ENHANCING RESILIENCE OF LOW INCOME WORKERS IN BRAZIL

Financial instruments and innovations

April 2021

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AFD
AGENCE FRANÇAISE DE DÉVELOPPEMENT

Enhancing Resilience of Low Income Workers in Brazil

Financial Instruments and Innovations

Social Protection and Jobs Global Practice
Latin America and Caribbean Region

April 2021

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Acknowledgments

This Policy Note was prepared by a World Bank task team comprising Matteo Morgandi (Task Team Leader), Tiago Falcao, Marcelo Neri, Malin Ed, Katharina Fietz, Gabriel Lyrio Oliveira, and Maria Concepcion Steta Gandara. Chapters 1 and 3 draw from several background papers specifically developed for this note by Professor Marcelo Neri, (Fundação Getúlio Vargas), comprising (a) a micro-analysis of financial behavior and attitudes of low-income households in Brazil, based on four nationally representative datasets for Brazil (IBGE PNAD Continua and POF, Lloyd's Risk Poll Survey, and World Bank Findex); (b) a review of select experiences in Brazil to stimulate savings and financial inclusion; and (c) a study on the use and demand for insurance by low-income families (the latter financed by the Inter-American Development Bank [IADB]). The team is thankful to Joana Sousa Lourenço, Pedro Xavier Faz de los Santos, and Pietro Calice for their advice and inputs on international experiences; to Pablo Acosta (Program Leader for Brazil) for his strategic guidance; to Ricardo Martin Garcia Tafur and Diogo Falchano Bardal for their input on the financial sector in Brazil; and peer reviewers Melis Guven, Truman Packard, and Heinz Rudolph.

The note prepared as part of the Externally Financed Output 1627 'Brazil Social Protection Policies During the Recovery from COVID-19' financed by the Agence Francaise de Development (AFD), in response to a demand from the Ministry of Citizenship of Brazil. The team is grateful to the ministry's staff in the Executive Secretariat and the National Secretariat of Citizenship income (SENARC) for their feedback and comments at different stages.

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Acronyms

AE	*Emergency Aid (Auxílio Emergencial)*
AFP	Chilean Pension Fund Administrator (*Administradora de Fondos de Pensiones*)
API	Application Programming Interface
BANSEFI	National Savings and Financial Services Bank (*Banco del Ahorro Nacional y Servicios Financieros)*
BCB	*Central Bank of Brazil (Banco Central do Brasil)*
BEPS	Colombian Periodic Economic Benefits *(Beneficios Económicos Periódicos)*
BF	*Bolsa Família*
BPC	*Benefício de Prestação Continuada*
CCT	Conditional Cash Transfer
CEF	*Caixa Econômica Federal*
CCF	Colombian Family Compensation Funds (*Caja de Compensación Familiar*)
CLT	Consolidation of Labor Laws *(Consolidação das Leis do Trabalho)*
CONEF	National Financial Education Committee (*Comitê Nacional de Educação Financeira*)
CRAS	Social Assistance Reference Center (*Centro de Referência de Assistência Social*).
CRISP	Crisis-Resilient Social Protection
CPF	Individual Taxpayer Registry (*Cadastro de Pessoas Físicas*)
ENEF	National Strategy for Financial Education (*Estratégia Nacional de Educação Financeira*)
FGC	*Fundo Garantidor de Créditos*
FGTS	*Fundo de Garantia do Tempo e Serviço*
FGV	Center for Social Policies in Brazil

FOSFEC	Colombian Solidarity and Employment Promotion and Cessation Protection Fund (*Fondo de Solidaridad de Fomento al Empleo y Protección al Cesante*)
GDP	Gross Domestic Product
IBGE	Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*)
IDB	International Development Bank
INEC	Northeast Citizenship Institute (*Instituto Nordeste Cidadania)*
INSS	National Social Security Institute (*Instituto Nacional de Seguro Social*)
IPA	Innovation for Poverty Action
PASI	Immediate Social Support Plan *(Plano de Amparo Social Imediato)*
PNAD	National Sample Households Survey (*Pesquisa Nacional por Amostra de Domicílios*)
PNMPO	*Programa Nacional do Microcrédito Produtivo Orientado*
POF	Family Budget Survey (*Pesquisa de Orçamentos Familiares)*
PROIIF	*Programa Integral de Inclusión Financiera*
RGPS	*Regime Geral de Previdência Social*
RSSB	*Rwanda Social Security Board*
SAT	*Seguro de Acidente do Trabalho*
SII	Internal Revenue Service of Chile (*Servicio De Impuestos Internos* [SII]
SD	*Seguro Desemprego*
SENARC	*National Secretariat of Citizen Income (Secretaria Nacional de Renda de Cidadania)*
SFH	*Sistema Financeiro de Habitação*
UISA	Unemployment Insurance Savings Account

Executive Summary

This note seeks to inform the design of a financial product and complementary actions that the Government of Brazil could adopt to strengthen resilience of families in *Bolsa Família* (BF)[1] and *Cadastro Único*[2], particularly those working in the informal economy. While the Brazilian social protection system provides instruments to reduce the risk of destitution from old age and disability with broad coverage, protection against labor income shocks in Brazil remains segmented and largely depends on labor status and household composition. In 2019, nearly one-third of households in Brazil lived below the *Cadastro Único* poverty line of BRL 499 per capita[3], but many of them were above the eligibility threshold of BF (BRL 189 per capita). Moreover, an estimated 5 million households live below the median household income but are out of reach of any form of 'protected' income (whether it is a social transfer, a pension, or a formal job with access to unemployment insurance). During the pandemic, *Auxílio Emergencial* (AE)[4] was an appropriate response to mitigate the systemic shock affecting these otherwise uncovered households, but AE was not designed to be fiscally sustainable and incentive compatible in the medium term

The systemic shock brought by COVID-19 exacerbated vulnerable families' existing challenges in managing income volatility. High income volatility was a characterizing feature of poor households even before the pandemic. Panel data show that workers in informal wage employment or self-employment experience at least twice as high variation of income compared to formal wage employees, even when taking into account unemployment spells. Thus, a major challenge for vulnerable families is how to navigate temporary income shocks, without permanently damaging assets or human capital. This is also the case for those who receive the BF cash transfer, given that 71 percent of their total income on average derives from their labor. Access to credit or savings can be a way to face such sudden income shocks; however, two-thirds of adults in Brazil's bottom 40 percent of the population report that they could not raise money in an emergency event. Among those who think they could, informal credit is more common than formal credit, and both are more common than savings (Findex 2017).

[1] *Bolsa Família* is a conditional cash transfer program in Brazil, aimed at families with children living in extreme poverty or poverty.
[2] *Cadastro Único* is the single registry that allows the Federal Government of Brazil to keep track of low-income families.
[3] Close to the international line of US$5.5 purchasing power parity (PPP) per capita a day.
[4] *Auxílio Emergencial* is a financial support provided by the Federal Government of Brazil and aims to provide emergency protection during the COVID-19 Pandemic.

Access and use of financial instruments by low-income families

Compared to other countries, the saving rates in Brazil are low—and especially low among the poor. Household budget survey data shows that, within the heterogeneous poor population, the self-employed and formal wage workers on average save more, and in general women save more than men. The analysis also shows that BF recipients have lower net savings than poor who are not in the safety net—in fact most recipients use savings to pay off existing debt. This could be an indication that families with social transfers have more opportunity to borrow against their future benefit flows, but also that more room exists to build their saving capacity.

Behavioral biases and financial illiteracy reduce the propensity to save. Compared to international peers, the Brazilian population more pronouncedly exhibits the behavioral biases that are associated with lower saving: overoptimism, time-inconsistent preferences, and low trust. Test results also show knowledge gaps in fundamental concepts of financial literacy such as probabilities, which limit the ability to make informed financial decisions. Unsurprisingly, even among the poor, education predicts access to credit, better repayment, and lower default probability.

91 percent of families in *Cadastro Único* and 25 percent of individuals in BF families already owned a savings account before AE (BCB 2020). Pre-pandemic data show that women, individuals with a greater levels of education, and urban populations, as well as formal wage and self-employed workers, are more likely to own bank accounts. The connection of the poor with financial institutions reached a historic high in 2020, as *Caixa Econômica Federal* (CEF) opened a free digital account for each unbanked beneficiary of AE. However, little is known about the current usage of these accounts by the new customers since.

In 2018, one-quarter of families in *Cadastro Único* used formal credit, though most often through more expensive consumer credit instruments. "Special checks" and minimum payments on credit cards are the more common way of borrowing by the poor, possibly because these are preapproved. Only one-quarter of the loans of *Microcrédito Produtivo Orientado* are actually provided to families in *Cadastro Único*. Stringent requirements, and lower propensity to invest, divert this subsidized credit to those with more formal credit history. However, many informal workers operate from home and do not maintain separate accounting for home and business expenses, and often goods bought with consumer credit also serve as tools for their business. Lastly, very few low-income families use a commercial insurance product. About 18 percent of the total population in Brazil holds a private insurance. This number plummets to 3 percent among BF families, and individuals tend to buy it mostly when it is mandated (like for vehicles or house insurance when renting a home).

Steering financial inclusion to improve resilience international experience

In recent years, several countries with large informal economies promoted tailored financial risk management instruments for people with unobservable and low earnings. Low-income families have some capacity to save—but on an irregular basis. Some countries introduced dedicated individual savings accounts to stimulate long-term savings by the informal self-employed (such as Colombia and Kenya), or, in some cases, these were directly tied to participation in conditional cash transfers (CCTs) (Mexico and Pakistan). These instruments were designed with specific features both on the deposit and the withdrawal side, with the objective of addressing savings constraints and behavioral biases.

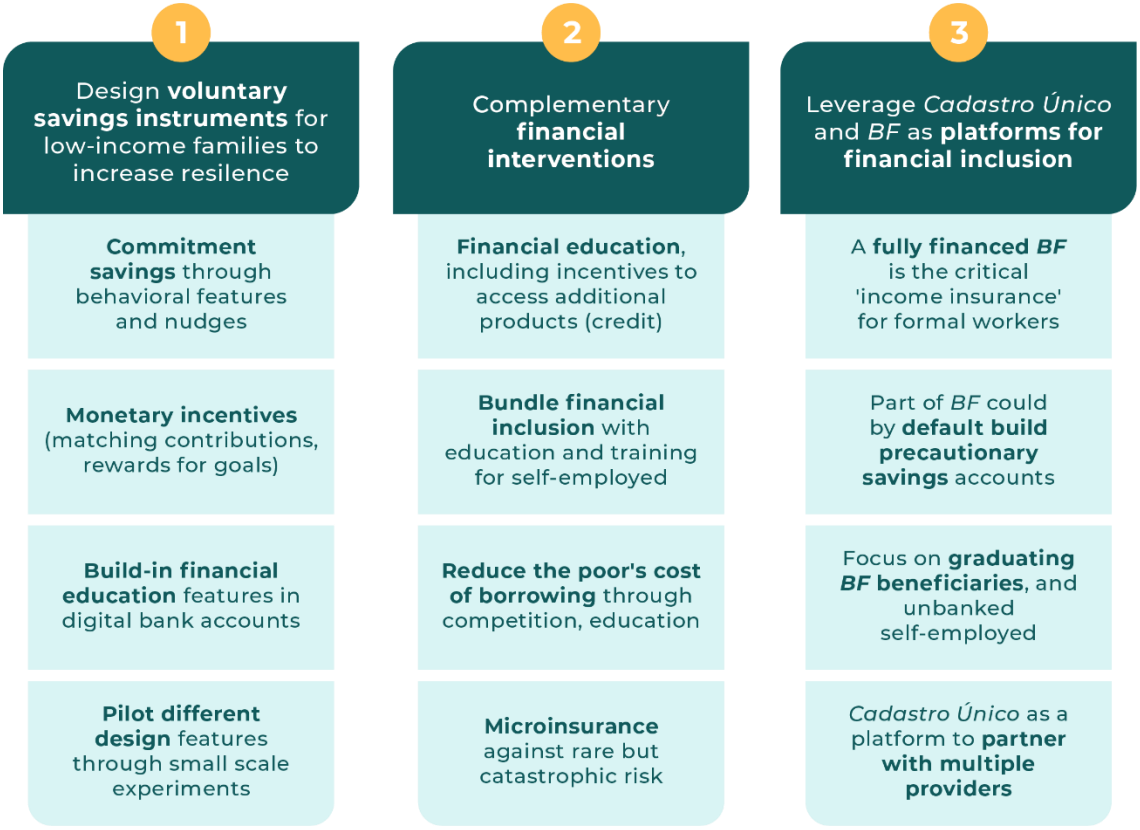
To incentivize savings, countries experimented with a range of features: automatic transfers (for example, Mexico), lotteries combined with a 'deposit deadline' (for example, Colombia), behavioral interventions using technology, matching contributions (for example, Rwanda), favorable interest rates, and other monetary incentives. The long-term savings instrument *Ejo Heza* in Rwanda is bundled with life insurance. It also allows to use savings as a collateral for credit. Most programs allow early withdrawals but with some constraints to remain separate from a regular checking account. Easiness of access and enrollment is fundamental for the take-up and usage of new products by individuals with limited experience (and trust) of financial products. Most programs have addressed this by avoiding sign-up or administrative fees (for example, Colombia) or operating entirely through mobile phones, thus avoiding reliance on bank branches (for example, Kenya).

Behavioral nudges and measures to enhance financial literacy are often combined with the saving products. The *Beneficios Económicos Periódicos* (BEPS) saving program in Colombia introduced text messages to help users reach a determined savings goal. In Mexico, the financial inclusion program for social assistance beneficiaries offered financial education as a condition to receive higher credit.

What policies could support greater resilience of vulnerable households in Brazil?

A salient question during Brazil's recovery period will be how to increase resilience of vulnerable and informal workers, especially those who exit AE, but are ineligible for social assistance. The full application of 'guaranteed return' and 'zero waitlist' in BF is therefore a critical policy to ensure a minimum form of 'income insurance' of last resort for non-poor households who remain at risk of falling into poverty after a shock (World Bank 2021). In addition, this note argues that several financial inclusion policies can contribute to this objective (Figure 1).

Figure 1. Summary of policy recommendations



As a complement to social transfers, a dedicated financial saving product could be introduced for workers in BF and *Cadastro Único*. This is most suitable for families with some ability to save, including those in *Regra de Permanência* (who are approaching exit from BF due to increasing income). In the case of BF recipients, a dedicated savings account would differentiate savings from unwithdrawn benefits. Default options could nudge users in setting aside a portion of their BF transfers every month, similar to the PROIIF program in Mexico. Such account could be kept even after the family exits the BF program and over time build a history of formal financial flows. Matching contributions and other incentives could be another way to incentivize savings for those about to exit the BF program and increase their resilience thereafter. Though more costly, the approach may provide additional benefits to families and society—such as the mobilization of additional private savings, improvement of financial literacy, and productivity spillovers. The experience of *Conta Social Digital* should be studied to identify how AE savings have been utilized.

Microinsurance and financial education could expand the toolbox available to families to diversify and manage risks. Financial education will be critical to support families making better use of savings accounts, and in general, to choose cheaper products. Tailored pedagogical material (such as *Futuro na Mão*) is already developed for this audience and is ready for digital

delivery. Bundling of financial education within financial products, with customers being educated 'while using', is also a promising approach for adult education. Financial education take-up could also be incentivized in exchange for receiving access to lower-cost credit lines, as better-educated clients bear lower risk for lenders. Certain idiosyncratic catastrophic risks could be best borne by the private sector through microinsurance, for instance, risk of death; usually such products work best if bundled by default with other products in demand.

Expanding and lowering the cost of credit is also important to improve the welfare of the poor, including by making microcredit less cumbersome to access. While this note does not intend to cover in-depth credit, several implications also emerge from the analysis in this area. First, by making the revenues of informal workers visible through savings accounts, the poor's financial history could over time also serve as a small intangible collateral to access credit. Second, since a single credit product is unlikely to serve the needs of this diverse population in *Cadastro Único*, the government can play a role in reducing the cost for the private sector to serve this market segment. Identifying the optimal way to engage with private providers will be critical to harness innovation and provide best value. The existing infrastructure of *Cadastro Único* could be harnessed to reduce banks' customer acquisition costs among a few competitively providers. Lastly, while this note explores in depth demand-side constraints to financial inclusion, supply-side constraints experienced by the private sector remain underexplored. Central Bank data could be harnessed to identify banks doing business with the poor, and an active dialogue with private financial providers could provide recommendations to enable serving better this market segment.

Introduction

Across the world, the COVID-19 pandemic highlighted the vulnerability of a large share of the poor population, including those living just above the eligibility threshold of social transfers. In this note, the 'vulnerable' are defined as households that are not poor but can quickly fall back into poverty due to their volatile and largely informal labor income. At the individual level, the poor also disproportionally face the risk of shocks that can perpetuate poverty traps. But due to their largely informal labor status, these families have less access to formal risk management instruments. From PNAD COVID data over seven consecutive months, it is shown that smoothing short-run consumption could increase social welfare levels by 22 percent (Neri, 2020a).

Beyond the temporary income support launched in 2020, the debate about additional public policies that could enhance vulnerable households' resilience against idiosyncratic risks remains. Brazil was one of the countries that more quickly and effectively innovated to respond to this systemic shock of COVID-19 through the creation of emergency benefits for the vulnerable not covered by existing social transfers (*Auxílio Emergencial* [AE]). AE required the development of systems to enroll tens of millions previously 'invisible' to the social protection system for the first time. However, such benefits are, by definition, short-lived, and the questions of 'what's next?' and 'what else?' remain central in the policy debate in developing countries that would like to extend, in a fiscally sustainable way, protections to the newly registered vulnerable families. While emergency benefits work well during systemic and broad-based shocks, the key challenge of vulnerable households is to navigate systemic idiosyncratic income volatility.

This note contributes to the broader debate by exploring policies that use financial instruments and innovations to enhance resilience of low-income families in Brazil, as a complement to *Bolsa Família* (BF). These policies could benefit particularly those who recently graduated from the BF program, those who are about to graduate (families in *Regra de Permanência*), and those who are in *Cadastro Ú*nico[5] but ineligible for BF, such as the new beneficiaries of AE. The note's use of multiple microdata sources aims to go beyond solely studying the existing literature and seek insights on the design of tailored products in coordination with other social protection policies.

The note is structured as follows. Chapter 1 of this note describes the risks faced by households in Brazil including income volatility and other shocks, with a focus on vulnerable and poor households. The note then proposes a framework to identify the appropriate instruments to mitigate shocks to income, based on the nature and frequency of the shock (Chapter 2). It then moves on to identify existing publicly and privately provided instruments to manage risks in Brazil (Chapter 3). This is complemented with lessons learned from past risk management interventions and experiences in Brazil as well as international evidence of relevant savings interventions used in similar contexts (Chapter 4). Chapter 5 provides a set of preliminary recommendations on the design of a risk management savings product and complementary policies.

[5] *Cadastro Único* aims to register all Brazilian families with less than 0.5 minimum wage per capita income or total income below 3 minimum wages. All families in BF are registered in *Cadastro Único*.

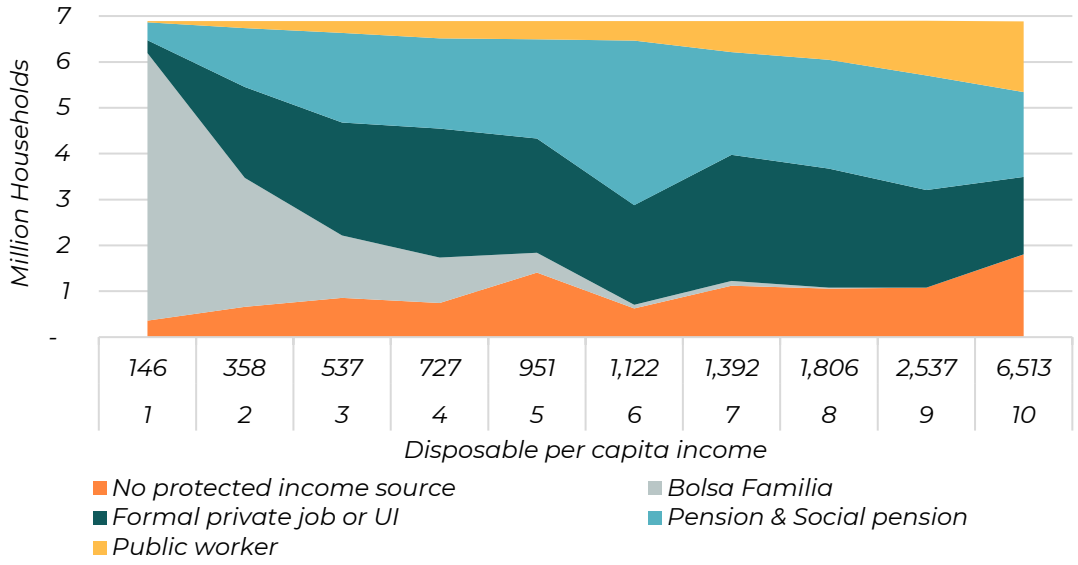
1. The challenge of vulnerability for low-income families

This chapter exploits several data sources to describe the financial risks of social assistance beneficiaries and the vulnerable population in Brazil. The analysis in this chapter leverages four recent microdata surveys for Brazil (The Brazilian Institute of Geography and Statistics' [IBGE] Family Budget Survey [POF] and National Sample Households Survey [PNAD], World Bank Findex Brazil, and Lloyd's Risk Poll Survey) to describe income volatility and risks faced by poor and vulnerable families. To the extent possible, all survey data are restricted to either the population living in the bottom 40 percent of the income distribution (similar to *Cadastro Único* threshold of income) or recipients of targeted social assistance, particularly the BF program.

Millions of poor and vulnerable households in Brazil are out of reach of government transfers or employment covered by contributory benefits and protections. Before the COVID-19 pandemic, nearly one-third of households (almost half of the population) in Brazil lived below the *Cadastro Único* poverty line of half a minimum wage per capita (similar to the World Bank US$5.5 purchasing power parity [PPP] per day poverty line). Based on the World Bank microsimulation model *BraSIM*, an estimated 90 percent of households below such income threshold received some form of government-provided social protection, through BF, pensions, or their formal jobs, which open access to labor supplements and unemployment protection programs (Figure 2). An estimated 9.7 million families in the population are out of reach of any such program, and about half of them to live below the median income (approximately one minimum wage per capita), distributed among the poor and those who could be considered 'vulnerable'—hovering just above the half minimum wage poverty line[6]. Moreover, many families remain poor despite receiving BF, due to its low average benefit of about BRL 186 (US$33) a month. Also, families with many members often remain in poverty despite having one adult in formal wage employment.

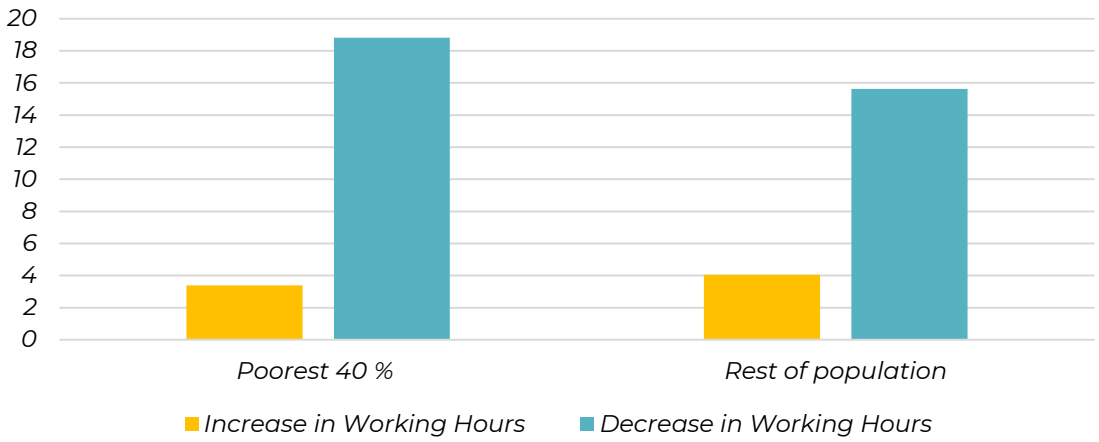
[6] *Cadastro Único* line is close in value to the US$5.50 PPP World Bank poverty line for middle-income countries.

Figure 2. Households without access to a protected job or a social transfer *by deciles of disposable per capita income*



Source: Authors' simulations based on WB BraSIM microsimulation model, for 2019. Note: X-axis represents disposable income deciles per capita and its average in 2019 BRL. Families with multiple benefits are assigned to the most generous.

Figure 3. Change in working hours (%)



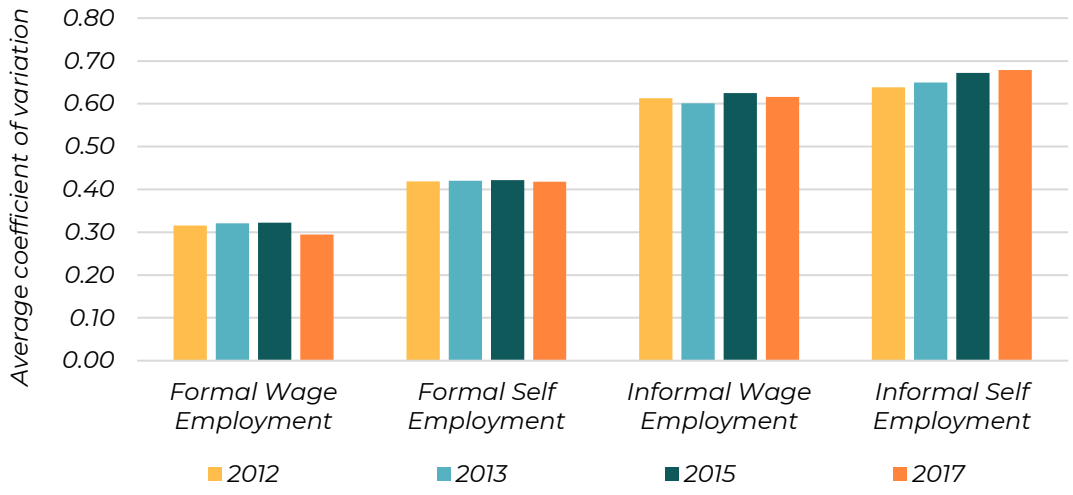
Source: Authors based on PNAD COVID, November 2020.

If unmitigated, the COVID-19 crisis would have disproportionally affected the income of the vulnerable in the second and third quintiles. The pandemic had a strong and negative impact on labor force participation and hours worked and, thus, on labor income. According to the national household survey, PNAD COVID-19, 18.8 percent of the poorest 40 percent worked

fewer hours than during a normal work week (see Figure 3). The corresponding number was lower for the rest of the population at 14.4 percent. The World Bank simulations predicted that, without regular and emergency social protection benefits, the crisis would have led to a −7.6 percent fall of the average household income, disproportionately affecting the second and third quintiles (Lara Ibarra and Macedo Rubião 2020)[7].

The poor and vulnerable are particularly exposed to income volatility due to the prevalent reliance on informal wage work and self-employment. About 71 percent of total family income of the BF families is from labor (Figure 6). This division differs slightly by employment type, with a relatively higher share of labor income if the member is formally employed and a lower share if the member is informally employed. Panel data analysis of reported labor incomes in Brazil shows that type of employment is an important determinant of income volatility[8]. The coefficient of variation of labor income among workers who were in informal wage work or self-employment in the first quarter is twice as high as the one experienced by those who were formal wage employees in the first quarter (Figure 4). 72 percent of all workers in poor households are informal (Figure 5). Households of informal employees and self-employed have 16 and 12 times higher income volatility than those of public sector employees (Neri, 2020). In fact, income volatility among BF families is 22.7 percent higher than that among workers contributing to social security, and twice as high as that among those receiving the social pension, *Benefício de Prestação Continuada* (BPC) (Neri 2020a).

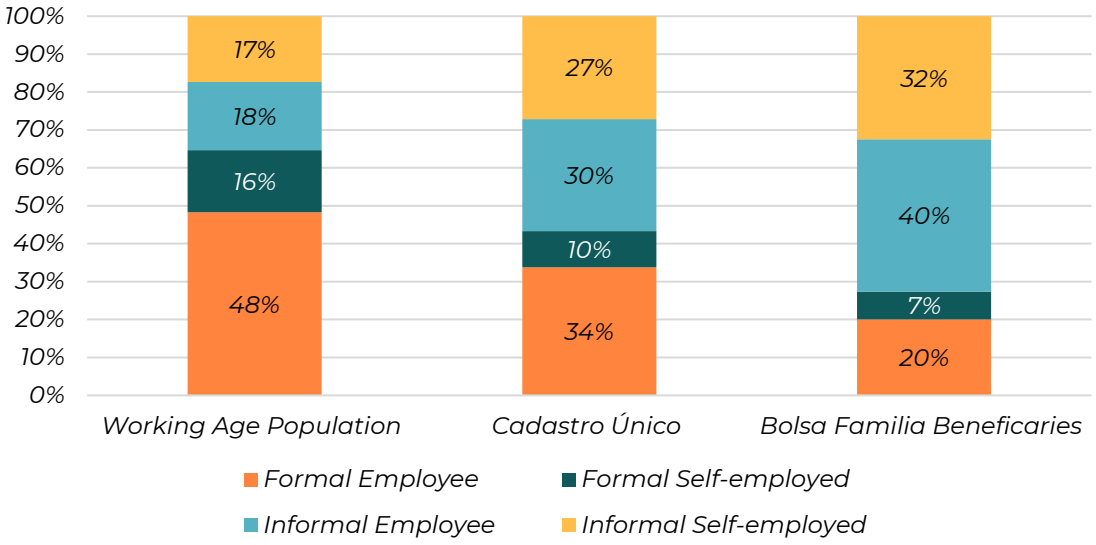
Figure 4. Volatility of income
by type of employment



Source: Authors based on PNAD 2012–2018.

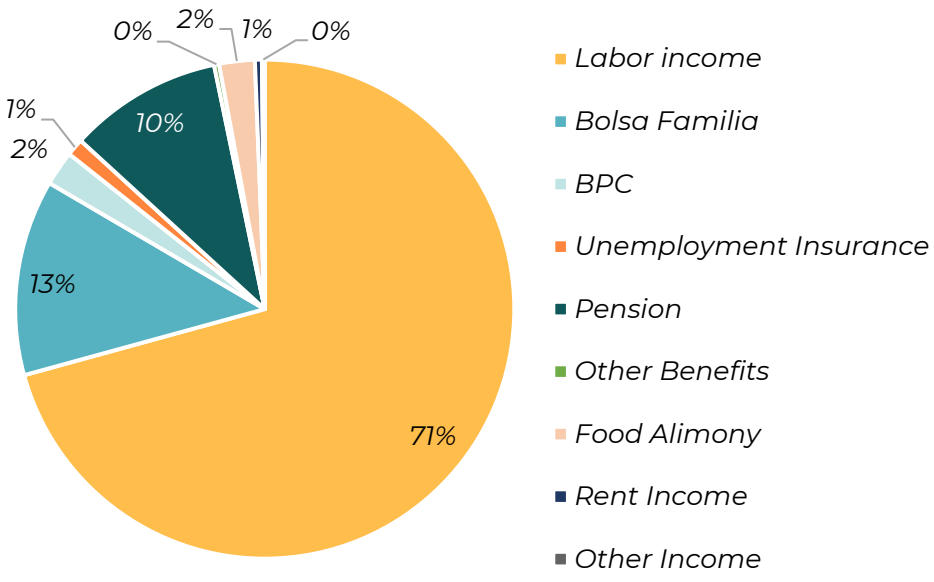
[7] Estimates based on BraSim 2019
[8] Income volatility is measured by the coefficient of variation of reported quarterly labor income by the same individual in PNAD Continua over at least three quarters. This measure also takes into account the periods when income reported is zero, for instance, during unemployment spells.

Figure 5. Type of employment
by population groups



Source: Authors based on PNAD 2012–2018.

Figure 6. Income source for BF families



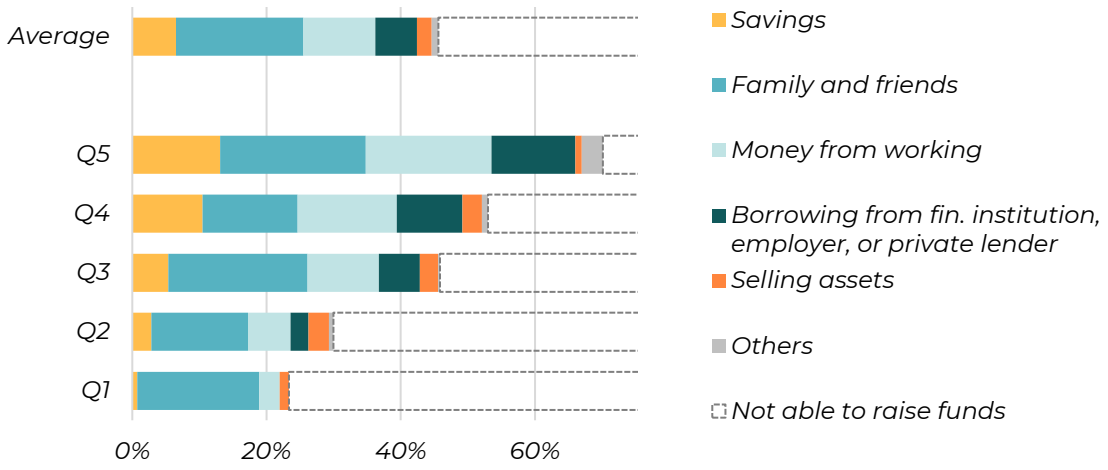
Source: Authors based on PNAD 2019.

The probability of falling into unemployment is also four times higher among the poor. Panel data from PNAD Contínua show that poor individuals and BF beneficiaries, respectively, have a 28.5 and 30.3 percent probability of moving from employment to unemployment within a year; the other individuals have a 7.4 percent probability for the same transition to happen (Neri 2021).

For poor families, BF often represents the most predictable source of income. The BF benefit represents on average 13 percent of the income of beneficiary families (Figure 6). For more than 70 of the BF beneficiaries, the benefit represents less than one-quarter of their income. Households covered by relatively more generous social and contributory pensions rarely remain below the poverty line in Brazil (Morgandi et al. 2020). Figure 6 also shows that income from unemployment insurance considering all beneficiary families on average accounts for 1 percent of the total income, again pointing to the vulnerable situation of these families with respect to labor income.

Few people in Brazil are able to raise money quickly to pay for an emergency, and the ability decreases with lower socioeconomic status. According to Findex 2017 data[9], only 45.6 percent of Brazilians thought they would be able to pay, in one month's time, an emergency expense of BRL 3,800 (US$700). Looking across quintiles, the ability to pay increases along with socioeconomic status. In the first quintile, only two out of ten are able to raise these funds (see Figure 7).

Figure 7. Brazilian adults able to raise emergency funds *by quintile (%)*



Source: Brazil Findex 2017.

[9] The Global Findex database provides comprehensive data on how adults save, borrow, make payments, and manage different risks. The database was launched in 2011 by the Bill and Melinda Gates Foundation and has since been published every three years.

Those who report they could raise emergency funds mostly would recur to family and friends—few would rely on own savings. According to Findex (2017), the few people who were able to raise money during an emergency would mostly do so by seeking support from family and friends, followed by raising money through working (see Figure 7). Only 7 percent of respondents reported that they would raise money by savings and 6 percent by borrowing from a financial institution. These shares are even lower among the bottom 40 percent. Comparing savings behaviors of Brazil's population with Organization for Economic Co-operation and Development (OECD) countries indicates that the share of people saving is very low in Brazil. Only 32 percent declared to have saved in the previous year, compared to 73 percent in OECD countries and 37 percent in countries with similar gross domestic product (GDP) per capita (see Section 3.1) (Findex 2017).

During the pandemic, most BF beneficiaries who borrowed money did so through formal banks and institutions. More recent data on actual take-up of debt indicates that 70 percent of BF beneficiaries who reported to have borrowed money did so through formal banks and institutions, rather than through family members (IBGE PNAD COVID 2020). This may indicate the unavailability of informal credit during the systemic shock of the pandemic.

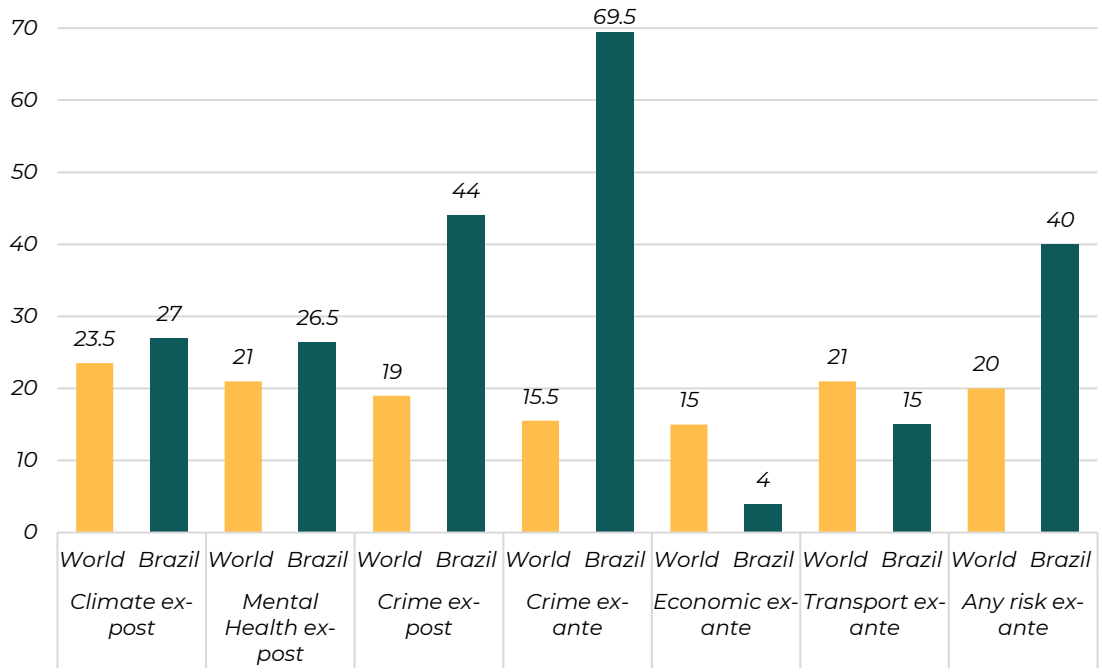
Shocks force some families to adopt negative coping strategies, which reverse previous human capital gains. A vast body of literature has documented negative coping strategies when faced with shocks. Negative coping strategies such as skipping meals, losing days of school, missing work days due to illness, and adopting child labor can have severe and long-standing impacts on human capital (World Bank 2020a). In Brazil, evidence shows that 39 percent of people living in favelas skipped meals to cope with COVID-19 (Manfrinato et al. 2020). Furthermore, research conducted by the United Nations Children's Fund (UNICEF) reveals that even among those children who had access to education during the pandemic, a significant percentage was unable to study on a regular basis[10].

Besides income shocks, poor households in Brazil are highly concerned about additional risks, such as crime, climate-induced shocks, and accidents. The World Risk Poll surveys people to identify the risks that they consider a threat to their safety, either potentially (ex ante) or experienced (ex post). Figure 8 illustrates the most common risks identified by respondents in the bottom 40 percent of Brazil income distribution compared to the bottom 40 percent globally. Interestingly, the risk of crime dominates among this population in Brazil, at 70 percent, compared to only 15 percent in the world average, which is consistent with Brazil being one of the countries with highest crime rate in the world (Lloyd's Register Foundation 2020). At the second and third places come weather shocks and mental health, respectively, followed by road accidents, weather, and, only in the last place, economic difficulties. In general, the bottom 40 percent in Brazil scores higher values in almost all risk categories compared to the rest of the world. Furthermore, those living in precarious dwellings, often situated in urban

[10] UNICEF (United Nations Children's Fund). 2020. Accessed April 5, 2021. https://www.unicef.org/lac/en/press-releases/brazil-families-children-and-adolescents-are-hidden-victims-pandemic-reveals-unicef.

communities, are more likely to experience the negative effects of climate-related shocks. About 69 percent of households in climate-vulnerable urban communities in Brazil have a per capita income below 1 minimum wage (IBGE 2010).

Figure 8. Historical experience and the future expectation of sources of risk *(most common risks) - poorest 40% in Brazil and World in 2019 (%)*



Source: Neri 2020b, based on Lloyd's World Risk Poll for Brazil. Note: Ex ante refers to perception of potential risks, and ex post refers to risks that occurred within the last two years to a family member or a close acquaintance.

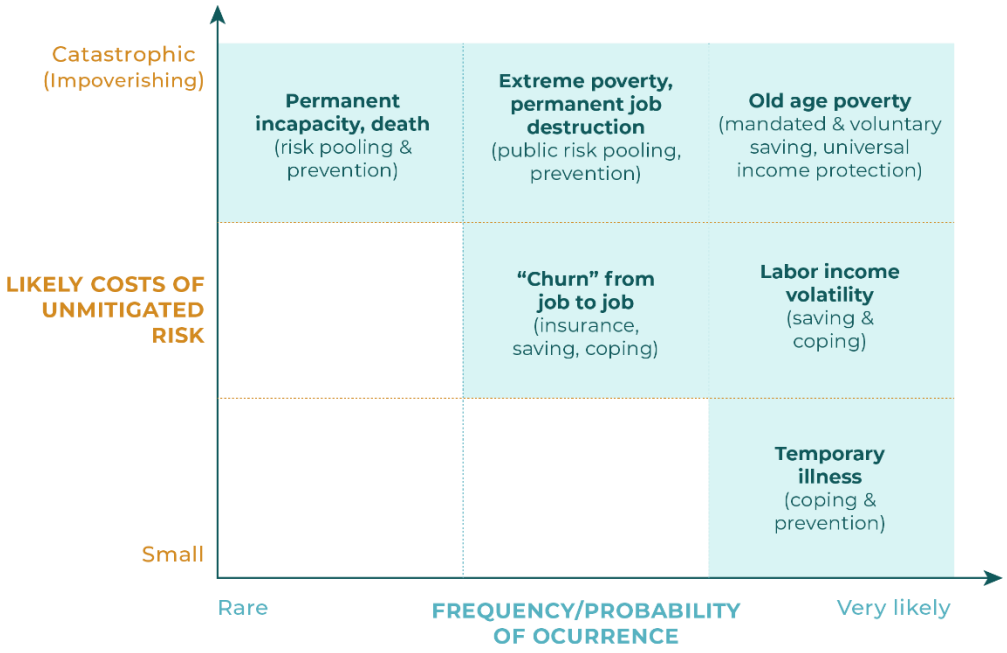
2. Public risk-sharing instruments for low-income households in Brazil

2.1. A CONCEPTUAL FRAMEWORK

There are several ways households can manage risks that threaten livelihood, particularly those shocks that are channeled through the labor market. The recent World Bank White Paper titled 'Protecting All: Risk Sharing for a Diverse and Diversifying World of Work' discusses the renewal of labor market risk-sharing policies in the social protection system of the twenty-first century (see Packard et al. 2018). As discussed above, labor income among the poor is often obtained without the intermediation of an employer, it is volatile and in most cases is unobservable by the state. The authors argue that this reality is unlikely to change, and it should lead to developing a combination of social protection instruments and complementary policies, including financial products, that most efficiently help low-income households to manage risks, based on the gravity of the loss and probability of the risk occurring (Figure 9).

The nature of the risk guides the choice of a mitigating instrument: risk pooling, which can be in the form of either insurance or publicly financed programs; self-insurance (individual saving); prevention (including investments and regulations); and coping (assuming the cost ex post). It is more effective to cope with rare and inexpensive shocks (for example, non-grave illness) rather than insure against them. As shocks become more frequent (for example, unemployment, severe income fluctuation), it is more efficient to engage in prevention and savings, which will lower both the likelihood of shock and the cost. As the shock becomes less frequent but has high costs or is socially unacceptable (for example, early death, permanent disability, and extreme poverty), it is more efficient to risk-pool or to invest in prevention (through health and safety regulations for instance). For frequent and expensive shocks (risk of old age poverty), both savings and risk pooling are required.

Figure 9. Optimal risk instruments per the size and frequency of a probable loss



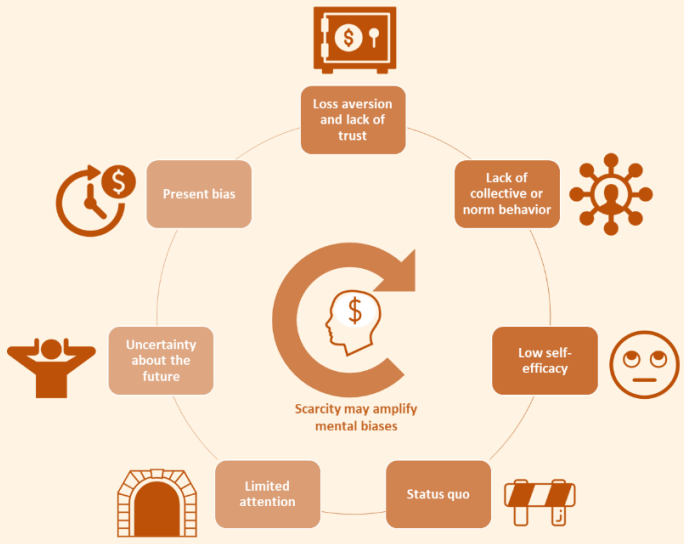
Source: Authors, based on Baeza and Packard (2006); Ehrlich and Becker (1972); Gill and Ilahi (2000); Packard et al. (2019).

The choice of instruments to optimize risk sharing is also dictated by feasibility and transaction costs, including possibility of containing moral hazard, adverse selection, and behavioral biases. The diversity of employment and income generation modalities observed in contemporary labor markets does not allow to use the same instrument across the board. Today many governments have unemployment insurance as the main instrument to help workers cope with job loss. However, risk pooling through insurance may be unfeasible due to high moral hazard or adverse selection, which, in turn, depends on the observability of losses and effort. For this reason, while insurance may be feasible for formal dependent workers whose income losses are clearly observable, it may be more challenging to implement this instrument for the self-employed (see Chapter 4 for a discussion of schemes in OECD countries). Where losses occur frequently but are easy to hide or exaggerate, as in the case of profits from self-employment, savings (even subsidized) might be the best option to self-insure with an incentive-compatible design. If individuals have no capacity to save at all, such as for chronic poor, the largest form of risk pooling (publicly financed social assistance) may be the most preferable design. Technology and increased observability of financial flows (including consumption) may shift the cost-benefit calculation, which, in the past, determined some of these instruments to be difficult to implement for the poor and the informal, such as individual savings. The many behavioral biases that affect savings, and good financial decisions also need to be considered while determining whether participating in risk sharing should be mandatory, incentivized, or simply voluntary (see Box 1).

Box 1. Behavioral biases affecting financial decisions: Evidence from opinion surveys in Brazil

Behavioral biases to savings have been overlooked in the past but are shown to be as important to address as other constraints. Barriers to savings are often classified into demand- and supply-side constraints in the literature (for example, Bosch et al. 2019). While supply-side barriers are related to the provision of savings accounts, demand-side barriers often concern behavioral aspects and affordability that might prevent an individual from saving. The path to a savings goal is often filled with behavioral biases that hinder individuals from reaching their goal. Behavioral research has documented several behavioral biases which make saving even more difficult among the poor (Sousa Lourenço 2020), and value surveys reveal that behavioral biases are more pronounced among the Brazilian population (Neri 2020b).

Figure 10. Behavioral biases that prevent savings



A. Present bias. Some individuals have a stronger preference for immediate benefits over future ones. This can lead to self-control problems and a tendency to postpone savings decisions (cost in the present). In addition, individuals can have difficulties making decisions that generate abstract benefits. The Gallup World Poll shows that 42 percent of the population in Brazil has time-inconsistent preferences and that Brazilians put higher weight to payoffs closer to the present time (Frisancho 2017).

B. Overoptimism. Brazilians are overoptimistic regarding their own future. In 2019 Brazil scored 8.4 out of 10, which was third place out of 145 countries, in the Gallup World Poll which measures expected happiness in five years from now (Neri 2020b). The more optimistic respondents were also 8 percent less likely to save.

C. **Risk and loss aversion.** Thinking about the future and financial health can be stressful and uncomfortable, especially when the factors that determine our future such as a stable income are uncertain. Savings require an initial cost which, for some individuals, implies a loss of liquidity; such sense is stronger for those who have a stronger aversion to loss. As a result, individuals may procrastinate or avoid even thinking about it. Several measures indicate that Brazilian exhibit high 'risk aversion'. The Findex survey reveals that 88 percent of Brazilians see risk as a threat rather than an opportunity, more than the global population average of 60 percent. A proxy commonly used to measure risk aversion is the use of safety belts in cars, and it shows that 93 percent of Brazil's population and the poorest 40 percent use a car belt compared to 77 percent worldwide (Neri and Osorio 2020).

D. **Lack of trust, including in financial institutions.** Discouragement in using financial institutions to build up savings may be due to negative experience, historical exclusion, or perception that banks are meant for wealthier people. Only 42 percent of the Brazilian population trusted financial institutions in 2019, which is the 114th place out of 141 countries. However, this increased positively in comparison with 2006, when 38 percent trusted financial institutions (Neri 2020b). Moreover, lack of interpersonal trust in general may affect savings. Only 12 percent of Brazilians trusted their neighbors in 2018—which is the fourth last rank out of 144 countries. Furthermore, trust in the government decreased from 51 percent in 2010 to 34 percent of the population in 2019.

E. **Limited attention and mental cost of saving.** Poverty and lack of economic resources increase stress and reduce mental bandwidth for less immediate concerns. Dedicating time toward savings possibilities consumes energy which could be used instead to solve daily problems or plan for the future. Saving for the future or an unexpected event is not constantly present in people's mind. Instead, people tend to focus largely on the here and now. Poverty and lack of economic resources can cause individuals to ignore needs that are not immediate.

F. **Status quo.** Some individuals have a tendency to avoid action and resort to the status quo which can lead to inferior results when the decision context imposes difficulties for action (for example, several steps to sign up for a program).

G. **Lack of collective norm or behavior.** Lack of a cultural norm to encourage savings action may affect savings substantially. In addition, decisions about savings from family and other community members affect decisions through learning, social pressure, and social identity. This is an important factor given Brazil's notoriously low savings rates, particularly among the poor.

H. **Low self-efficacy.** A history of financial difficulty can lead to the accumulation of positive expectations or a lack of belief in one's own ability to start saving and reach savings goals.

Source: Neri (2020b); Neri and Osorio (2020); Sousa Lourenço (2020).

Applying this framework to Brazil's public policies portfolio reveals that the most complete suite of risk-sharing options is available only to formal dependent workers, due to the history of the social protection system. Table 1 illustrates the array of publicly provided or mandated risks-sharing programs and their level of access for individuals operating in the labor market under different legal forms of employment or informally.

Table 1. Risk management programs in Brazil for different forms of work

<table>
<tr><th rowspan="2">Form of work and estimated number (2018)</th><th colspan="6">Risks</th></tr>
<tr><th>Earnings volatility/unemployment</th><th>Accident</th><th>Permanent disability</th><th>Sickness; maternity</th><th>Old-age poverty</th><th>Death, crime, climate</th></tr>
<tr><td>Formal employees (CLT, public sector) (45.7 million)</td><td>FGTS, SD, Multas (SD coverage 0.53 million)</td><td>Seguro Accidente Trabalho</td><td>RGPS disability benefits</td><td>Sick leave,</td><td>Full RGPS benefits</td><td rowspan="5">Private insurances available against death, theft, and disaster

A disaster response benefit can be activated for families in Cadastro Único</td></tr>
<tr><td>Micro Empredador Individual (2.9 million)</td><td rowspan="4">Means-tested social assistance
(= BF)
(13.8 million families)</td><td></td><td>BPC</td><td rowspan="4"></td><td>Basic RGPS benefits</td></tr>
<tr><td>Trabalhador Autonomo (6.2 million)</td><td>Seguro Accidente Trabalho</td><td>RGPS benefits</td><td>Full or basic RGPS</td></tr>
<tr><td>Firm owners (Pessoa Juridica) (0.7 million)</td><td rowspan="2"></td><td>RGPS benefits</td><td>Full RGPS benefits</td></tr>
<tr><td>Informal workers (self-employed and employees) (32.5 million)</td><td>BPC</td><td>BPC</td></tr>
</table>

Source: Estimates from World Bank microsimualations model (BraSIM), based on PNAD Continua; SD coverage 2019: Panel with information on SD Link; BF coverage 2019: CECAD 2.0 Link.

Note: CLT = Consolidação das Leis do Trabalho; FGTS = Fundo de Garantia do Tempo e Serviço; PJ = Pessoa Jurídica; RGPS = Regime Geral de Previdência Social; SD = Seguro Desemprego. Number of workers based on World Bank BraSIM microsimulation model, using PNAD Continua 2019 monthly average for the primary job.

The taxonomy reveals the uneven level of access to programs that help manage certain risks, and is the legacy of an industrial-era concept of the world of work[11]. For instance, formal self-employed workers have access to a different benefits than CLT (formal) workers. Moreover, several risks protected through the benefits accrued in the workplace has limited connection with employment itself (such as mandatory savings to manage risk of old age poverty). Social protection in Brazil was designed to mimic industrial-era corporatist Europe and assumed formal dependent employment as the prevailing form of work. Under such model, self-employment was relegated as a residual category either meant to frame the work of high-educated (and strongly regulated) professions or for voluntary entrepreneurs with high-risk

[11] Formal self-employment, in the three prevailing legal forms (individual firm owners [PJs], individual microentrepreneurs [*microemprendedores individuais*, MEIs], and *Trabalhadores Autonomos*), reached the peak of 12 million in Brazil in 2018, from about 7 million 10 years earlier. Formal self-employed became an increasing share of the formal labor force. This was mainly due to the rise of the subsidized and simplified MEI regime.

tolerance. In fact, this model revealed to fall short of the reality of the world of work in developing countries and, increasingly, in high-income countries, as shown by high shares of involuntary self-employment and persistently high informality (Packard et al, 2019), including in Brazil.

Only a subset of formal workers is covered in the event of job loss by unemployment protection programs. Formal dependent workers hired under a labor-code (CLT) contract in Brazil enjoy access to multiple income protection instruments: unemployment insurance (SD, a cash benefit from the employer-financed individual savings account (FGTS), and severance pay (*Multas*). SD is the largest labor market program financed by the federal government, and it offers the most generous replacement rate of past wages in the region (Morgandi et al. 2020). However, only 18 percent of the unemployed annually receive this benefit, due to its rather strict eligibility parameters and, especially, to its limited application to formal dependent workers.

For every other worker, including a quarter of the unemployed, BF provides a minimum layer of income protection. Workers who do not hold a *Carteira Assinada*, representing over half of the employed, can only rely on BF to weather income shocks. BF is a means-tested conditional cash transfer (CCT) program that includes a minimum income guarantee component against extreme poverty. Remarkably, in 2019, 25 percent of the unemployed workers were covered by BF, compared to an estimated 18 percent receiving SD. Its key strength that sets it apart from most other CCTs in middle-income countries relates to the demand-driven targeting system, which allows for timely entry even for non-poor families that experience an income shock (World Bank 2021). About 75 percent of BF adult recipients are already in the labor force, but they suffer from higher unemployment or, more often, in-work poverty. Thus, the program helps both families that face chronic poverty and those that temporarily experience an income loss. Due to these circumstances, an informal wage employee is 15.56 times more likely to become poor and a self-employed worker 12.06 times in comparison to a public worker (Neri 2020a).

The Brazilian SP system also provides an uneven, but near-universal, protection against the risk of destitution deriving from old age and permanent disability. The pension system in Brazil consists of RGPS, a mandatory scheme offered to the private sector formal workforce, several generous special pension regimes offered to public sector workers, and the BPC, a noncontributory pension addressed to poor elders through a minimum wage indexed pension. These programs also offer protection for people with disabilities. These programs, particularly the contributory programs and public sector pensions, are plagued with sustainability challenges due to their inadequate design and high generosity relatively to their financing basis; contributory programs are largely subsidized and drain resources from other programs.

Protection from work-related accidents is more fragmented. In this area, Brazil mandates work-related insurance, Seguro de Acidente do Trabalho (SAT), although this applies mainly to formal wage workers. In this case, the benefit can also be claimed by *Trabalhadores Autonomos*

(self-employed), who contribute to the National Social Security Institute (Instituto Nacional de Seguro Social, INSS), in case of work-related injuries, but not by legal firm owners or individual microentrepreneurs (PJs and MEI). For these and informal workers, only private insurance is available.

Lastly, several of the risks cited by the Brazilian population as potentially most catastrophic, such as crime and disasters, are primarily covered by the private insurance market. These include accidental death, losses, or death due to crime and climate-induced losses, such as weather shocks. The fact that such losses are not covered by public programs does not necessarily show their inefficiency, given that private instruments such as accident insurance, disability insurance, and property insurance exist in the market and are often mandated (such as vehicle insurance), albeit they are normal goods, too costly for the poor to afford (Neri 2021).

3. Use of financial and risk management products by families in *Bolsa Família* and *Cadastro Único*

Before the pandemic, 90 percent of families in *Cadastro Único* were already making use of some financial instrument. According to administrative data that matched *Cadastro Ú*nico information with the Central Bank database, in 2019, 91 percent of families active in Cad*astro* Único had a bank account, compared to 67 percent in 2012 (BCB 2020). Several policies supported this expansion, for instance, in 2017 through resolution 4,480 the government allowed financial institutions to open bank accounts based on digital documents—which removed the obligatory proof of a physical ID and an address. This chapter explores with more granularity the access by low-income families to different specific products, including private savings, credit, insurance, and financial education through several nationally representative household surveys for Brazil.

The access to bank accounts increased further during the COVID-19 pandemic through AE. Following the COVID-19 pandemic, the AE intervention equipped all recipients without a private bank account with a digital saving account (see Box 2). This included families in BF that, for the first time, were able to receive payments as deposits in a fee-free digital saving account provided by *Caixa Econômica Federal* (CEF). Many of the AE recipients managed to save a proportion of their income support during 2020, but these savings plummeted after a few months with the end of the AE benefit and the enduring pandemic (Folha de S.Paulo 2021).

Box 2. *Auxílio Emergencial* and the universalization of bank accounts in Brazil

Brazil was severely hit by the COVID-19 crisis as one of the countries globally with the highest number of confirmed cases and deaths. To protect the most vulnerable population, AE was introduced in April 2020 with the objective of reaching and protecting vulnerable informal, own account workers and the unemployed. Almost 50 percent of the Brazilian population was directly reached by AE in the first month, making it one of the largest and most rapidly expanded social protection programs in the world. The fast expansion of AE was possible owing to innovative approaches in the design of AE. Among other things, the program includes a cellphone app to register personal information for enrollment and a virtual bank account provided to the new beneficiaries to which the benefit is paid[12].

People who fulfilled the following criteria were granted the transfer: (a) older than 18 years old; (b) not formally employed; (c) not a recipient of any other social benefit; (d) earning a monthly income under half of the minimum wage and not earning a taxable income, that is, above BRL 28,559; and (e) self-employed, unemployed, or informal worker and listed in the *Cadastro Único.* BF beneficiaries are automatically enrolled to receive AE if the benefit is more generous than the family's regular BF benefits. AE provided five monthly transfers of BRL 600 (US$114) and four monthly payments of BRL 300 (US$57) to a maximum of two eligible adults in families without a formal income. The first round of AE was discontinued in December 2020. In April 2021, a new round started with slightly stricter eligibility conditions and lower payments.

Owing to the AE interventions, access to savings accounts by the bottom 40 of the population was radically transformed. The virtual bank account app delivered by Caixa through which beneficiaries receive their AE income support was downloaded 295.8 million times between April 2020 and April 2021 (Caixa 2021a). Furthermore, recent Caixa estimates suggest that 105 million digital social savings accounts were opened in 2020 and 34 million individuals became enrolled for the first time in a bank (Caixa 2021b). Furthermore, data from Fundo Garantidor de Créditos (FGC) show that many families managed to save a portion of the income support during 2020. However, in the beginning of 2021, due to the interruption of the AE transfer combined with a surge in COVID-19 cases, an outflow of more than half of the total savings in the accounts, BRL 14.2 billion, was observed (6minutos 2021).

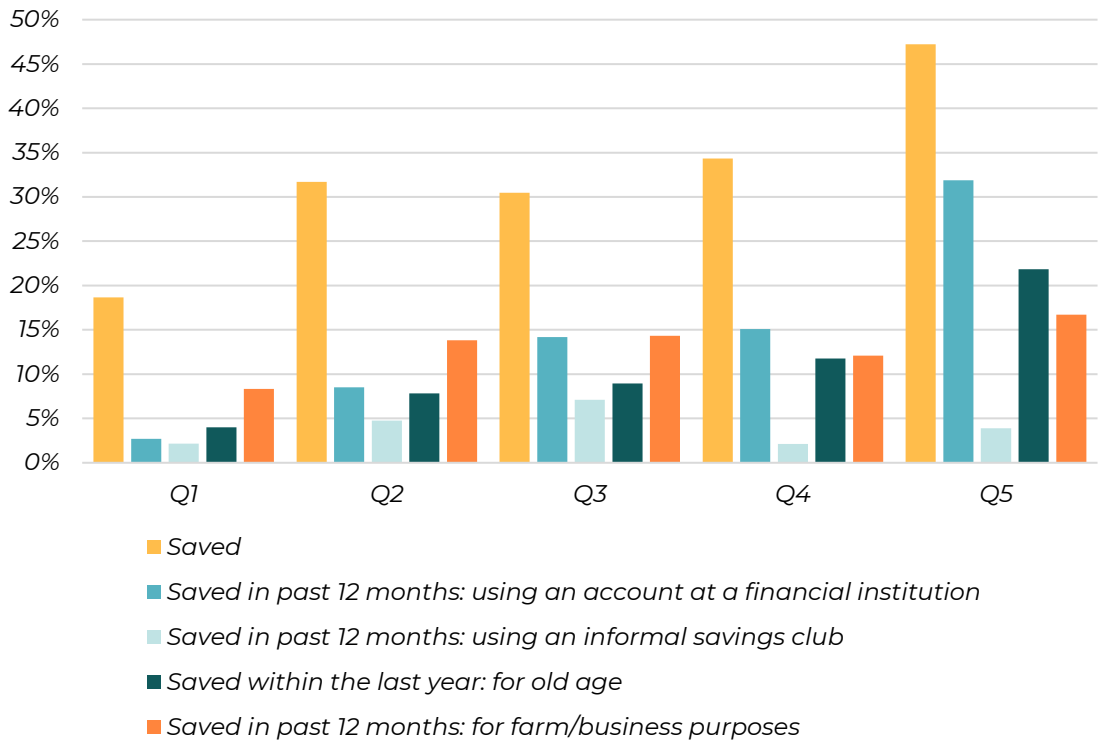
Sources: 6minutos 2021; Caixa 2021a; Caixa 2021b.

[12] The virtual bank account is accessible through an app provided by Caixa.

3.1. SAVINGS ACCESS AND USE

The Brazilian population exhibits a low saving rate by international standards, and saving is half as common (20 percent) among the poorest quintile compared to the richest one (42 percent). In 2017, 19 percent of adults in the first quintile and 32 percent among the second quintile declared having saved within the last year (see Figure 11). Consistent with this evidence, a different data source, POF for 2017/2018, reports that one-quarter of the BF beneficiary adults declared owning a savings account, compared to 34 percent of the whole population. This was the most common financial instrument among this group, followed by checking accounts and credit cards (Figure 12).

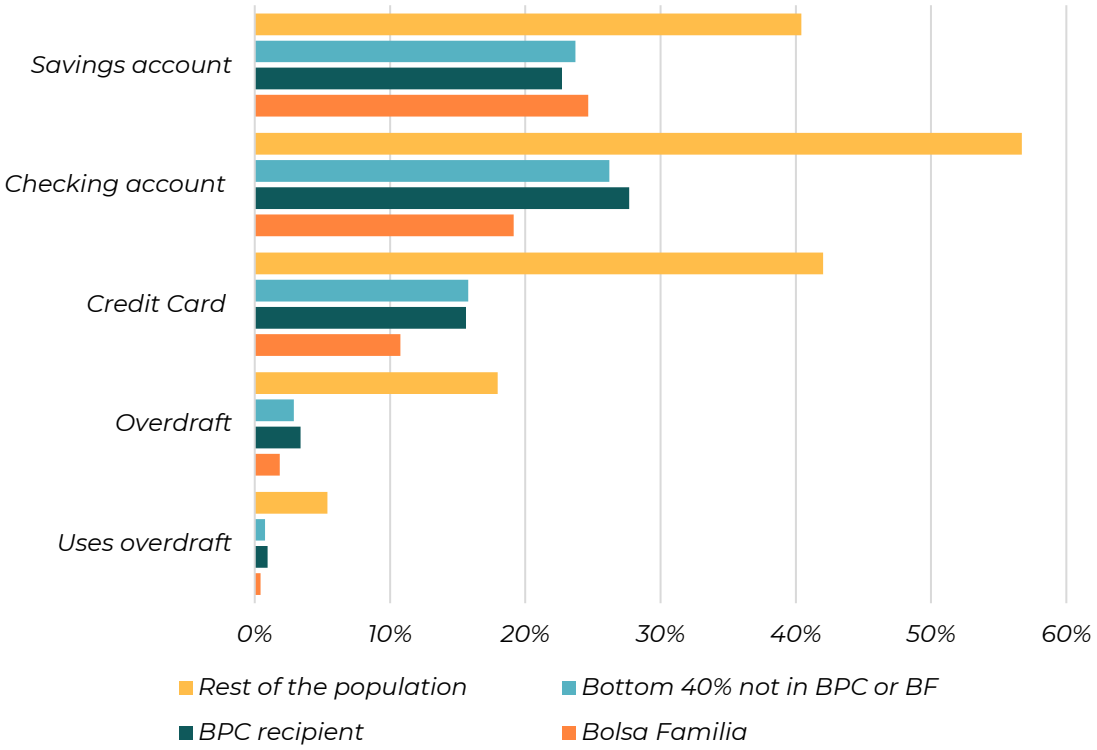
Figure 11. Saved within the last year, full population *by quintile*



Source: Findex Brazil 2017.

Most low-income individuals saved formally at a financial institution, and a large share of these individuals declared they saved for farm and business purposes. In general, in Brazil, most people who declared saving do so through formal financial institutions. Yet, using informal savings clubs becomes more frequent in the first to third quintile. There is also a clear difference between the higher and lower income groups in terms of savings purposes. While it is more common for individuals in the highest income quintiles to save for old age, individuals in the first to third quintile mainly save for business.

Figure 12: Share of people (over 15 years) owning a financial instrument



Source: Neri (2020a) based on POF 2017/2018.

Low-income families likely share the same account for all members. As the share of families in *Cadastro Único* with any bank account is far larger than at the individual level (BCB 2020), it is likely that in most families a single account is shared by different members. The share of savings account owners in the bottom 40 percent income population that is not receiving BF or BPC is a bit smaller, representing 24 percent (Table 2). However, no significant differences from BF or BPC beneficiaries were found when using regression analysis and conditioning on observable characteristics, including family income (Neri and Mencarini 2020). Interest for financial accounts in Brazil is in general high and even individuals that do not have a bank account express interest in having one. In fact, less than 1 percent of the population without financial accounts reports having no interest in them (Neri, 2020).

Evidence points to a positive effect of cash transfers on financial behavior and inclusion. Cash transfer programs have in some countries led to higher savings by the poor. Bastagli et al. (2018) analyzed 10 available studies that rigorously examined the effect of CCTs on savings and found evidence that households can afford to marginally increase precautionary savings because of their guaranteed and predictable source of income. Neri (2014) concluded that the BF program increases a beneficiary's chances of accessing financial services by 23 percent. In this sense, more than being a way out of poverty, BF is a gateway into the financial market.

Within the low-income population of Brazil, those with better education, independent workers, and those with a formal job are more likely to have a savings account. In the case of Brazil, Neri (2020a) used the POF data of 2017/2018 (IBGE) to study the heterogeneity in saving behavior among different low-income groups, including BF beneficiaries[13] (Table 2). Ownership of saving accounts is about the same among men and women in the average population, but a bit more prevalent among women (26 percent) than men (23 percent) in the low-income BF beneficiary population. Furthermore, savings accounts are more frequently used by formal workers in comparison to informal workers, especially among formal wage employees[14]. This could partly because formal employers often open an account for their employees to transfer salaries.

Table 2. Proportion of individuals ages over 15 years owning a savings account by interest group and individual characteristics subgroups

	Interest groups				Total
Characteristics subgroups	BF recipient	BPC recipient	Bottom 40% not in BPC or BF	Rest of the population	Full population
Total	**24.65**	**22.72**	**23.72**	**40.42**	**33.95**
Male	22.72	20.89	23.15	39.91	33.27
Female	26.26	24.29	24.24	40.9	34.57
Self-employed/employer formal (INSS)	34.79	32.56	48.06	49.47	48.18
Self-employed/employer informal	29.00	28.69	28.6	41.94	35.67
Formal wage worker CLT/military/public	43.41	38.02	39	49.43	47.47
Wage worker informal	25.13	30.24	26.08	39.88	32.49
Not employed	14.03	17.35	14.6	29.02	22.41
No education	14.74	15.76	13.18	24.82	18.34
Primary education (incomplete or complete)	22.51	23.59	21.33	35.41	28.6
Secondary education (incomplete or complete)	34.71	24.62	29.51	42.56	38.64
Tertiary education (incomplete or complete)	37.53	34.83	35.98	47.89	46.74
Rural	**18.78**	**17.76**	**18.67**	**33.55**	**24.07**
Urban	**27.46**	**23.7**	**24.75**	**41.06**	**35.57**

Source: FGV Social/CPS (2021), based on 2017 POF microdata.

While the gap with the full population in bank account access is by now small, in absolute terms BF beneficiaries save much less than the average Brazilian. Only 8.5 percent of BF beneficiaries have positive net saving flows[15], compared to 15 percent of the whole Brazilian

[13] Results are displayed for individuals over 15 years old.
[14] Similar findings emerge from the more recent Central Bank data: likelihood of having a bank account for adults in *Cadastro Único* is positively related to higher level of education, residency in urban areas and labor market activity, particularly as independent workers or employers
[15] Savings that exceeded the accumulation of debt. For instance, a family that did not save in the period but reduced its total debt is considered to exhibit a positive net saving flow.

population (see Table A.1 in Annex 1). Regression analysis showed that BF beneficiaries save 22 percent less than the rest of the population in 2018, controlling for other characteristics[16] including household income per capita (Neri 2021). Again, formal workers and better-educated people have a higher share of positive net financial saving flows (see Table A.1 in Annex 1).

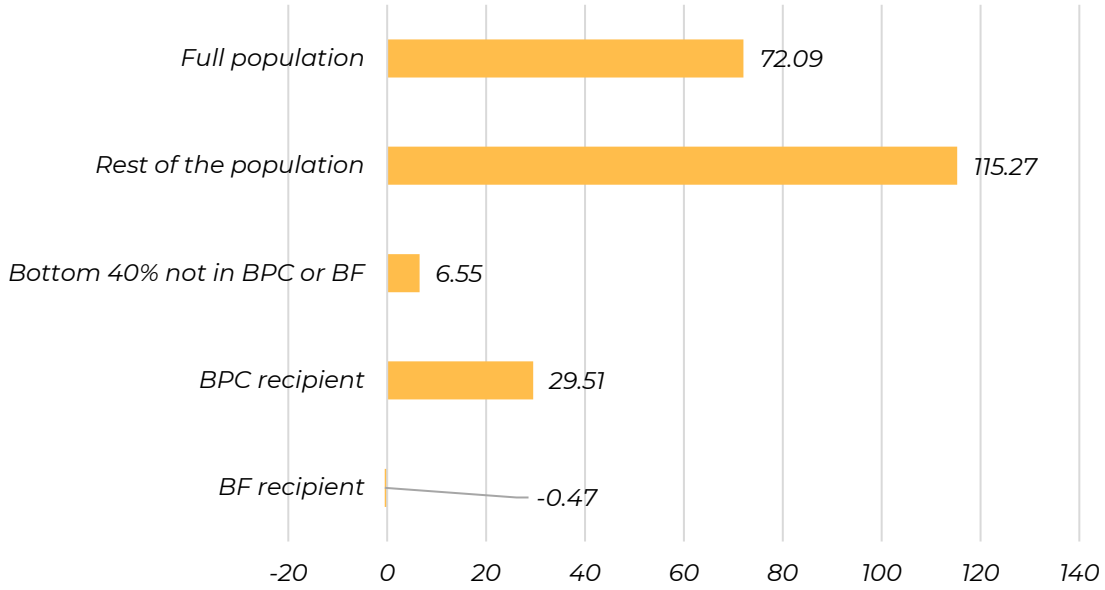
Even among those who reported to save, formal credit, more than own savings, is the most common way to cope with emergencies. Less than 3 percent of the Findex survey respondents in the bottom two quintiles of the population reported that they could rely on own savings in an emergency, and only among the top two quintiles of Brazilian families were savings a significant source of shocks buffer (Figure 7). On the other hand, the credit channel may be more important to support resilience. Among families who were recipients of BF and had to ask for credit during the COVID-19 pandemic, only 30 percent took this loan from family and friends, the remainder relied on formal banks and credit institutions. The share of those who rely on banks for credit is even higher (89 percent) for receiving a pension or BPC (Neri 2021). However, as discussed further below, the poor tend to use more expensive credit instruments than the rest of the population.

Compared to the rest of the population, very few BF beneficiaries (2.9 percent) have positive net savings. Through the analysis of household income and expenditure data (POF 2017), Neri (2020b) estimated that the mean value of net savings (that is, total savings plus financial assets minus accrued debts) for BF beneficiaries is negative (BRL −0.47), which means that saved income is used to pay for debt. This value is well below the mean saving amount of the whole population (BRL 72) and the poorest 40 percent not receiving BF or BPC (BRL 6.55) (Figure 13). Regression analysis confirms that, controlling for all other observables, being in BF is associated with lower probability of positive net savings.

Among BF families, those in formal self-employment tend to be those most in debt, probably because they have higher propensity (or opportunity) to take formal credit. Figure 14 disaggregates average net saving flows for families receiving BF by occupational status and sex. Remarkably, formal self-employed workers are those most in debt, with net savings of BRL −98.62. Informal self-employed BF beneficiaries, on the other hand, have positive financial assets, which may simply imply that they are more credit constrained. These averages contrast with those of formal and informal self-employed workers in the entire Brazilian population, who have mean positive savings of BRL 332 and BRL 29.95, respectively. Lastly, women tend to have higher positive net savings than men.

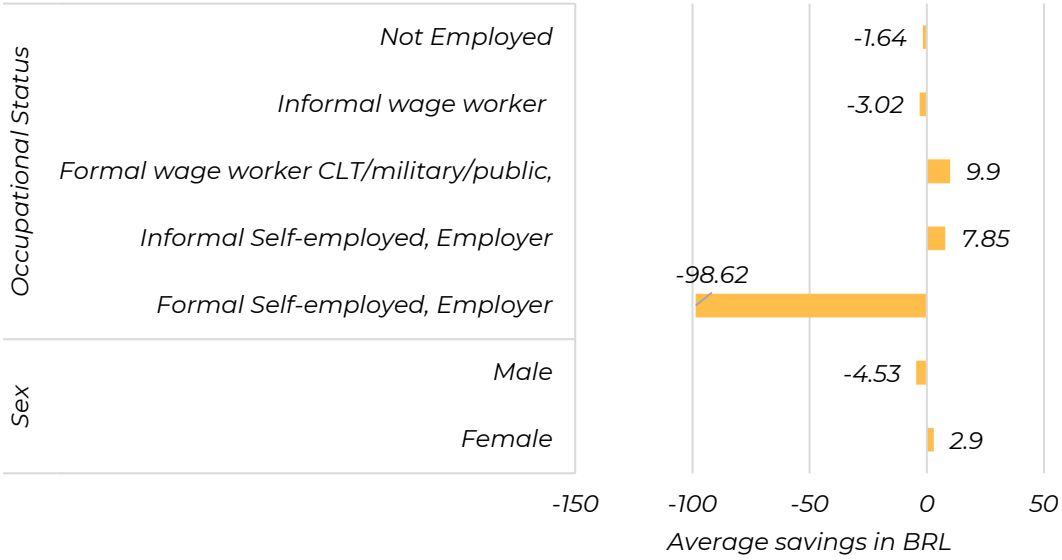
[16] The set of regressions' covariates are schooling level, individual income and its respective quadratic and cubic terms (to capture precautionary saving behavior), individual position in the family composition, age range, gender, range of family per capita income, individual position in the labor market, status with respect to social pension system contributions, geographical region and rural/urban status of the individual's residence within Brazil. Each interest variable is represented by a dummy that indicates if the individual's family has income from social pension (INSS) or social assistance programs (BPC and BF).

Figure 13. Mean income saved (BRL), 2017



Source: POF 2017/2018 analysis done by Neri (2020a).

Figure 14. Mean income saved in BRL among BF beneficiaries *by sex and work status*



Source: POF 2017/2018 analysis done by Neri (2020a).

Formal entrepreneurs in BF families also tend to invest more in financial assets, vehicles, durable goods, and real estate. The POF analysis also indicates that formal entrepreneurs in BF make significantly higher investments in capital and financial assets, compared to the informal BF entrepreneurs. This may be due to higher average income of the formal segment of the self-employed (Fietz and Lyrio de Oliveira 2021) and better access to the credit market through the ability to collateralize their assets or income streams. The latter could be the greater access to social protection instruments made available to formal self-employed workers by INSS (disability, retirement, accident, and sick leave), which reduces the need for precautionary savings.

3.2. CREDIT ACCESS AND USE

Low-income families in Brazil tend to use less credit products than the rest of the population. According to BCB (2018b), approximately 40 percent of the individuals ages 15 years or older used some formal credit product, while approximately 30 percent of the individuals in Cadastro Único but not BF beneficiaries used some form of credit in 2017 (BCB 2018a). This number drops to 10 percent for the BF beneficiaries.

Despite having increasing access to bank accounts, the credit take-up by individuals in BF fell over time. Between 2012 and 2017, the share of BF beneficiaries that use some credit product fell from 16 percent to 10 percent. In contrast, the share of families in Cadastro Único but not BF beneficiaries slightly increased from 26.1 percent to 27.3 percent in the same period (BCB 2018a). For the nonvulnerable population, that is, those not in Cadastro Único, credit use stood relatively still at around 40 percent in the period (BCB 2018b).

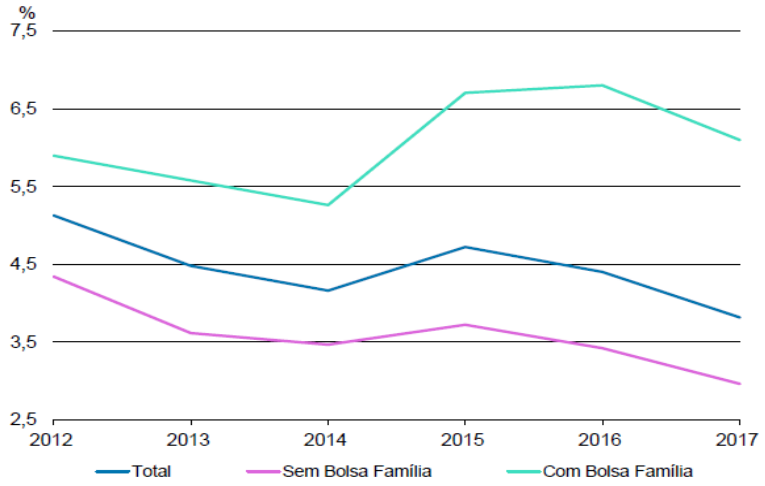
Among the low-income population, labor status, level of education, and income are key determinants of credit take-up. By analyzing the credit card, the most used credit instrument by the vulnerable population, data from POF 2017/2018 reveal that the group of formal workers have by far the greatest access to credit (see Table A.2 and A.3 in Annex 1)[17]. Among BF beneficiaries, in the formal self-employed subgroup, 21 percent own a credit card compared to 11 percent of informal self-employed workers. The formal employees also have higher chances to own a credit card than informal employees (28 percent compared to 9 percent). These differences could be explained by the lower access to financial products by informal workers as they do not have a regular source of income nor employment verification (Neri 2020b). Another important determinant of access to credit is the level of education. Table A.2 also shows that the higher the education level the higher the credit card coverage for all groups, especially in the BF group where it increases from 5 percent for individuals with no education to 25 percent for those with tertiary education. No significant difference is observed by gender,

[17] The data could potentially include inactive accounts. The authors have therefore analyzed the data in relative terms and assume the inactive accounts are equally likely across all groups.

except for the BPC group, where females are more likely to own a credit card—17 percent in comparison to 14 percent of males.

Successful repayments also correlate with the income and education levels. It is observed in BCB (2018a) that, among vulnerable families, the poorest (BF beneficiaries) appear with a higher rate of credit default (roughly 6 percent) than individuals outside BF (approximately 3 percent) in 2017 (Figure 15). This may be due to two reasons: (a) the most vulnerable are more exposed to income shocks besides having already a lower-income level and (b) this group, as discussed in the following paragraphs, tends to use the most expensive credit products, which may make it more difficult to honor the debt.

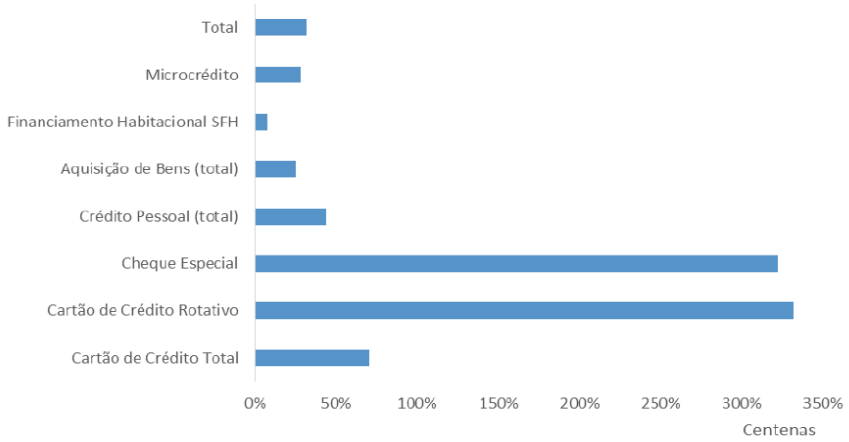
Figure 15. Credit default rate for individuals registered in Cadastro Único



Source: Figure extracted from BCB 2018a.

The vulnerable and poor use more expensive credit instruments than the rest of the population. As shown in Figure 16, the most expensive credit instrument in 2017 in Brazil was the revolving credit card (*Cartão de Crédito Rotativo*), which is defined by the amount that the person is not able to pay of the credit card monthly statement. Table A.4 in Annex 1 shows that this form of credit represents 17 percent of the total credit volume used by the '*Cadastro Ú*nico but not in the BF population, in comparison to 8 percent of the total credit volume contracted by the 'rest of the population'. This instrument represents 12 percent of the total credit volume used by BF beneficiaries. Considering the broader category of credit card, it represents 45 percent and 40 percent of the total credit volume used by, respectively, BF and *Cadastro Ú*nico families, in contrast to 31 percent observed in the rest of the population. These findings combined with the interest rate disparities between credit products show the necessity to better diversify the supply of credit for low-income population groups (Neri 2021). The findings are also closely related to responsible finance and consumer protection regulation and indicate the need for financial institutions to adequately inform credit users of their choices.

Figure 16. Average interest rates of credit products for individuals

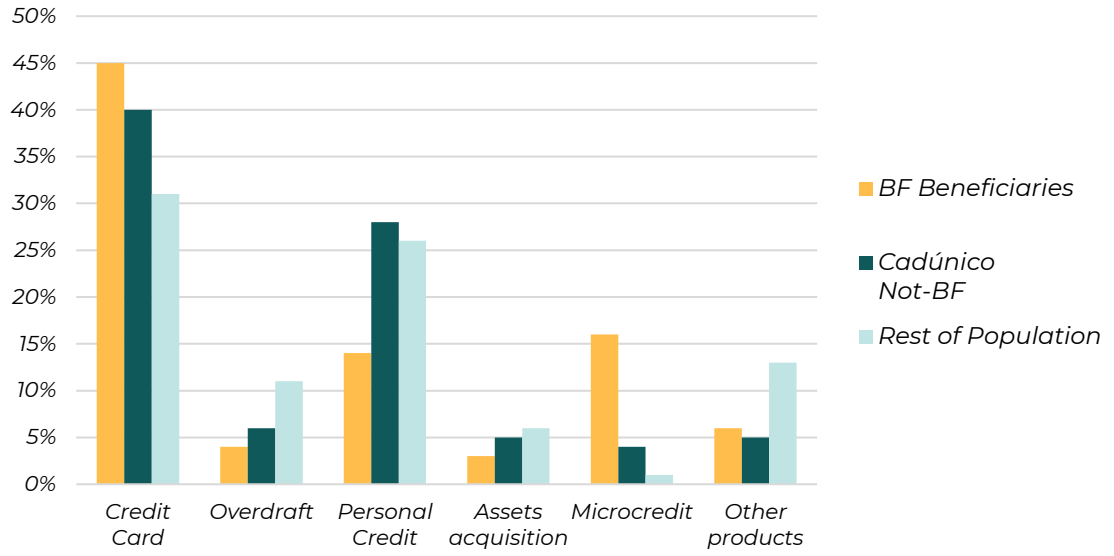


Source: Figure extracted from BCB 2018a.

Cheaper forms of credit associated with capital accumulation are used much less by vulnerable populations. Figure 17 shows that 3 percent of the BF beneficiaries' credit is used for assets acquisitions, while the rest of population uses only 6 percent of their total credit for this purpose, though these forms of credit are cheaper and may represent a behavior of forcing the saving through real assets acquisition. This fact could also mean that vulnerable families use credit relatively more for smoothing consumption of basic goods. On the other hand, this could also be a reflection of the difficulty lower-income groups face in accessing investment loans or working capital loans. Corroborating these findings, the analysis of the POF 2017/2018 data found that families are not necessarily using the cheaper form of credit. Overall, low-income families report to take out more credit through credit cards and overdrafts, rather than by using credit lines or long-term debt.

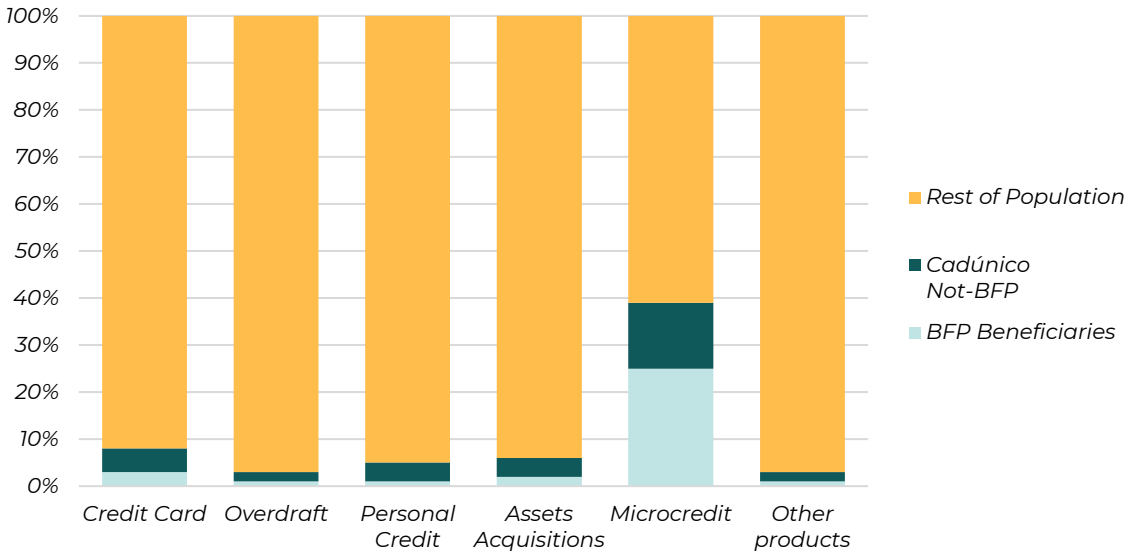
BF and low-income families are largely underrepresented in the total credit volumes, even in the case of microcredit. Even though more than 40 percent of the Brazilian families are in *Cadastro Ú*nico, they only represent 6 percent of the total credit volume (2 percent BF and 4 percent Cad*astro* Único out of BF). Lack of evidence to verify income flows, no previous credit history, and lack of collaterals may play an important role in this context. Figure 18 shows that within credit products, the share of amounts provided to vulnerable individuals is also much smaller. Despite targeting more vulnerable individuals, only a minority were accessing the government-promoted low-interest microcredit products. BF families received 25 percent of the total microcredit volume, while other low-income families in Cad*astro* Único received 14 percent, and the rest of population accounted for 61 percent of this credit modality (Figure 18). This may be due to the inconvenient and long application process to obtain productive microcredit and the fact that the borrower needs an operative business for at least 6 months. To serve the unbanked in Brazil and simplify the banking process in general, the fintech Nubank offers credit cards for individuals without a credit history (see Box 4). Users of the Nubank credit card can build their own credit history through the usage of the credit card.

Figure 17. Product share in the total credit volume used *by each group*



Source: MDS 2018.

Figure 18. Share of BF, Cadastro Único not-BF, and rest of population in the total credit volume contracted of each product



Source: Figure extracted from MDS (2018).

Microcredit is concentrated in the Northeast region. The Programa Nacional do Microcrédito Produtivo Orientado (PNMPO) was introduced in Brazil on a national scale to facilitate the access to credit for low-income microentrepreneurs with an annual turnover/income of up to BRL 360 thousand. During a first face-to-face meeting with an agent trained on socio-economic survey, educational guidance or support towards business planning is offered. The microcredit is offered by authorized institutions and the credit cannot exceed an interest rate of 4 percent[18]. Even if microcredit appears more intensively in BF and Cadastro Único families when compared to the other products, it is concentrated in the Northeast region of the country (BCB 2020), which accounts for 93.5 percent of the total in 2017, followed by the Southeast with 4.7 percent, North with 1.1 percent, South with 0.4 percent, and Midwest with 0.3 percent. According to Neri and Osorio (2020), this is related to the positive experience of Banco de Nordeste (see Box 3).

Box 3. Productive microcredit targeting low-income entrepreneurs in Brazil's Northeast region

***CrediAmigo* provides personalized services through a direct relationship of the microcredit agents with the entrepreneurs in their own workplace and through the provision of guidance services on business planning.** The program, which serves population in the Northeast and which was created by the Banco do Nordeste in 1997, aims to contribute to the socioeconomic development of entrepreneurs by providing microfinance products and services and business guidance in a sustainable, timely, and easily accessible way. Informal and formal microentrepreneurs can open a bank account free of charge, have a loan released within seven working days with low interest rates, and receive personalized services.

The *CrediAmigo* program, which had more than 2.24 million active clients in January 2021, is often referred to as an international success case. The majority of clients in January 2021 were women (67 percent) with an average value per loan of BRL 1,838.92 (US$328). The average value per loan for the resulting 33 percent of men was higher, amounting to BRL 2,735.81 (US$488) (Banco do Nordeste 2021). Especially the private partnership between the Banco do Nordeste and the Northeast Citizenship Institute (Instituto Nordeste Cidadania [INEC]) is part of the success strategy of the program. INEC implements the bank's guidelines and strategies for selecting, training, and hiring staff to run the program. Furthermore, it is monitoring microcredit service procedures and methods (Varella, Parente, and Faheina 2017). Neri (2008) who studied the program found a significant increase in real values of customer turnover, payment capacity, family consumption, and operating profits. Furthermore, 50–60 percent of the borrowers surpassed Brazil's poverty line.

[18] Ministerio da Economia. 2021. Programa Nacional do Microcrédito Produtivo Orientado (PNMPO). Accessed April 26, 2021. https://portalfat.mte.gov.br/programas-e-acoes-2/programa-nacional-do-microcredito-produtivo-orientado-pnmpo/.

***Agroamigo* is extending the microcredit strategy of CrediAmigo to rural areas of the Northeast of Brazil.** *Agroamigo* is aimed at farmers who are members of the National Program for the Strengthening of Family Farming (*Programa Nacional de Fortalecimento da Agricultura Familiar*) with an operation limit of BRL 20,000. As of February 2021, the program had applied more than BRL 20.8 billion in credit, which means 5.82 million operations. There are currently 1.36 million active clients. Most of the program participants do not have a checking account (90.5 percent), and almost none of the beneficiaries have a credit card. About 15 percent of the customers own a savings account (Neri and Osorio 2020). Neri and Teixeria (2012) who assessed the impact of *Agroamigo* on rural business performance found that the profit increased by 15.4 percent in the second year of the program.

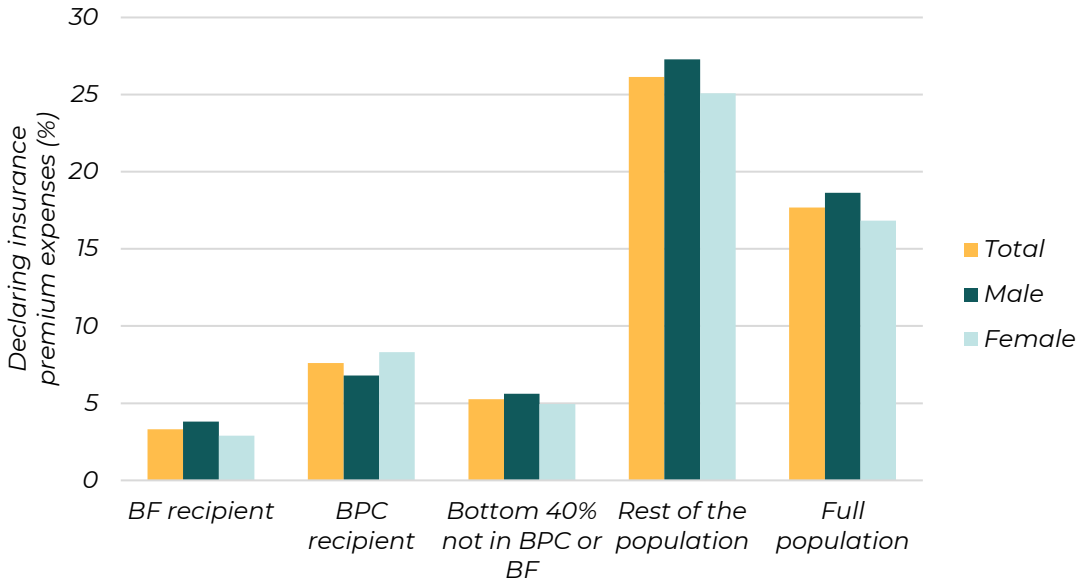
Source: www.bnb.gov.br/crediamigo.

Households with access to credit are more likely to leave Cadastro Único quickly, but no rigorous causal study exists specifically for Brazil. A number of studies found that that financial inclusion may reduce vulnerability (Chibba 2009; Park and Mercado 2018); however, in India, access to banking had no effects on poverty (Bhandari 2009). In the case of Brazil, no causal study exists, but BCB (2020) tracked vulnerable families in Cadastro Único for more than 80 months and showed that the group of families with access to some credit product had 46 percent probability to remain active in Cadastro Único at the end of the period, compared to 67 percent of the families without credit access. A similar difference is found between families that have access to any financial product and those without financial product access. However, households without bank accounts differ in several critical aspects (education, employment) from those who are unbanked—in other words, no causal evidence was established.

3.3. INSURANCE ACCESS AND USE

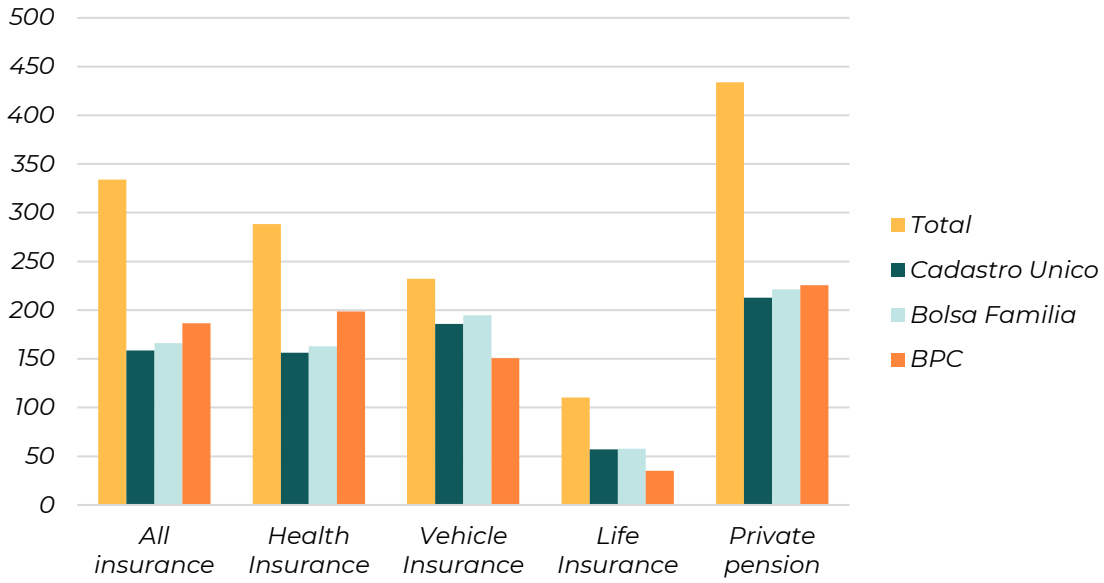
Private insurances are not widespread in Brazil, and individuals already owning an insurance are more likely to purchase an additional one. Private insurances—such as health insurance, car insurances, life insurance, or private pension plans—cover about 18 percent of the Brazilian population over 15 years old (Figure 19). In general, people in Brazil spend most on private pension insurance, followed by health insurance (Figure 20). In addition to the already low coverage rate, the chances for an individual to buy an insurance are greater if he or she already owns one and the probability of having an insurance increases with income (see the following paragraph). Due to these circumstances, unprotected risk accumulates among the same people who do not own any type of insurance and who are also often the poorest, highlighting the necessity of microinsurance provision plans (Neri 2020). Today, 2.21 percent of BF beneficiaries have access to microinsurance (Neri 2020).

Figure 19. Propensity to purchase private insurance
(% of population group)



Source: FGV Social/CPS from the POF 2017 microdata.

Figure 20. Private insurance expenditure (purchasers only)
by different population groups (BRL, 2017)



Source: FGV Social/CPS from the POF 2017 microdata.

Insurance take-up rates increase with income and are higher among men and the formal self-employed. In general, the female population in Brazil has a lower take-up of insurance products than the male population, both in the low socioeconomic groups as well as in the whole population. The only exception is among BPC beneficiaries where more women declare insurance premium expenses (Figure 19). Furthermore, the take-up of all insurance types among lower-income individuals (BF beneficiaries and bottom 40 percent not in BF or BPC) is particularly low, with only 3.31 percent and 5.71 percent, respectively, declaring insurance expenses. According to an FGV[19] study classifying the Brazilian population in different income groups, the highest income group is 16.9 times more likely to have an insurance compared to the lowest income class Among BF beneficiaries, formal wage workers and the self-employed are the ones with the highest propensity to purchase an insurance, with 8.95 percent and 10 percent, respectively, declaring insurance expenses (see Table A.5 in Annex 1). The likelihood of having an insurance also increases with the level of education. Lastly, among BF families, the likelihood of holding an insurance also increases with the perceived risk of crime and it is also significantly higher among urban populations.

Microinsurance targeted at low-income individuals is offered by several providers in Brazil. In 1989, the *Grupo Segurador Banco do Brasil* e MAPFRE launched the first microinsurance, the Immediate Social Support Plan (Plano de Amparo Social Imediato [PASI]), aimed at the low-income population (Neri 2020). Many providers have since joined the market. For example, ALM Seguros offers various microinsurance products but mainly funeral products as well as life and accident insurances to emerging customers in certain areas of Brazil. Through a radio station in Rio de Janeiro, microinsurances of ALM Seguros are promoted to a large number of people. The method combines financial education, such as discussions about managing personal risks (death, unemployment, and so on), and information on microinsurance products, and listeners can purchase the insurance by calling the radio station. In 2019, ALM Seguros had approximately 150,000 clients (ILO 2021). The recently founded digital bank provider Nubank in Brazil has launched a new product line of insurances with a low starting price of BRL 9 a month (see Box 4).

Box 4. Open Banking and digital banks in Brazil

Open Banking was recently implemented in Brazil and is a bank practice that provides third-party financial service providers open access to consumer banking, transaction, and other financial data from financial institutions through the use of application programming interfaces (APIs). At this point, it is implemented at an early stage where the Central Bank of Brazil is allowing the exchange of basic data from financial institutions.

[19] The Center for Social Policies in Brazil.

In combination with the implementation of Open Banking in Brazil, several new fintech companies have been focusing on providing digital banking with an easy and tailored banking experience through lower costs and less bureaucracy.

Nubank, founded in 2014 in Brazil, provides those services to customers in Brazil, Argentina, Colombia, and Mexico. Starting as a tech company that provided a non-fee credit card with a maximum credit limit of BRL 50 in Brazil, the company has since scaled up fast. Today Nubank is the world's largest independent digital bank, with 35 million customers in Brazil alone. New users do not have to undergo a credit check to open a digital account. Instead, Nubank performs an enrollment analysis on new users based on publicly available information. In Brazil, for example, this analysis is done through the person's individual taxpayer registry (Ca*dastro de Pessoas Física*s, CPF) number and name. With these data, Nubank's system automatically collects several publicly available data points and generates an internal score.

Since its founding, Nubank has expanded its product line, offering besides digital bank accounts and credit cards, a debit card, insurances, person-to-person payment via PIX (instant payment system created by Brazil's Central Bank which makes it possible to transfer money in real time), loans, rewards, and life insurance. The life insurance, Nubank Vida, has an average starting price of BRL 9 per month and the basic coverage ensures financial protection and offers individual funeral assistance in case of the policyholder's death. The insurance is customizable and offers the option to add extra coverage including funeral assistance for family members, hospitalization coverage, and disability coverage.

Recently the bank, which operates through a mobile application, has announced a new credit card, which is targeted at unbanked and people with difficulties getting a credit card. Customers can select a credit value of their choice and back up this value through a deposit in their digital bank account, which will be blocked accordingly. Then, they can use their credit card for purchases and any debt will be repaid through the blocked amount in the digital bank account. The modality allows customers to have a traditional credit card and build up a credit history. This credit history is based on nontraditional data such as where a user lives and moves, the type of purchases the user makes, whether the user read the contract of the credit card, and who invited the user to Nubank. This boils down to a lot of behavioral information which can give a more holistic picture of the user.

The fintech actively advertises on its website to receive the emergency cash benefit AE in the Nubank digital bank account.

Another example of a fintech that targets the unbanked—even though at a lower scale—is alt.bank. The fintech designed a mobile application, which does not require literacy since transactions can be done through color-coded prompts, is currently counting on 100,000 customers. The product line of alt.bank includes a debit card, a prepaid credit card, person-to-person payment via PIX, and telemedicine visits.

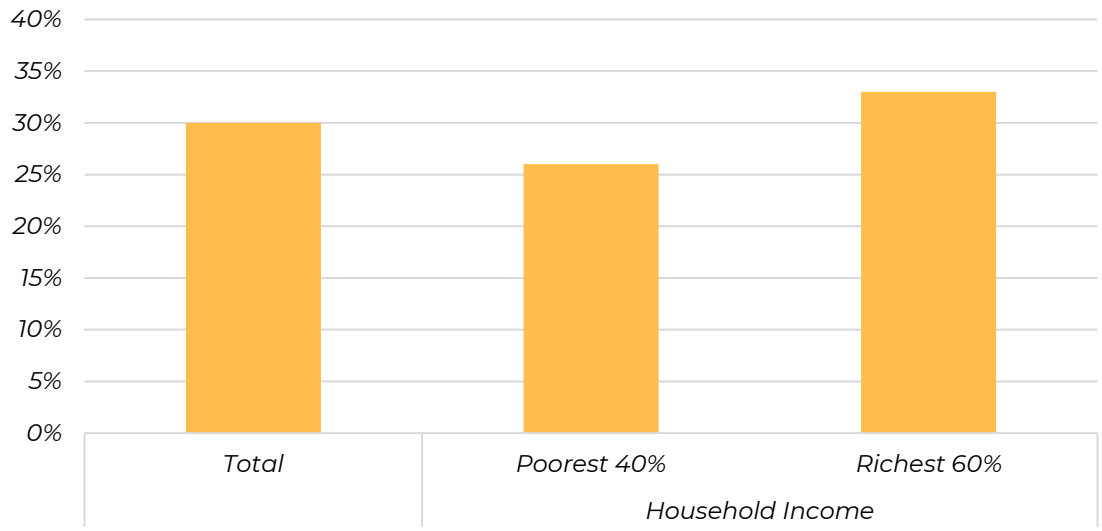
Sources: techcrunch.com; bloomberg.com; altbank.com; nubank.com

3.4. FINANCIAL EDUCATION

Financial literacy plays a crucial role in financial decisions of low-income families, and this tends to be low in Brazil in comparison to OECD countries. In addition to income and schooling, financial education is shown to be a positive determinant of savings behavior (Bruhn et al. 2016). Data from Pisa 2018 show that out of 20 countries[20] (mostly OECD countries) Brazil is in the 17th place in financial literacy. The evaluation, which looked at 15-year-old students around the globe, found that even though Brazil increased its overall score from 2015, 43.6 percent of the students had a low score in financial literacy and only 1.9 percent of the students were among the top performers.

Differences in performance by socioeconomic level are stark. Variation in students' socioeconomic status explains 16 percent of the variation in performance in financial literacy in Brazil (compared to 10 percent in OECD countries). Other data sources bring additional evidence. A proxy used to measure the understanding of probability concept in each country is the percentage of the individuals who answer correctly that 1 out of 10 is the same as 10 percent. According to the survey data released by Lloyd's (2019), the World Risk Poll, 30 percent of Brazilians answer this question correctly, in comparison to the world average of 40 percent. Neri (2020b) found that only 26 percent of the respondents in the bottom 40 percent of Brazil could answer this correctly (Figure 21).

Figure 21. Percentage of individuals who answered correctly that 1 out of 10 is the same as 10 percent, Brazil



Source: FGV Social from the World Risk Poll 2019.

[20] Australia, Brazil, Bulgaria, Canada, Chile, Estonia, Finland, Georgia, Indonesia, Italy, Latvia, Lithuania, Peru, Poland, Portugal, the Russian Federation, Servia, the Slovak Republic, Spain, and United States.

In 2010, the National Financial Education Committee (Comitê Nacional de Educação Financeira [CONEF]) launched a National Strategy for Financial Education (*Estratégia Nacional de Educação Financeira* [ENEF])[21]. The strategy had the objective of promoting financial education, increasing the capacity of citizens to make conscious choices about the administration of their resources, and contributing to the efficiency and solidity of the financial, insurance, and pension markets for adults as well as students (Forte 2020)[22] (see Box 5). As part of the strategy, a specific program for high school students between ages 15 and 17 years was introduced (*Educação Financeira No Ensino Médio*). The program consisted of case studies integrated in regular high school subjects, and it reached a large scale after a pilot.

Results from the pilot evaluation among youth showed promising results of higher financial product take-up and improved financial literacy. Bruhn et al. (2016) evaluated the impact of the pilot program for high school students and found (a) improved financial literacy, (b) increased grades, (c) short-term effect on enrollment of students (spillovers to the whole country), and (d) increased use of credits of those students. Furthermore, they found positive impacts on parents through a dedicated channel of the program to families.

In conjunction with the launch of the digital savings accounts from CAIXA, the GoB also took steps towards increasing financial awareness among youth. In 2020, as an initiative to increase financial awareness among underprivileged children and youth served by the BF program, the GoB announced the plan of expanding the *Futuro na* Mão program, packaged as "*Futuro na Mão 2.0*". In addition to increasing financial awareness, the program also aims to increase the understanding of budgeting, taxes and pensions[23]. The original *Futuro na Mão* program's objective was to offer financial education workshops to women in the BF program and the Social Assistance Reference Center (*Centro de Referência de Assistência Social* [CRAS]).

[21] Decreto Federal 7.397/2010, renewed Decreto Federal nº 10.393 (9.6.2020).
[22] The gratis offers can be executed by public and private institutions. CONEF (among others including the Ministry of Economy, Ministry of Education, Ministry of Justice and Public Security, and the Central Bank) defines the actions of the plan as well as the coordination of the implementation. Between 2013 and 2015, educational programs for youth and adults were developed. In 2018, special attention was paid to the strategic redirection of teachers and in 2020 the implementation of the Curricular Common National Base was started.
[23] Ministério da Cidadania. 2020. *Cidadania na infância: Futuro na Mão 2.0 vai levar educação financeira a jovens e crianças carentes.* Accessed 9/24/2021. https://www.gov.br/cidadania/pt-br/noticias-e-conteudos/desenvolvimento-social/noticias-desenvolvimento-social/cidadania-na-infancia-futuro-na-mao-2-0-vai-levar-educacao-financeira-a-jovens-e-criancas-carentes

Box 5. Behavioral interventions for financial education of low-income adults

The ENEF is deemed important to create profiles for female and for low-income BF beneficiaries based on their propensity to save and different behavioral biases (Forte 2020). Based on their profile, the strategy would adopt different interventions.

The four groups for low-income individuals are as follows:

A. **The dedicated** (reasons for indebtedness: donations, fulfilling the wishes of others; challenges: put limits, and focus on him/herself)

B. **The elderly** (reasons for indebtedness: undertake investments; challenges: unforeseen events)

C. **The resigned** (reasons for indebtedness: financial abuse, unconscious choices, unfamiliar; challenges: empowerment, isolation)

D. **The hedonist** (reasons for over-indebtedness: impulsive consumption and present bias; challenges: sustainability, discipline).

The four groups for female BF beneficiaries identified are as follows:

A. **The dreamer**, who has little responsibility over the use of money because of the impulse to consume. The challenge is to encourage more mature and conscious financial decisions and provide the respective instruments.

B. **The visionary**, who generates wealth and income and thus risks and investments. The challenge is to support the expansion and protection of assets and stimulate its multiplier role.

C. **The survivor**, who has limited resource optimization. The challenge is to leverage resource management talent to enable it.

D. **The warrior**, who focuses on short-term choices. The challenge is to develop a vision of risks and orientation to enable medium- and long-term planning.

Source: Forte (2020)

4. Financial programs to manage risks for vulnerable populations: International experience of relevance to Brazil

Several countries with high levels of informality and vulnerability experimented in creating tailored risk management instruments that complement the basic income support of social assistance and statutory programs. The limited scope of noncontributory social protection and the limited coverage of contributory programs to the formal sector are a challenge not only in Brazil but in many middle-income countries around the world[24]. Initiatives accelerated in the last decade to develop complementary instruments to last-resort social assistance that could incentivize resilience, particularly among those households identified as the 'missing-middle', characterized by having some capacity to save and contribute but not necessarily 'plugged in' the formal social protection system, and often not coercible to contribute to mandatory program, as shown in Figure 2.

This chapter discusses several case studies of interest to Brazil. Table 3 gives an overview of case studies, including Colombia, Kenya, Rwanda, Mexico, Pakistan, and Chile. The focus has been purposely broad to include programs that target both informal workers and those aiming at the formalized self-employed; the latter are a growing share of the formal labor force but often remain ineligible for mandatory statutory programs such as unemployment insurance. The case studies include programs that help manage risks during the working lives, although often these also combine the objective of incentivizing long-term savings for old age 25. Lastly, the note also takes stock of the emerging experience of unemployment insurance for the self-employed in OECD countries, which illustrates the challenges of taking the insurance (instead of individual saving) route to attend to this group. A detailed description can be found in Annex 2.

[24] Current experience and cases of this have further been summarized in several publications (for example, RNSF 2017; Winkler, Ruppert Bulmer, and Mote 2017; Behrendt and Ahn Nguyen 2018).
[25] Most of the existing experiences relevant for this particular issue originate from four strands of literature: (a) literature on long-term savings schemes (pensions) for informal workers (for example, Bosch et al. 2019; Guven 2019); (b) literature on financial inclusion of informal workers (for example, Demirgüç-Kunt and Singer 2017); or (c) the behavioral literature on savings (for example, Karlan, Ratan, and Zinman 2014; Roll et al. 2020); and (d) literature on the extension of unemployment insurance for the self-employed.

Table 3.1. Key characteristics of risk management programs (Part 1)

	Type of program	Objective of program	Target group	Number of beneficiaries/Coverage	Provided by the private or public sector	Voluntary or mandated	Design features to increase savings/contributions
Colombia (*Beneficios Económicos Periódicos* [BEPS])	**Long-term savings accounts** (can also be used for other long-term savings in Kenya and Rwanda)	Extend pension coverage	Informal and low-income workers	666,990 beneficiaries (2020). Potential beneficiaries: 12.3 million workers earn less than the MW in Colombia. Out of these 11.4 million do not contribute to pensions	Public (some services provided by the private sector)	Voluntary	Matching contributions, lotteries, text message reminders
Kenya (Mbao pension scheme)				100,000 beneficiaries (2018). 12 million potential beneficiaries in the Jua Kali (Informal Sector Association)	Private sector		Some withdrawal-side restrictions
Rwanda (*Ejo Heza*)				1.3 million enrolled (2021). Potential beneficiaries: 2.9 million workers in the informal sector (2019)	Public (some services provided by the private sector)		Matching contributions
Chile (Reform 2008)			Formal self-employed	> 300,000 self-employed (2008) but has decreased since. This represents 33 percent of those eligible to contribute	Public	Semi-compulsory	—

Table 3.2. Key characteristics of risk management programs (Part 2)

	Type of program	Objective of program	Target group	Number of beneficiaries/Coverage	Provided by the private or public sector	Voluntary or mandated	Design features to increase savings/contributions
Colombia (*Cesantías*)	**Unemployment savings accounts**	Extend unemployment insurance savings	Formal self-employed	8 million beneficiaries (2018)	Public and private sectors	Voluntary	Favorable interest rates
Mexico (*Programa Integral de Inclusión Financiera* [PROIIF]) *Discontinued*	**Credit and saving tied to CCT payment**	Incorporate CCT beneficiaries into the formal financial sector	CCT beneficiaries	Between 2015 and 2018, the program reached a total of 2.3 million families. The CCT program (Prospera) covers 6.2 million beneficiaries	Public (some services provided by the private sector)		Financial education, free life-insurance, potential access to microloans
Pakistan (Crisis-Resilient Social Protection [CRISP]) *Planned*	**Voluntary savings scheme with individual accounts**	Protection from shocks	Missing middle and graduating CCT beneficiaries	Pilot will target 150,000 beneficiaries	Public		Matching contributions
High-income OECD countries	**Unemployment insurance to formal self-employed**	Extend unemployment insurance to the self-employed	Formal self-employed	Pilot will target 150,000 beneficiaries	Public or private sector (depends on the country)	Voluntary or mandatory (depends on the country)	—

4.1. LONG-TERM SAVINGS INSTRUMENTS

Despite differences in design, all analyzed instruments share the objective of increasing financial inclusion and savings accumulation. The majority of savings instruments explored in this chapter are for long-term savings. BEPS in Colombia, Mbao in Kenya, *Ejo H*eza in Rwanda, and Chile's individual funds are all long-term savings schemes, allowing for early withdrawals, with the objective of creating retirement savings for uncovered workers. In addition, this chapter also reviews other, more diverse, programs geared toward creating savings for short-term shock mitigation: *Cesantías* in Colombia are unemployment insurance savings accounts (UISAs) for the self-employed; the planned voluntary savings schemes CRISP in Pakistan supports families graduating from the CCTs; and the financial inclusion program PROIIF in Mexico has the purpose to incorporate CCT beneficiaries in both savings and credit, as complementary instruments to smooth consumption and allow investments.

The target groups of the different programs are, by design, low earners with irregular incomes. The different savings instruments presented in this note target different segments of the population. While Ejo Heza, Mbao, and BEPS target informal and low-income workers, they are open for everyone that wishes to join. The pension system in Chile and the *Cesantías* in Colombia target not only formal wage workers but also formal self-employed workers. The PROIIF program in Mexico targeted CCT beneficiaries and CRISP targeted graduating cash transfer beneficiaries and the missing middle. Although the programs of this note target slightly distinct groups, they all have their often unobservable, irregular and low earnings in common.

Although most of the programs are established and delivered almost exclusively by the public sector, they include elements from the private sector. The Mbao pension scheme in Kenya is entirely provided by the private sector, while the *Cesantías* funds in Colombia are provided by both the private and public sectors. Furthermore, PROIIF, *Ejo* Heza, and BEPS include elements or services that are provided by the private sector.

Some of the savings schemes have links to national ID systems and are portable across jobs. Linking the program with the national ID system can help effectively identify and track contributions of individuals. Upon registration to the Mbao scheme, applicants must present their national ID card. The *Ejo H*eza plan is also linked to the account holder's national ID, which make the savings account portable across jobs. In Chile, different agencies are interacting with each other using the national ID system: formal employees pay pension contributions to the pension fund administrator (*Administradora de Fondos de Pensiones* [AFP]) and the self-employed make their contributions to the tax agency. In case a self-employed worker undertakes a salaried job during a year, the AFP must communicate any contributions to the tax agency and vice versa.

Participants can join all the select programs on a voluntary basis and opt out if they wish. It is not realistic to mandate informal workers to contribute to saving schemes. First, their 'often' low income and irregular earnings make them unable to contribute on a regular basis. Second, gaps in the national ID system make it even harder to implement mandatory schemes.

Most of the programs evaluated in this note provide voluntary schemes. The only exception is the pension scheme to formal self-employed workers in Chile which is semi-compulsory. This means that the self-employed are automatically enrolled in the program but have a chance to opt out whenever they want to.

Most of the programs reviewed provide flexibility in the contribution amount and frequency. The BEPS pension scheme in Colombia does not require a minimum period of contributions, and minimum contributions start at COP 5,000 (US$3.99), which may be affordable also to earners below the minimum wage. In the Mbao pension program, the minimum contribution is equivalent to US$0.20. No penalties are realized if members fail to contribute. In the case of *Ejo Heza* also, contributions are voluntary in all terms. The *Cesantías* in Colombia and the pension scheme in Chile, for formal self-employed workers, are more stringent, as they require one month of the beneficiary's declared earnings or wage per year. This is similar to Brazil's minimum contributions for formal self-employed workers (*Pessoas Juridicas*).

Most of the saving schemes allow short-term withdrawals, to increase trust and remain flexible. Lack of trust in the providing institution can reduce the effect of savings accounts (Goldberg 2014), which, for informal workers with limited experience with the financial sector, often equates to liquidity. However, excessive accessibility may hinder the very objective of saving for the long term. Thus, programs such as Mbao, *Ejo He*za, and *Cesantías* restrict withdrawals in different ways (time frame, specific purpose), without forbidding them entirely.

Addressing behavioral biases is important to increase the deposits to savings accounts. The 'take-up' of savings scheme is a key measure to describe the scale the program has reached in terms of the number of accounts opened. As noted in the case of Brazil, the take-up of savings accounts in developing countries is disproportionally higher than their actual usage (for example, Figure 12 and Figure 13). Low saving is a combination of the sheer lack of spare cash from daily necessities and behavioral biases, such as overload of information, present bias, and lack of the initiative or strength to start saving (see Box 1).

Almost all the select programs include design features on both the deposit and withdrawal sides of savings accounts with the objective of addressing behavioral biases. One way to increase the usage and reduce the withdrawals of savings accounts is to help the user commit to a savings goal. Commitment savings accounts are used in many developing countries and are known for incorporating specific mechanisms that help people save small amounts periodically (Martin 2014). The accounts often include deposit- and withdrawal-side features aimed to address behavioral biases (see Table 4). Deposit-side features help individuals make regular deposits into savings accounts and withdrawal-side features deter individuals from making withdrawals (Ashraf, Gons, and Karlan 2003). It is however critical to keep a good balance between deposit- and withdrawal-side features and the flexibility of the scheme. As discussed above, given the irregular earnings and often limited savings ability of the end users, too hard restrictions might have negative effects on the savings rate.

Table 4. Deposit and withdrawal features and other interventions to incentivize long-term savings

Features	Description
Deposit side	
Automatic transfers	Automated transfers from one account to another, nonbinding commitment device (for example, PROIIF)
Automatic deductions from paychecks	Money is removed before it enters a client's account
Deadline for bonuses	Deadline as a threat to miss a benefit (could be done through lotteries) (for example, BEPS)
Automatic increases	Programs that make people commit now to saving once income increases
Deposit collectors	Frequent reminder/pressure to save (for example, BEPS)
Monetary incentives	Favorable interest rates, matching contributions, bundling with other services such as insurances (for example, *Ejo Heza*, BEPS, and Cesantías)
Withdrawal side	
Restricted use	Only use for education, health care, old age (for example, *Ejo Heza*)
Restricted timing of withdrawal	Commitment to save for a specified time (for example, Mbao)
Lock box	Piggy bank for which the bank and not the clients has the key
Withdrawal fee	An individual has to pay for withdrawals—can prevent impulsive withdrawals (for example, Mbao)
Delayed withdrawals	Can also prevent impulsive withdrawals as above
Peer monitoring	Peers help commit to savings. Punishment for withdrawal can be either financial or reputational
Other interventions	
▪ Financial literacy interventions and awareness campaigns (for example, PROIIF) ▪ Waive of administrative of registration fee	

Source: Based on Ashraf, Gons, and Karlan (2003) and Martin (2014).

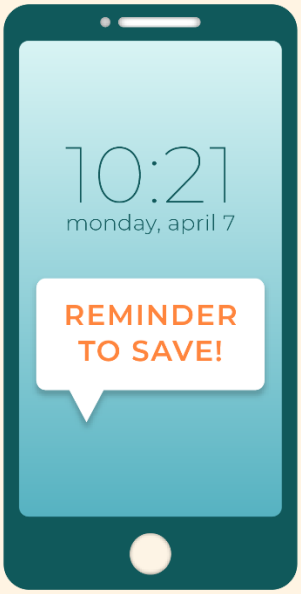
The following deposit- and withdrawal-side features are part of the design of the select programs:

- **Connecting a savings account to a predictable stream of income using automated transfers may increase the chances of reaching a long-term savings goal.** Automated transfers liberate the user from the savings decision and reduce transaction costs since no action is required. An automated transfer option is offered to CCT beneficiaries of the PROIIF program. The PROIIF beneficiaries are faced with two different options when setting up a savings account: (a) they can decide every second month how much of their income support can be deducted and deposited into the savings account or (b) they can join a program which makes an automatic monthly transfer of an amount selected by the beneficiary. It is shown that individuals are more prone to save when having a predictable and guaranteed inflow of income (Bastagli et al. 2018)

- **Lotteries combined with a deadline are often used to increase deposits to savings accounts.** Another way to increase savings is to establish deadlines for receiving certain benefits or bonuses. Because of present bias, deadlines are sometimes needed to inspire savings. In line with this, the BEPS in Colombia introduced a lottery initiative with the purpose of increasing the regularity of savings. Beneficiaries that actively made timely and regular contributions on a weekly, monthly, or yearly basis were automatically enrolled in the lottery and eligible for different attractive prizes.
- **Matching contributions or attractive interest rates can increase the deposits.** Both *Ejo Heza* and BEPS offer matching contributions to beneficiaries as a mean to incentivize savings. Once BEPS users reach their pension age, they receive their savings back plus a matching contribution of 20 percent from the state. The *Ejo Heza* pension scheme offers tailored matching contributions for different socioeconomic groups. The general rule is that less income implies a higher matching contribution. Another incentive used in savings schemes is a favorable interest rate. *Cesantías* in Colombia, for instance, offers an interest rate of 12 percent per year of the total amount saved and an optional return rate depending on the type of investment the account holder selects.
- **Bundling with other services such as insurances might attract more participants.** According to Guven (2019), synergies arise when bundling various services and products. Thus, one way of making savings schemes more attractive is to integrate them with other valuable services. It is, for example, quite common to bundle savings accounts with the provision of different types of insurances. Both *Ejo He*za and BEPS offer their users access to life and disability insurances.
- **Most programs include withdrawal-side requirements to prevent depletion of account balances.** The Mbao scheme combines restricted timing of withdrawal and a withdrawal fee. Beneficiaries of the Mbao scheme can make a lump-sum withdrawal after three years. Making a withdrawal before the three-year limit will be penalized. *Ejo He*za has implemented a 'restricted use' feature so that beneficiaries of the program have access to 25 percent of their total accumulated savings for liquidity needs and 40 percent of the total savings can be used as a collateral to obtain a loan.
- **Using labels and reminders can have important effect on account balances.** Procrastination or lack of attention could reduce the deposits to savings accounts over time. However, this can be treated with reminders and nudges that help the person reach his or her savings goal (Cavallo and Serebrisky 2016). Text message reminders are, for example, an inexpensive and effective way to improve saving behavior. As an initiative to understand the effect of psychological incentives on savings behavior and engage more users in saving regularly, the BEPS program in Colombia experimented with text message reminders to beneficiaries (see Box 6). Abkas et al. (2016) partnered with the Mbao pension scheme in Kenya to test how weekly reminders could increase savings in the scheme. They found that reminders and track-keeping of savings both increase savings and concluded that policy makers and product designer should consider behavioral aspects when designing savings accounts.

Box 6. The BEPS program and text message reminders to increase savings

Behavioral biases are sometimes overlooked in research but can explain a large part of undersaving. Interventions to overcome those biases have been found successful in many developing countries. One effective and inexpensive intervention explored is to send savings reminders regularly (Akbas et al. 2016). The idea behind text message reminders is that people are present biased meaning that they cannot pay attention to their future expenditures in the present. Reminding people about their future expenditures is a way to support people to make better savings decisions.



Inspired by the behavioral literature, the Innovation for Poverty Action (IPA) partnered with *Colpensiones* (the national pension agency) and the Interamerican Development Bank (IDB) to understand the impact of different text message reminders on the savings behavior of BEPS beneficiaries through a series of randomized control experiments.

The experiment consisted of three different waves. Among 690,000 BEPS users, 390,000 were randomly sampled. In the first wave, 240,000 users were sent 'behavioral reminder messages' with the purpose of making retirement feel more present and 150,000 received standard reminders. In the second wave, 155,000 out of the 240,000 users who had received behavioral messages received a 'savings goal message' which set different annual savings goals based on the individual's savings amount the previous year. The remaining 85,000 users served as a control group and received no messages. In the third wave, the long-term impact was measured of the first and the second waves. Lastly, an additional experiment was conducted testing how to incentivize inactive users through phone calls. Each user received a phone call informing them about their savings account.

In general, it was shown that text message reminders increased the amount saved among active savers. However, the messages were not effective at converting people from not saving at all to saving some. Looking at the specific types of messages, the experiment revealed that the 'behavioral reminder messages' were not more efficient than regular text message reminders. The 'saving goals messages' incentivized people to save significantly larger amounts. The results also indicate that it is more effective to set a reachable and lower goals than ambitious ones. Overall, the long-term effect of the savings reminders faded rapidly over time. The effect of the saving goal message were however more long-lasting. Lastly, the phone calls to the inactive users were proven efficient.

Source: IPEA 2018.

Some of the programs integrate other interventions aiming to increase financial literacy and awareness to overcome behavioral biases and information asymmetries. According to Holzmann and Pallares-Miralles (2005), although evaluations are limited, financial education can yield positive outcomes and attitudes toward savings as well as good financial knowledge. The PROIIF program offers several different components to improve the financial situation and behavior among Prospera beneficiaries. One of the components is financial education with a broad curriculum including budget training, pension planning, and digital financial education. According to an impact evaluation of the PROIIF program (EASE 2016), the financial education component had a positive and significant impact on PROIIF beneficiaries' savings behavior.

Some programs collect savings through physical collection offices, whereas, in African countries, mobile money deposits are common. The availability of different programs may be a determining factor for the take-up of beneficiaries. Technological changes imply opportunities to improve the effectiveness of savings products. Serving potential beneficiaries through traditional brick-and-mortar locations is expensive for both the program supplier and the client. Not only does it require a physical location and staff for the program supplier, the client also has to travel, sometimes even long distances, to deposit money (Goldberg 2019) The Mbao scheme harnesses technology and allows users to make deposits through several Kenyan mobile money systems. Similar to the Mbao scheme, Ejo Heza users are able to make contributions using mobile wallets, bank accounts, or debit and credit cards. Despite being provided by the government, Ejo Heza has partnered with two of the bigger telecom operators in Rwanda, MTN Rwanda and Airtel Rwanda, as well as the IT financial solution company, Mobicash, to support citizens to enroll and save into the scheme using cell phones. In contrast to the Mbao and Ejo Heza schemes, participants of the BEPS program deposit money into their BEPS account at the official collection points around the country. The collection points can be accessed in 96 percent of Colombia's municipalities.

Despite lacking rigorous evaluations, the literature illustrates some initial challenges and lessons learned from the implementation of these programs. The impact of the programs in terms of both successes and challenges is highlighted in the following paragraphs:

- **Despite their nationwide availability, some of the programs struggle with awareness and take-up of beneficiaries.** One important and easily measured success indicator of the programs is the take-up. Take-up of beneficiaries seems to be an issue for some programs even though they are available at a national level. Assessments of BEPS and Mbao indicate the following: one of the main challenges highlighted with the BEPS program was the relatively low take-up (OECD 2017). The take-up of Mbao account holders is low and in 2018, 100,000 users contributed to the scheme, which is low in comparison to the members in Jua Kali (the informal workers association in Kenya) which accommodated 12 million members. The low take-up can be due to lack of awareness of the program and general low financial literacy in the country that hinders people from making informed decisions about participation in a program.

- **Usage of the schemes is normally disproportionally lower than the take-up of accounts. Another important success measure is the usage of deposits made to the accounts.** According to OECD (2020), around 1 million low-income informal workers held a BEPS account in 2019. Less than 50 percent of these accounts had actual savings and less than 30 percent of workers actively contributed to the accounts. To circumvent the low usage of the schemes, many programs have tried to address behavioral biases through interventions or design features (for example, text reminders, matching contributions, and automatic transfers).

- **Improved financial literacy is often correlated with successful saving outcomes.** Goldberg (2014) argues that it is difficult to offer new financial products to unbanked populations without providing some financial information. Even though they do not offer financial education per se, some of the saving programs indirectly improved financial literacy among their users. Kabare (2018) found that financial literacy increased among the individuals joining the Mbao pension plan. Precisely because financial literacy is limited at the start, the saving schemes are best successful if the experience becomes pedagogical, with customers learning by using the product.

- **While allowing early withdrawals can increase trust, it is important to sustain savings even after depletion of accounts.** Despite integrating withdrawal-side restrictions in the scheme, an evaluation of the Mbao program found that many users tend to withdraw their savings early (Kabare 2018). This highlights the importance of sustaining savings among users even after the account has been depleted.

4.2. UNEMPLOYMENT INSURANCE EXTENDED TO NONDEPENDENT WORKERS

Many OECD countries, mostly high-income ones, began including the formal self-employed in their unemployment insurance systems. Despite many advantages such as increased flexibility and reduced employment barriers, nondependent workers are often disadvantaged in terms of access to and the level of social security as many of the current instruments are designed for formal workers. In Latin America, extension of unemployment insurance to nondependent workers, particularly the self-employed, is rare. The only country that offers unemployment support to the self-employed, to the authors' knowledge, is Colombia (see Box 7). To understand the intricacies of extending protection to self-employed workers, one has to turn to Europe where a number of countries included self-employed workers in their unemployment protection systems.

Box 7. Unemployment insurance for the self-employed. The case of Colombia

In general, the unemployment insurance system in Colombia rests on three main pillars to protect the income of laid-off workers: (a) severance pay; (b) individual savings accounts, *Cesantías* (see Annex 2); and (c) unemployment insurance fund (*Fondo de Solidaridad de Fomento al Empleo y Protección al Cesante* [FOSFEC]). Colombia's unemployment protection system provides voluntary coverage for formal self-employed workers. The unemployment insurance fund (Pillar III) is described from the perspective of self-employed workers in the following paragraphs.

Colombia's FOSFEC protects laid-off workers by helping them maintain their entitlement to health services and pension savings. The fund also provides a cash transfer for laid-off workers based on the number of dependents as well as labor intermediation and training services. To access FOSFEC, self-employed workers must join the Family Compensation Funds (*Caja de Compensación* Familiar [CCF]). The self-employed are further required to have prior affiliation to the health and pension system. The payout period for all workers is six months but can be terminated earlier if a beneficiary fails to fulfill the job search obligations.

Although contributions to the unemployment insurance are voluntary for the self-employed, **contribution requirements** to receive the **CCF** benefits are more stringent for the self-employed than for wage workers. The self-employed need a prior contribution to the CCF for two years within the last three years (compared to one year of contributions for wage employees). The contribution for the self-employed is calculated based on one legal monthly minimum wage.

The **eligibility conditions** for self-employed workers are slightly more stringent than for wage workers and require that the duration agreed upon in their contract has been fulfilled and that they hold no other contract or obtain no other source of income.

Like wage employees, the self-employed are required to register in one of the authorized employment services and participate in the job search and job training programs. If offered a job that pays at least 80 percent of the last wage earned in their previous job under the same or better conditions, beneficiaries must not turn down the offer.

Lastly, under the unemployment insurance fund an additional savings path is possible. If wage employees or the self-employed save voluntarily, they receive a proportional cash bonus calculated based on the saving period and wage level.

Source: Velásquez 2016; www.mintrabajo.gov.com

Several considerations need to be addressed when including self-employed workers in unemployment insurance: (a) Should the system be compulsory or voluntary? (b) How big is the benefit and what is it based on? (c) How should fluctuating earnings of the self-employed be treated? (d) How can the insurance scheme be designed to mitigate moral hazard or adverse selection? (e) How can the schemes be designed to ensure equal treatment of the self-employed and salaried employees? The majority of these considerations will be addressed using experience from Europe discussed below.

Unemployment insurance to the self-employed is provided either on a voluntary or on a mandatory basis. While the compulsory insurance is mandatory for formal self-employed, the opt-in scheme is voluntary. The compulsory scheme can also be partial, covering only certain categories of the self-employed. Voluntary and compulsory schemes can coexist in combined systems (for example, Sweden, Denmark, and Finland). This means that in addition to the compulsory insurance, the self-employed can choose whether they want to opt in to a voluntary employment scheme. There are several countries in Europe where the self-employed are still ineligible for unemployment insurance. In those countries a means-tested allowance is offered for the unemployed self-employed (see Table 5).

Table 5. Country classification of the unemployment insurance schemes

	Permanent wage employees	Self-employed	Temporary workers
Compulsory UI	Most European Union countries	Czech Republic, Hungary, Luxemburg, Slovenia, Portugal, Poland, Sweden	Generally, temporary workers have access to the same unemployment schemes as standard workers in Europe (but less likely to fulfill the eligibility criteria)
Voluntary UI (self-selection is allowed)	Finland, Sweden, Denmark	Finland, Sweden, Denmark, Austria, Slovak Republic, Spain	Finland, Sweden, Denmark
Means-tested social assistance with job search requirements	Virtually all OECD countries have social assistance with job search requirements, although enforcement varies widely from country to country		

Source: Based on Avlijaš (2019). Note: UI = Unemployment insurance.

The unemployment benefit can vary by several parameters, including the worker's contribution amount or duration before unemployment. Most countries have a predetermined payout period of around one year, while for other countries it is determined by the contribution period. For instance, depending on the number of months of contributions in the previous 48 months, the benefit is paid for 2–12 months in Spain. The voluntary scheme in Sweden and Luxembourg provides earnings-related unemployment insurance benefits, paid at

80 percent of previous earnings based on earnings from the last 12 months (up to a ceiling of EUR 2,547.30). This is paid during the first 200 regular working days of unemployment; the benefit is then reduced to 70 percent (Nelson et al. 2017; OECD 2018). In other cases, the unemployment insurance benefit is based on the basic amount and the time worked before unemployment (Poland and Spain). In Poland, for example, if the self-employed worker has worked for 1–5 years, 80 percent of the basic amount is paid, while 100 percent is paid for those who have worked between 5 and 20 years and 120 percent is paid for individuals who have worked more than 20 years (Chłoń-Domińczak, Sowa, and Topińska 2017; Cabrero et al. 2017).

To prevent moral hazard, the unemployment insurance requirements are often stricter for nondependent workers. Since it is hard to establish the reason behind the job loss for the self-employed, schemes employed different strategies to deal with the issue (Avlijaš 2019). In some countries, the self-employed need to prove bankruptcy or close their business. In Sweden, for instance, the self-employed need to prove that their firm ceased to exist completely. If the firm is recuperated, the self-employed will not be entitled to unemployment benefits for five years. In other cases, the self-employed are only eligible for unemployment benefits in case of a disaster or financial or medical emergency. Furthermore, in many countries, the self-employed worker must be registered as a jobseeker in labor offices. If offered with a suitable job, the self-employed worker must accept it.

Some countries promote reemployment for the self-employed. In Spain, to promote employment, the benefit is given in the form of a single payment to help the self-employed start a work activity or join a work cooperative as an associate (Cabrero et al. 2017).

Some of the compulsory insurances require more months of contributions from the self-employed than from wage employees. To receive the unemployment benefit, self-employed workers in Finland require at least 15 months of entrepreneurship during the last 48 months. This is longer than the country's requirement for standard wage workers—6 months in the previous 28 months. In Luxemburg, the self-employed require a minimum of 24 months of contributions, in comparison to four months for regular employment.

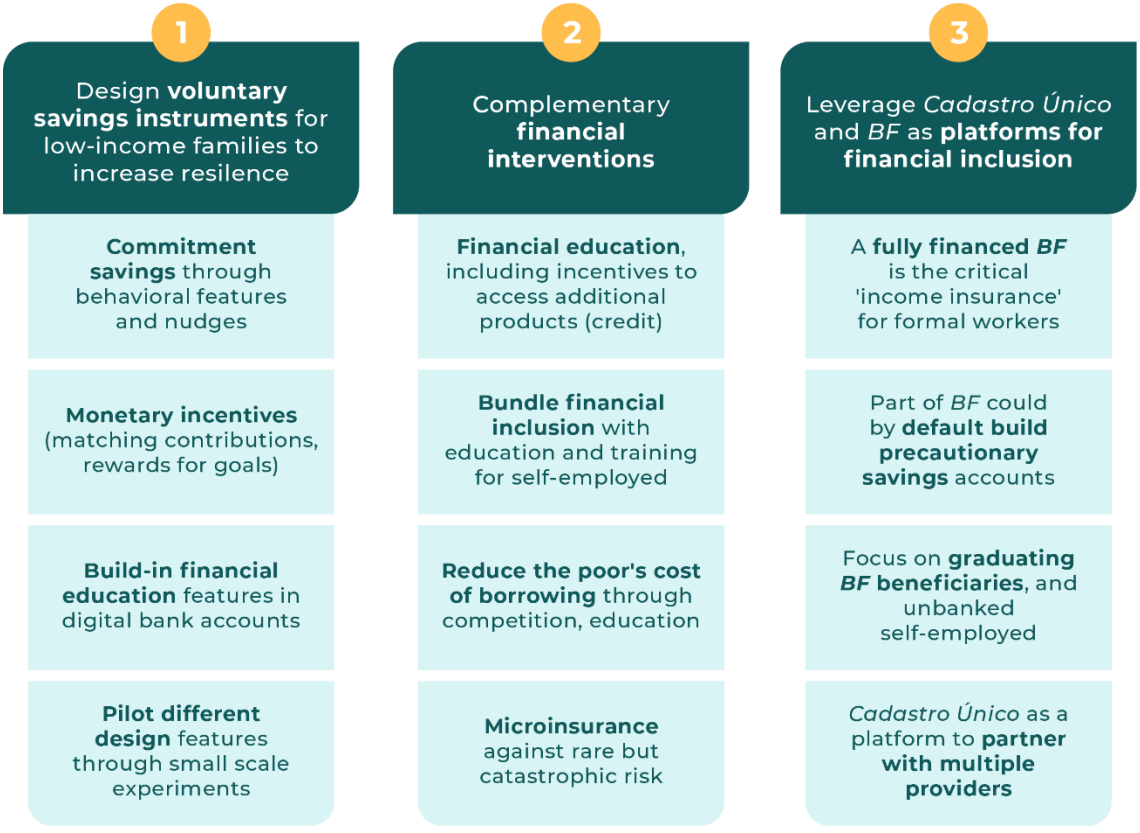
One concern is that the self-employed often face less favorable conditions than salaried employees, even though self-employed workers have access to the same schemes as other workers. The unpredictable earnings of the self-employed combined with the stricter contribution requirements, such as minimum earnings and contribution periods, may hinder self-employed workers from benefitting from the insurance and increase a risk of exclusion (Spasova et al. 2017). Among the self-employed, the risk of noncoverage can vary depending on the country context and the type of system. While the risk of exclusion is rather low in countries with compulsory insurance, the issue is more present in countries with opt-in insurance (Spasova et al. 2017). Avlijaš (2019) points out in that low-earning self-employed workers in countries with voluntary unemployment insurance systems are at a particular risk of not getting coverage because of their low earnings. They are also at risk of receiving very low benefits if they opt in, which may disincentivize them further.

Voluntary schemes tend to be affected by adverse selection effects, resulting in a low coverage of workers. One risk of voluntary insurance schemes is adverse selection of members. Many scholars claim that the self-employed workers with the highest risk also have the biggest incentive to join the insurance scheme (Spasova et al. 2017). This can lead to a vicious circle resulting in low-risk members leaving the scheme. According to the OECD (2019), adverse selection leads to either rising premia or failing coverage, unless the voluntary unemployment insurance fund reaches a high coverage rate. Evidence from Sweden indicates a failing coverage rate among the self-employed as the willingness to pay voluntarily for social protection appears to be low. Evidence from Finland points to the same scenario: When paying contributions is optional, most self-employed workers with the option of entering a voluntary system prefer not to (Kangas and Kalliomaa-Puha 2017).

5. Enhancing resilience through financial inclusion: policy options

While the COVID-19 crisis led to innovations that partially broadened access to digital savings accounts, a specific policy that leverages savings or insurance to improve management of risk for low-income families remains to be developed in Brazil. To date, attention has been largely placed on the expansion of credit for this group.

Figure 22. Summary of policy options



This chapter builds on the diagnostics and the framework discussed in the previous chapters to lay out recommendations for extending risk management instruments that cover some of the gaps in the current set of public policies. The recommendations presented in this chapter (Figure 22) are grouped in three pillars: (a) specific design features for a dedicated saving product that complements social transfers, (b) complementary interventions such as insurance and financial education, and (c) coordination of these new instruments with the BF benefit and the *Cadastro Único* delivery system.

5.1 DESIGN FEATURES OF INCENTIVIZED SAVING PRODUCTS FOR LOW-INCOME FAMILIES

Ensuring availability and quick reentry in BF, when needed, represents the first and the most efficient form of basic income insurance for those outside the formal sector in Brazil. Following the framework proposed in this report, it bears remarking that BF's minimum income component acts as a basic form of risk pooling against the catastrophic income losses leading to extreme poverty (Neri 2021). Thus, a first conclusion from this analytical work is that availability of such benefit, including by expanding the policy of guaranteed return for those who left BF, is central to efficiently protect families experiencing income fluctuations in the informal sector (see World Bank 2021).

As a complement to BF, a new precautionary savings product could be offered to those who have a limited ability to save and are in *Cadastro Único*, which should be purposely designed to consider behavioral challenges and the potentially high opportunity cost. Given the low (and fluctuating) ability to save of low earners, a savings scheme intending to build some layer of protection should take into account the intermittent ability to contribute and balance the need for liquidity and the goal of building a savings horizon. It is also important to recognize that the poor face a high discount rate (opportunity cost) in foregoing consumption, and thus such products are more desirable for those who are vulnerable but not necessarily the extreme poor and make more financial sense if they are fairly remunerated.

Commitment savings features can help overcome present bias or limited attention inexpensively (see Table 6). Many of the internationally reviewed programs implement commitment savings features, such as default-option automatic transfers and, sometimes, withdrawal restrictions. It is however important to not make the commitment savings too costly for the user. Evidence has shown that people will not open or use the account if restrictions on the deposit and withdrawal side are too strict (Karlan, Ratan, and Zinman 2014). Inexpensive text message reminders have also proved effective in reminding individuals to save, as in the case of Colombia's BEPS (Box 6). Connecting a savings account to a predictable

stream of income through automatic transfers (for example, PROIIF) could relieve the individual of the savings decision and thus prevent present bias from affecting the decision. There should be some differentiation between a savings-oriented product and a regular checking account, particularly to induce the customer to conceptualize the different purposes of the two. For instance, some of the programs reviewed have withdrawal restrictions for their long-term saving scheme (for example, Mbao, BEPS, Ejo Heza). However, it is important that short-term access to savings is possible in times of shock (Guven 2019).

Matching contributions, lotteries, and interests are more costly but effective incentives that could be targeted to strategic groups. Different kinds of monetary incentives have also shown to be effective when addressing present bias. Tying savings to a future reward through matching contributions increased propensity to participate in a savings scheme and save more (Hinz et al. 2013). To nudge the low-income users, the *Ejo H*eza scheme provides a higher matching rate for lower socioeconomic groups. Matching contributions tend to be a more costly, but they may be less expensive than extending noncontribury benefits to higher-income individuals. Lotteries, enrolling savings schemes users who managed to save a certain amount before a deadline, are less costly and were proven to nudge savings (for example, BEPS). The cost-benefit analysis for such interventions would compare the marginal protection offered through an increase in the noncontributory transfer/threshold with the returns of offering, instead, interest or matching contributions that also stimulate the individual to improve financial behavior.

The *Futuro na Mão* toolkit, which was tested on BF beneficiaries, could inform the design of specific features in this precautionary savings account. The 'financial education kits' developed for BF families as part of *Futuro na Mão* financial education program could be reformulated in digital form (for example, podcasts, videos, and text messages). For instance, the kits taught individuals to set aside savings in different boxes for different purposes (individual goal, unforeseen expenses). This option could be combined with a text message reminder or a notification from the virtual bank account app reminding about the importance of saving or a specific savings goal of the beneficiary.

Different design features should be evaluated with pilot trials. Most of the schemes in the international experience were initially implemented and piloted on a smaller scale to find potential room for improvement (for example*, Ejo Heza*). Neri (2021) recommends the option to narrow the target market initially to refine the product at a lower cost. This pilot should focus on understanding the risks of the physical and digital infrastructure to access the product. Furthermore, a survey could be used to follow up and understand the perception and attitudes toward the product.

Table 6. How to design a product that overcomes barriers to saving

Savings barriers		Barriers particularly present in Brazil	Potential design features addressing barriers	Design priorities
Demand-side barriers (behavioral biases)	**Present bias**	42 percent of the population in Brazil has time-inconsistent preferences and put higher weight to payoffs closer to the present time (Frisancho 2017)	▪ Commitment savings features (automatic transfers, smooth restrictions on the withdrawal side); link guaranteed income streams to savings account (PROIIF) ▪ incentives: favorable interest rates, matching contributions, bundling with other products	✓
	Limited attention		▪ Reminders and labels ▪ Automatic savings accounts	
	Loss aversion or lack of trust	High 'risk aversion' among people in Brazil (Neri and Osorio 2020) and low trust by international standards (only 42 percent of the Brazilian population trusted in financial instructions in 2019) (Neri 2020b)	▪ Build trust by less strict commitment features ▪ Financial education	✓
	Lack of collective or norm behavior		▪ Financial education and awareness	
	Low self-efficacy		▪ Set up manageable savings goals	
	Status quo		▪ Keep the process simple	
Demand side (other barriers)	**Affordability/limited savings capacity**	People in BF and *Cadastro Único* exhibit higher income volatility and BF is the only reliable stream of income for the majority	▪ Assume low and irregular contributions when designing the product ▪ Offer a voluntary product	✓
	Information and knowledge gaps	In Brazil 12 or more years of education is positively associated with savings behavior	▪ Awareness campaigns ▪ Financial education to make savings easy	✓
	Geographical or access barriers		▪ Harness technology to make product accessible at a national scale to a lower cost	

Source: Authors based on Frisancho (2016), Bosch et al. (2019), and Sousa Lourenço (2020) and designed features observed international experience review.

5.2 COMPLEMENTARY POLICIES: FINANCIAL EDUCATION AND INSURANCE

An overarching and essential complement to new financial products is the provision of financial education. Financial education has shown to be an important, often essential, complement to increase savings behavior. Better financial literacy (a) increases trust in financial institutions and reduces any loss aversion of savings, (b) increases knowledge about savings and its benefits and helps individuals better manage their finances at the business and household levels, and (c) improves ability to choose between different financial products. It is often bundled with financial products to educate the customer while using the savings product. In some countries, financial education is a precondition to receiving subsidized or cheaper forms of credit.

The literature indicates that enhancing financial literacy is challenging, and thus any intervention should be complemented by a measurement of effectiveness. The literature indicates that more financially literate individuals tend to plan better, save more, get more return on their investments, and manage their money better in retirement (Mitchell and Lusardi 2015). Financial literacy is also strongly correlated with a stronger ability to deal with emergency expenses and weather income shocks (Hasler, Lusardi, and Oggero 2018). However, evaluations of the effectiveness of financial literacy training show mixed results (Holzmann and Pallares-Miralles 2005). A key lesson for the implementation of financial education is that one size does not fit all and a lot of evidence also points out that behavioral interventions might be as important as education. For instance, a creative categorization of different profiles as in the case of the of the ENEF national strategy could be used to tailor interventions to different groups (Box 5). To ensure that financial education is appropriate to the target group, monitoring and evaluation mechanisms should be implemented along with such education.

Financial education during school age is likely to yield better results. This content of financial education builds on competencies taught in formal education, and early financial decisions bear fruit during the life cycle. The national strategy for financial education in Brazil already obtained the introduction of this subject as part of the education curriculum. Neri (2021) also points at studies showing that the use of middle school students as a channel to bring knowledge of financial instruments to parents through homework has proven effective in Brazil (Bruhn et al. 2016).

The Ministry of Citizenship already counts on experiences and curricula developed for families in BF, but a new financial education delivery strategy is needed to ensure broad dissemination. In the past decade, the Ministry of Citizenship initiated a program of financial education (Futuro na Mão) based on an impact evaluation methodology, which relied on printed materials and was implemented by staff in CRAS. Lessons learned from the scaling-up phase of Futuro na Mão should be drawn to understand if this method relying on in-print material was effective. Another potential source of ready-to-implement material is the Adults Financial Education

Program—developed as part of the National Strategy of Financial Education (AEF 2020). This strategy was developed specifically for adult female BF recipients. Scaling up such initiatives in digital form may require further efforts and partnerships but could eventually result in being less costly than traditional rollout methods. However, digital and distance delivery presupposes digital literacy and connectivity, elements that remain to be properly studied and understood for the audience of *Cadastro Único*.

Financial literacy is important to support the poor self-employed in utilizing policies, such as MEI and Targeted Productive Microcredit. Adults in *Cadastro Único* who are in self-employment, particularly informal, could also be a special target group for financial education, as part of a broader package to support formalization of those with better earnings and, in turn, to enhance opportunities for accessing less costly forms of credit. The micro-profile showed that the informal self-employed have slightly higher savings rates but lower access to the less expensive credit for investments, compared to formal entrepreneurs in *Cadastro Ú*nico. Stronger financial literacy appears to be essential to allow the self-employed to improve their own accounting practices and make a more informed decision about the benefits and costs of Brazil's highly subsidized regime for microentrepreneur (MEI). The MEI regime comes with several benefits such as insurance, better pension, maternity license, and the possibility to access credit. While intended to serve precisely this low-income group, MEI is largely used today as a loophole to reduce taxes for high- and medium-skilled self-employed in the top 50 percent of the income distribution of Brazil (World Bank, forthcoming). Depending on the specific constraints, financial education could also be an avenue to reduce the cost for banks to provide the *Microcrédito Produtivo Orientado* to individuals in *Cadastro Único*, who today receive only one-quarter of all microcredit lending volumes. Many workers are not aware of these regimes.

Tailored communication campaigns also have a role to play in improving trust in the financial system. Distrust in the financial system and preference for cash remain important barriers to savings among the BF beneficiaries. Only 42 percent of the Brazilian population trusted in financial institutions in 2019, well below international benchmarks, and trust levels decrease as financial literacy falls (Nuñez Letamendia and Poher 2020). Thus, financial education as a complementary policy to the savings products is critical to build trust and to allow individuals to respond better to incentives (see Section 5.3).

Building a savings record could also improve access to lower-cost credit by filling a missing credit history. The discussion on how to enhance credit concession practices for low-income families is ample and beyond the scope of this note. However, there is an important connection between savings and credit of relevance to this discussion. Barriers for low-income households to obtain credit include missing securities and credit histories. This is also reflected in the micro-profiling of individuals in Cadastro Único where it was found that, although they represent 40 percent of the population in Brazil, individuals in Cadastro Único only account for 6 percent of the total credit volume in Brazil. Those working informally have a harder time getting credit than formalized workers. A regular participation in savings could be used to build

a record of the customer's income stream and signal future credit behavior. For instance, based on a savings account statement as a proof of good financial behavior, the customer could be granted a loan. However, the promise of better credit access could serve as incentive to save. This feature was utilized in Mexico's PROIIF program, which increased credit lines to the CCT beneficiary families after a period of sustained savings and after receiving financial education. A similar modality was also implemented in the Ejo Heza scheme, where the beneficiary could use part of his or her savings as a collateral.

Some specific risks could also be mitigated through private insurance, best if offered as a bundle with other financial products. The theoretical framework adopted in this report argues that certain risks (catastrophic and rare) are best served through large risk pooling, such as insurance, especially if the moral hazard and adverse selection can be contained. Brazilians in the bottom 40 percent report to be particularly concerned about crime, natural disasters, and accidents. In addition to the emotional damage, death of a family member can result in immediate burial costs or debts for the survivors. Expenditure on insurance in 2017 (among the few in BF who bought life insurance) was a modest BRL 57, and the take-up of any private insurance is extremely low among adults in BF (3 percent), though this propensity triples among those engaged in the formal sector, and the propensity is even higher for those with higher education and in the urban population. Several countries offer death or burial benefits as part of the financial package for social assistance beneficiaries, and Brazil could consider doing the same. Given that even nonpoor individuals rarely choose to buy insurance, the take-up will be low unless bundled in a broader package of services or unless it is offered as a public policy. Thus, it is difficult to envisage this policy to be enacted with a fiscal implication, unless the insurance is to replace other benefits (such as Auxilio Funeral).

5.3 COORDINATION OF FINANCIAL PRODUCTS WITH *BOLSA FAMÍLIA* AND *CADASTRO ÚNICO*

The BF's current rules require movement of funds from the designated account to avoid clawback of funds. The transition to digital accounts during the pandemic has been accompanied by a change in the rules, also known as claw-back clauses, that required families to withdraw their monthly BF benefit within a certain period or otherwise face benefit reclaim and suspension. The BF payment must be subject to some movement. Saving any part of BF in *Conta Poupança* Digital is thus possible, but difficult, as it requires separating mentally ordinary funds from those to be set aside.

One potential solution is to equip families with a separate precautionary savings account. Default options could nudge users in setting aside a portion of their BF transfer there. Separate precautionary savings accounts should be repackaged and offered to families in BF, accompanied by behavioral design features. Similar to the PROIIF program in Mexico, BF

beneficiaries receiving their transfer in an electronic account could be provided with a default, but modifiable, option to receive part of their transfer in a separate long-term savings account. Separating the goal of the digital account meant for ordinary withdrawal from the one with a focus on saving is important from the administrative and the psychological point of view. The amount could be modified or tied to a specific saving goal. Automatic transfers may be an efficient way to overcome hyperbolic discounting, which is a challenge in Brazil, as a predictable stream of income has a positive impact on savings behavior (Bastagli et al. 2019. The savings account could be kept even after the family exits the BF program.

The experience of the social digital saving accounts and of the Caixa Tem app should be closely studied. The rollout of AE resulted in opening tens of millions of free deposit digital accounts by CEF (Poupança Social Digital). The Government of Brazil could consider converting these to regular digital savings accounts. Further analysis of the profile, saving, and withdrawal behaviors of the individuals that received for the first time a digital account would provide valuable lessons regarding saving behaviors of the least connected families and insights for the design of a dedicated product. Furthermore, evaluations of the user-friendliness of Caixa Tem and the digital savings accounts could provide a better understanding of what constraints such digital product might have. For instance, affordability of smart phones or data coverage could be a potential constraint.

This precautionary savings product may be particularly suitable for those above the poverty line within *Cadastro Único*, including families in BF's *Regra de Permanência*. The saving capacity of families in *Cadastro Ú*nico is heterogenous, and those in BF have displayed particularly low propensity to save. However, BF recipient households in *Regra de Permanência*[26] are in a special transition window—they are allowed to earn a higher income but continue to receive the BF transfer (World Bank 2021). This group, representing about 10 percent of all families in BF, would particularly benefit from a saving program that prepares them to buffer future shocks once the transfer stops. Investment in monetary financial incentives during this period to build up savings would be worthwhile for this group, as this may prevent a more costly return to the social safety net. Families that are in this transition period could also be targeted during their two years with a differentiated payment modality, partially directed to the long-term savings account as a default option, which could be modified at will.

***Cadastro Único* could also be leveraged to reduce the cost of intermediating higher-value products for low-income customers.** *Cadastro Único*, through the enhancements developed during the pandemic, is able to collect a wealth of information on families that could potentially lower costs for financial providers to offer additional products. Financial platforms in some countries have served the purpose of intermediating cheaply different innovative fintech

[26] Families experiencing an income increase in BF, and those who voluntarily declare such higher income in *Cadastro Unico*, are able to continue receiving the BF benefit for two additional years, owing to the income disregard rule, *Regra de Permanência*. This rule allows BF families to stay in the program as long as their earned income is less than the *Cadastro Único* poverty line.

products (see Box 8). As observed earlier, the poor tend to pay higher-cost credit and likely receive low returns on savings, and this is in part because transaction costs are particularly high for low-margin customers. A similar logic could be considered in Brazil, using Cadastro Único as the source of financial intermediation, for a narrower range of products. BCB research shows that many banks already serve customers in Cadastro Unico, besides the single intermediary CEF. But users may not have sufficient time, education, or geographic reach to identify the best value product. The public sector could thus play an important role in competitively selecting the few financial products that offer best value for users, including consumer credit, savings accounts, and micro-insurance, and help reduce their delivery cost.

Box 8. Marketplace platforms for digital banking, a one-stop shop with personalized financial products

Marketplace banking is a new business model that promises potential for competition and cheap allocation of innovative financial products. So far such platforms were developed mostly in high-income countries and for a tech-savvy clientele, but government-owned social registries and social protection programs could potentially serve as a similar intermediary to multiple financial providers.

The basic idea of the model is to create a platform to intermediate products of other providers without being an actual bank. Customers benefit from being able to easily access a variety of financial solutions that are personalized to their needs. End customers mainly benefit by a one-stop shop for the best-in class products. Customers are navigated through the increasingly complex fintech offers by showing only relevant options with the aim of identifying a product that best fits their needs. The marketplace bank provides customers with a simple, safe, and personalized selection of products.

Furthermore, the marketplace bank also serves other financial service providers by offering them a highly scalable, low-cost customer acquisition channel. Through the provision of customer data, the providers are able to improve and customize their offers to the user. Examples for marketplace banking are Bom Pra Credito in Brazil, Revolt in the United States and Europe, N26 in Europe, or Starling in the United Kingdom.

The model could enhance more inclusive banking by addressing various challenges (a) through reducing the end-to-end costs, downward pressure on customer pricing is created; (b) through the product availability and the easy start of using new products, accessibility to financial services is expanded; (c) through a wider range of products and smart personalization of products, customers are empowered to find and adapt the products that best fit their needs; and (d) through convenience and simplicity of the model, the products are brought closer to the customers.

Source: CGAP 2021.

Experiences from former financial inclusion programs in Brazil should also be taken into account. Understanding low-income customers and tailoring products to the needs of their

target group is important. The national best-practice programs *CrediAmigo* and *Agroamigo* in Brazil's Northeast region (see Section 3.3) relied on a close agent-client relation of the financial education strategy to provide the bulk of microfinance loans to families in *Cadastro Ú*nico in the country. Lessons learned from those programs could be used as a foundation for future programs and products.

Supply-side constraints that are currently preventing offering financial products to the vulnerable should be analyzed further. While this note focuses on the demand-side perspective, supply-side (providers') constraints should be taken into account going forward. First, it would be important to assess the impact on poor applicants of current requirements to solicit microcredit (documentation, collaterals, guarantors, proof of operative business, and so on). In Brazil, low-income individuals use more expensive credit because this is often preapproved. It would therefore, as a second step, be important to closely evaluate the practices used by financial institutions to assess the credit risks of low-income individuals as well as their approval procedures through, for instance, beneficiary feedback tools. In addition, the actual market demand for different products could be examined. These points could, in combination with the analysis of this note, give a holistic picture of how to better include the vulnerable in Brazil in the financial market.

Moving forward, it is also important to consider broadening capacity and instruments to partner with private providers, transparently and competitively. The next step for the government could be to identify a potential financial institution partner. This could be done through analyzing Central Bank data to identify banks present in Brazil that already work with (or are better suited to work with) low-income customers. A complementary initiative could be to promote a team that exchanges good practices on how to serve the low-income groups better among peer banks. Lastly, the government should also consider the complementary micro reforms suggested in this note in the broader social protection context, including the possibility of harmonizing a saving product for the poor with existing programs for the formal sector (such as FGTS).

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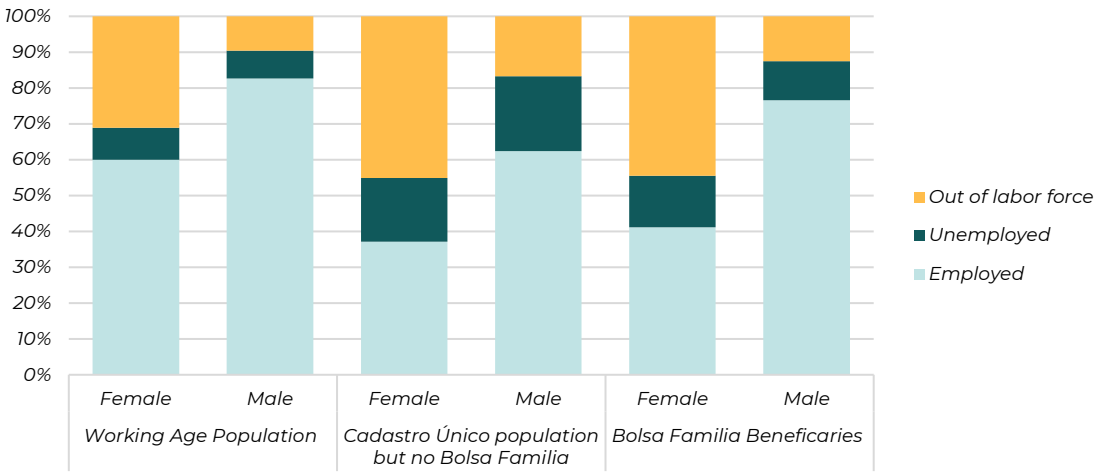
Annex

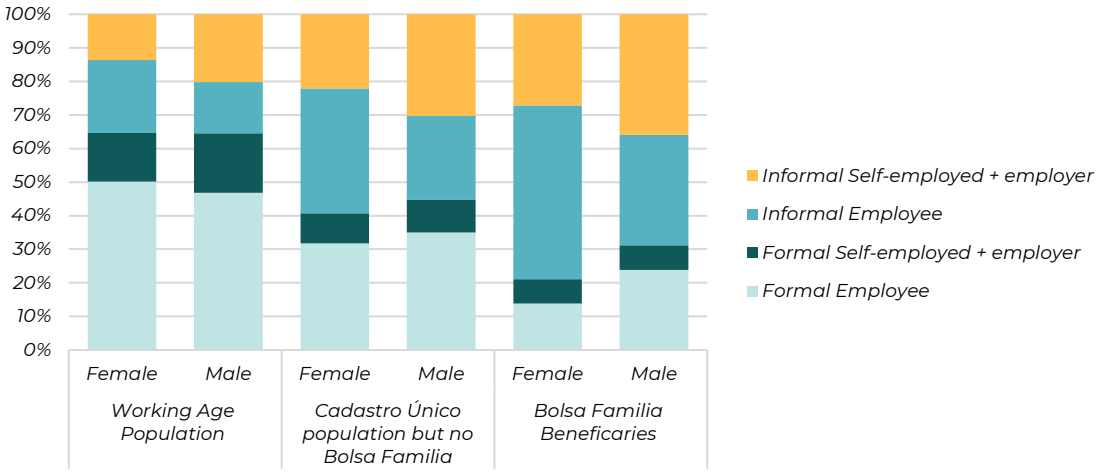
ANNEX 1: ADDITIONAL CHARTS ON MICRO-PROFILE OF LOW-INCOME FAMILIES AND THEIR FINANCIAL BEHAVIOR

Figure A.1. Labor market Status by gender



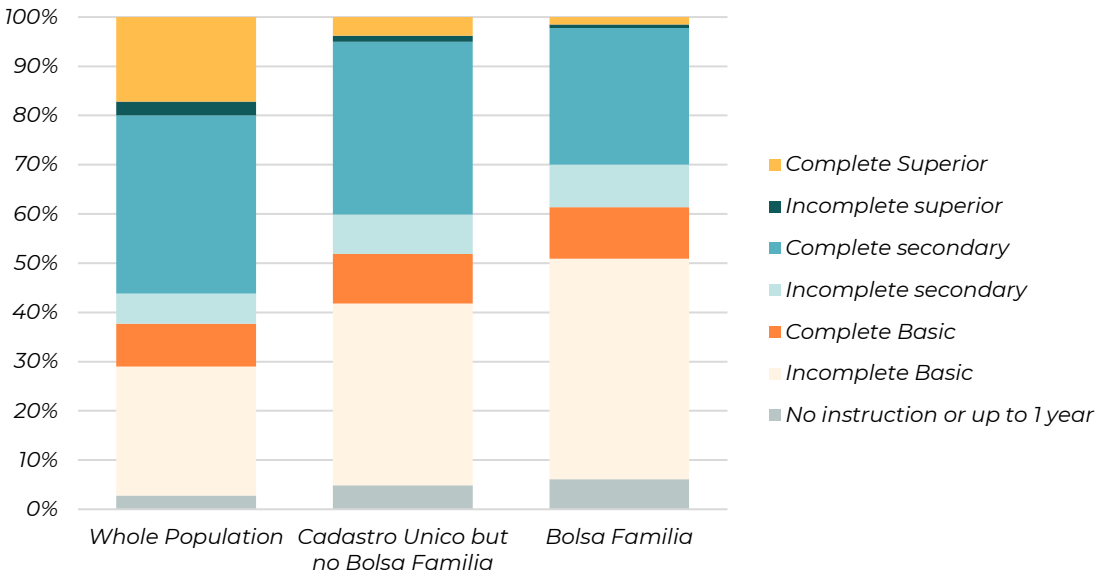
Source: PNAD 2019. Note: Groups are restricted to individuals at working age (18–64) and not disabled or in education.

Figure A.2. Occupational status by gender



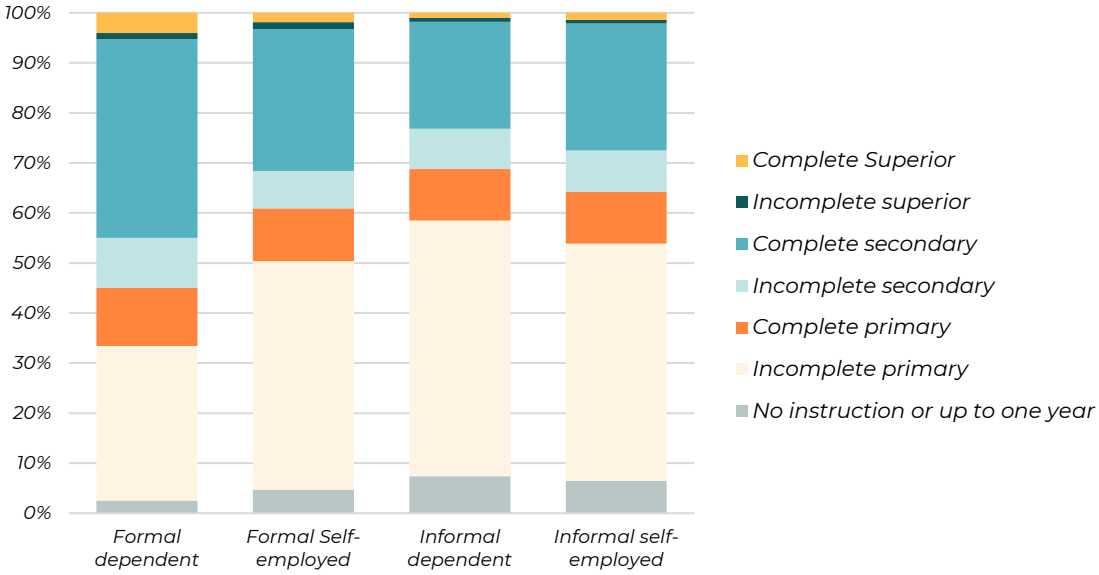
Source: PNAD 2019. Note: Groups are restricted to individuals at working age (18–64) and not disabled or in education.

Figure A.3. Highest education level achieved



Source: PNAD 2019. Note: Groups are restricted to individuals at working age (18–64) and not disabled or in education.

Figure A.4. BF beneficiaries education level by occupational status



Source: PNAD 2019. Note: Groups are restricted to individuals at working age (18–64) and not disabled or in education.

Table A.1. Proportion of individuals with a Positive Net Financial Saving Flow in the survey period by Interest Group and Individual Characteristics Sub-groups

Positive net financial saving	Groups				Total
Characteristics subgroups	BF recipient	BPC recipient	Bottom 40% not in BPC or BF	Rest of the population	Full population
Total	**8.51**	**11.94**	**7.52**	**19.30**	**14.95**
Male	9.34	11.03	7.50	20.41	15.77
Female	7.82	12.71	7.54	18.28	14.20
Self-employed/employer formal (INSS)	14.83	20.86	14.67	22.88	21.53
Self-employed/employer informal	10.28	15.9	8.46	17.91	14.00
Formal wage worker CLT/military/public	16.25	16.81	12.05	25.42	22.88
Wage worker informal	7.08	11.93	5.98	13.84	10.14
Not employed	5.58	9.92	5.85	14.57	10.71
No education	9.79	11.35	10.47	19.61	13.93
Primary education (incomplete or complete)	7.66	11.54	6.79	16.86	12.13
Secondary education (incomplete or complete)	9.37	11.80	7.74	17.00	14.11
Tertiary education (incomplete or complete)	15.26	20.05	8.74	25.53	24.12
Rural	8.91	14.01	9.4	21.46	13.77
Urban	8.32	11.53	7.14	19.10	15.14

Source: FGV Social/CPS from the POF microdata.

Table A.2. Proportion owning a credit card by interest group and individual characteristics subgroups

Owns credit card	Interest groups				Total
Characteristics subgroups	BF recipient	BPC recipient	Bottom 40% not in BPC or BF	Rest of the population	Full population
Total	**10.78**	**15.62**	**15.79**	**42.01**	**30.92**
Male	10.50	13.71	16.03	42.00	31.04
Female	11.02	17.25	15.57	42.03	30.81
Self-employed/employer formal (INSS)	20.64	33.36	35.58	62.23	56.58
Self-employed/employer informal	11.01	17.05	18.05	39.86	27.90
Formal wage worker CLT/military/public	27.56	36.94	30.07	56.88	50.97
Wage worker informal	9.31	21.57	14.73	34.59	22.97
Not employed	5.55	9.77	8.95	26.34	17.84
No instruction	4.77	8.22	6.19	13.94	9.02
Primary education (incomplete or complete)	9.12	14.46	13.77	29.68	20.68
Secondary education (incomplete or complete)	17.14	21.74	20.76	44.03	35.71
Tertiary education (incomplete or complete)	24.86	40.97	26.92	62.28	58.87
Rural	5.04	6.76	8.51	20.77	11.68
Urban	13.52	17.36	17.27	43.97	34.07

Source: FGV Social/CPS from the POF microdata.

Table A.3. Amount distribution of each credit product among BF, Cadastro Único, and the rest of the population 2017 (%)

	Product name	BF beneficiaries	*Cadastro Único* but not BF	Rest of the population
Credit card	Revolving Rotative	3	7	90
	Parceled out	4	6	90
	Not parceled out	3	4	93
	Total	**3**	**5**	**92**
Checking account	Overdraft	1	2	97
Personal credit	Not payroll loans	1	3	96
	Payroll loans	1	5	94
	Total	**1**	**4**	**95**
Assets acquisitions	Vehicles	1	3	96
	Other assets	8	11	81
	Housing (through SFH)	1	3	96
Productive credit	Microcredit	25	14	61
Other products	Other products	1	2	97

Source: MDS 2018.

Note: Payroll loans are a form of credit where the borrower has a formal employment and the employer compromises to discount the installments from the wages. Housing credit considers only the amount in the Sistema Financeiro de Habitação (SFH), a system that is composed by the all BCB-authorized financial institutions and aims to foster house ownership by low-income population (BCB 2018b).

Table A.4. Amount distribution of credit products within each population group 2017 (%)

	Product name	BF beneficiaries	*Cadastro Único* but not BF	Rest of the population
Credit card	Revolving Rotative	12	17	8
	In installments	3	2	2
	Not parceled out	30	21	21
	Total	**45**	**40**	**31**
Checking account	Overdraft	4	6	11
Personal credit	Not payroll loans	6	8	10
	Payroll loans	8	20	16
	Total	**14**	**28**	**26**
Assets acquisitions	Vehicles	9	10	11
	Other assets	3	2	1
	Housing (through SFH)	3	5	6
	Total	**15**	**17**	**18**
Productive credit	Microcredit	16	4	1
Other products	Other products	6	5	13
	Total	**100**	**100**	**100**

Source: MDS 2018.

Notes: Payroll loans are a form of credit where the borrower has a formal employment and the employer compromises to discount the installments from the wages. Housing credit considers only the amount in SFH, a system that is composed by the all BCB-authorized financial institutions and aims to foster house ownership by low-income population (BCB 2018b).
The comparison of housing and productive credit with the rest of the population is not fair since both numbers in this table consider only products designed for low-income population and disregard other forms of housing and productive credit more representative of the middle/high-income population.

Table A.5. Insurance premium expenses (% declaring insurance premium expenses), by subgroup and total

% with insurance premium	Subgroups				Total
Individual characteristics (15 years or +)	BF recipient	BPC recipient	Bottom 40% not in BPC or BF	Rest of the population	Full population
Total	**3.31**	**7.61**	**5.27**	**26.14**	**17.69**
Male	3.81	6.79	5.62	27.28	18.64
Female	2.89	8.30	4.94	25.09	16.84
Formal Self-employed	8.95	10.99	10.94	39.19	34.09
Informal Self-employed	2.34	5.47	5.06	21.30	12.98
Formal wage worker CLT/military/public,	10.83	24.15	11.58	36.46	31.17
Informal Wage worker	1.96	6.76	3.42	17.26	9.7
Not Employed	1.94	4.89	3.47	18.42	11.36
No instruction	1.65	2.97	2.52	6.81	4.01
Primary education (incomplete or complete)	2.5	6.45	3.94	16.15	9.76
Secondary education (incomplete or complete)	5.60	12.13	7.62	26.33	19.80
Tertiary education (incomplete or complete)	10.74	26.61	11.23	43.69	40.61
Rural	1.07	2.23	2.21	11.24	5.09
Urban	4.38	8.67	5.89	27.51	19.76
Rent or mortgage payments delay	2.86	5.55	6.29	27.38	16.73
Public services payments delay	3.24	6.85	5.41	24.22	13.70
Consumer credit payments delay	3.96	10.66	6.38	27.73	16.84
Flood perceived risk at home	3.08	5.74	8.14	31.27	19.99
Landslide perceived risk at home	2.61	2.72	8.03	25.33	15.60
Violence perceived risk at the neighborhood	4.73	7.87	7.70	36.06	25.26

Source: MDS 2018.

ANNEX 2: CASE STUDIES OF SAVING SCHEMES FOR INFORMAL WORKERS IN SIX DEVELOPING COUNTRIES

This annex describes each program in the international experience in detail. It includes background information, design features, and a review of the program's effectiveness.

CRISP, PAKISTAN: Hybrid social insurance - social assistance mechanisms

BACKGROUND. COVID-19 has led to a severe economic recession in Pakistan and the crisis is expected to substantially increase poverty. The majority of workers in the country engage in informal work, leaving a big part of the population without access to social protection. The situation emphasizes the weaknesses of the social protection system in the country and calls for a strong social protection response. Together with the Government of Pakistan, the World Bank has initiated an operation to address the gaps in the social protection system.

OBJECTIVE AND TARGET GROUP. The main objective of this project is to reimagine social protection in Pakistan through supporting a more adaptive and crisis-resilient system and to move toward the next generation of programs. The program intends to positively disrupt the existing safety nets and delivery systems in three different ways:

A. Building in greater innovation and technology in the social protection system to advance the registries and payment delivery systems. This can, for instance, be done by the use of big data.
B. Introducing a voluntary savings scheme to extend coverage to the missing middle and graduating CCT beneficiaries.
C. Supporting human capital accumulation to mitigate the long-term effects of COVID-19.

DESIGN FEATURES. The program will explore and, most likely, include elements such as matching contributions for different socioeconomic groups, different lock-in time frames for withdrawals, digital platforms for incentivizing behavioral change, solutions for coordination with existing safety nets, and other monetary incentives.

EVALUATION OF THE PROGRAM. The project is currently being developed and there is no evaluation available.

SOURCES: World Bank 2020b.

BEPS, COLOMBIA: A long-term savings scheme with several built-in savings incentives

BACKGROUND. The very high share of informal workers within the Colombian workforce in combination with the general pension system's requirement of earning at least a minimum salary throughout the year to contribute to pensions posed big challenges for the country's pension system. Not only did it lead to few people contributing to the pension system overall, it also resulted in a particularly low protection of low-income workers. The Colombian government decided to address this challenge and partnered with *Colpensiones* (the National Pension Agency) and the Ministry of Labor to design and offer alternatives to Colombian citizens who did not comply with the requirements. In 2013, the BEPS program was introduced for informal sector workers, self-employed workers, and workers with irregular earnings to contribute voluntarily to the general pension system.

OBJECTIVE AND TARGET GROUP. The BEPS program is a flexible voluntary savings scheme that promotes retirement savings. The program is suitable for workers 18 years old and above who (a) earn less than the minimum wage, (b) have irregular earnings, and (c) are informally employed as it does not have a minimum duration of contribution to receive future benefits. The program allows contributions beginning at US$3.99. Program participants can deposit money into their BEPS account at one of the official collection points around the country (currently covering 96 percent of Colombia's municipalities).

DESIGN FEATURES. There are several attractive design features of the BEPS aiming to incentivize beneficiaries to enroll in the program and save. First, BEPS beneficiaries do not incur any registration or administration fee. Second, once beneficiaries reach their pension age, they receive their savings back plus a 20 percent matching contribution from the government. This means that to every COP 100,000 saved the government will add COP 20,000. Lastly, the government has experimented with different features to spur savings even more. Among others, a lottery was introduced and a text message reminder intervention was conducted to increase savings (see Box 6).

EVALUATION OF THE PROGRAM. The fact that the government is still experimenting with different incentives to increase the registration to the program as well as the level of savings reveals that the take-up and usage are at the lower end. In an impact evaluation by OECD (2017), one of the main challenges pointed out was the relatively low take-up. Today, the number of beneficiaries enrolled is 700,000.

SOURCES: Colpensiones 2020a; Colpensiones 2020b; IPA 2020; OECD 2017.

MBAO, KENYA: A long-term savings scheme allowing irregular deposits and early withdrawals

BACKGROUND. The informal sector in Kenya, also called Jua Kali, represents more than 83 percent of the working population. As the population in Kenya is rapidly ageing, the provision of old age protection has gained more importance in the country. The Mbao scheme was established in 2009 as an individual long-term savings for informal sector workers and is provided by the private sector. In 2011, all Kenyans gained access to this long-term savings.

OBJECTIVE AND TARGET GROUP. Individuals above 18 years of age with a national ID card can register for the plan. Registration is done through a mobile phone to the cost of KES 100, which is equivalent to US$1. Additionally, upon registration, applicants must fill out a registration form and present their national ID card. Users make daily deposits to the account and deposits can be made by several mobile money systems in Kenya. The minimum required contribution is US$0.20. However, to ensure inclusivity, no penalties are realized if members fail to contribute. The contributions are pooled in a fund which is managed by professionals appointed by Mbao trustees. Although the scheme is open to any citizen who would like to join, it is particularly well suited to the informal sector as it caters for those with low and irregular incomes.

DESIGN FEATURES. One attractive feature of the Mbao pension scheme is its flexibility. Not only does it provide flexible contribution terms as mentioned above, it also offers flexibility when it comes to withdrawals. Beneficiaries can make a lump-sum withdrawal after three years. A withdrawal before the three year-limit is penalized.

EVALUATION OF THE PROGRAM. Kabare (2018) evaluated the effectiveness of the program and summarized its strengths and challenges. In terms of strengths, the Mbao scheme is a cheap and simple way to save money. Not only does it address a gap in Kenya's social protection system, but it has also contributed to the financial literacy in the country. Despite the flexible nature of the program, the take-up of accounts is slow. Compared to the 12 million members in the Jua Kali (informal workers) Associations, only 100,000 users contributed to the scheme in 2018, which is considered low. In addition to this, some of the Mbao beneficiaries withdraw their savings early which has increased the importance of encouraging people to sustain their contributions even after they withdraw their savings.

SOURCES: Akbas et al. 2016; Guven 2019; IDB 2020; Kabare 2018.

PENSION REFORM OF 2008, CHILE: Inclusion of self-employed in the pension system

BACKGROUND. Although Chile has a relatively low level of workers in the informal sector compared to its neighbors, evidence suggests that the mobility between the informal and formal sectors in Chile is high (Bronfman and Reyes 2017). To increase equity and coverage and reduce costs, Chile reformed its pension system in 2008. Among other policies, the reform package of 2008 included an extension of the mandate to contribute to the pensions for self-employed workers.

OBJECTIVE AND TARGET GROUP. Because of their unobservable income, it is challenging to impose mandatory contributions on the self-employed. Therefore, the reform only covered a special category of formal self-employed worker who typically declared their annual taxes to the Internal Revenue Authority (*Servicio De Impuestos Internos* [SII]). In conjunction with the reform, formal self-employed workers were automatically enrolled to pay annual pension contributions through SII. Formal wage workers are contributing to the AFP in Chile. If a self-employed worker also had a salaried job during the year, the AFP must inform the tax agency about these contributions.

The contribution base is determined based on annual taxable income indicated in their tax declaration and paid on an annual basis. A contribution to a pension fund is 10 percent of the annual taxable income. Traditionally, the contributions to the AFP are paid monthly. On top of that contribution, a self-employed person would be required to pay the fees for managing the individual pension account. The self-employed worker has the chance to opt out and not pay the contributions which makes the program semi-compulsory. The first year of mandatory contributions was effective in 2012.

EVALUATION OF THE PROGRAM. During the first year of implementation (2015), more than 300,000 self-employed workers contributed through the system. This represented 33 percent of those eligible to contribute and was considered a substantial improvement since only 100,000 self-employed contributed on a monthly basis in 2012. By 2017, as many as 80 percent of the self-employed had opted out (OECD 2020). The take-up has however declined since. An assessment by Bronfman and Reyes (2017) shows that including self-employed in the pension system strengthens coverage for people who are transitioning between formal self-employment and wage employment. The same study does not find any significant impact on coverage of low-income workers.

SOURCES: Bronfman and Reyes 2017; OECD 2020.

CESANTÍAS, COLOMBIA: Unemployment Insurance Savings Accounts for self-employed

BACKGROUND. UISAs, similar to FGTS in Brazil, have gained popularity in recent years as an alternative to the traditional unemployment insurance system and have been implemented in many countries in Latin America (for example, Brazil, Argentina, Chile, Colombia, Peru, and Uruguay). UISAs are private savings accounts to which an individual worker or employer make monthly deposits. In case of job loss, the money can be withdrawn from the account.

OBJECTIVE AND TARGET GROUP. Most UISA systems in Latin America only offer coverage to private formal sector workers. However, the UISAs in Colombia, also called *Cesantías*, offer formal self-employed workers to voluntarily join a UISA of their own choice. In Colombia, there are both private (*Protección, Porvenir,* Skandia, and so on) and public (*Colfondos*) account providers. Usually, the self-employed worker contributes one month of his or her declared earnings to the UISA.

DESIGN FEATURES. While a formal worker can only withdraw in case of unemployment, retirement, health issues, house purchase, and education, there are no withdrawal restrictions for the self-employed. Each severance fund pays an interest rate of 12 percent per year of the total amount saved and an optional return rate depending on the type of investment the account holder selects. Table A.6 gives an overview of the *Cesantías* for self-employed in Colombia.

SOURCES: Colpensiones 2020b.

Table A.6. Cesantías for self-employed in Colombia

Eligibility condition	Registered as an individual formal self-employed/independent worker
Contribution	One month of the person's declared earnings or wage per year
Withdrawal conditions	In the case of self-employed, there are no conditions for withdrawing the funds. Only apply to dependent workers
Payout	**Each severance funds company pays:** 1) A mandatory interest rate of 12% per year over the total amount saved, as required by the law 2) An optional return rate on the total amount saved depending on the type of investment the account holder selects
Withdrawal frequency	Independent workers do not have conditions for making withdrawals. However, if they choose to make an investment of their funds, they might be charged an early withdrawal fee
Investment options	Porvenir, Protección, Skandia, and Colfondos.

PROIIF, MEXICO: A financial inclusion program with automatic deposits of cash transfers to savings account

BACKGROUND, OBJECTIVE, AND TARGET GROUP. The conditional cash program *Prospera*, previously known as *Progresa* and *Oportunidades*, is Mexico's flagship antipoverty program, reaching around 6.8 million families in 2018. The aim of the program is to break intergenerational poverty by enhancing human development through provision of education and health services. *Prospera* has many different lines of actions including, productive inclusion, financial inclusion, labor market insertion, and social inclusion. In 2003, *Prospera* and the state-owned National Savings and Financial Services Bank (BANSEFI) partnered with a number of nonbanking institutions including credit unions, microfinance institutions, and savings and credit cooperatives and associations. By 2011, all *Prospera* recipients could choose their preferred method of payment of the cash transfer (see Table A.7). In 2012, the program decided to stick to bank card payment only. This was all part of the financial inclusion line of action of the *Prospera* program.

In 2015, PROIIF, a comprehensive financial inclusion program, was launched as part of the financial inclusion operations of *Prospera* and BANSEFI. The objective of the program was to incorporate CCT beneficiaries of the *Prospera* program into the formal financial sector and to provide financial services to families living in remote and marginalized areas of the country.

DESIGN FEATURES. PROIIF offers different instruments to improve the financial situation and literacy among *Prospera* beneficiaries. First, it provides access to financial education with a broad curriculum including budget training, pension planning, and digital financial education. Additionally, it offers a savings account, life insurance at a discounted price, and supplementary credit and debit cards free of charge.

Every second month, the *Prospera* beneficiary can decide how much of her or his income support is to be deducted every two months and put into a savings account. When setting up the savings account, the beneficiary can also choose to join an additional program which offers an automatic monthly transfer of the amount selected by the beneficiary and the possibility to withdraw at any time. The savings account is voluntary and withdrawals can be made at any time.

EVALUATION OF THE PROGRAM. During the first year of the implementation of the program, 1 million beneficiary families participated. Initially, it was planned to reach a total of 6.8 million *Prospera* families. Between 2015 and 2018, the program grew slightly up to 2.3 million families. An impact evaluation was conducted one year after its introduction to evaluate its first year of operation. It showed, for instance, that 100 percent of the PROIIF beneficiaries attended the financial education and signed up for free life insurance. Based on

the impact evaluation of the program, the financial education had a positive impact on the beneficiaries' savings behavior. Results showed that 26 percent of the beneficiaries saved more than US$10 on a bimonthly basis. Spending patterns from the credit card and the savings account show that most of the money was spent on education and medical expenses, 58.6 percent and 22.7 percent, respectively. Only 6.2 percent was spent on emergencies (Castañeda Sánchez 2021; EASE 2016).

SOURCES: Castañeda Sánchez 2021; Dávila Lárraga 2016; EASE 2016; Masino and Nina-Zarazua 2018.

Table A.7. Methods of cash transfer payment available to Prospera recipients (2011)

Mechanism	Payout method	Withdrawal options
Direct cash payment	Paid to the beneficiary in cash in an envelope	Temporary payment point or TELECOMM office
Account deposit to savings accounts	Deposited into savings accounts	BANSEFI or savings account branch or temporary payment point
Debit card	Deposited into savings account	ATMs or by paying with card
Chip bank card/prepaid card	Deposited into savings account	BANSEFI or savings account branch, temporary payment point, TELECOMM office, DICONSA community store

Source: Based on Davila Larraga (2016). Note: TELECOMM is a public entity which provides telecommunications and financial services.

EJO HEZA, RWANDA: A long-term savings scheme with matching contributions according to socioeconomic group

BACKGROUND. In December 2018, the Government of Rwanda launched *Ejo Heza*—a long-term voluntary and government-funded savings scheme administered by the Rwanda Social Security Board (RSSB).

OBJECTIVE AND TARGET GROUP. *Ejo Heza* shares many similarities with the Mbao pension program in Kenya. The *Ejo Heza* is a long-term savings account that offers beneficiaries to withdraw for other reasons than retirement and was established with the objective of increasing savings among the citizens of Rwanda. The *Ejo Heza* program is open for any Rwandan citizen above 16 years of age with a national ID. However, parents of children ages 16 years and below have the possibility to open accounts for their children. A citizen can use a phone and easily open a portable pension account within minutes. Similar to the Mbao scheme, individuals are able to make contributions using mobile wallets, bank accounts, or debit and credit cards. The savings account is linked to national ID.

Contributions are voluntary and users are free to decide how much and when they wish to save.

Despite being provided by the government, *Ejo Heza* has partners in the private sector. Two of the bigger telecom operators in Rwanda, MTN Rwanda and Airtel Rwanda, as well as the IT financial solution company, Mobicash, support citizens to enroll and save into the scheme using cell phones.

DESIGN FEATURES. The scheme offers various attractive monetary incentives to motivate participation in the form of matching contributions and access to life insurance. The matching contributions are based on the socioeconomic status. In general, an individual with lower earning is eligible to a higher matching contribution rate (see Table A.8). Beneficiaries of the *Ejo Heza* program have access to 25 percent of their total accumulated savings for liquidity needs and 40 percent of the total savings can be used as a collateral to obtain a loan.

EVALUATION OF THE PROGRAM. Since the program has not been live for that long, evaluations of the program's impact are limited and inconclusive. Guven (2019) points out that one of the challenges with the program is outreach and public awareness of the program. According to the RSSB, to date 1.3 million beneficiaries have enrolled to *Ejo Heza* with estimates savings of FRW 13.6 billion (USD 13.6 million).

SOURCES: Guven 2019; Guven and Brodersohn 2019; RSSB 2021.

Table A.8. Ejo Heza government co-contribution and life insurance based on socioeconomic group (RWF)

Category	Subscribers' minimum contribution a year	Government co-contribution ceiling (3 years)	Life insurance cash benefit to the family in case of death	Insurance funeral expense cover
1 and 2	15,000	18,000	1,000,000	250,000
3	15,000	18,000	1,000,000	250,000
4	72,000	—	1,000,000	250,000

Source: Guven and Brodersohn 2019.