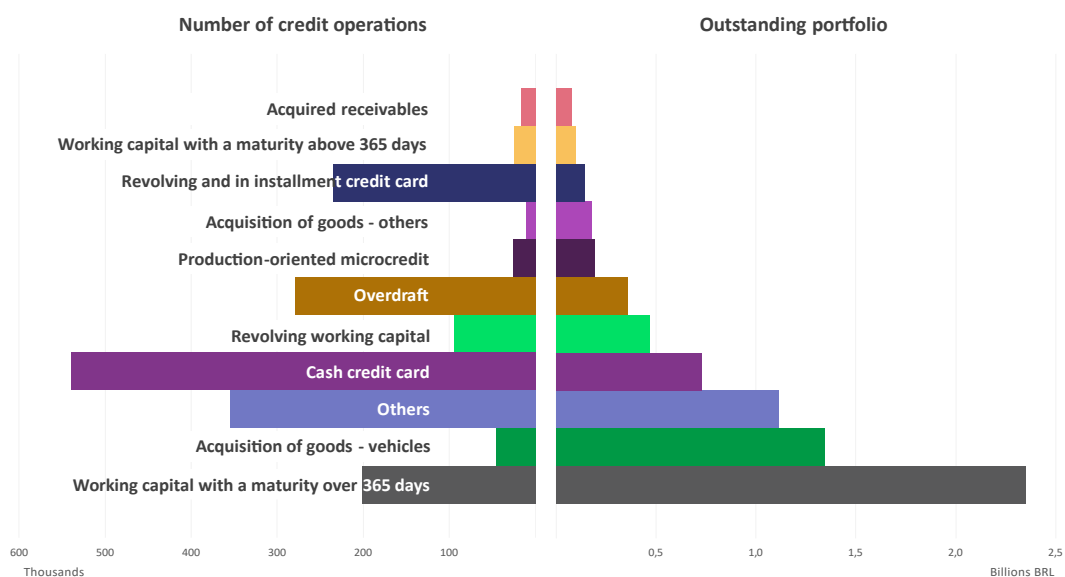
Since credit cards related credit types are widely used by all MEIs, it is worth highlighting the difference between the average interest rates effectively charged in 2020 by MEI as individuals and MEI as legal entities. The difference is 78% per year for the revolving credit card and 55% per year for credit card in installments. In both types, the interest rate paid by MEI as legal entities was lower.

Figure 2.2.7 – Number of credit operations and outstanding portfolio by type – individual MEI in 2020



Source: BCB

Figure 2.2.8 – Number of credit operations and outstanding portfolio by type – corporate MEI in 2020



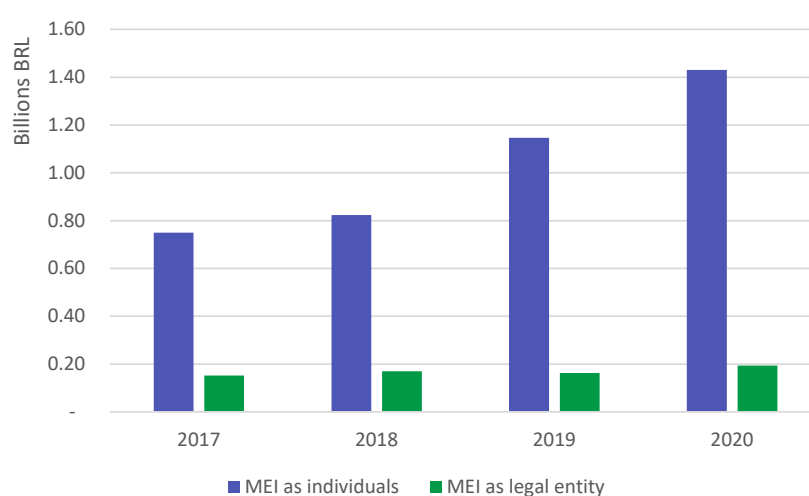
Source: BCB

MEI is increasingly accessing entrepreneurial credit lines, thus reducing the cost of credit

Regarding the evolution of the outstanding portfolio composition aimed at these entrepreneurs, there is no significant change in the use of credit types between 2017 and 2020 in credit for MEI as individuals. However, as for MEI as legal entities, credit balances increased for both working capital with a maturity above 365 days (from 21.6% to 33% of the total outstanding portfolio) and working capital with a revolving ceiling (from 1.3% to 6.6% of the total outstanding portfolio), indicating that MEIs have shown greater interest in credit lines aimed at entrepreneurship.

Another type of credit that deserves attention is that related to production-oriented microcredit, with portfolio expansion of 91% by MEIs as individuals and 27% by MEIs as legal entities from 2017 to 2020 (Figure 2.2.9). Moreover, a recent normative change, regulated by CMN Resolution 4,854, of September 24, 2020, removed the need for any in-person visit by the agent of the financial institution to the borrower's economic activity site. This may further impact the use of this type of credit by MEIs.

Figure 2.2.9 – Outstanding portfolio evolution of the Production-oriented Microcredit for MEIs



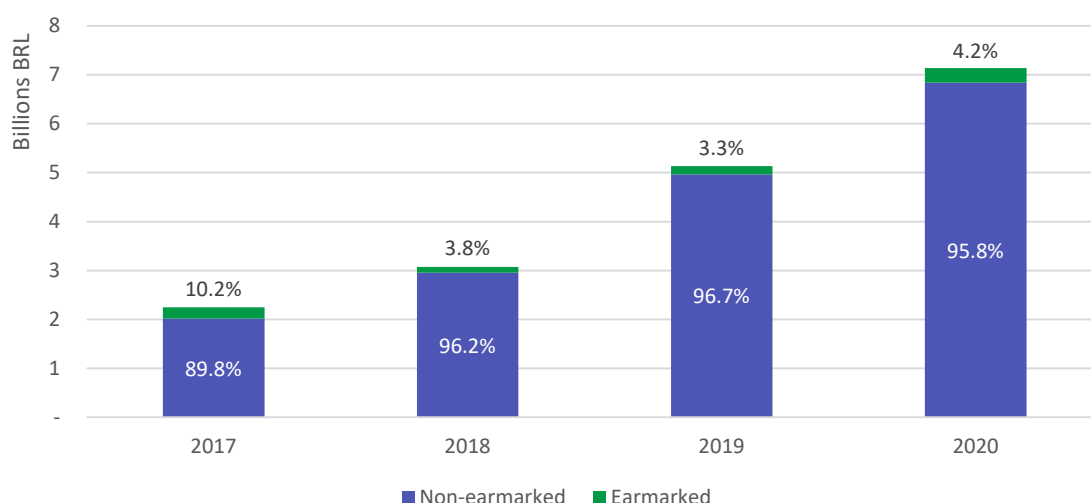
Source: BCB

The relevance of earmarked resources decreased in MEIs credit portfolio

The last approach considers the origin of credit, i.e., whether it comes from non-earmarked or earmarked resources.¹⁰⁶ In 2017, 10.2% of credit for MEI as legal entities was provided by earmarked resources and 89.8% by non-earmarked resources. In 2020, this difference increased, as only 4.2% of credit was obtained from earmarked resources and 95.8% from non-earmarked resources (Figure 2.2.10). On the other hand, in 2017, the average interest rate of non-earmarked resources was 88%, while that of earmarked resources was 18.8%, with the difference decreasing in 2020 to an average interest rate on non-earmarked resources of 46.4%, against 19.1% on earmarked resources.

¹⁰⁶ **Non-earmarked resources:** refer to loans granted with interest rates agreed between financial institutions and borrowers (market interest rates). In non-earmarked operations, financial institutions decide how to apply the funds raised in the market. **Earmarked resources:** operations regulated by the National Monetary Council (CMN) or linked to budgetary resources to foster the long-term and mid-term production of goods and investment in the real estate, housing, rural, and infrastructure segments. Resources come from a part of demand deposits and savings accounts, as well as from public funds and programs. The Production-Oriented Microcredit National Program (PNMPO) is an example.

Figure 2.2.10 – Credit portfolio of MEI as companies by origin of resources

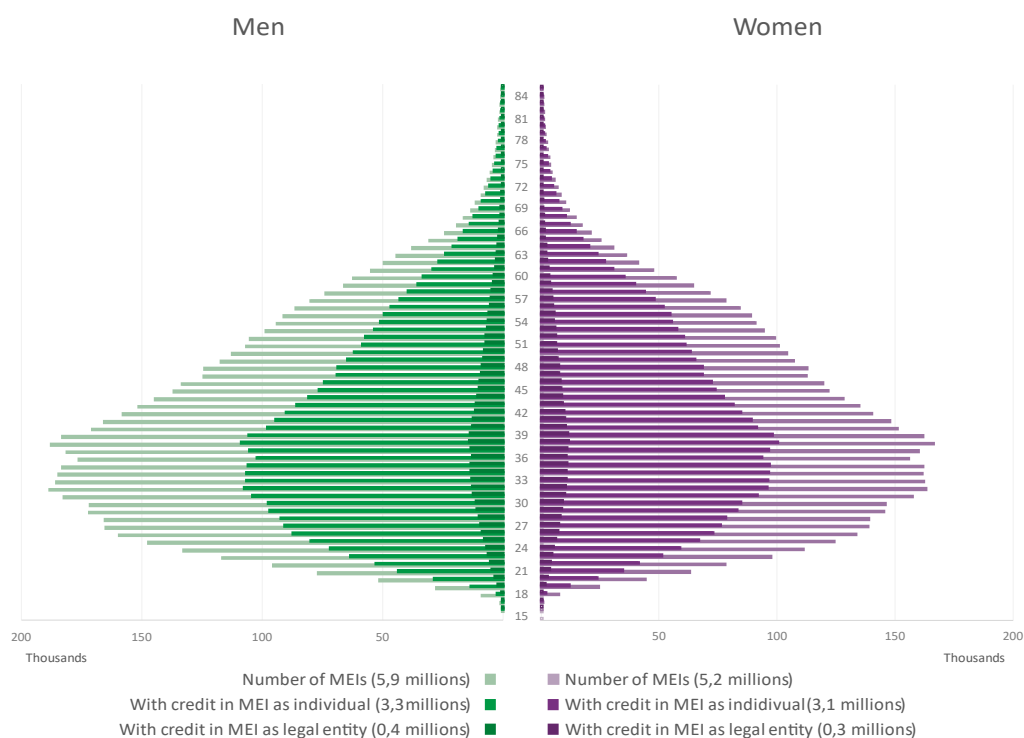


Source: BCB

Men have a higher credit balance than women, especially between 30 and 45 years old

Another way to look at credit for MEIs is to consider the gender and age of borrowers. In Brazil, men are the majority both in the total number of micro-entrepreneurs as individuals (53%) and in the number of borrowers (52%). The proportion of MEIs with credit as both individuals as legal entities remains similar for both genders (Figure 2.2.11).

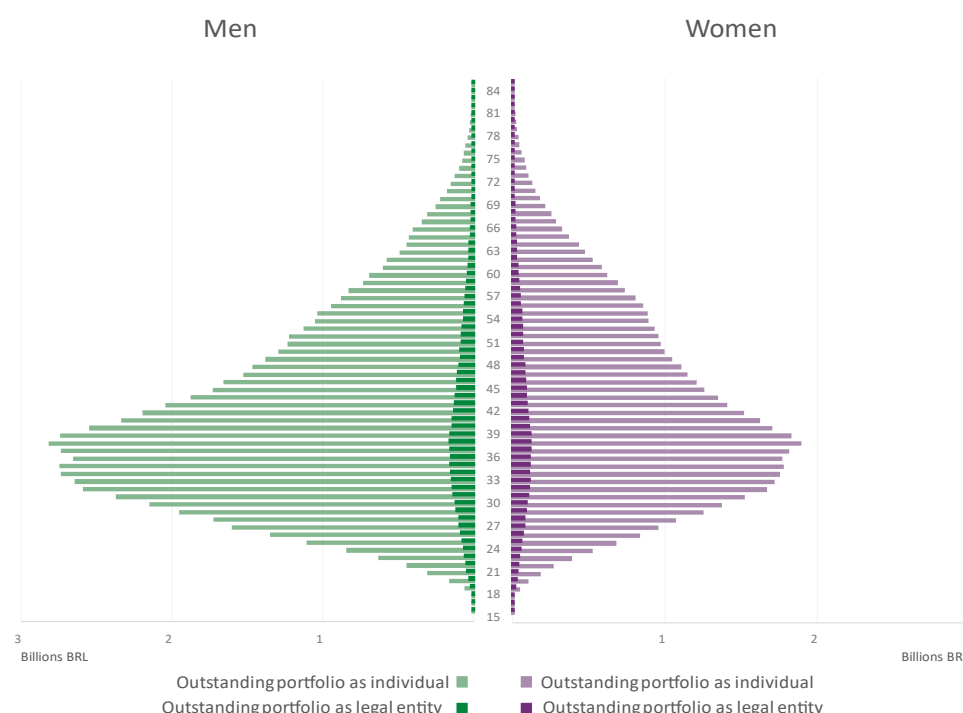
Figure 2.2.11 – Outstanding portfolio for MEI as individuals and legal entities – by gender and age



Source: BCB

However, when considering the volume of credit, the position of men is even more remarkable, as 59% of all credit is used by them. Moreover, the difference becomes much wider when the age between 30 and 45 is considered (Figure 2.2.12).

Figure 2.2.12 – Outstanding portfolio for MEI as individuals and companies – by gender and age



Source: BCB

The impact of the Covid-19 pandemic on MEIs was mitigated by emergency credit lines

In 2020, the number of MEIs in the country grew by 20%, reaching more than eleven million active registries by the end of the year, an opposite movement to the country's labor market, which had a workforce reduction of 5.7% and an increase of 16.6% of the population out of the workforce.¹⁰⁷ One may suppose that this significant increase in the number of MEIs in 2020 is related to the increase in the unemployment rate, a consequence of the Covid-19 pandemic, pushing part of the previously employed workers to self-employed activities.

Given the above outlook, Sebrae conducted ten editions of a survey entitled *Impacto da Pandemia do coronavírus nos Pequenos Negócios* (Impact of the coronavirus pandemic on Small Businesses)¹⁰⁸ to capture perceptions and attitudes related to the demand, including those regarding credit-related issues. Despite the resistance of MEIs to borrow, search for credit increased significantly during the year (Figure 2.2.13). However, few MEIs were able to obtain the desired loan, as the percentage of individuals who sought the loan but were not successful remained above 60% (Figure 2.2.14). On the other hand, the success rate increased from 10% to 30% between the first and the latest survey's edition.

¹⁰⁷ Data comparing the Brazilian Quarterly Continuous National Household Sampling Survey (PNADC/T) of 2019Q4 with 2020Q4.

¹⁰⁸ <https://datasebrae.com.br/covid/>.

Figure 2.2.13 – Loans search by MEIs

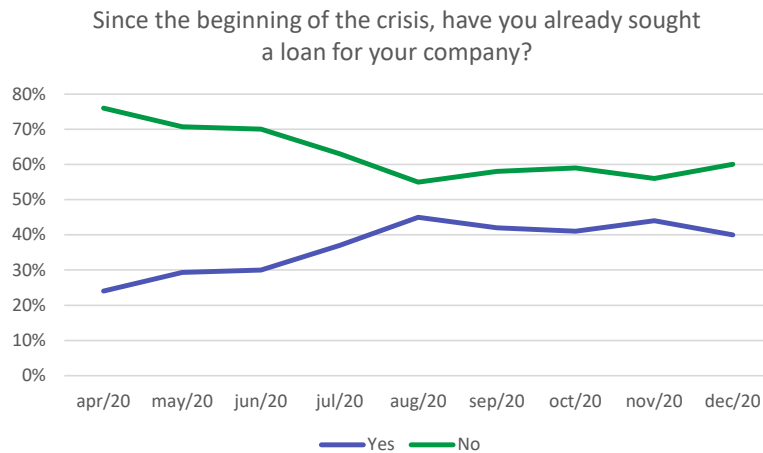
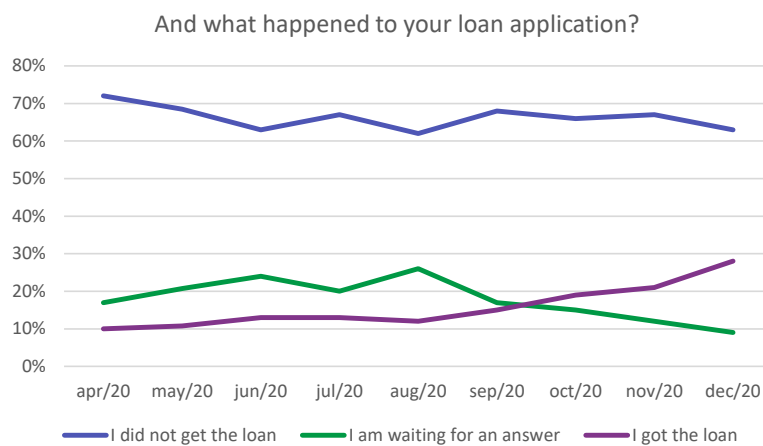


Figure 2.2.14 – Loans grant success rate for MEIs



Finally, as measures to combat the economic effects of the Covid-19 pandemic on businesses, the federal government launched emergency credit programs that helped to mitigate the impact of the health crisis among entrepreneurs. MEIs were included in some of these programs, such as the National Program for Supporting the Micro and Small Enterprises (Pronampe) and the Emergency Program of Access to Credit in the Form of Secured Receivables (Peac-Maquinhinhas).

2.3 Elderly population

Older people,¹⁰⁹ aged 60 or more, represent 34 million people in Brazil, 16% of the total population.¹¹⁰ In 2018, they were present in more than 33% of Brazilian homes and guaranteed more than half of the income in nearly 20% of the 71 million country's homes.¹¹¹ In view of this great relevance in the financial budget of Brazilian households, this chapter thoroughly examines the financial inclusion, financial education, and consumer protection aspects for this public.

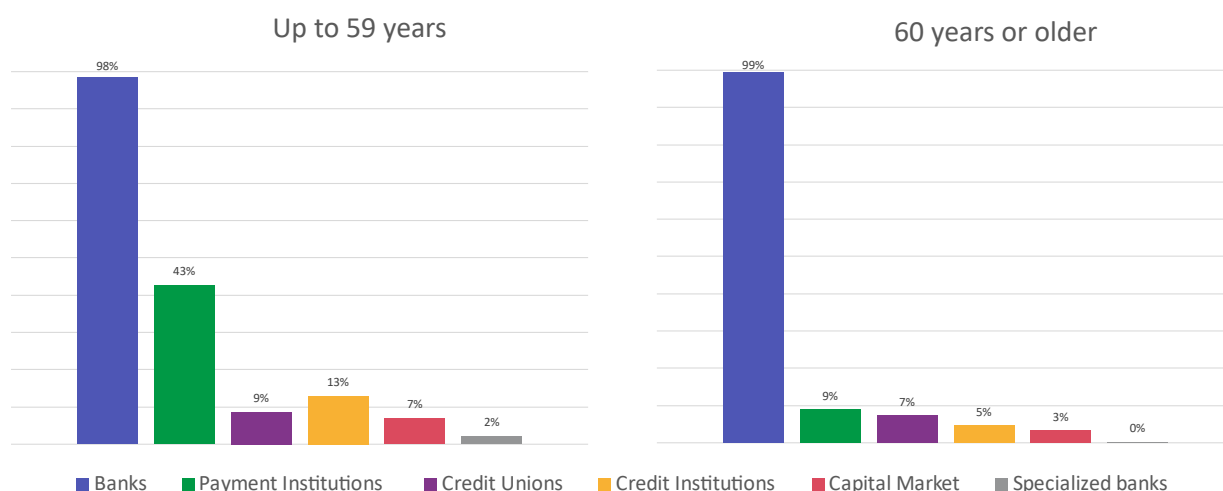
» Between analogical and digital: inclusion, access, and financial education

#inclusion #education

The access of older people to the financial system is increasingly digital

As for the access, 32.5 million older Brazilians maintain a relationship with the financial system, more than 95% of the total. Similarly with the other age groups of the population, banks lead relationships with older people (Figure 2.3.1). However, unlike young and adult individuals that have also sought other types of institutions, older people are quite concentrated in the bank segment (only 9% maintained IPs accounts in 2020).

Figure 2.3.1 – Diversification of institutions used by the population with SFN relationship in 2020¹¹²



Source: BCB

The expansion of digital solutions made available by financial institutions, normally associated with the younger, have also reached the older population. This expansion was strengthened in 2020, in view of social distancing measures imposed by the Covid-19 pandemic and the launch of solutions, like the Pix, that reduced the technological barrier that more strongly affected this part of the population.

The percentage of older people with internet access is still quite lower than the average access of the Brazilian population, although it has been increasing since 2015. More specifically, whereas internet access

109 *Estatuto do Idoso* – Rights of the Elderly – Law 10,741, of October 1, 2003) classifies elderly individuals as those aged 60 years or above.

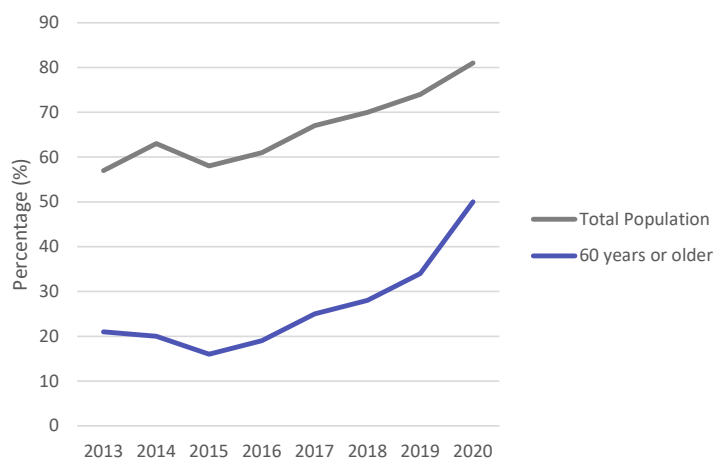
110 Data from the Federal Revenue Board.

111 *Nota Técnica 81* from Ipea.

112 This figure shows more than 100% in each case because, in general, individuals maintain simultaneous relationships with several financial institutions and IPs.

of the Brazilian population increased from 57% in 2013 to 81% in 2020, for individuals aged 60 or more the rate grew from 21% to 50% (Figure 2.3.2).

Figure 2.3.2 – Evolution of internet users (2013 – 2020)



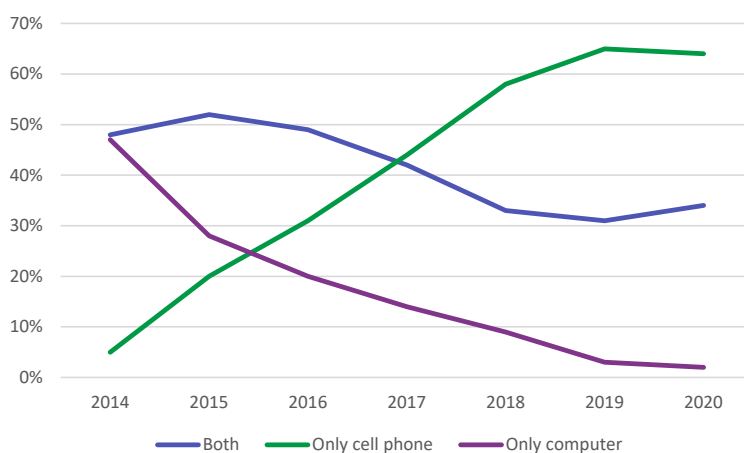
Note: data referring to the percentage of the population that accessed the internet in the previous 3 months.

Source: TIC Domicílios

The mobile phone has consolidated as the main means of access for the elderly population to digital financial services

As the population in general, older people started to increasingly resort to mobile devices to the detriment of computers over the last years to access the internet (Figure 2.3.3). Although this is the age group with the lowest internet access rate, the recent increase in the use of mobile phones, associated with restrictions due to the pandemic, is an element that seems to have favored a quicker digital inclusion in comparison with the pace observed until 2019.

Figure 2.3.3 – Devices used for accessing the internet by older people (2014 – 2020)

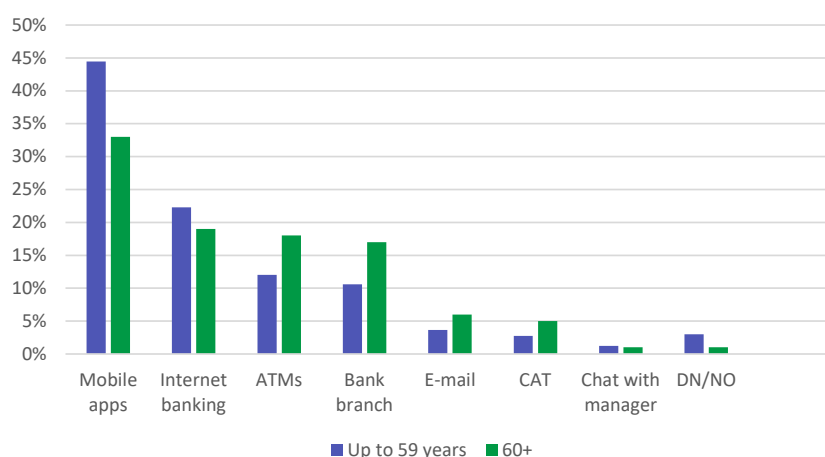


Note: data referring to the percentage of internet users by type of device used exclusively or simultaneously.

Source: TIC Domicílios

As for financial transactions carried out by internet users, *Observatório Febraban*, a survey of September 2020, identified that the most used channels by older people were mobile apps. However, when compared with the population in general, older people prefer using ATMs and bank branches for carrying out financial transactions (Figure 2.3.4).

Figure 2.3.4 – Percentage of most used channels by individuals with internet access to carry out financial transactions

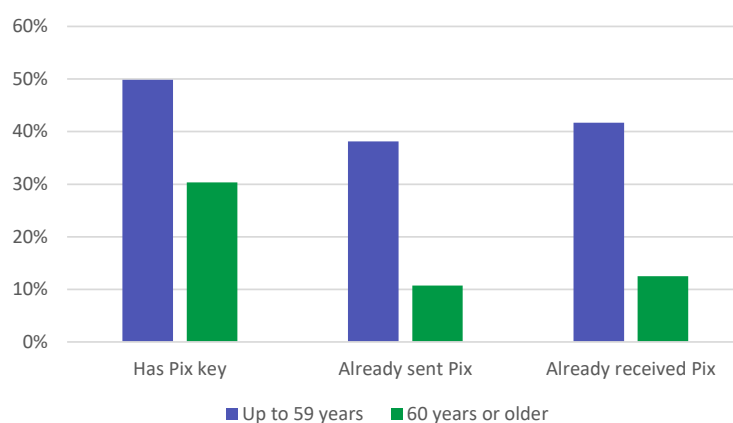


Source: *Observatório Febraban*, September 2020

Elderly individuals also started using Pix

Pix introduced a huge innovation, incorporating an additional option to the digitalization of the means of payment. Since innovation relies on technologies, it was expected a greater incentive to the use of Pix by the younger population. In fact, the penetration of Pix in the older range of population is lower (Figure 2.3.5). Nevertheless, nearly 30% of older people with a SFN relationship (9.8 million) had already registered a Pix key in March 2021, 11% (3.5 million) had already sent a Pix, and 13% (4 million) had already received a Pix, indicating that this innovation also reached this segment of the population.

Figure 2.3.5 – Registration and use of Pix by individuals with SFN relationship in March 2021, by age



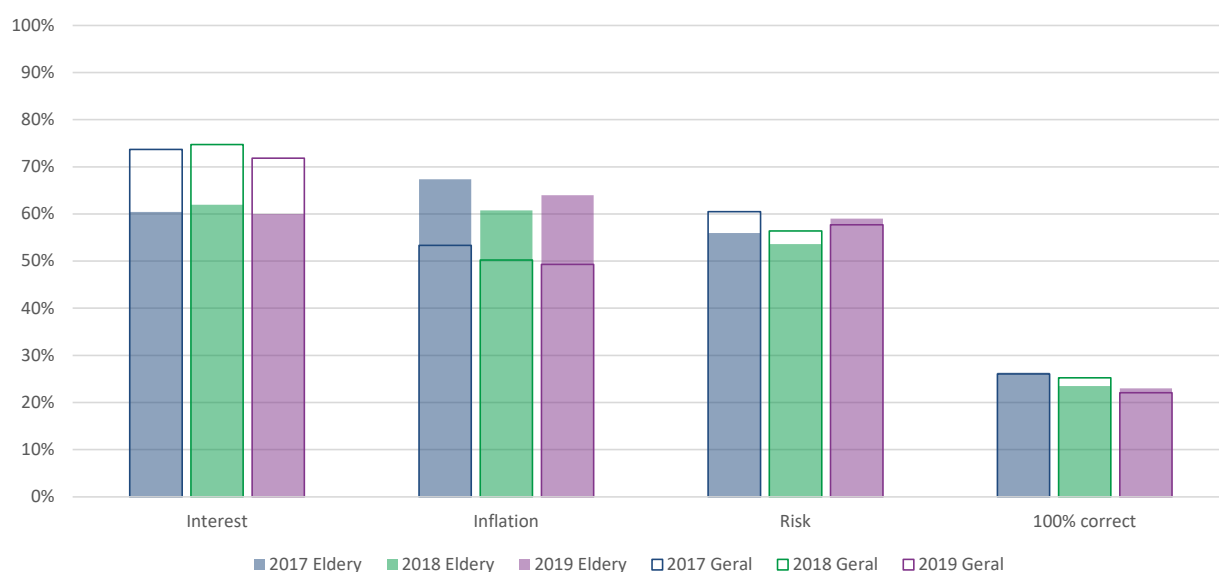
Source: BCB

Financial education levels of the elderly population have not changed

According to 2017 and 2019 Anbima surveys about the profile of Brazilian investors, older people outperformed concerning inflation, but kept close to the average of population in general when asked about risk and below the average when asked to make a calculation about simple interest rates (Figure 2.3.6).¹¹³ Considering the period analyzed, no significant change is perceived in the basic financial knowledge of this group.

¹¹³ The 2019 sample comprised 594 older citizens aged 60 or more of the classes A, B, and C in the five Brazilian regions.

Figure 2.3.6 – Percentage of correct answers about financial knowledge – Elderly x population in general



Source: survey Anbima X-Ray of the Brazilian Investor

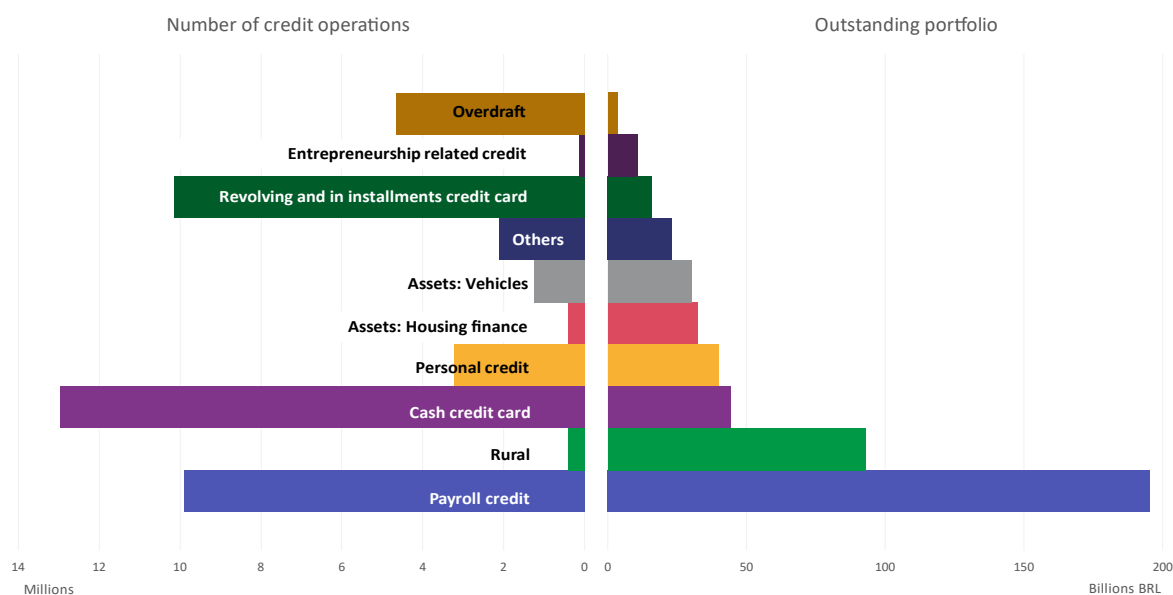
» Use of credit by the elderly population: the preponderance of payroll-deducted loans

#inclusion #use #quality

The use of credit by older people has a specific format, since, whereas for young and adults the real estate credit outperformed in terms of outstanding portfolio balance, for older people the greatest credit balance refers to personal payroll-deducted loans. Figure 2.3.7 shows the number of operations and the outstanding balance of credit types.¹¹⁴ Therefore, nearly one third of credit operations of older people are carried out with credit card, 22% with payroll-deducted loans, and 22% with operations related to revolving or installment credit card. On the other hand, considering the outstanding portfolio, 40% is concentrated on payroll-deducted loans, 20% on rural financing, and 12% on cash credit card and credit card with interest (revolving and installment).

¹¹⁴ Data concerning the number of credit operations and the outstanding portfolio of the payroll-deducted credit card, present in the Box Elderly individuals and payroll-deducted loans, are contemplated in this chapter in the cash, revolving, and instalment credit card.

Figure 2.3.7 – Number of credit operations and outstanding portfolio by credit type – December 2020

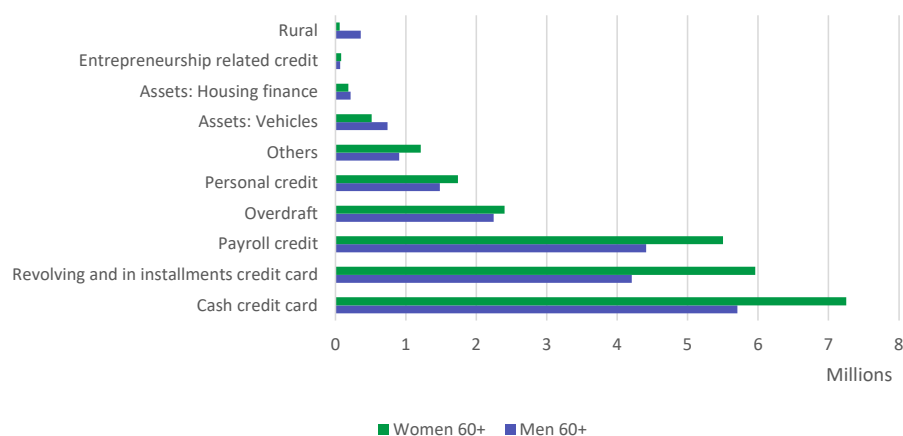


Source: BCB

Payroll-deducted loans are the main credit portfolio of the elderly population, accounting for 40% of the outstanding balance, nearly the double of the second credit type, rural credit (19% of the total)

Concerning the use of credit by men and women, one may observe a greater number of older women using credit in almost all credit types but those related to the financing of goods (real estate and vehicles) and rural financing (Figure 2.3.8). For the three most representative credit types, data reveal that older women used 33% more often the credit card (cash and with interest) and 25% more often the payroll-deducted loans than older men in 2020.¹¹⁵

Figure 2.3.8 – Number of credit operations by type carried out by men and women aged 60 or more – December 2020

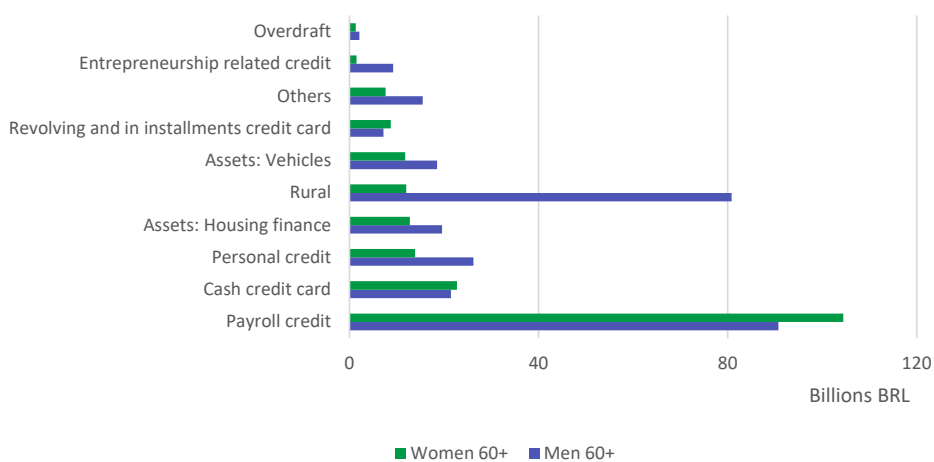


Source: BCB

¹¹⁵ There is 21% more women than men in this age group.

In terms of outstanding portfolio, despite the greater number of older women than men, there is a balance among credit types (Figure 2.3.9), but it is worth mentioning the rural financing credit type, with a difference in the outstanding balance of nearly 6.7 times greater for men.

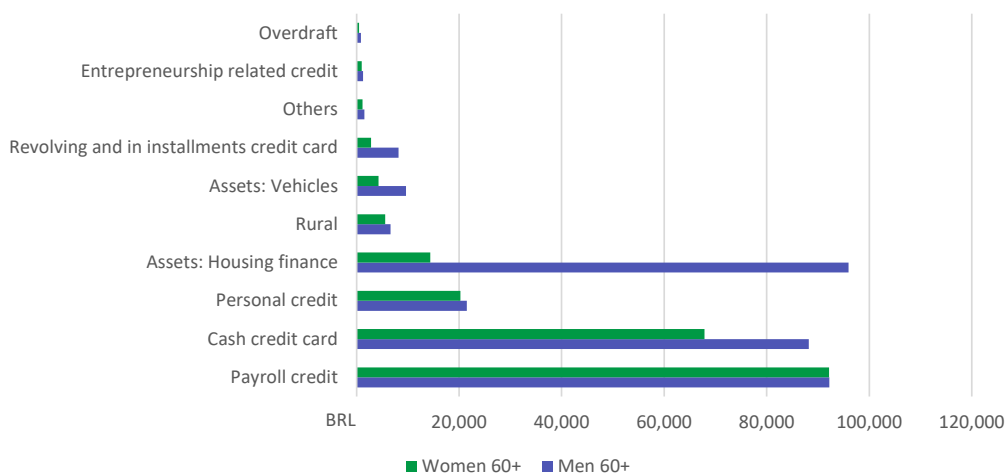
Figure 2.3.9 – Outstanding portfolio by credit type for men and women aged 60 or more – December 2020



Source: BCB

Finally, the analysis of credit use by older women and men considering the average ticket reveals that men outperform in all credit types (Figure 2.3.10), including in those for which the number of operations and outstanding portfolio is greater for women.

Figure 2.3.10 – Average ticket by credit type for men and women aged 60 or more



Source: BCB

A look at payroll loans and payroll credit cards

Credit taken as payroll deductible loans can be evaluated from the perspective of two products: payroll loans and payroll credit card. At the end of 2020, there were about nineteen million people in Brazil using payroll loans credit and about 5.7 million using payroll credit cards. The main consumer group of both modalities is the elderly population (Figure 1), which represents 55% of payroll loans credit borrowers and 68% of payroll credit card borrowers.

In the last three years, the number of borrowers of payroll loans grew very little, around 1%, while the number of borrowers of payroll credit cards increased by 20% (Table 1).

Table 1 – Payroll loan and payroll credit card borrowers between 2018 and 2020 (in millions)

	2018	2019	2020	2018-2020
Payroll loans	19.2	19.7	19.4	+0.9%
Payroll credit card	4.7	5.4	5.7	+20.4%

Figure 1 – Number of borrowers of payroll loans and payroll credit cards by age in 2020

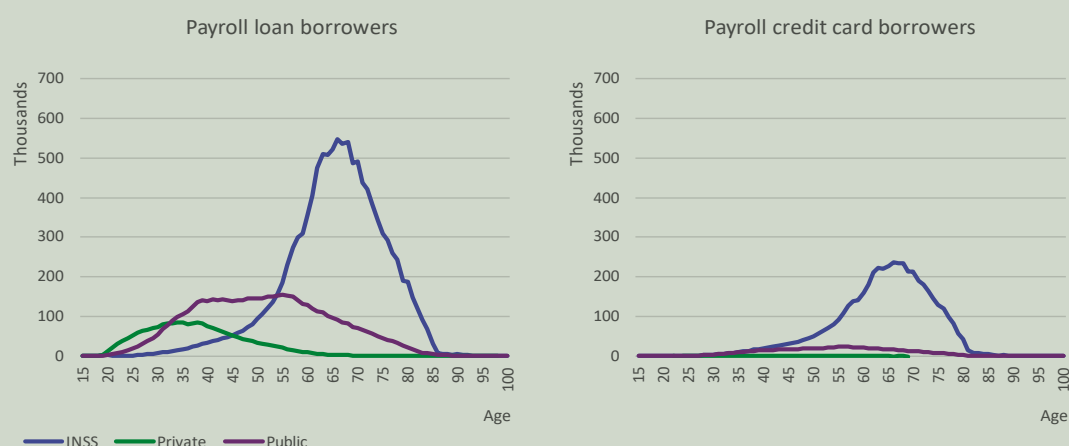


Considering the sector (public, private and INSS)¹¹⁶ and the age distribution of the population, the use of the modalities differs a lot. In public and private sector, payroll loan borrowers do so before the age of 40, while, for INSS borrowers, the concentration occurs between 65 and 70 years of age (Figure 2).¹¹⁷ For the payroll credit card, considering public and private sector, there is not much use for all ages, while, for the INSS public, the concentration also occurs between 65 and 70 years of age.

¹¹⁶ Paying sources linked to consigned credit are called sectors, and may be from the public sector, the private sector or the National Institute of Social Security (INSS), the public agency responsible for collecting contributions to maintain the Brazilian Social Security regime operating: paying retirements, pensions due to death, illness, disability, and others benefits foreseen by law.

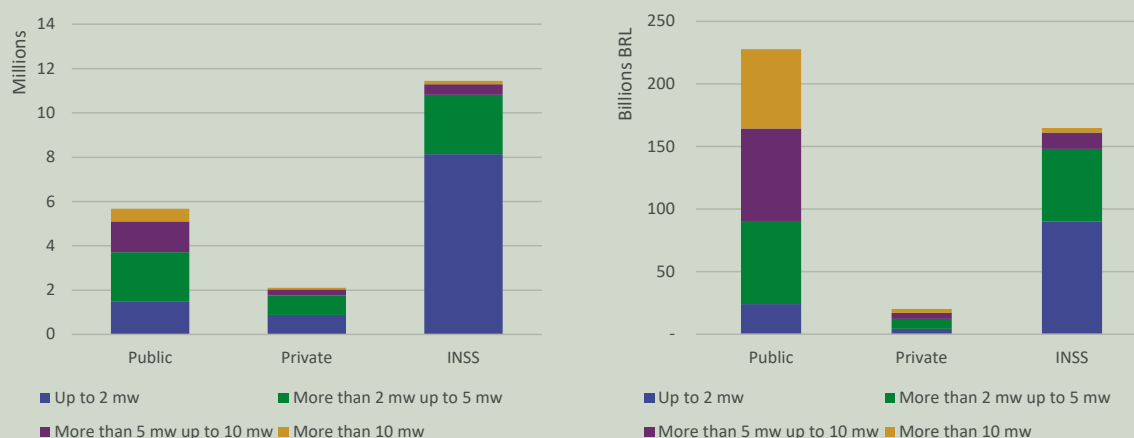
¹¹⁷ The concentration of elderly is expected, as both payroll credit and payroll credit cards are linked to the INSS sector and are credits that become available mainly after retirement.

Figure 2 – Number of borrowers of payroll loans and payroll credit cards by age and sector in 2020



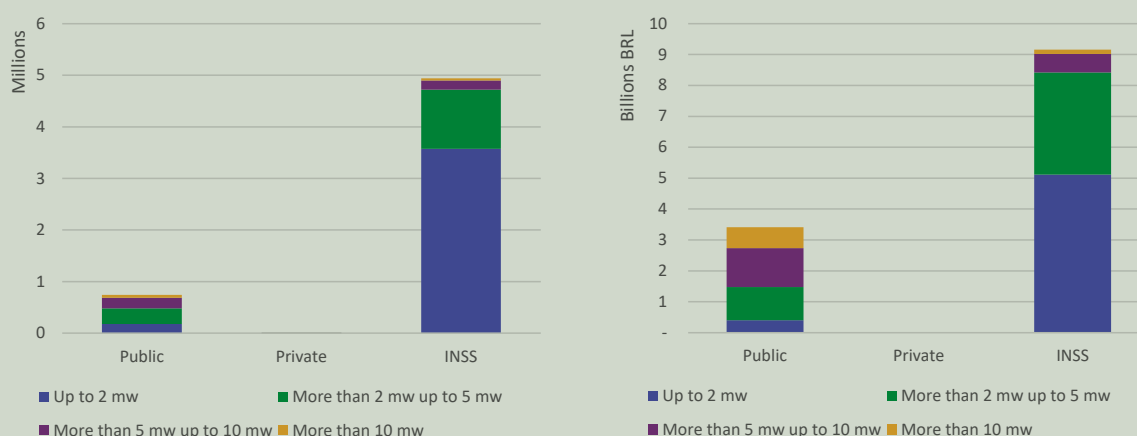
Examining the amount of credit granted in 2020, the balance of public sector payroll loans (R\$248 billion) was 49% greater than the balance of the INSS (R\$166 billion). On the other hand, the active portfolio of the INSS payroll credit card (R\$9.15 billion) was 2.7 times greater than that of the public sector (R\$3.41 billion) (Figures 3 and 4). In addition, there is a concentration of INSS borrowers in the lowest income brackets in both modalities.¹¹⁸

Figure 3 – Number of borrowers and payroll loan balance by income bracket and by sector in 2020



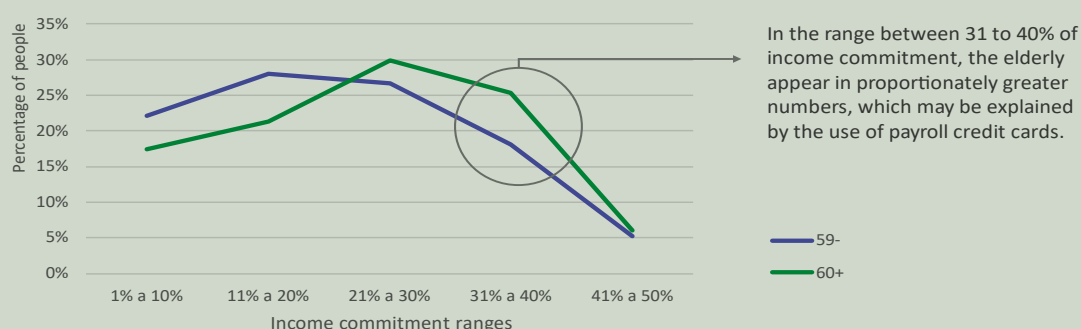
118 The Box “Panorama of the payroll loan portfolio” of the 2020 Banking Economy Report allows viewing in percentage terms of the income distribution by each sector. Available on: https://www.bcb.gov.br/content/publicacoes/relatorioeconomiabancaria/reb_2020.pdf.

Figure 4 – Number of borrowers and credit card payroll loan balance by income bracket and by sector in 2020



Finally, an assessment of the debt ratio of the payroll and payroll credit card reveals greater debt among the older people in relation to the rest of the population. For example, there are proportionately more older people in the higher income brackets than among the rest of the population (Figure 5). More than half of the elderly (55%) has a debt between 21% and 40% of their income, while most of the population under 60 (55%) has a debt ratio of their income between 11% and 30% with these types of credit.¹¹⁹

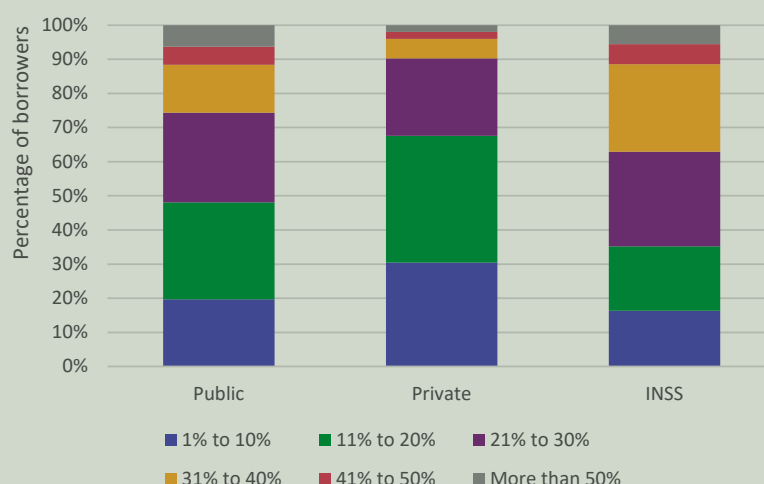
Figure 5 – Payroll loan debt ratio and payroll credit card for age groups up to 59 years old and from 60 years old in 2020



Another possibility is to look at the debt ranges that concentrate more people within each sector. Thus, while in the INSS 53% of borrowers have between 21% and 40% of their income committed, in the public sector 55% of people commit between 11% and 30% of their income with these credits, with the lowest level of debt to income with the private sector, in which 68% of borrowers commit between 1% and 20% of their income (Figure 6).

¹¹⁹ In accordance with Law 10,820, of December 17, 2003 (employees governed by the Consolidation of Labor Laws – CLT), with Law 8,112, of December 11, 1990 (civil servants of the Union) and with the INSS Normative Instruction /PRES 28/2008 (retirees and pensioners), discounts cannot exceed: (i) 30% (thirty percent) for personal loan operations; and (ii) 5% (five percent) for credit card operations. Exceptionally, as of Provisional Measure 1,006, of October 1, 2020, transformed into Law 14,131, of March 30, 2021, there was an increase, until December 2021, of the assignable margin to 40% (forty percent) for personal loan operations, of which the same 5% (five percent) can only be offered for credit card operations.

Figure 6 – Payroll loan and payroll credit card debt ratio by entity in 2020



In summary, the growth in the use of payroll credit cards by older people, mainly by INSS beneficiaries, associated with a lower income profile of these borrowers, may be contributing to a higher debt ratio of the income of this part of the population. Therefore, although payroll credit and payroll credit cards are credit modalities with lower interest rates and are relevant for older people – the latter mainly for low-income people – it is necessary to monitor their excessive use, in addition to the possible consequences in the financial well-being of this population and their families, as the ease of access and use can, if used inappropriately, be a path to risk indebtedness.¹²⁰

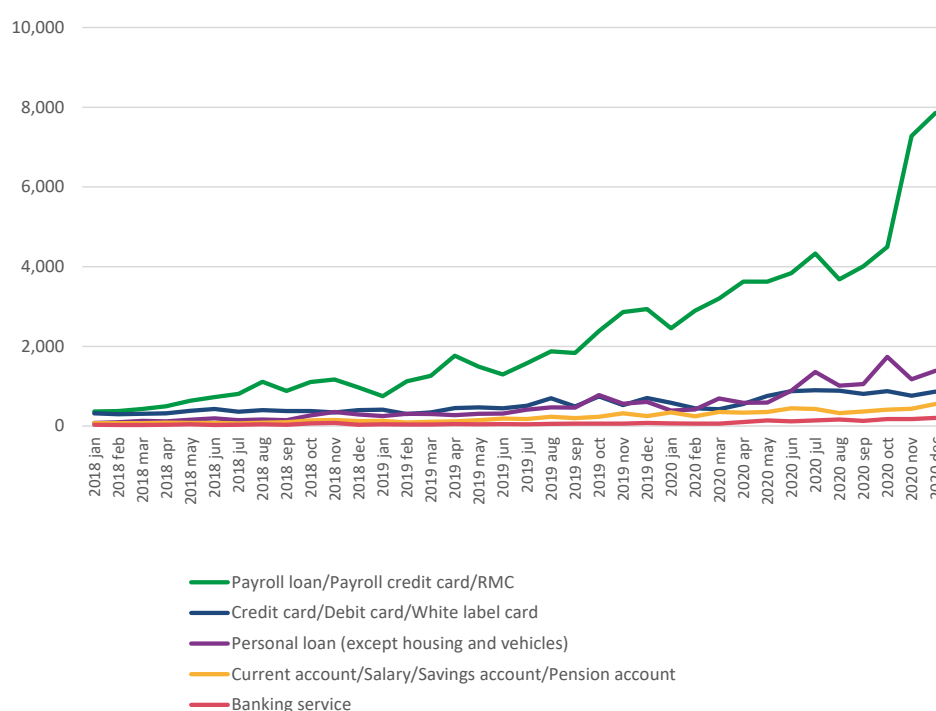
120 For the adopted understanding of risk indebtedness, consult the following report: Risk Indebtedness in Brazil (2020). Financial Citizenship Series – Studies on Education, Protection and Inclusion. Available on: https://www.bcb.gov.br/content/cidadaniafinanceira/documentos_cidadania/serie_cidadania/serie_cidadania_financeira_6_endividamento_risco.pdf (Portuguese only).

» The profile of complaints by the elderly population

#protection

As for consumer protection for older people (aged 61 or older¹²¹), the analysis of information from complaint channels may indicate ways for understanding issues faced by this group of individuals. Figure 2.3.11 shows the evolution of the five most complained subjects in the platform Consumidor.gov.br between 2018 and 2020 for people aged 61 or older. It is noteworthy the increase in the number of complaints related to payroll-deducted loans, which more than doubled in 2020. Still concerning complaints about payroll-deducted loans, a great extent comes from INSS beneficiaries, totaling, in December 2020, 86% of this type of complaint, whereas 14% came from private sector workers or civil servants.

Figure 2.3.11 – Five most complained subjects in Consumidor.gov.br between 2018 and 2020 for people aged 61 or older



Note: data referring to the number of complaints by type of complaint.

Source: Consumidor.gov.br

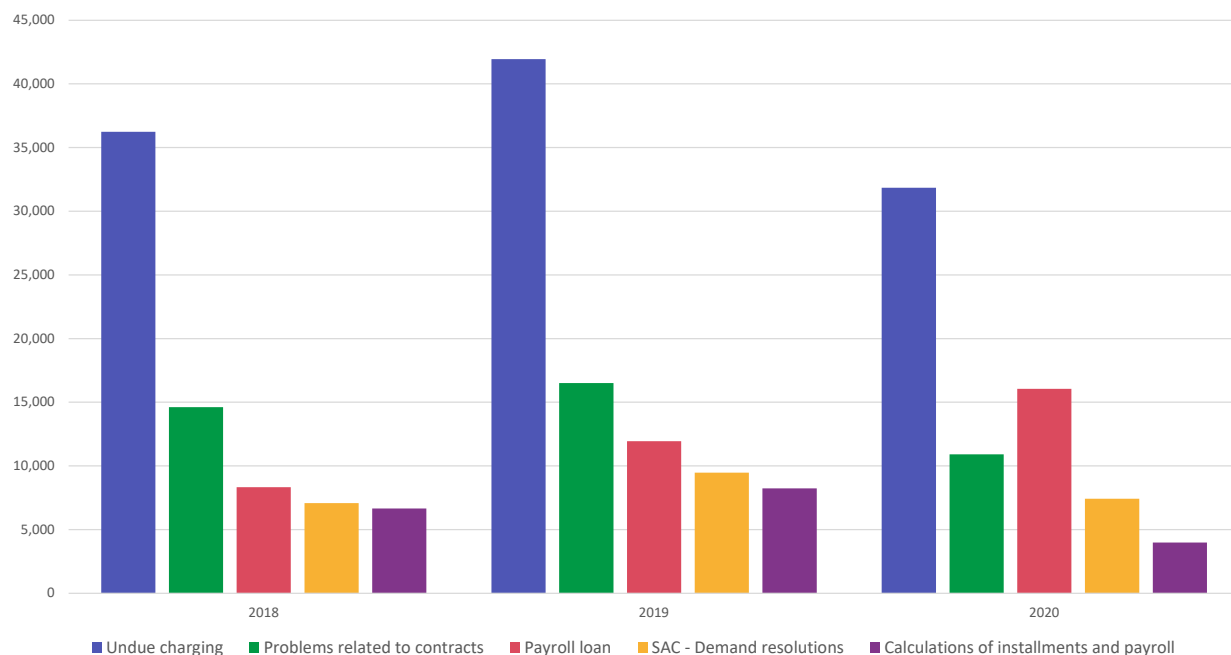
Another complaint channel with a national reach functioning face-to-face and by telephone is the National Consumer Defense System (SNDC),¹²² with 955 station services and 621 Procons¹²³ in all federation units. Data for the last three years for the elderly population also indicate the increase of complaints concerning payroll-deducted loans, the only subject to register a steady growth since 2018 (Figure 2.3.12).

¹²¹ Data available in this section consider people aged 61 or older, since this is the cut-off point used by data suppliers.

¹²² SNDC congregates Procons, Public Ministry, Public Defense, and civil bodies for the consumer protection, which act in an articulate and jointly way with the National Consumer Secretariat (Senacon).

¹²³ State Departments of Consumer Protection and Defense, responsible to guide consumers in their complaints, give information about their rights and verify the consumption relations.

Figure 2.3.12 – Five most complained subjects in the Procons between 2018 and 2020 for people aged 61 or older



Note: data referring to the number of complaints by type of complaint.

Source: Senacon/SNDC

By observing the number of complaints in the Procons concerning financial services in 2020, it should be highlighted the fact that older people accounted for 35% of this total and exceeded 64% of complaints about payroll-deducted loans. Considering that older people encompass 18% of the adult population, these high indexes of complaints reveal the importance of services channels and consumer protection, mainly because it deals with a more vulnerable public, demanding strong adaptability of supply of financial services and products.



Chapter 3

Innovation in the National Financial System: benefits for the citizen

Digitalization has been transforming the SFN and the way financial services and products are offered to its customers and users. The potential benefits are significant: digital finance can expand the supply of products and services with lower costs, greater speed, convenience, and security. This chapter presents recent changes in the financial system and their possible impacts for the citizen.

The financial environment has been changing rapidly in Brazil with new institutions and an evolving regulatory and payments environment. One objective of the BCB's strategic agenda (BC# Agenda), in its #Competitiveness dimension, is to prepare the financial system for a more technological and inclusive future.

In this scenario of increasing digitalization, it should be emphasized that access to digital financial services must be supported by digital and financial education and adequate levels of financial consumer protection for this process to be truly inclusive.

3.1 New SFN's institutions

The emergence and rapid evolution of FinTechs¹²⁴ in Brazil has been fundamental in promoting financial inclusion and increasing competitiveness, which are strategic BCB's objectives, reflected in its BC# Agenda. The provision of financial and payment services to an increasingly larger share of the population, making use of available technological resources, has been a major contribution of Payment Institutions (IPs) and credit FinTechs, whose main characteristics are described below.

» Payment Institutions

#inclusion #access #use

Payment Institutions (*i.e.*, IPs) are companies that provide buying and selling services and movement of resources within a payment arrangement,¹²⁵ which are not allowed to grant loans or to finance their customers. They are classified according to the payment services provided (Table 3.1.1) and may operate in more than one mode.

Table 3.1.1 – IP types

IP type	Services provided	Example
Electronic currency issuer ¹²⁶	It manages its customer's payment account. In this account, the resources must be previously deposited by the customer, and the IP provides transactions, whether payments or transfers	Prepaid card issuer
Postpaid payment instrument issuer	It manages a postpaid payment account. In this account, the customer deposits funds to pay debts already incurred	Credit card issuer
Accrediting company	It does not manage payment accounts, but enables its customers to be payees, so that they can accept payment instruments (such as credit and debit cards). The accrediting IP also participates in the process of settlement of payment transactions, acting as a creditor to the issuer	A company that enables the bank credit machine (<i>maquininha</i> or POS ¹²⁷ for credit or debit card acceptance in a store or by an individual entrepreneur)
Payment transaction starter	It initiates transactions without holding the accounts or the funds involved in providing the service	A company that, even though not holding a deposit or payment account, makes a payment transaction from that account upon the authorization of the account holder

124 According to the Financial Stability Board (FSB), the term FinTech has a broad concept, referring to as "technologically enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services".

125 Law 12,865, of 2013, considers a payment arrangement to be the set of rules and procedures that govern the provision of a certain payment service to the public. This payment service is accepted by more than one payee, and is accessed directly by end users, who may be payers and payees. A Payment Institution is understood as a legal entity that, adhering to one or more payment arrangements, has as its main or secondary activity, the provision of payment services.

126 BCB Resolution 80, of 2021, considers electronic money to be the resources in BRL stored in an electronic device or system that allows the end user to make a payment transaction.

127 Point of Sale or Point of Service.

IPs differ from banks, especially because they are not financial institutions

According to Law 12,865/2013, IPs are prohibited from performing activities that are exclusive to financial institutions (FIs), such as granting credit and managing bank checking accounts (demand deposit accounts). In addition, the legislation grants IPs more agile and flexible authorization processes for their operation, compatible with the complexity of the operations in which they intend to operate.

An important difference between IPs and FIs is evidenced when a customer wishes to make deposits of financial resources in an institution. IPs are restricted to offering only payment accounts, while FIs can offer both payment accounts and demand deposit accounts, the so-called current accounts, for the same purpose.¹²⁸

Both types of accounts allow payments and transfers between accounts in the same institution or between different institutions and depend on the prior deposit of funds. However, credit limits, such as the overdraft facility, can be added only to demand deposit accounts, offered by FIs alone.

These accounts differ in two other aspects: a) in the way the institution manages the resources deposited and b) in the guarantee offered for the deposits. Resources deposited in payment accounts, unlike resources deposited in a demand deposit account in FIs, cannot be used by the institution in financial intermediation operations, such as credit operations (loans and financing). In addition, the resources deposited in demand deposit accounts are protected by the Credit Guarantor Fund (FGC), up to the limit of BRL 250 thousand per holder/customer, per financial institution or financial conglomerate. As for financial resources deposited in payment accounts, which can be offered by both IPs and FIs, they are not protected by the FGC.

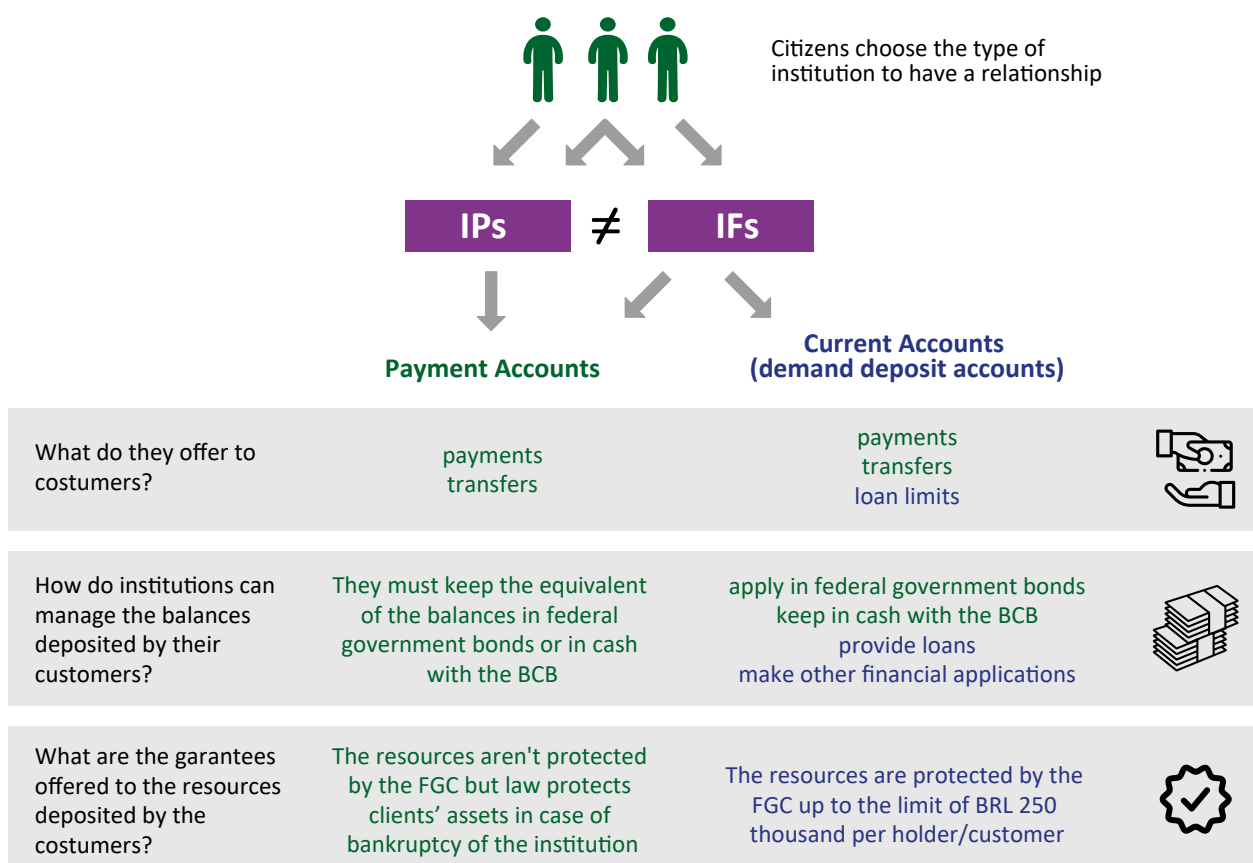
Despite the lack of protection by the FGC, institutions that act as issuers of electronic money, whether IPs (Table 3.1.1) or FIs, must keep the equivalent of the balances deposited by their customers in these payment accounts in federal government bonds or in cash with the BCB. The legislation ensures that these amounts do not become part of the assets of the institution holding the account in case of bankruptcy.

IPs also differ from FIs for not being all directly supervised by the BCB. In 2020, there were 190 FinTechs operating as IPs in the Brazilian market,¹²⁹ 26% more than in 2019. Of these, only 26 institutions have reached the operational limits set out in the specific regulations¹³⁰ – which determine the need for authorization and, consequently, supervision by the BCB.

128 For other purposes, other accounts can be offered by FIs, such as salary accounts, savings accounts, and time deposit accounts.

129 According to FinTechLab's radar (Portuguese only): <https://fintechlab.com.br/index.php/2020/08/25/edicao-2020-do-radar-fintechlab-detecta-270-novas-fintechs-em-um-ano/>. Accessed on January 11, 2020.

130 Until 2020, Circular 3,885 of 2018 was the specific regulation. BCB Resolution 80, of 2021, revoked this norm and some rules were changed. Now, IPs that adhere to Pix, even with operations at levels below the minimum limits, will be considered members of the SPB. As a result, they are subject to minimum regulation until they reach the operational limits for mandatory authorization or until 2023, when they will have to undergo the authorization process regardless of the value of their operations.



Financial inclusion, market, and customers

Although providing more restricted operations than FIs, IPs promote the financial inclusion of their customers by facilitating contracts of services at low initial costs. Additionally, it is not unusual for IPs to act as a digital platform to offer other products, such as financial investments and credit operations, made available by other partner FIs, which may even belong to the conglomerate to which the IP itself belongs. In 2020, 54% of the authorized IPs were linked to FIs such as Direct Credit Companies (SCDs), Credit, Financing, and Investment Companies (SCFIs or financiers), securities and bonds dealers (DTVMs), or banks.

IPs are gaining ground in the payments market and achieving more customers recently. Relying on technological advance and on the greater agility provided by digital tools, these institutions can sometimes provide new forms of "user experience".¹³¹ In December 2020, the segment reached 3.3% of the SFN's assets.¹³²

The number of postpaid cards issued by IPs¹³³ tripled from 2019 to 2020,¹³⁴ reaching 16 million, which represented 12% of total outstanding postpaid cards in the SFN at the end of 2020. Overall, transactions worth BRL 75 billion were handled in the period by this type of IPs service.

¹³¹ "User experience" is understood as a person's perceptions and reactions that result from the use or intended use of a product, system, or service.

¹³² Considering the Adjusted Total Assets (ATA).

¹³³ Considers cards issued by IPs not linked to large banks. "Large banks" are those banks falling under Segment 1 (S1) of CMN Resolution 4,553, 2017.

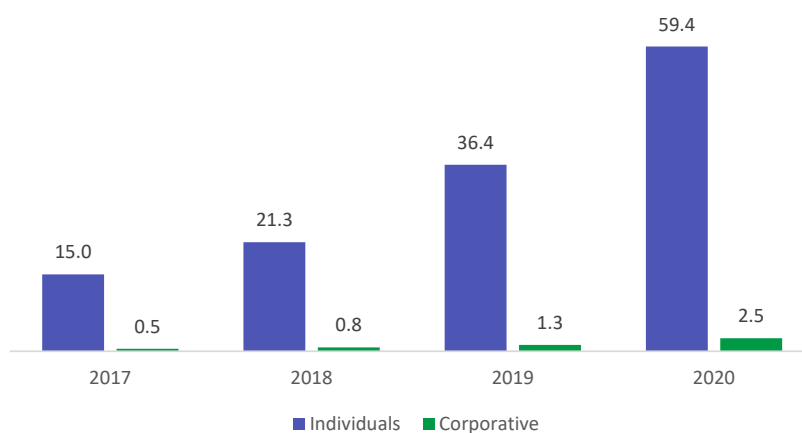
¹³⁴ Data for 2020 were not yet available up to the writing of this report.

Regarding prepaid cards, the 16.4 million cards issued by IPs¹³⁵ (two-thirds of all active prepaid cards in the SFN) handled BRL 42.7 billion in 2020, which represented approximately 80% of the entire SFN's turnover in this category.

In December 2020, IPs were responsible for managing approximately BRL 12.6 billion in payment accounts (86% of the SFN). In addition, IPs that acted as accreditors held just over BRL 230 billion in receivables from payment transactions (50.2% of the SFN). These receivables correspond to the amounts that acquirers must receive from the FIs and other institutions participating in the arrangement (especially issuers of postpaid instruments), and the amounts that issuers must receive from end users (mostly credit card payment transactions).

The number of IPs' customers¹³⁶ reported to BCB grew by 65% from 2019 to 2020, reaching 59.4 million individual customers, which corresponds to approximately 28% of the Brazilian population,¹³⁷ and 2.5 million corporate customers (Figure 3.1.1).

Figure 3.1.1 – Number of customers of payment institutions



Source: BCB

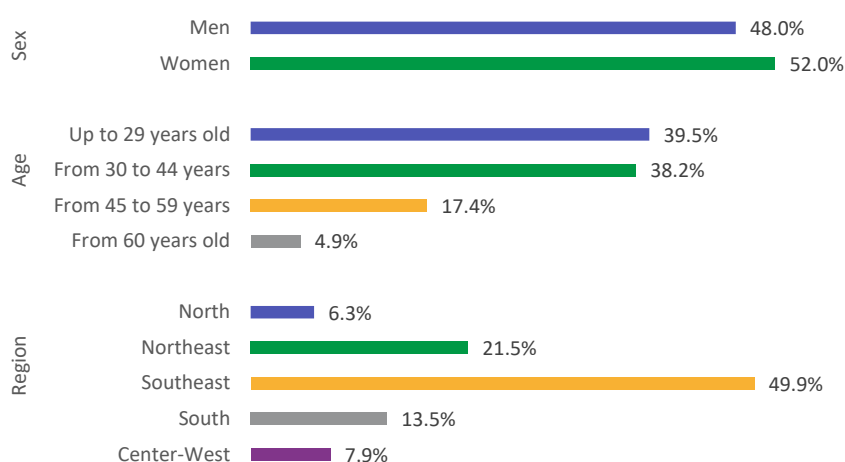
Most IPs' customers are women (52%), slightly over men (48%). As for age, most customers are under 45 years old (77.7%), and a small minority is aged 60 or older (4.9%) (Figure 3.1.2). Regarding the reported location, three states stand out in the number of customers: São Paulo (27%), Minas Gerais (10%), and Rio de Janeiro (10%). Thus, the Southeast region concentrates almost half of the IPs' customers (Figure 3.1.2).

135 Considers cards issued by IPs not linked to large banks. "Large banks" are those banks falling under Segment 1 (S1) of CMN Resolution 4,553, 2017.

136 Total number of unique CPFs/CNPJs in the CCS database at institutions classified as IPs (reference date is December 2020).

137 Source: https://www.ibge.gov.br/apps/populacao/projecao/box_popclock.php.

Figure 3.1.2 – Profile of payment institutions customers



Source: BCB

These figures seem to indicate that IPs function like payment service platforms that can effectively benefit the inclusion, since payment accounts and credit cards issued by these institutions have progressively been the population's gateway to the financial system, as shown in section 2.1. Moreover, considering the corporate public, many accreditors have the technology, capillarity, and knowledge required for serving the informal sector throughout the country, encouraging competition in the growing e-commerce, and serving niches less explored by the FIs already operating in the market.

» Credit FinTechs

#inclusion #use

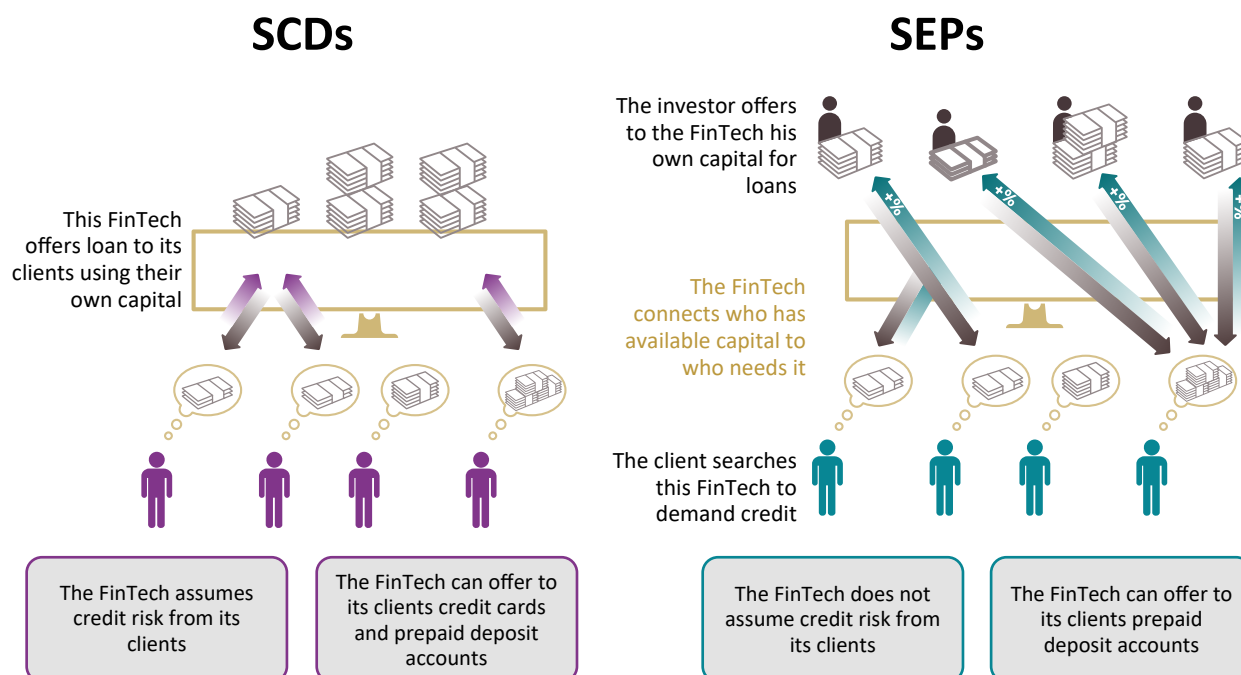
Credit FinTechs can be important instruments in implementing financial inclusion policies, increasing efficiency and competition in the credit market. These are FIs characterized by the intensive use of technology and by operating exclusively through electronic means, with the potential to expand the SFN capillarity and to reach specific market niches in all regions of the country.

SCDs (*Sociedades de Crédito Direto*) and SEPs (*Sociedades de Empréstimo entre Pessoas*), known as credit FinTechs, were regulated in 2018¹³⁸ and began their activities in the following year. By December 2020, 42 SCDs and nine SEPs had already been authorized to operate by the BCB, and another 33 applications were under analysis.

SCDs are FinTechs authorized to offer loans and financing to individuals and companies and can issue credit cards (postpaid payment accounts) and offer prepaid deposit accounts. They use their own capital in credit operations, thus assuming the risk of default, and carry out credit assignments to obtain funds for new operations. Most SCDs are linked to business groups and are an important tool in offering credit to their customers, thus fostering their economic activities.

SEPs can offer the same products and services as SCDs, except credit cards. In credit operations, however, they can only act as intermediaries, without using their own capital, connecting people in search of funds with people in search of investment opportunities, in a safe environment, without assuming the risk of default on the intermediated operations.

138 CMN Resolution 4,656, of 2018.



Financial inclusion, market, and customers

Throughout 2020, credit FinTechs served mostly companies in their operations. The SCDs granted approximately BRL 3.6 billion in credit, of which BRL 2.7 billion (75%) was lent to companies and BRL 931 million (25%) to individuals. From this percentage, it should be highlighted the relevant participation of individuals with income between three and ten minimum wages (14.6% of the total).¹³⁹

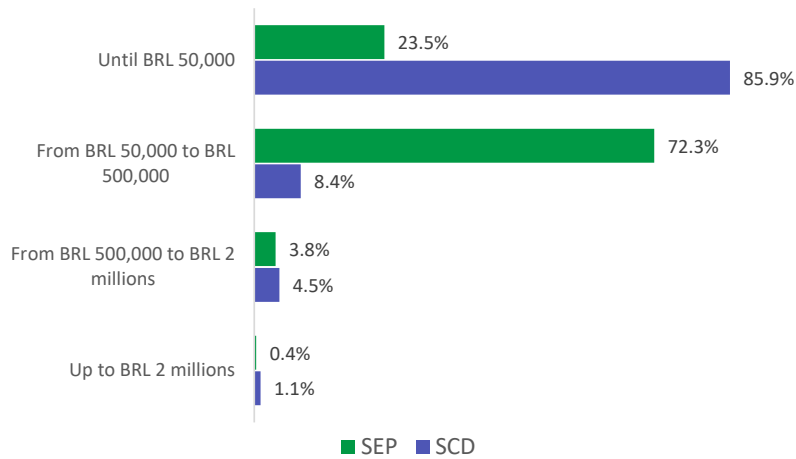
Through SEPs' intermediation, BRL 185 million were granted, of which BRL 172 million (92.9%) were channeled to companies and BRL 13 million (7.1%) to individuals. In 2020, individuals became relevant creditors (or "investors") of the operations intermediated by SEPs.¹⁴⁰

Considering the balance of FinTechs' loan portfolios in December 2020, one can see that SCDs' operations have lower average tickets. Besides, the participation of operations BRL 50 thousand (85.9% of the outstanding portfolio) was very high. In SEPs, where companies are the largest borrowers of funds, operations between BRL 50 thousand and BRL 500 thousand represented 72.3% of the institutions' outstanding portfolio.

¹³⁹ The SCD's credit portfolio composition by income range and earnings is detailed at the box "SCDs and SEPs – performance in the credit market" of the [2020 Banking Report](#) (Figure 5).

¹⁴⁰ The participation in operations intermediated by SEPs according to the creditor's profile is also shown at the Box "SCDs and SEPs – performance in the credit market" of the [2020 Banking Report](#) (Figure 9).

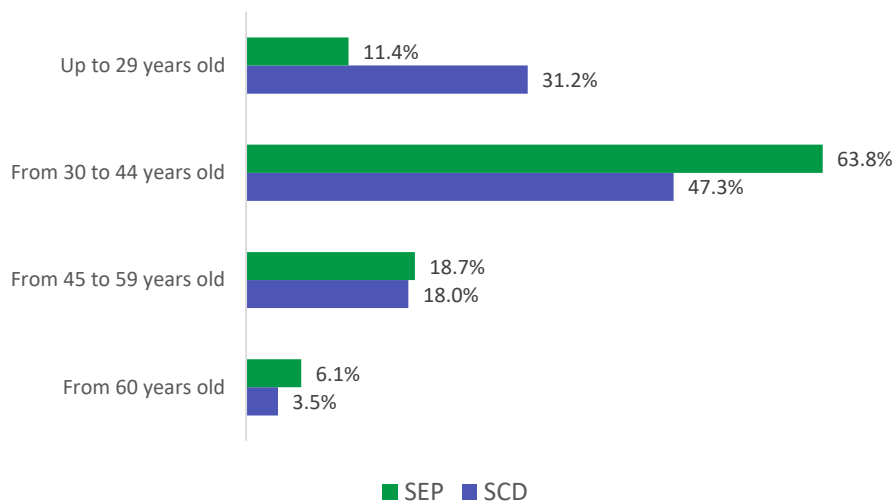
Figure 3.1.3 – Credit FinTechs’ outstanding portfolio by operation value range (in %) in December 2020



Source: BCB

Considering borrowers’ age group, there is significant participation of individuals under 45 years old as customers of credit FinTechs. This age group corresponds to 78.5% of customers at SCDs, and to 75.2% at SEPs.

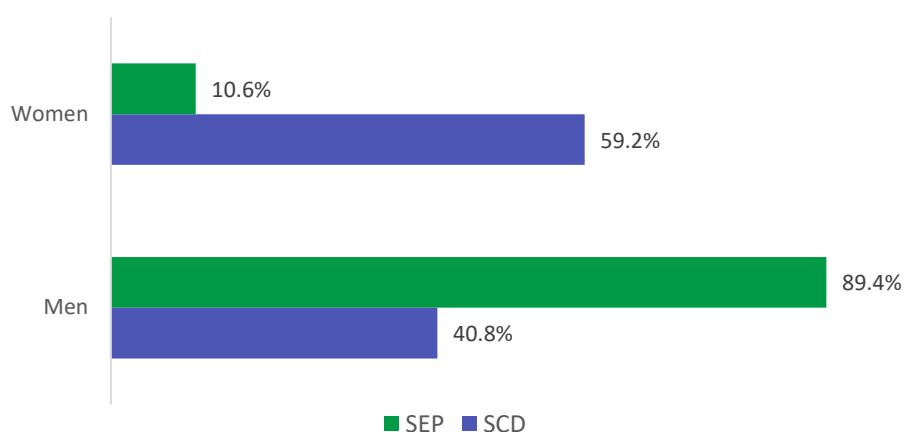
Figure 3.1.4 – Credit FinTechs customers by age range in December 2020



Source: BCB

Regarding the profile of FinTechs’ customers according to sex, a relevant participation of women is observed among borrowers in SCDs (59.2% of customers), while men predominate in SEPs (89.4% of borrowers).

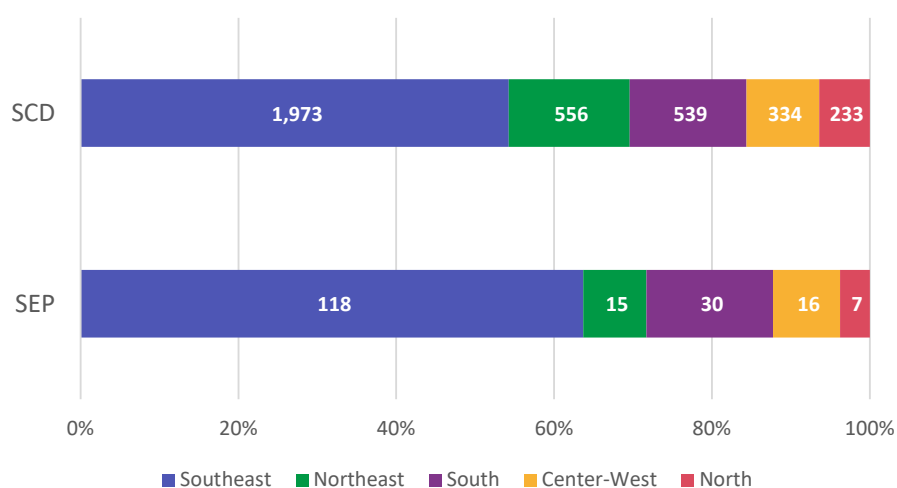
Figure 3.1.5 – Credit FinTechs customers by gender in December 2020



Source: BCB

As for territorial coverage, credit FinTechs operated in all regions of the country in 2020. However, the Southeastern region concentrated the largest volumes of borrowed funds, both in SCDs (54.3%) and SEPs (63.4%).

Figure 3.1.6 – Outstanding portfolio of credit FinTechs by region (in BRL million) in December 2020



Source: BCB

3.2 Innovations in the regulatory and payment environment

In recent years, the BCB has been implementing several projects with potential positive impact on the population's financial citizenship. Within the #Competitiveness dimension of the institution's strategic agenda (BC# Agenda), three specific actions stand out as innovations in the regulatory and payments environment that bring benefits to the citizen: Open Banking, Regulatory Sandbox, and Pix.

» Open Banking: increased innovation and inclusion in the financial system

#inclusion #quality #education

Open Banking – directly related to the digitalization and democratization of access to financial services – has transformed the way customers of financial products and services interact with the SFN. In general, Open Banking can be understood as a set of rules, protocols, and procedures that allows customers of participating institutions to share their registration and transaction data with other institutions also participating in this ecosystem, always upon the clear and specific customer authorization.

This data sharing is digital. The set of rules, protocols and procedures of Open Banking also allows customers to initiate a financial transaction at their original relationship institution through another institution of their choice with convenience and security. Its main foundation is the principle enshrined in personal data protection legislation: the consumer is the owner of his personal data and is entitled to share it.

The Open Banking implementation process¹⁴¹

The implementation of Open Banking ecosystems is already happening in different parts of the world, such as the UK, Singapore, and Australia. Each country has its own model regarding participants, obligation, and data scope, among others.

The Brazilian model – with the broadest scope of data and services among the models already implemented – is being considered one of the most advanced. Open Banking design in Brazil includes registration and transactional data, as well as services such as payment initiation and credit proposal forwarding. In its last phase it will also include data and services for investments, insurance, and social security, among others. This future phase will be called Open Finance because it is much more comprehensive.

The BCB developed this scope after a careful analysis of international experiences and with a broad participation, through public consultation, of all sectors interested in the topic. This broad discussion resulted in a regulatory framework through which the BCB defined the main requirements of the ecosystem, such as the profile of mandatory and voluntary participants, the minimum scope of data and services to be shared, conditions for customer consent and authentication, rules for contracting partnerships, and minimum-security requirements.

Regulation also determined the establishment of an initial governance structure, composed of associations representing institutions participating in Open Banking. This structure is responsible for transforming the guidelines and rules set by the BCB into standards and procedures to be adopted by participating institutions.

Open Banking is being gradually implemented in Brazil. The process started in February 2021 with the financial products and services data opening. However, it is important to emphasize that these steps are not the end of the implementation but, given its dynamic scope, the beginning of a continuous process of evolution of the ecosystem.

¹⁴¹ For more information about the implementation of Open Banking in Brazil, please visit https://www.bcb.gov.br/en/financialstability/open_banking.

Open Banking and the impact on financial citizenship

The Joint Resolution (BCB/CMN) 1, of May 4, 2020,¹⁴² which provides for the implementation of Open Banking in Brazil, explicitly mentions the promotion of financial citizenship as one of its objectives.

This new ecosystem kickoff will be an important boost for financial inclusion – one of the four dimensions of financial citizenship – thanks to increased competition, the reduction of information asymmetries, and the development of a more favorable environment for innovation.

Within this evolving and adaptive ecosystem, new business and service models are expected to emerge over time, increasing the range of options available to the population. Upon prior consent, smaller institutions will be able to access customer data that today is mostly handled by the largest banks. Based on this information, they will be able to offer more competitive and customized products and a better customer experience.

This scenario of increased competition, diversification, and customization tends to make services cheaper, increase convenience for customers and tailor them to the profile, needs, and goals of each person. In this way, citizens will be able to start or maintain their relationship with the financial system in a simple, safe, and appropriate way, even when there is little information available, generating positive effects on the quality of financial inclusion.

With the development of Open Banking, credit analyses, for example, can be more accurate, and rates can be reduced, since an individual applying for a loan at a FI can share the transaction history maintained with another FI. Debts maintained at different participating FIs can be analyzed and consolidated, and better refinancing solutions can be offered. Similarly, from a deeper knowledge of customers' financial habits, tools can be developed to help build up savings in a more consistent way with each consumer's profile, helping to increase citizens' financial resilience.

Financial education is another dimension of financial citizenship that should benefit from Open Banking. Software for comparing different products and services available in the market may help individuals choose the option that best suits their profile and needs. Counseling, financial education, and planning solutions may also emerge, contributing to better management of personal and household finances.

One of the greatest challenges of Open Banking, in addition to encouraging engagement in the ecosystem, is that these new models serve different segments of society, also reaching those who today are unserved by traditional financial institutions. The broad scope of Open Banking in Brazil, both in terms of data and services, as well as participants, is one of the fundamental characteristics for assuring that this financial system innovation be comprehensive.

To ensure consumer protection in this ecosystem, sharing of personal or service data depends on the customer's prior consent for specific purposes and deadlines. The FI participation in the Open Banking requires the previous authorization of operation by the BCB, so as to enable its supervision by the autarchy. Also, as they are institutions authorized to operate, FIs must have cyber security policies and meet a series of requirements with respect to the sharing of information, stipulating specific rules for the accountability of the institution and its managers.

As for the Open Banking regulation, one of the most relevant rules establishes that “the participating institution is responsible for the reliability, integrity, availability, security, and confidentiality in relation to the sharing of data and services in which it is involved, as well as for compliance with the legislation and regulations in force.”

Currently the BCB already supervises the whole process of implementing Open Banking in Brazil. Once it is up and running, the BCB will monitor the performance of the interfaces and their availability, so that this initiative meets the proposed objectives of encouraging innovation, stimulating competition, increasing the efficiency of the financial and payment systems, and promoting financial citizenship.

142 <https://www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Resolu%C3%A7%C3%A3o%20Conjunta&numero=1>.

» Regulatory Sandbox

#inclusion #participation

Originally, the concept of sandbox comes from the computer science, characterized as a controlled environment on the computer, in which tests can be performed. The idea is that any damage from testing would be restricted to that environment, without contaminating other components of the machine.

In 2015, the Financial Conduct Authority (FCA), the United Kingdom (UK)'s financial market regulator, applied this concept to the area of financial regulation and created the Regulatory Sandbox, which started operating in mid-2016. Like the original version of the concept, this is a controlled environment in which institutions can test, in the real world, new regulated products and services subject to a specific set of regulatory requirements.

The main goal of the Regulatory Sandbox is to foster the emergence of innovative products and services. In this environment, the regulator can follow the development process from the beginning and, to ensure compatibility with the country's regulatory framework, suggest changes to products and services that might be much more difficult to implement later.

In addition, a closer contact with the regulator is of interest to market institutions, especially those that do not yet have much experience with a regulated environment, such as FinTechs. In this environment, they can obtain guidance from the regulator in relation to aspects such as the compliance with regulatory requirements for supplying products and services and parameters that must be observed in market operations, such as risk management, transparency, and meeting customer and/or user needs. This contact is also important for the regulator, which can more closely monitor how new technologies are being used, what new risks could arise from them, and detect points for the improvement of legislation and regulation in force.



1. BCB analyzes proposals that qualify as innovative



2. Legal persons and several types of companies can participate even if not fully licensed by the BCB



3. Simplified monitoring procedures will be adopted



4. By the end of cycle, participants may obtain a permanent license from BCB to operate.

The projects may be the basis for the improvement of the regulation issued by the BCB and the CMN.

Following the FCA's pioneering work in the UK, other jurisdictions have decided to implement similar structures, through initiatives by regulators in jurisdictions such as Hong Kong, Singapore, Australia, Denmark, the Netherlands, Abu Dhabi, Canada, the United States, Sierra Leone, and Kenya.

Sandbox regulatory steps

CMN and BCB established the general rules of the BCB Regulatory Sandbox in the scope of the SFN and SPB, through CMN Resolution 4,865, of October 26, 2020, and BCB Resolution 29, of October 26, 2020.

The regulation designed the functioning of the Regulatory Sandbox and the requirements to be observed by its participants. In addition to the requirements established in the mentioned normative acts, participants

must observe rules for the prevention of money laundering and the combat of the financing of terrorism, as well as the BCB's rules for handling complaints made by customers and users.

Considering that the BCB Regulatory Sandbox is operationalized in cycles, BCB Resolution 50, of December 16, 2020, established the rules of the Cycle 1, lasting for one year and extendable for an equal period, and that may include 10 to 15 participants. This normative, which aims to classify projects, established priority themes for the BCB. Projects related to these themes will receive higher scores.

Sandbox impact on financial inclusion

Although there are still no results about the effect of regulatory sandboxes on issues related to financial inclusion, it will be interesting to check the progress of these structures in developing countries, where there is space for new projects focused on financial inclusion. A study requested by the European Parliament on the impact of regulatory sandboxes and innovation hubs on the FinTech ecosystem¹⁴³ indicates that this environment may benefit financial inclusion and increase the supply of financial products and services to consumers. According to this study, this type of structure is expected to increase competition, enabling the development of new financial products and services, as well as signaling that such jurisdiction supports innovation, attracting more innovators and investors.

In the Brazilian model, the strategic priorities directly or indirectly related to financial inclusion are: (i) financial and payment solutions with potential effects of stimulating financial inclusion; (ii) fostering credit for micro-entrepreneurs and small businesses; (iii) solutions for increasing competition in the SFN and SPB; and (iv) fostering sustainable finance.

Considering a testing environment and that a BCB strategic priority is to foster solutions aimed at increasing financial inclusion, the regulatory framework indicates that participants must adopt transparency measures in their relationship with their customers. To this end, participants must inform that their activities are carried out within the scope of the Regulatory Sandbox, including information regarding the lack of a definitive authorization from the BCB, when this is the case, and the deadline of the authorization to participate in the test.

In addition, participants are required to explain the concept of the Regulatory Sandbox to customers; explain the nature and complexity of the product or service provided; identify and disclose the risks incurred by the customer and user of the product or service offered; and timely provide their customers with contracts, receipts, statements, vouchers, and other documents related to these products and services.¹⁴⁴

» Pix

#inclusion #access #use #quality

Pix, the Brazilian instant payment arrangement, is the result of a working group in which several market agents have participated and that concluded its activities in December 2018 with the disclosure of the fundamental requirements for this ecosystem. In order to define its operating rules, the BCB established, in March 2019, the Pix Forum, a permanent advisory committee, with broad participation of market agents and public entities, which has been working on the continuous ecosystem's improvement. Thus, on November 16, 2020, the BCB started the full operation of Pix.

143 Regulatory Sandboxes and Innovation Hubs for FinTech – Impact on innovation, financial stability and supervisory convergence. Available at: [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652752/IPOL_STU\(2020\)652752_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652752/IPOL_STU(2020)652752_EN.pdf).

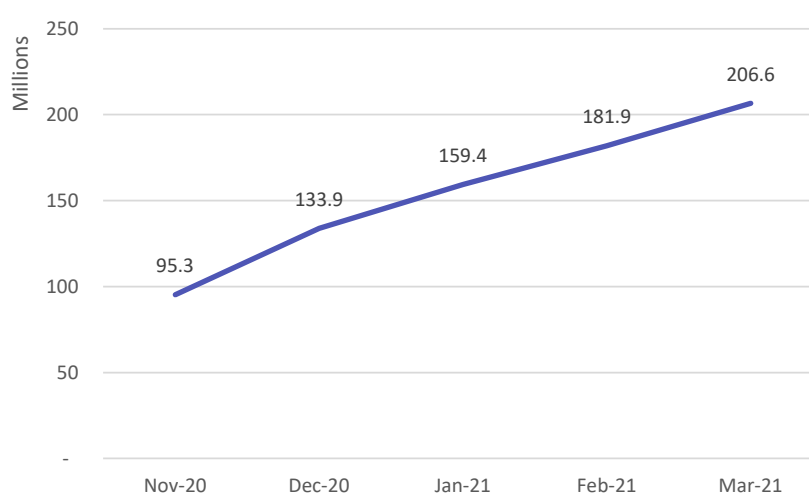
144 Further information about the Regulatory Sandbox is available at: <https://www.bcb.gov.br/en/financialstability/regulatorysandbox>.

Since its launch, Pix has turned in a new and effective alternative for the Brazilian population to make payments and transfers, alongside other means of payment such as cash, check, TED, DOC, slip, credit card, debit card, prepaid card, among others. Due to its characteristics (speed, availability, multiplicity of use, convenience, ease reconciliation for recipients, open environment, security, and low cost), Pix provides several benefits to its users and to the Brazilian economy, promoting competition, market efficiency, and financial inclusion.

The fast adoption of Pix by the Brazilian population

Even though the short period of time it has been available, Pix has already been widely adopted by the Brazilian population. On March 31st, 2021, four months and a half after the beginning of its operation, 206.6 million Pix keys¹⁴⁵ had already been registered (Figure 3.2.1.).

Figure 3.2.1 – Evolution in the number of registered Pix keys (million)



Source: BCB/DICT¹⁴⁶

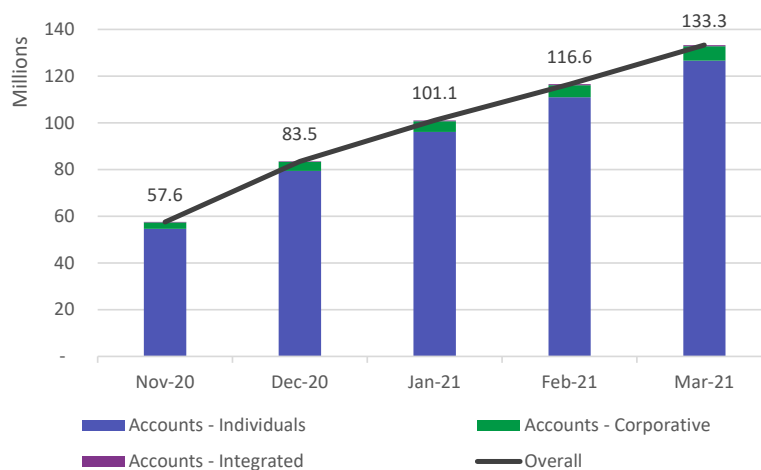
Many people register more than one key per account. More than 200 million individuals' keys are linked to 126.6 million accounts.¹⁴⁷ In March 2021, 6.2 million corporate accounts and about 500,000 integrated corporate and personal accounts had registered Pix keys (Figure 3.2.2).

¹⁴⁵ Pix key is a “nickname” that represents the set of information required for the identification of a transactional account on a Pix participant. The five types of Pix keys are: (1) email address, (2) mobile phone number, (3) CPF, (4) CNPJ, and (5) random key (a random set of characters generated by the system). Each Pix key represents the following set of information: (a) Pix participant, (b) branch number, (c) account number, (d) account type, (e) user ID (CPF or CNPJ of the account holder).

¹⁴⁶ The Transactional Account Identifiers Directory (DICT) is the database that allows you to search transactional account details from Pix keys, making the experience more convenient for those making a payment.

¹⁴⁷ Considering transactional accounts that may be a demand deposit account, a savings deposit account, or a prepaid payment account.

Figure 3.2.2 – Number of accounts registered on Pix (million)

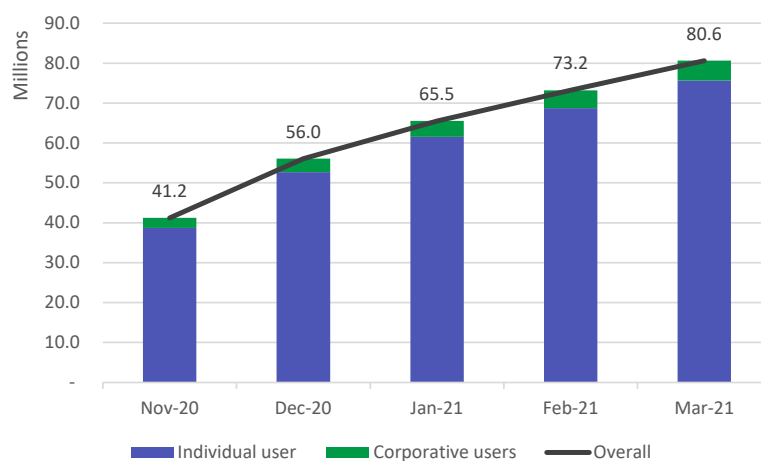


Source: BCB/DICT

From the total number of users with registered Pix keys (80.6 million in March 2021), most were individuals (75.6 million). Of these, 53 million had already sent at least one Pix, and 58.4 million had already received one, considering the period until March 31st, 2021 (Figure 3.2.3). This means that, in this period, 25% of the Brazilian population, or 30.8% of the adult population, had already sent a Pix.

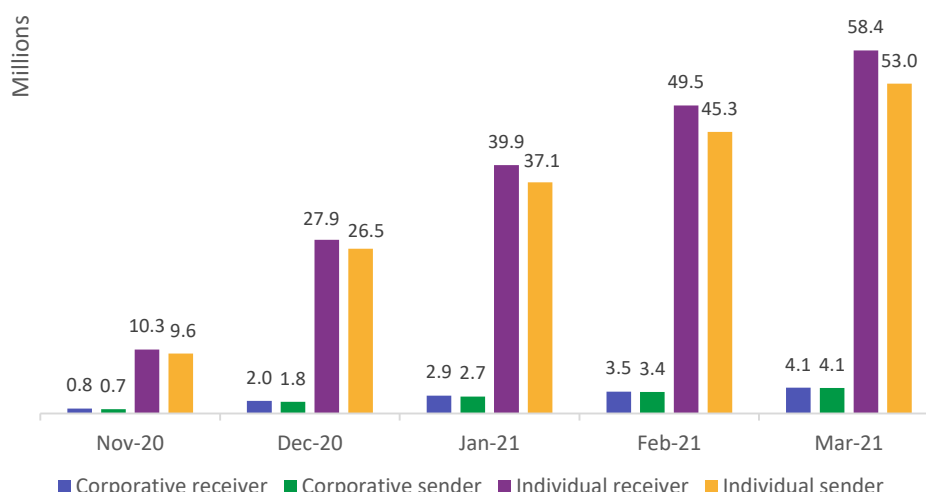
On the other hand, in March 2021, five million companies had registered Pix keys. Of these, 4.1 million had already sent at least one Pix, and the same number had already received at least one Pix in the period (Figure 3.2.4). This represents 29.7% of the corporates with some SFN relationship at the time.

Figure 3.2.3 – Evolution of the type of users who registered a Pix key (million)



Source: BCB/DICT

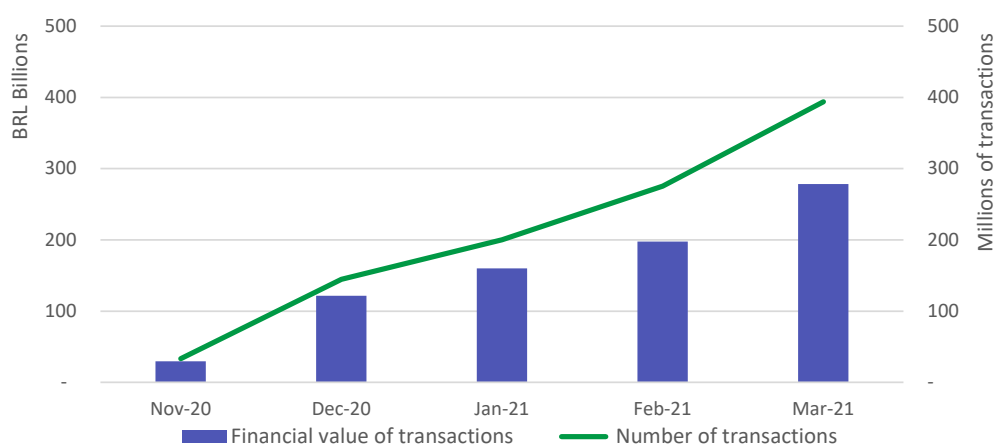
Figure 3.2.4 – Evolution of the types of users who have already used Pix (million)



Source: BCB/SPI¹⁴⁸

Between the start of its operation and March 2021, more than one billion Pix transactions were made, totaling more than BRL 787 billion (Figure 3.2.5). This is equivalent to an average value of BRL 778 per transaction. Transactions initiated by individuals have an average value of BRL 452.50, while transactions initiated by companies have an average value of BRL 3,345.35.

Figure 3.2.5 – Pix Transactions



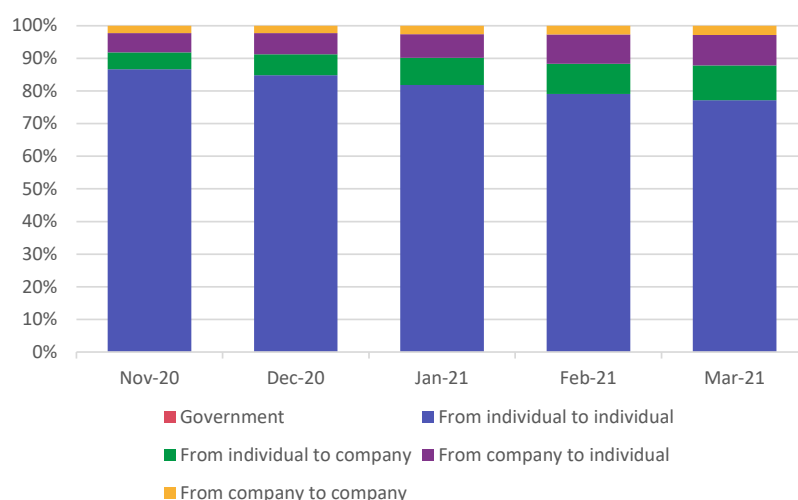
Source: BCB/SPI¹⁴⁹

So far, most of Pix transactions are made between individuals and, although still growing in absolute numbers, it has been losing relative ground due to the growth in the number of transactions involving companies (Figure 3.2.6). In this group of transactions, it is worth noting the rapid growth of transactions originating from individuals to companies, which generally represent transactions for the purchase of goods and services. In addition, Pix is increasingly being used to settle obligations at physical and electronic points of sale and is starting to become widespread in commerce as well.

¹⁴⁸ Data relating to Pix users only refers to transactions settled in the SPI.

¹⁴⁹ Data relating to Pix transactions refer to transactions settled in the SPI and information sent by Pix participants for transactions settled outside the SPI. Pix values and amounts are the sum of transactions carried out in the SPI and the transactions carried out outside the SPI.

Figure 3.2.6 – Nature of Pix transactions



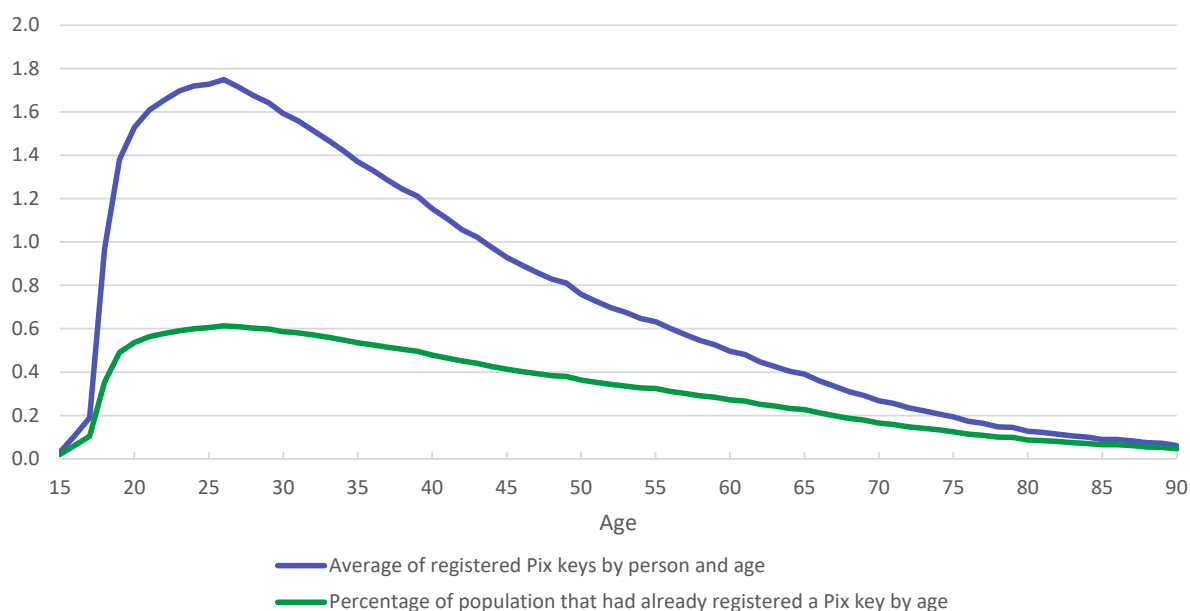
Source: BCB/SPI

Brazilians of all profiles are using Pix

Pix introduced a great innovation, being one additional option to the digitalization of the means of payment. Its intensive use, despite the short period of existence, indicates that the Brazilian population, in general, has been very receptive to the new means of payment.

As innovation relies on new technologies, it was already expected that young individuals would start to adopt Pix more quickly. Considering the entire population, the use of Pix by the elderly advanced more slowly, as suggested by the average number of Pix key registered per person and the proportion of people who had already registered a Pix key by March 2021, for each age group (Figure 3.2.7).

Figure 3.2.7 – Adoption of Pix by age group in the Brazilian population



Note: data referring to March/2021.

Source: BCB/DICT

When looking at the adoption of Pix by gender (Table 3.2.1), men proportionally registered more Pix keys and send and receive more Pix transactions, when compared to women, although the latter maintain, in absolute numbers, more SFN relationships than men.

Table 3.2.1 – Adoption of Pix by customers with a banking relationship, by gender

Gender	Customers (million)	Customers with a Pix key registered (%)	Customers who have already sent a Pix (%)	Customers who have already received a Pix (%)
Men	79.0	43.3%	32.2%	35.3%
Women	84.6	42.3%	31.2%	34.7%

Note: data referring to March/2021.

Source: BCB

Considering the population with available income information,¹⁵⁰ one also observes greater Pix adoption in the higher income ranges. The low-income population still does not seem to have adopted Pix as widely as users in the other groups. This low initial adoption may be related to the greater propensity of this population to use physical or face-to-face channels instead of digital ones, in addition to still present barriers to digital access. These barriers were analyzed in section 1.2.

Table 3.2.2 – Adoption of Pix by customers with a banking relationship, by income range

Population income groups	Customers (million)	Customers with a registered Pix key (%)	Customers who have already sent Pix (%)	Customers who have already received Pix (%)
Low income (≤50%)	56.2	41.1%	28.4%	33.0%
Middle income (>50%-90%)	45.0	57.0%	45.0%	49.0%
High income (>90%-99%)	10.1	66.5%	59.2%	58.4%
High income (> 99%)	1.1	67.9%	61.5%	58.7%

Note: data referring to March/2021.

Source: BCB

From a geographic perspective, the Southeastern and Northeastern regions concentrate almost 70% of all the Pix made by individuals. However, from a relative perspective, analyzing the adoption rate, that is, the relationship between the distribution of transactions and the distribution of the population with a banking relationship, we see that the Central-Western region has the highest rate, followed by the Southeastern and Northern regions, all with an index higher than 1.0.

¹⁵⁰ Further information on the breakdown of income groups by percentiles in section 1.1. The information on customers' income is reported by the financial institutions to the SCR. Thus, we only approached customers who have or had credit exposure, resulting in a smaller sample than the total of customers with a banking relationship.

Table 3.2.3 – Adoption of Pix by Brazilian regions

Region	Adults with bank relationship		Pix made until March		Adoption rate
	in million	in %	in million	in %	
North	12.2	7.4%	59.6	7.6%	1.02
Northeast	41.8	25.6%	162.3	20.8%	0.81
Southeast	72.3	44.2%	380.1	48.6%	1.10
Sul	24.7	15.1%	97.1	12.4%	0.82
Center-West	12.5	7.7%	82.9	10.6%	1.38

Note: data referring to March/2021.

Source: BCB

Regarding the size of the municipalities, the adoption of Pix is greater in the more populated Brazilian cities, which also have higher banking relationship indicators (Table 3.2.4). Considering that the municipalities with the smallest number of residents are also those with the fewest service points,¹⁵¹ Pix may come to play an important role in expanding financial inclusion in these localities.

Table 3.2.4 – Pix coverage by size of municipality, for customers with a banking relationship

Size of municipality (by number of inhabitants)	Customers (in million)	Customers with a Pix key registered (%)	Customers who have already sent Pix (%)	Customers who have already received Pix (%)
Up to 20,000	23.0	28.0%	17.7%	20.1%
From 20,000 to 100,000	42.2	34.1%	22.8%	25.9%
From 100,000 to 1 million	59.0	48.3%	36.7%	40.4%
Above 1 million	39.2	52.5%	41.8%	45.5%

Note: data referring to March/2021.

Source: BCB/SPI

The adoption of Pix has also occurred among Emergency Aid recipients.¹⁵² In March 2021, 28.2 million beneficiaries (43.1%) had already registered a Pix key, and 21.8 million (33.3%) had already received a Pix. In a scenario marked by the effects of the pandemic, electronic transactions have established as a simpler and more accessible alternative for the population. In this context, Pix has been useful to increase the access of the low-income population to digitalized banking and payment services, boosting their participation in the financial system in a more efficient way.

Table 3.2.5 – Adoption of Pix among the beneficiaries of the Emergency Aid

Type of beneficiary	Beneficiaries (in million)	Beneficiaries with a Pix key registered (%)	Beneficiaries who have already sent Pix (%)	Beneficiaries who have already received Pix (%)
<i>Bolsa Família</i>	18.5	21.9%	12.5%	19.1%
<i>Cadastro Único</i>	10.2	43.7%	28.4%	30.1%
ExtraCAD	36.9	53.6%	38.8%	41.3%
Emergency aid	65.6	43.1%	29.7%	33.3%

Note: data referring to March/2021.

Source: BCB

151 Branches/head offices, traditional and/or electronic service points and bank correspondents, as seen in section 1.1.

152 Details and characteristics of the Emergency Aid program, such as the types of beneficiaries, were explained in section 1.3.

Pix expands access to electronic means of payments: seventeen million people who did not use TED have used Pix

In January 2021, Pix surpassed the number of TEDs and DOCs combined. Compared with other electronic means of payment (Table 3.2.6), it is already possible to see a significant increase in the use of the Pix, as well as a drop in the number of other types of financial transactions.

Table 3.2.6 – Number of transactions per quarter (millions of transactions)

Quarters	2020Q1	2020Q2	2020Q3	2020Q4	2021Q1
Bank slip	804.1	821.6	973.7	1,040.6	978.7
Credit card	2,568.5	1,914.1	2,624.3	3,172.1	3145.6
Debit card	2,764.9	2,265.5	2,945.3	3,464.2	2981
Prepaid card	574.7	519.4	788.3	1,047.8	1435.6
Check	79.2	62.9	64.1	65.8	57.9
DOC	43.5	73.8	74.4	58.6	31.7
Pix	-	-	-	178.1	869.4
TEC	2.4	2.3	2.0	2.6	2.2
TED	260.2	299.1	372.5	399.8	249.2
Total	7,097.3	5,958.6	7,844.6	9,429.7	9,751.2

Source: BCB

Based on these changes, and to improve the knowledge about the Pix user profile, some relationships have been established between the use of Pix and TED. Table 3.2.7 compares the number of TEDs made by individuals in the one-year period prior to Pix (between November 2019 and October 2020) with the number of Pix transactions made by individuals between November 2020 and March 2021. For the total number of users, the analysis was extended to August 2021.

A relevant part of individuals who used to make TEDs before the launch of Pix (29 million) continues to make this type of transaction but in smaller quantities, and also started to make Pix transactions. Individuals who used to make TEDs and now make only Pix represent about 8% of the number and 6% of the value of Pix transactions. Finally, there is a large portion of the population that had not previously made TEDs, and now is using Pix.¹⁵³ By March 2021, this public reached 17 million people and represented 16% of the number and 10% of the value of Pix transactions.

Table 3.2.7 – Profile of transactions, regarding the use of TED and Pix

Did he/she use TED before Pix?	Does he/she use TED after Pix?	Public (million)	Number of TED (monthly average)		Number of Pix (monthly average)	Average TED ticket (BRL)		Average Pix ticket (BRL)
			Before Pix	After Pix		Before Pix	After Pix	
Yes	Yes	29	5.06	2.19	4.03	2,000.00	2,300.00	498.00
Yes	No	6	0.96	-	2.1	1,800.00	-	352.00
No	-	17	-	-	1.46	-	-	288.00

Note: data referring to March/2021.

Source: BCB

¹⁵³ In August 2021, approximately forty million people were in this situation, almost a quarter of the country's adult population.

These data suggest that a significant number of Brazilians, who previously did not use an electronic credit transfer instrument (TED), have done so since the launch of Pix. This may imply that these citizens, or at least part of them, were included in the process of digitalization of the payment market thanks to Pix. It is also noteworthy that the average transaction ticket of this part of the population is lower than the average ticket of those who already used TEDs before Pix, indicating that Pix has assumed a relevant role in retail payments of lower value.

Pix tomorrow

Besides the major innovations introduced by Pix in its first months of operation, there are great expectations for the incorporation of other benefits to citizens, individual micro-entrepreneurs, individual entrepreneurs, and companies in general. The availability of new features and new Pix products is foreseen in the agenda for the coming years.

Pix was developed by BCB to make life easier for individuals and companies, either as payers or as payees, and seeks to enable new business models, reduce costs, contribute to the digitalization of the means of payment, and provide the financial inclusion of the population. Its growing use,¹⁵⁴ encompassing increasingly types of use, has contributed to the construction of a more transparent, more competitive, more efficient, more inclusive, and more secure retail payments market, ultimately contributing to the financial citizenship.

154 The continuous and fast expansion of Pix since its launch leads to the rapid change of statistics presented in this section over time. [Pix Statistics](#) present updated information about Pix keys and user profiles and [SPI Statistics](#) (in Portuguese) present daily transaction data. Further technical information about Pix is available at www.bcb.gov.br/pix.



Chapter 4

Conclusions

Data and analyses in this Report show important advances in financial citizenship between 2018 and 2020. In 2018, the Financial Citizenship Report indicated in its conclusions that, as far as financial citizenship is concerned, future was heading to be digital. Great progress in this direction has been seen in recent years. The fast and growing adoption of Pix, the Brazilian instant payment scheme, is an example of digitalization with positive impacts on financial inclusion.

In addition to highlighting the growing importance of digitalization, this Report has sought to broadly understand the transformations of financial citizenship. Based on three axes, the RCF aimed **to analyze the past, understand the main challenges of specific populations, and highlight the innovations in the SFN that will help shape the future of financial citizenship in Brazil.**

In **analyzing the last three years**, the conclusion was that the scenario was one of preservation in terms of access to physical points of service for financial services. If, on the one hand, there was a drop in the number of branches, on the other hand there was an increase in the number of service points and banking correspondents.

Access to the SFN, which had already been at high levels, expanded in 2020, with the inclusion of 14 million citizens in the system. With this, 96% of the adult population in Brazil established some kind of financial relationship. In addition to this most recent expansion of access, the past analysis showed that the **diversification of providers** has changed the landscape of institutions that provide financial services to the Brazilian citizen, especially the IPs, which were responsible for about 30% of the new relationships established in the analyzed period.

Regarding **products and services**, in the last three years the population with some credit operation increased slightly reaching, by the end of 2020, almost 50% of the adult population in Brazil. From the income perspective, the use of credit reflects the country's inequality, as 50% of the population with the lowest income have approximately 12% of the credit portfolio balance in 2020.

When analyzing the use of **digital financial services**, it was possible to look into a scenario of increasing digitalization. Even the lower income groups have increasingly sought relationships with IPs, which focus heavily on offering digital financial services. These groups also increasingly adopted Pix in the very first months after its implementation. The migration to digital occurs even in a scenario where income is configured as the main barrier for Brazilians to access the Internet and digital means of payment.

The year 2020 could not be overlooked in the **analysis of recent developments**, a period strongly marked by the **impacts of the Covid-19 pandemic on financial citizenship**. Besides driving greater digitalization of financial services, the conditions imposed by the pandemic also had effects on other aspects of Brazilians' financial lives. The first effect was the expanded access, with an increase of almost 10% in the number of people in Brazil maintaining a relationship with the SFN, from 149 to 163 million in 2020. A relevant part of this expansion seems to be related to the Federal Emergency Aid, a benefit that may also be related to the more expressive drop in delinquencies specifically in that year.

In the crisis scenario brought by the pandemic, it was possible to evaluate the **financial resilience of Brazilians**. Sex and family income were the factors with the greatest influence on the probability of a person being financially resilient: being a man increases by 67% the chance of belonging to the resilient group, as well as having a family income of twenty minimum wages or more increases by 23 times the chance of being resilient if compared to families with income of up to one minimum wage.

New in this RCF issue, the in-depth analysis of **specific population clippings** was important to understand the main challenges of these populations and to build a richer diagnosis of financial citizenship in Brazil.

Young Brazilians have proven to be an important force for the diversification of financial providers observed recently. While the population between 15 and 29 years old is 25% of the citizens within the SFN, they represent 42% of the clients of both IPs and credit institutions. Analyzing this audience also reveals the challenge and potential of financial education. In 2018, 44% of Brazilian students assessed by Pisa were classified below the minimum level of proficiency in financial literacy. However, there was improvement in performance both absolutely and comparatively between 2015 and 2018.

Another specific public addressed were the Individual Micro-Entrepreneurs (MEIs), which reached eleven million registrations by the end of 2020. Although these entrepreneurs still relate to the SFN 4.6 times more often as individuals (via personal accounts), they are increasingly seeking to transact with the SFN as legal entities; the percentage of corporate relationships grew from 21% in 2017 to 29% in 2020.

The analyses based on the relationship between **senior** citizens and the SFN show the leading role played by payroll loans observed in this age group. It is the most used credit type both in number of operations and in the balance of the active portfolio: 40% of all credit granted to the older people was done through payroll loan. Payroll loan is also the most complained about financial issue in Consumidor.gov.br since 2018 and the only complaint in continuous growth in Procons between 2018 and 2020.

Finally, **looking to the future**, the RCF highlighted **innovations** that have the potential to change the way financial services are offered. In this sense, it was observed that IPs have gained relevance in the financial lives of citizens, with their customer portfolio increasing from fifteen million in 2017 to sixty million in 2020. A second group of institutions with potential to impact financial citizenship, especially in the expansion of access to and use of credit, began operating in the SFN in this triennium were the SPEs and the SCDs, both known as credit fintechs.

Besides the new institutions, specific innovations in the regulatory and payment environment brought important implications for financial citizenship: (i) **Open Banking**, which enables a scenario of greater competition, diversification and customization and tends to make services cheaper, more conveniently accessed by customers and better suited to the profile, needs and objectives of each person; (ii) the **Regulatory Sandbox**, which also fosters the creation of innovative products and services and has among its strategic priorities to encourage the emergence of financial and payment solutions with potential effects of stimulating financial inclusion and fostering credit for micro-entrepreneurs and small businesses; and (iii) the launch of **Pix** operation, which was conceived by BCB to facilitate the lives of citizens and companies, whether payers or payees. Pix seeks to enable new business models, reduce costs, contribute to the digitalization of means of payment and provide financial inclusion.

The adoption of Pix, for example, was fast, and the **digitalization of means of payment with impacts on digital financial inclusion** also seems to have occurred on the very first months of operation. By August 2021, around forty million citizens who previously did not use electronic means of payment began to do so through Pix, which demonstrates effects beyond a simple change to other digital means of payment.

These nuances in the analysis of **financial citizenship** show how this subject has advanced in recent years and highlight the various challenges yet to be overcome. The constant monitoring of this reality is essential for developing new technologies and innovative solutions and adequately evaluating their consequences on the lives of citizens and their relationship with the SFN.

Glossary

Adults with a relationship with the National Financial System (SFN): individuals over the age of 15 who hold deposit accounts or financial assets in the form of goods, rights and values, maintained or managed by banks, specialized banks, credit unions, credit and capital market institutions. This also includes persons who hold payment accounts at IPs, even though these are not considered to be components of the SFN.

Only one CPF is considered, even if the person has more than one registered relationship. The information is obtained from the Brazilian General Registry of the National Financial System (CCS*), and the database of the Brazilian Federal Revenue Office (RFB) is used to establish the age cutoff and to exclude suspended CPFs. The CCS information used in this work considers active (not terminated) relationships, even if they have very low balances or do not register movements for long periods.

*CCS data can be updated retroactively both by the FIs and by cadastral updates from the RFB.

Brazilian General Registry of the National Financial System (CCS): contains data of individuals and legal entities owning assets, rights and values in effect on January 1, 2001 and of relationships initiated on that date onwards. It registers information on account holders and clients of financial and payment institutions, and their legal representatives or attorneys-in-fact. The CCS shows the date of the beginning and, if applicable, of the end of the relationship with the institution, but does not contain data on amounts, financial transactions, or account and investment balances.

CadÚnico: a tool for identifying low-income families, containing information such as characteristics of the residence, identification of each person, education, work situation and income. CadÚnico is used to select and include low-income families in federal programs such as Bolsa Família.

Access channels: access channels to financial services are the means provided by financial institutions that allow their users to access their financial services. These access channels may be face-to-face (physical) or non-face-to-face (remote). The set of physical access channels is traditionally called service points. Remote access channels include call centers, internet banking and cell phone applications.

Credit card: payment instrument that enables the acquisition of products and services with future settlement, according to predetermined requirements, such as credit limit and validity. Also called postpaid card, the payment of the value corresponding to the products and services acquired will be made to the credit card issuer on a previously agreed date.

Credit card without financial charges: values and number of operations of purchases made with credit cards, both cash and in installments by the shopkeeper at the time of purchase, without incurring interest or other financial charges.

Credit card with financial charges: amounts and number of installment credit operations financed by the card issuer. These operations can be linked to revolving credit, withdrawals, installment purchases or installment purchases of credit card invoices with financial charges.

Payroll-deducted credit card: works like other credit cards for the payment of products and services. The difference is that, in the payroll-deducted credit card, the invoice value can be charged, totally or partially, automatically to your payroll. The amount charged is limited to the payroll-deduction margin. If the charge is partial, the outstanding value, not charged automatically, must be paid by the customer by the due date. If it is not paid, this amount will be financed with interest. In addition, the payroll-deducted credit card allows withdrawals within the consignable margin of the card. These withdrawals are, in practice, a loan that uses this additional margin related to the card, which is 5% over the percentage allowed for the payroll-deducted loan.

Debit card: payment instrument that enables the purchase of products or services by debiting the amount from the buyer's demand deposit account. It can also be used to withdraw cash from ATMs or in commercial establishments that have the appropriate machines.

Prepaid card: An instrument that works in a similar way to a debit card, but needs to be pre-loaded before being used. Every transaction or withdrawal reduces the balance deposited in the card until it is zeroed. To keep using it, a reload is necessary. In practice, the prepaid card works like a prepaid cell phone; its use is limited to the amount loaded on it. Depending on the issuer of the card, it can be used as a credit card at the time of purchase, but not for installment transactions.

Check: order for payment on demand, issued against a financial institution or "drawee", which establishes an obligation to pay a certain amount to whom the order is addressed, through the signature of the issuer, or "drawer". In Brazil, demand deposit accounts are the only ones that can be used for checks.

Overdraft facility: credit operation linked to the current account, in which a certain credit limit is made available to the client to use at his or her convenience, without the need to communicate its use beforehand to the financial institution.

Account holder clients: number of people who are clients of the various types of products guaranteed by the FGC. FGC's data considers individuals and legal entities, and the same client may have a deposit account and a savings account, or have accounts in more than one financial institution, generating double counting in the aggregate.

Borrower's debt service-to-income (CR): defined as the ratio between monthly debt service and the borrower's monthly income. A methodological revision of the measure presented in the September 2014, March 2015, and October 2015 editions of the Financial Stability Report (FSR). The measure uses data from BCB's Credit Information System (SCR), and allows the calculation on an individualized basis for each borrower in the SFN and, based on individualized data, the calculation of a central tendency measure for both the SFN and other levels of aggregation.

New credit operations: sum of the balance of new credit operations contracted in the reference period. This means that concession equals the amount, which was contracted during the period, even if it was not effectively released.

Demand deposit account (current account): account intended for the deposit of funds in financial institutions, by individuals or legal entities. Its balance can be affected by checks, magnetic cards or electronic transfers, among others. The funds deposited are not remunerated or adjusted for inflation and are guaranteed in the event of bankruptcy or liquidation of the financial institution, up to a certain limit, by the Brazilian Credit Guarantee Fund (FGC).

Savings deposit account: account intended for depositing funds by individuals or legal entities. No income tax is levied on such investments. The basic rate is given by the Referential Rate (TR) plus an additional remuneration of 0.5% per month (if the Selic rate target is higher than 8.5% p.a.), or 70% of the Selic rate target per year, on monthly basis, in force at the starting date of the income period (if the Selic rate target is equal to or lower than 8.5% p.a.). The interest earned is the same regardless of the volume invested, and there is no minimum investment amount. The date the savings account is opened is considered its anniversary date. The account's earnings are credited at each anniversary. Money may be withdrawn by the account holder at any time, but if this happens before the account's anniversary that month's yield will not be credited to the account. It allows several types of financial transactions such as electronic transfers or debit cards. In case of bankruptcy or liquidation of the institution, the funds are guaranteed, up to a certain limit, by the FGC.

Payment accounts: it is an account based on amounts previously deposited by the customer, that allows withdrawals, payment of bills and slips (boletos), transfers by TED, DOC and Pix, in addition to transfer of funds between customers of the same payment or financial institution. In this case, they are known as prepaid payment accounts. They can also be postpaid, if intended for payment transactions that do not require the prior deposit of funds. The most common example of this kind of payment account is the mean

of payment commercially known as credit card. Payment accounts are offered by payment institutions or by financial institutions. In the case of prepaid payment accounts, funds deposited by customers for transactions are not protected by the FGC and cannot be used for financial intermediation operations (credit operations).

Housing credit: category of credit that incorporates all the subtypes of real estate financing of SCR. For this report, the most relevant is housing financing, targeted to the acquisition or construction of housing units regulated under the Housing Finance System (SFH).

Payroll-deducted personal credit: credit operations that withholds part of the borrower's salary or benefit, for the payment of loan installments (payroll deduction) under the terms of the legislation in force. These operations must not be linked to the acquisition of goods or services, in the form of financing.

Non-payroll-deducted personal credit: loan operations to individuals, not linked to the acquisition of goods or services and without withholding part of the borrower's salary or benefit for the payment of the loan installments.

Credit card – revolving credit: debit balance remaining after the due date of the invoice. The amount of revolving credit is the difference between the total amount of the invoice and the amount paid by the borrower, including interest calculated up to the end of the month.

Rural and agribusiness credit: type of credit that includes financing rural producers for costing and investment operations, both agricultural and livestock.

Term deposits: fund investments by individuals or legal entities in investments such as Bank Deposit Certificates (CDB), Bank Deposit Receipts (RDB), Time Deposit with Special Guarantee (DPGE) of the FGC.

Directory of Transactional Account Identifiers (DICT): a database of the Pix payment solution that stores the information of Pix payee's users and allows to search their respective transactional accounts (current account, payment account, etc.) with addressing keys that are more convenient for those making a payment, the so-called Pix keys. The DICT is the component that allows payment initiation in a practical and fraud-risk mitigating way and is managed and operated by the BCB.

Borrower's debt-to-income ratio: the ratio between the current value of borrowers' debts in the SFN and their accumulated income over the last twelve months. As in the case the borrower's debt service-to-income, it considers the income of individuals who have debts in the SFN. The individualized calculation is done, borrower by borrower, and then the median is used for aggregate calculations.

Delinquency: any credit operation – including overdue and not yet due installments – is deemed to be delinquent if there are installments overdue for more than 90 days. This process, called “hauling” (arrasto), assumes that the debtor in such a situation will not pay the not-yet-due installments while there are installments overdue for more than 90 days. The delinquency rate is calculated by dividing the sum of operations with installments overdue for more than 90 days by the sum of all credit operations registered.

Individual micro-entrepreneur (MEI): a self-employed person who is legalized as a micro entrepreneur. Makes up to BRL 81,000 per year (according to Complementary Law 139, of 2011, and Complementary Law 155, of 2016) and does not have a stake in another company as a partner or owner. A MEI may have one hired employee who receives the categories' or national minimum wage.

Small businesses: companies with annual gross revenue greater than BRL 360,000 or equal to or lower than BRL 3,600,000, as established in art. 3, section II, of Complementary Law 123, of 2006.

Pix: Payment transfer and purchase solution that allows funds to be transferred from transactional accounts (deposit accounts or prepaid payment accounts) of users – individuals or legal entities – of any participant in the arrangement (financial or payment institutions) to transactional accounts of users – individuals or legal entities – of another or the same participant. Transactions are available 24 hours a day, seven days a week, every day of the year and funds are available at the beneficiary account within seconds after the transaction is started.

Number of loans granted: a number of loans contracted and effectively realized, which have outstanding installments at the reference date, both overdue and not yet due. The number of loans encompasses not only grants performed on the reference date, but also the outstanding credit stock on that date, regardless of the date the loan was granted. Credit operations can be identified, with client individualization and operation information (for clients whose operations in the institution equal or exceed BRL 200) or not identified, with aggregation of information (when the client's operations are below BRL 200). In these indicators, the identified operations are being considered.

Number of borrowers: number of clients with outstanding credit operations (outstanding credit operations, as aforementioned). Individuals or corporations that: i) reside abroad; or ii) do not have a Corporate Taxpayer Register Number (CNPJ) or an Individual Taxpayer Register Number (CPF), were disregarded. The latter, anyway, have negligible values.

Complaints Ranking: the “complaints index” is the result of the ratio between the number of complaints classified as regulated and valid in the reference period and the total number of clients of each institution or financial conglomerate, calculated by adding up the numbers of distinct CPF and CNPJ in the CCS and SCR bases. To allow better comparison, the ranking of complaints from banks and financial institutions (including commercial banks, multiple banks with commercial portfolio, savings banks, credit, financing and investment companies) is segmented into two groups, according to the number of clients of the institution or conglomerate: lower or higher than four million clients. There is also a specific ranking, published every six months, for complaints against consortium management, due to the peculiar market in which these institutions operate.

Regulated and unregulated complaints: each complaint registered with BCB is analyzed and classified as:

- **Regulated complaints** – with merit: number of occurrences (irregularities), associated with complaints concluded during the reference period, in which there was evidence of non-compliance by the institution with a law or regulation for which the BCB is responsible for supervision;
- **Regulated complaints** – other: number of occurrences (irregularities), associated with complaints closed in the reference period, in which there was no evidence of non-compliance by the institution with a law or regulation for which the BCB is responsible for supervision; or
- **Unregulated complaints:** number of occurrences (irregularities), associated with complaints closed in the reference period, which are not related to a law or regulation for which the BCB is responsible for supervision.

Monthly income: since the information may differ when coming from different supervised entities (SEs), the following procedure was adopted: i) if there is more than one monthly income range of individuals for each borrower, the mode is used to define the single monthly income range of the client and, as a tie-breaker criterion, the range that presents in the aggregate the largest value of active portfolio; ii) among the SEs that report the single monthly income range of the client, the largest income value is considered, respecting the lower and upper limits of the range in question; and iii) an estimate of the social security contribution and income tax is discounted from the value obtained.

Credit portfolio balance or outstanding portfolio: includes both overdue and not yet due installments in BRL, excluding operations accrued as losses. The outstanding portfolio encompasses not only credit concessions performed on the reference date, but also the outstanding credit stock on that date, regardless of the date the loan was granted.

Monthly debt service: amounts informed to SCR of the outstanding portfolio falling due in up to thirty days, except for: a) housing finance, whose amount falling due in up to thirty days is estimated by the constant amortization system; b) overdraft facility, whose debt service corresponds to the monthly interest amount; and c) other credit types with a revolving nature, whose amounts falling due in up to thirty days are estimated by the Price amortization system. It considers all the types of credit to individuals, except rural credit and those with corporate financing nature, although granted to individuals. The debt service of credit card and installment credit card operations – although also calculated – is not part of the basic measure of the SCR, being incorporated to the monthly debt service in alternative measures of the indicator in question.

Credit Information System by the BCB (SCR*): a tool for registering and consulting information on credit operations, sureties and guaranties provided and credit limits granted by financial institutions to individuals and legal entities in the country. The SCR is updated monthly by financial institutions, through the collection of information on operations granted. Since 2016, the SCR database has stored the operations of customers with total liability equal to or greater than BRL 200.00, due and not yet due, and the amounts related to guaranties and sureties provided by financial institutions to their customers, in addition to credits to be released recorded in the monthly balance sheets.

*All credit information in this report is provided by the BCB's SCR. Credit operations abroad or operations which region is not informed were disregarded.

Instant Payment System (SPI): centralized and unique infrastructure managed by the BCB for the settlement of instant payments between distinct institutions in Brazil. The system performs gross settlement in real time (RTGS), that is, it processes and settles transaction by transaction. Once settled, transactions are irrevocable. Instant payments are settled with entries in the special-purpose accounts – called Instant Payment Accounts (IP Accounts) – kept with the BCB by the institutions directly participating in the system. To ensure the soundness of the system, there is no possibility of overdraft entries, that is, PI Accounts do not allow for negative balance.

Pix transactions: they comprise transactions settled in the SPI and information sent by Pix participants from transactions settled outside the SPI. Pix values and amounts are the sum of transactions performed in and out the SPI.

Average interest rate: average of the interest rates on credit operations, weighted by the respective amounts disbursed. The average rates of the aggregate segments are calculated by the average rates of the credit types, weighted by the average balances of the respective types. Only operations agreed upon with pre-fixed rates are considered in this calculation.

Transfers: in addition to Pix, transfers can be made by Credit Transfer Document (DOC) or Express Wire Transfer (TED).

- **DOC:** interbank funds transfer order on behalf or in favor of individuals or legal entities, customers of financial institutions or payment institutions. It can only be sent and received by commercial banks, multiple banks with commercial portfolio, savings banks and payment institutions authorized to operate by the BCB. DOCs can only be issued in an amount up to BRL 4,999.99, and settlement occurs on the next business day following the date of issue.
- **TED:** interbank funds transfer order, settled through a funds transfer settlement system, which is available to the receiving client within one hour and thirty minutes of the transfer execution. Account holders with the BCB – except for clearing houses and providers of clearing and settlement services – can offer TED to their clients, but there is no obligation. There is no minimum or maximum operational limit for sending funds through TED.

Annex

Table 1 – Summary measures of financial health indicators (ISF)

	Average	Standard error	CI95%		Minimum	Maximum	N	p
			IL	SL				
ISF – total	57.6	0.3	57.1	58.1	0.0	100.0	5.000	<0.001
G1	71.2	0.9	69.5	73.0	21.0	100.0	1.098	
G2	67.6	0.5	66.5	68.6	48.0	100.0	1.393	
G3	46.1	0.4	45.3	46.8	0.0	88.0	2.510	
ISF – Financial security	56.7	0.3	56.1	57.4	0.0	100.0	5.000	<0.001
G1	67.9	1.2	65.6	70.1	0.0	100.0	1.098	
G2	66.0	0.7	64.6	67.4	6.0	100.0	1.393	
G3	46.7	0.5	45.6	47.8	0.0	100.0	2.510	
ISF – Financial ability	64.4	0.3	63.8	65.1	0.0	100.0	5.000	<0.001
G1	69.1	0.9	67.4	70.8	0.0	100.0	1.098	
G2	65.0	0.6	63.9	66.2	0.0	100.0	1.393	
G3	44.1	0.5	43.2	45.1	0.0	100.0	2.510	
ISF – Financial behavior	64.4	0.3	63.8	65.1	0.0	100.0	5.000	<0.001
G1	77.5	1.0	75.6	79.5	8.0	100.0	1.098	
G2	73.6	0.8	72.1	75.1	8.0	100.0	1.393	
G3	53.7	0.7	52.4	55.0	0.0	100.0	2.510	
ISF – Financial freedom	52.3	0.8	50.9	53.8	0.0	100.0	5.000	<0.001
G1	71.8	1.0	69.8	73.8	0.0	100.0	1.098	
G2	65.5	0.6	64.3	66.7	0.0	100.0	1.393	
G3	36.5	0.7	35.1	37.9	0.0	100.0	2.510	
BF	6.2	0.0	6.1	6.3	0.0	12.0	5.000	<0.001
G1	7.3	0.2	6.9	7.6	0.00	12.00	1.098	
G2	6.8	0.2	6.5	7.1	0.00	12.00	1.393	
G3	5.4	0.1	5.2	5.6	0.00	12.00	2.510	

Table 2 – Parameters of the multinomial logistic regression

	G1		G2	
	<i>Adjusted OR</i>	<i>p</i>	<i>Adjusted OR</i>	<i>p</i>
Gender Male (ref. = female)	1.67 (1.41 - 1.98)	<0.001	1.36 (1.17 - 1.58)	<0.001
Age group (ref. = 60 years or older)		0.001		<0.001
18 to 24 years	1.70 (1.26 - 2.28)	<0.001	1.56 (1.17 - 2.06)	0.002
25 to 29 years	1.59 (1.19 - 2.13)	0.002	1.35 (1.02 - 1.78)	0.033
30 to 34 years	1.50 (1.13 - 1.98)	0.005	1.13 (0.88 - 1.46)	0.320
35 to 39 years	1.31 (0.99 - 1.74)	0.062	1.11 (0.86 - 1.44)	0.426
40 to 59 years	1.04 (0.82 - 1.32)	0.733	0.88 (0.7 - 1.1)	0.252
Education (ref.=Illiterate / Incomplete Elementary 1)		0.023		0.584
Complete Elementary 1 to High School	0.71 (0.45 - 1.13)	0.153	0.89 (0.54 - 1.48)	0.662
High School / Incomplete College	0.65 (0.40 - 1.03)	0.068	1.07 (0.67 - 1.71)	0.786
Complete High School	0.83 (0.51 - 1.36)	0.464	1.09 (0.66 - 1.80)	0.733
Complete Post-graduation	0.96 (0.56 - 1.64)	0.888	1.16 (0.68 - 1.98)	0.580
Socioeconomic class (D-E)		0.473		0.134
A	1.57 (0.96 - 2.56)	0.070	1.87 (1.21 - 2.90)	0.005
B1	1.39 (0.87 - 2.24)	0.172	1.64 (1.09 - 2.46)	0.018
B2	1.32 (0.83 - 2.08)	0.241	1.67 (1.13 - 2.47)	0.010
C1	1.14 (0.76 - 1.72)	0.514	1.46 (1.02 - 2.09)	0.037
C2	1.12 (0.80 - 1.57)	0.503	1.30 (0.94 - 1.80)	0.112
Region (ref. = Center West)		0.202		0.045
North	1.10 (0.72 - 1.67)	0.660	0.85 (0.61 - 1.19)	0.353
Northeast	1.34 (0.99 - 1.80)	0.056	0.99 (0.74 - 1.33)	0.943
Southeast	1.09 (0.85 - 1.41)	0.486	0.74 (0.60 - 0.91)	0.005
South	1.29 (0.98 - 1.70)	0.075	0.86 (0.68 - 1.09)	0.200
Monthly household income (ref.= Up to 1 Minimum Wage - MW)		<0.001		<0.001
From 1 to 2 MW	1.15 (0.79 - 1.68)	0.460	1.34 (1.03 - 1.75)	0.031
From 2 to 3 MW	1.60 (1.09 - 2.36)	0.017	1.77 (1.30 - 2.42)	<0.001
From 3 to 5 MW	2.31 (1.58 - 3.38)	<0.001	2.71 (1.94 - 3.78)	<0.001
From 5 to 10 MW	3.68 (2.43 - 5.58)	<0.001	4.11 (2.88 - 5.88)	<0.001
From 10 to 20 MW	8.03 (5.01 - 12.88)	<0.001	6.14 (3.96 - 9.51)	<0.001
Over 20 MW	23.24 (12.13 - 44.55)	<0.001	11.66 (6.35 - 21.43)	<0.001

Reference category G3

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