Entrepreneurship on a Safety Net: Evidence from the World's Largest Cash Transfer Program*

Murillo Campello†
University of Florida & NBER

Guilherme Junqueira‡
University of Florida

Spyridon Lagaras§
University of Illinois

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Abstract

Do social transfer programs boost entrepreneurship among low-income populations? We address this question by examining Brazil's Bolsa Família—the world's largest cash transfer program—and its effects on entrepreneurial entry, performance, economic mobility, and human capital formation. Using administrative data covering 2.3 million sole-proprietorships, we track entrepreneurs through the complete business lifecycle—from entry through performance to post-failure employment. We address selection combining instrumental variables—exploiting bunching across program eligibility thresholds—with matching and granular fixed effects. We first show that cash transfers increase transitions into entrepreneurship from both non-employment and wage employment, increasing beneficiaries' representation among entrepreneurs. We then identify systematic performance disadvantages: cash-transfer entrepreneurs exhibit lower survival, business growth, employment creation, and credit access, eventually facing higher rates of tax violations and debt collection proceedings. Performance gaps do not reflect insufficient cash alone—they generally narrow where local prices make the uniform cash transfer worth more, yet persist even where its real value is highest. Instead, the gaps appear consistent with program dependence, revealed by income bunching at eligibility thresholds and widening gaps among longer-tenured beneficiaries. Examining post-entrepreneurship trajectories, we find that cash-transfer entrepreneurs return to wage employment faster and more often than other failed entrepreneurs; and although both groups return at lower pay, cash-transfer founders' wage losses are 61% smaller. Overall, our analysis reveals that cash-transfer businesses remain trapped in subsistence, generating neither growth nor economic transformation, but the entrepreneurial experience itself builds human capital that disproportionately benefits beneficiaries.

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†Corresponding author. Warrington College of Business, University of Florida & NBER. Email: campello@ufl.edu.

‡Warrington College of Business, University of Florida. Email: gjunqueira@ufl.edu.

§Gies College of Business, University of Illinois at Urbana-Champaign. Email: lagaras2@illinois.edu.

1 Introduction

Governments around the world have implemented social protection programs that provide cash payments to vulnerable populations as a central policy tool, with over 70 countries distributing approximately one percent of the national gross domestic product (GDP) through such programs (World Bank (2025b)). While these programs primarily aim at mitigating poverty and providing consumption insurance, they also have the potential to affect labor supply, occupation choice, and human capital accumulation (Baird et al. (2011)). Understanding these effects is central in assessing whether cash transfer programs merely redistribute income or also shape longer-run economic outcomes and upward socioeconomic mobility.

Entrepreneurship is a particularly salient margin along which economic advancement is likely to arise, as business ownership historically enables individuals to accumulate assets, acquire a diverse set of skills, and create pathways out of poverty (Banerjee et al. (2015); Levine and Rubinstein (2017); Blattman et al. (2020)). However, entrepreneurial entry typically requires upfront capital and entails substantial risk (Evans and Jovanovic (1989); Hurst and Lusardi (2004); Banerjee and Duflo (2005)), posing important barriers for low-income individuals. Cash transfers may therefore facilitate entrepreneurial entry by easing financing constraints, allowing households to accumulate resources over time, enabling experimentation, or reducing exposure to downside risk (Bianchi and Bobba (2013); Ghosh and Vats (2022)). At the same time, program eligibility is tied to income thresholds, implying that transfers may discourage business expansion or formalization once a firm begins to generate revenue. As a result, cash transfer programs may increase transitions into entrepreneurship while shaping the scale, performance, and persistence of the businesses that are created. Examining how these countervailing forces interact in practice is therefore an empirical question with important implications for program design.

This paper studies how cash transfer programs shape entrepreneurial activity among low-income populations, addressing three central questions. First, we examine whether social transfers affect transitions into entrepreneurship, including entry from both non-employment and wage employment. Second, we analyze how businesses founded by cash-transfer recipients perform relative to other firms across important dimensions of the firm's lifecycle, including survival, growth, employment creation, access to credit, and tax compliance, and investigate the mechanisms underlying observed performance differentials. Finally, we study post-entrepreneurship labor market outcomes to assess whether entrepreneurial experience generates lasting benefits for beneficiaries, even when ventures fail.

We address these questions using Brazil's Bolsa Família—the world's largest cash transfer program. Bolsa Família reaches over 17 million families, representing one-quarter of Brazilian households. The program combines strict income eligibility thresholds (monthly per capita income below R$178, equivalent to $49 or 20% of Brazil's minimum wage) with direct cash support averaging R$170 ($47) per beneficiary per month. Beneficiaries must fulfill education and health requirements, including regular school attendance for children and health check-ups for pregnant and lactating women. Brazil's simplified business registration system (Simples Nacional) facilitates entry into entrepreneurship among low-income individuals by offering low taxation (approximately 1% of revenues, which also accrues toward entrepreneurs' social security) and minimal compliance requirements—making this an ideal setting for studying how cash transfers affect entrepreneurial entry and subsequent firm performance.

Our empirical analysis combines two data sources. First, we use Brazil's nationally representative household survey (PNAD Contínua) to estimate the causal effects of cash transfers on entrepreneurial entry. Second, we leverage five Brazilian government administrative datasets: firm registries with outcomes for all active and inactive firms, individual-level Bolsa Família payment records, formal employment histories including wages and demographics, subsidized small business loans, and government debt collection proceedings. A key innovation is our systematic identification of individual tax identifiers (CPFs) for sole-proprietorship founders, enabling us to link these administrative datasets for the first time, to the best of our knowledge. We track firms annually from inception through five years, measuring survival, growth, employment, credit access, tax compliance, and debt collection.

We start by examining whether cash transfers stimulate entrepreneurial entry. From its inception in 2004 until 2021, Bolsa Família operated through two eligibility tiers—extreme poverty (below R$89 per capita monthly as of 2018) and poverty (R$89–178)—with sharply different benefit structures. Households in extreme poverty receive both a basic benefit and variable benefits tied to children, while those in the poverty tier receive only variable benefits. This design creates asymmetric incentives for income manipulation: crossing the extreme poverty threshold eliminates the entire basic benefit—a loss equivalent to one-third of total resources for childless families—whereas crossing the poverty threshold triggers only modest reductions cushioned by a two-year protection rule that allows households to continue receiving benefits after their income rises above the threshold. Consistent with theoretical predictions that manipulation arises where benefit losses are largest, we document bunching—excess mass in reported income—concentrated only at the extreme poverty threshold; this bunching disappears after 2021 when Brazil eliminated the two-tier structure and adopted a single eligibility threshold.

We exploit the absence of manipulation at the poverty eligibility threshold to construct an instrumental variables strategy. Our instrument is the share of households with pre-transfer income below the poverty threshold within a survey area. Because we observe no bunching at this threshold, variation in eligibility reflects genuine income differences rather than strategic income reporting. We estimate a two-stage least squares specification at the Survey Area–year level, instrumenting the share of beneficiary households with the share of households below the poverty threshold, while controlling for Survey Area fixed effects, state-by-year fixed effects, and local demographics. The first stage is strong: a ten percentage-point increase in the share of households below the poverty threshold raises the beneficiary share by 2.2–2.5 percentage points, with Kleibergen-Paap F-statistics of 928–1,086. In the second stage, a ten percentage-point increase in program participation increases transitions into entrepreneurship by 16% from non-employment and 8% from wage employment relative to baseline rates, and raises the share of entrepreneurs who are cash-transfer beneficiaries by 46%.

The exclusion restriction requires that the share of households below the poverty threshold affects entrepreneurship only through program participation. Three observations support this assumption. First, the economic circumstances of households near this margin make an independent poverty-to-entrepreneurship channel implausible: at R$5.93 ($1.63) per capita daily—below the World Bank's $3.00-per-day extreme poverty line, capturing the inability to meet basic food, clothing, and shelter needs (World Bank (2025a))—marginal income differences cannot plausibly drive entrepreneurial entry without the transfers that eligibility provides; the R$178 threshold also carries no policy significance beyond Bolsa Família eligibility. Second, in a placebo period—2020–2021, when Auxílio Emergencial replaced Bolsa Família with flat transfers distributed regardless of the poverty threshold—the instrument's predictive power for entrepreneurship vanishes, exactly as it should if the instrument operates through the program rather than through poverty itself. Third, the most plausible remaining confounder—local economic shocks—biases *against* our findings: a positive shock simultaneously lifts households above the threshold and creates entrepreneurial opportunities, attenuating our estimates toward zero. Additional tests rule out necessity entrepreneurship driven by nominal wage ratcheting (following Kaur (2019)) and probe complier composition across the two program thresholds.

Having established that cash transfers stimulate sole proprietorship formation, we turn to examining the performance and characteristics of businesses created by program recipients relative to the rest of entrepreneurs. A central challenge in our firm-level analysis is selection, as transfer recipients potentially differ systematically from the typical entrepreneur in the population in terms of income, education, and access to capital. We address the identification concern through a set of complementary strategies that yield highly comparable groups along a comprehensive set of observable dimensions. Specifically, we focus on sole proprietorships—the primary entry point to entrepreneurship for low-income individuals—and restrict our analysis to first-time entrepreneurs with recent formal employment experience (within 12 months of business founding), ensuring similar pre-entrepreneurship labor market attachment.

We further address selection using granular fixed effects that absorb both entrepreneur-level and business-level heterogeneity. Entrepreneur fixed effects capture the *joint* profile of individual characteristics measured prior to business founding, including race, gender, education, age, and a set of pre-entrepreneurship job attributes such as occupation, salary level, salary type, and employer size. Business fixed effects control for industry, initial equity, and founding year combinations, ensuring comparisons among entrepreneurs starting similar businesses at the same point in time. Finally, we implement Coarsened Exact Matching (Iacus et al. 2012; Aneja et al. 2025), grouping entrepreneurs into strata defined by education, gender, pre-entrepreneurship salary, founding year, industry, and initial equity, and retaining only strata containing both cash-transfer and non-cash-transfer entrepreneurs. Our procedure yields a matched sample of over two million sole proprietorships with tight covariate balance across observable characteristics. We classify as *cash-transfer entrepreneurs* those enrolled in Bolsa Família at founding or within the prior 12 months. Standard errors are clustered at the municipality level.[1]

We start our firm-level analysis by examining business survival and growth. Businesses established by cash-transfer entrepreneurs exhibit systematically lower survival rates. First-year disadvantages are modest (0.7% lower survival, or −0.57 percentage points relative to a mean of 81.3%), but gaps widen substantially: by year five, cash-transfer entrepreneurs are 15.5% less likely to survive. Business growth shows similar patterns. Nearly all sole proprietorships initially operate under the individual microentrepreneur (MEI) regime, capping annual revenues at R$81,000 ($22,000) and employment

[1] We provide evidence in robustness exercises that our results hold under alternative error-clustering schemes.

at one worker. Firms expanding beyond these thresholds transition to microenterprise (ME) status, allowing revenues up to R$360,000 ($100,000) and 9–19 employees. Cash-transfer entrepreneurs are 12.2% less likely to reach this growth threshold by year two, with gaps persisting through year five.

We next investigate whether cash transfers enable entrepreneurs to scale their businesses through job creation and formal credit access. Along both margins, cash-transfer entrepreneurs face substantial disadvantages. They are 45% less likely to create employment in their first year, with this gap remaining large over time and reaching 38% by year five. Credit access differentials are even more pronounced. Five years after founding, cash-transfer entrepreneurs are 52% less likely to access BNDES growth capital—subsidized loans for fixed investments, equipment, personnel training, and expansion that represent Brazil's primary small business financing channel. These disadvantages persist despite Brazil's simplified business regime, which is explicitly designed to facilitate small business growth.

The analysis of regulatory compliance further reveals systematic challenges in navigating Brazil's business environment, even when operating sole proprietorships with minimum regulatory requirements. Cash-transfer entrepreneurs exhibit a 43% higher likelihood of tax filing violations—failures to submit mandatory annual declarations—two years after founding. These compliance gaps persist over time, reaching 40% higher violation rates by year five. The regulatory challenges extend beyond filing to payment. Cash-transfer entrepreneurs are 17% more likely to face active debt collection proceedings five years after founding—indicating unpaid tax obligations, social security contributions, or administrative penalties that have escalated to government enforcement actions.

A remaining concern is whether unobserved differences between cash-transfer entrepreneurs and other entrepreneurs—beyond the rich set of characteristics absorbed by our fixed effects and matching procedure—could drive our results. We address this using the Oster (2019) framework, which exploits the relationship between coefficient movements and R-squared movements to bound the extent to which selection on unobservables could overturn estimates. The results are reassuring: for survival, unobservables would need to be 3 to 34 times more important than observables to eliminate the estimated gap; for employment creation, credit access, and tax compliance, selection on unobservables would need to run *counter* to the direction our controls move the coefficient—a substantially stronger robustness condition.

A natural question is whether this underperformance simply reflects insufficient cash—whether beneficiaries would match other entrepreneurs if only the transfer were larger. We test this by exploiting a key feature of Bolsa Família: beneficiaries receive identical nominal transfers regardless of where they live, yet the same payment buys substantially more in low-price areas. For instance, R$200 in São Paulo (SP) carries roughly the purchasing power of R$300 in Aracajú (SE). Where the transfer is worth more, most performance gaps shrink: cash-transfer entrepreneurs face smaller disadvantages in survival, growth, tax compliance, and debt collection. Yet even in the poorest municipalities—where the transfer's real value is highest—these gaps shrink but persist, and cash-transfer entrepreneurs continue to underperform on most margins. These results suggest that more cash helps, but it is not enough on its own.

If more cash is not the whole story, the *duration* of program enrollment at business founding offers a sharper test of a second mechanism: program dependence. Time on the program cuts two ways. On one hand, longer enrollment lets households accumulate resources, which should *improve* the businesses they eventually start. On the other, if prolonged reliance erodes the incentives and skills to operate independently—a dependence trap—outcomes should be *worse* the longer a founder was enrolled before founding. The data favor the second reading. Among founders enrolled more than two years before founding, the gaps are widest five years out: tax violations run 51% above the baseline rate and debt collection 23% above—both far exceeding the gaps for shorter-tenure beneficiaries—while employment creation falls 40% short. We read these patterns—along with the earlier bunching results—as consistent with a dependence channel, though pre-founding tenure also proxies for harder-to-observe traits, such as depth of poverty and weak labor-market attachment, that we cannot fully rule out.

Beyond explaining performance gaps, a central question is whether entrepreneurship generates human capital returns for cash-transfer beneficiaries even when ventures fail. If so, programs facilitating business entry might yield positive returns through improved post-entrepreneurship employment. We first ask where founders go once their businesses fail, tracking each founder—at 6, 12, and 24 months after closure—across three pathways: returning to formal wage employment, starting a new business, or falling into a residual of unemployment, inactivity, or informal work. Relative to other failed founders, cash-transfer entrepreneurs are 4% to 5% more likely to return to formal wage employment and, most relevant to the concern that cash transfers push beneficiaries toward informality, up to 2.3% less likely to fall into the residual. They are 10% less likely to start a venture by two years—consistent with learning about their comparative advantage rather than churning into another subsistence business.

We then turn to the quality of that re-employment, asking whether the entrepreneurial experience leaves beneficiaries better off in the labor market. Among the 262 thousand founders who return to formal work within a year of closure, we compare their post-entrepreneurship jobs both to the jobs they held before founding (within-individual) and to those of other failed founders (difference-in-differences). In absolute terms, cash-transfer founders return to somewhat lower-paying jobs than they held before. Relative to other failed founders, however, their earnings hold up far better: their salary declines are 61% smaller and their hourly wage losses 68% smaller, and they return to work faster (a median of six months before closure, versus four). Because a pure safety-net account—benefits funding a longer, more selective job search—would predict slower reemployment, the fact that cash-transfer founders return faster, and at higher rates, points instead to human capital built through the entrepreneurial experience itself.

Our paper contributes to three streams of literature on entrepreneurship and social policy. First, we advance research on heterogeneity in entrepreneurship types by providing systematic evidence supporting the theoretical distinctions drawn by Levine and Rubinstein (2017) and Schoar (2010). Levine and Rubinstein (2017) distinguish between incorporated self-employed who engage in non-routine cognitive tasks versus unincorporated self-employed who perform manual tasks and earn less, while Schoar (2010) differentiates between subsistence entrepreneurs with small operations and transformational entrepreneurs operating growth-oriented businesses. Both papers show minimal transition between entrepreneurship types, challenging policies that assume subsistence entrepreneurship leads to transformational entrepreneurship. La Porta and Shleifer (2008, 2014) similarly document minimal transition rates from informal to formal entrepreneurship in developing countries. Our findings extend these distinctions by documenting an important distinction *within* subsistence entrepreneurship: among sole proprietorships, entrepreneurs supported by social transfers are systematically less likely to achieve growth, scale their operations, or develop the characteristics that enable transition toward more transformational business models. Our analysis of post-entrepreneurship employment outcomes reveals that cash-transfer entrepreneurs returning to wage employment earn less than before starting their businesses, yet they experience smaller salary declines and smaller hourly wage losses compared to other failed entrepreneurs, suggesting their entrepreneurial experiences provide greater human capital gains.

Second, we expand the literature on capital constraints and risk in entrepreneurship by examining how social insurance affects entrepreneurial outcomes. While extensive research shows that capital constraints hinder entrepreneurial entry (Evans and Jovanovic (1989); Hurst and Lusardi (2004);

Banerjee and Duflo (2005); Cagetti and De Nardi (2006); de Mel et al. (2008); Karlan and Morduch (2010); Adelino et al. (2015); Chodorow-Reich et al. (2024)) and that career risk deters potential entrepreneurs (Gottlieb et al. (2022); Landier (2005); Gromb and Scharfstein (2002)), less is known about entrepreneurial performance among transfer recipients. Bandiera et al. (2017) and Balboni et al. (2022) show that social transfers can enable occupational change among the poor. Bianchi and Bobba (2013) examine Mexico's Progresa and argue that cash transfers enable entrepreneurial entry primarily by relaxing insurance constraints. Other studies find positive investment effects: Gertler et al. (2012) and Ghosh and Vats (2022) show increased agricultural income from cash transfers in Mexico and India respectively, while recent work on Brazil's Bolsa Família documents increased formal employment and local economic activity (Gerard et al. (2024)). More broadly, recent work on Brazil documents that financial inclusion fosters entrepreneurship, employment creation, and local economic activity, while also increasing wage inequality due to heterogeneous returns across skill levels and capital-skill complementarities (Fonseca and Matray (2024); Fonseca and Van Doornik (2022)). We advance this literature by providing the first comprehensive analysis of cash-transfer entrepreneurship across all economic sectors and the complete business lifecycle. We document that while cash transfer programs facilitate entrepreneurial entry, beneficiaries show systematic performance gaps relative to similar non-recipients.

Finally, our work relates to research on unemployment insurance (UI) mechanisms. Hombert et al. (2020) study a French reform providing downside insurance to unemployed individuals starting businesses, finding increased entry without quality deterioration. More broadly, Chetty (2008) develops a framework distinguishing moral hazard from liquidity effects in unemployment insurance, while Acemoglu and Shimer (2000) show UI can increase productivity by encouraging workers to seek higher-quality jobs. We differ by examining an ongoing cash transfer program for persistently low-income households rather than temporary unemployment insurance—while UI typically provides short-term support, Bolsa Família beneficiaries in our sample receive transfers for an average of 37 months—studying entrepreneurial outcomes from founding through failure, and economic mobility.

The remainder of the paper is organized as follows. Section 2 describes institutional details and Section 3 covers data and sample construction. Section 4 examines bunching and entrepreneurial entry, Section 5 presents our main empirical strategy, Section 6 analyzes entrepreneurial performance, Section 7 examines mechanisms, and Section 8 studies economic mobility. Section 9 concludes.

2 Institutional Background

This section describes the institutional setting of the Bolsa Família program and Brazilian firms. We first provide an overview of Brazil's Bolsa Família program, including its scale, eligibility requirements, and conditionalities. We then detail the program's benefit structure and the incentives it creates for income manipulation near eligibility thresholds. Finally, we describe the landscape of firm creation in Brazil.

2.1 Bolsa Família Program

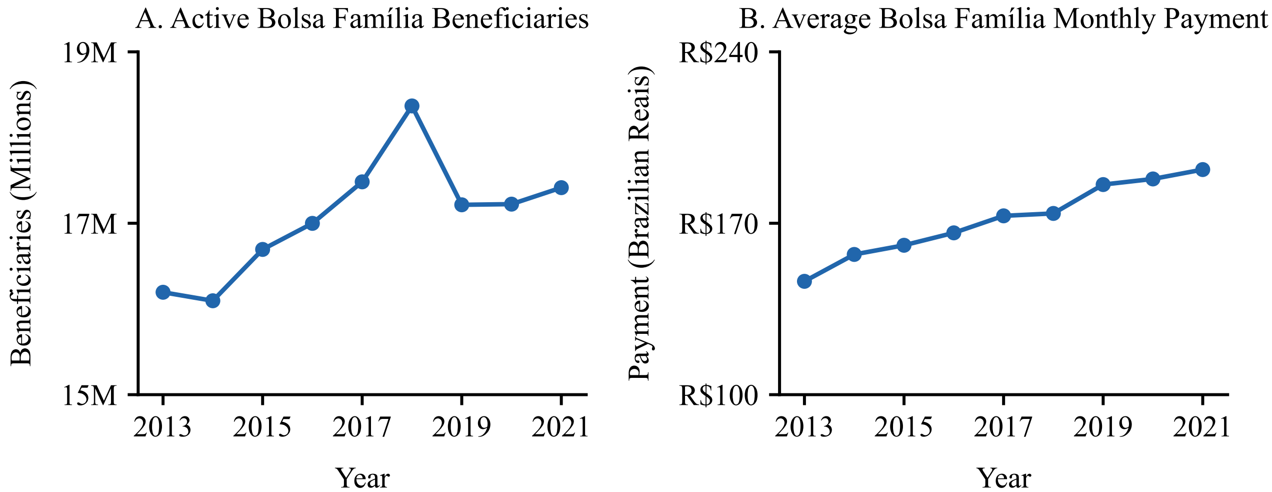
Bolsa Família is the world's largest conditional cash transfer program. The program combines strict income thresholds with direct cash support through a two-tier eligibility structure. To qualify, households must register in the national Unified Registry (CadÚnico) and demonstrate monthly per capita income below specified thresholds. Prior to 2023, households were classified into two categories: *extreme poverty* and *poverty*. As of 2018 (approximately the midpoint of our study period), the extreme poverty threshold was R$89 monthly per capita (equivalent to $25, or 10% of Brazil's minimum wage), while the poverty threshold was R$178 (equivalent to $49, or 20% of the minimum wage).

Panel A of Figure 1 shows that since 2016, over 17 million families benefit from Bolsa Família—representing over one-quarter of Brazilian households. As Panel B shows, beneficiaries receive on average R$170 ($47) monthly, equivalent to 19% of Brazil's minimum wage.[2] Figure IA1 shows that Bolsa Família has a fiscal cost of over R$30 billion ($8 billion) annually to the Brazilian government, representing about 0.5% of Brazil's GDP between 2014 and 2021.

To maintain enrollment, families must fulfill education and health requirements. Specifically, the program requires children to attend school regularly (namely, it requires 85% attendance for 6–15 year olds, and 75% for 16–17 year olds), young children to attend regular growth monitoring and health check-ups, and pregnant and lactating women to attend prenatal and postnatal check-ups and participate in health promotion activities. School attendance and health compliance are monitored regularly by municipal operators and schools. Families must also keep their required information updated in the CadÚnico—including their income—as errors or failure to update can lead to benefit suspension.

[2]Between 2014 and 2021, on average: the BRL–U.S. Dollar exchange rate was R$3.63 (Federal Reserve 2025); there were 68.1 million Brazilian households (IBGE 2024); the minimum Brazilian monthly wage was R$900 (Senado 2025). We provide USD conversions for key policy parameters using the R$3.63 rate; other values remain in R$ throughout.

Figure 1: Number of Bolsa Família Program Beneficiaries and Average Monthly Payment



This figure shows the number of Brazil's Bolsa Família program beneficiaries and average monthly Bolsa Família payment between 2013 and 2021. Panel A plots the number of active recipients (millions) by year. Panel B shows the average monthly payment per recipient (in Brazilian Reais) by year. Data are from Brazil's MDS (Ministério do Desenvolvimento Social).

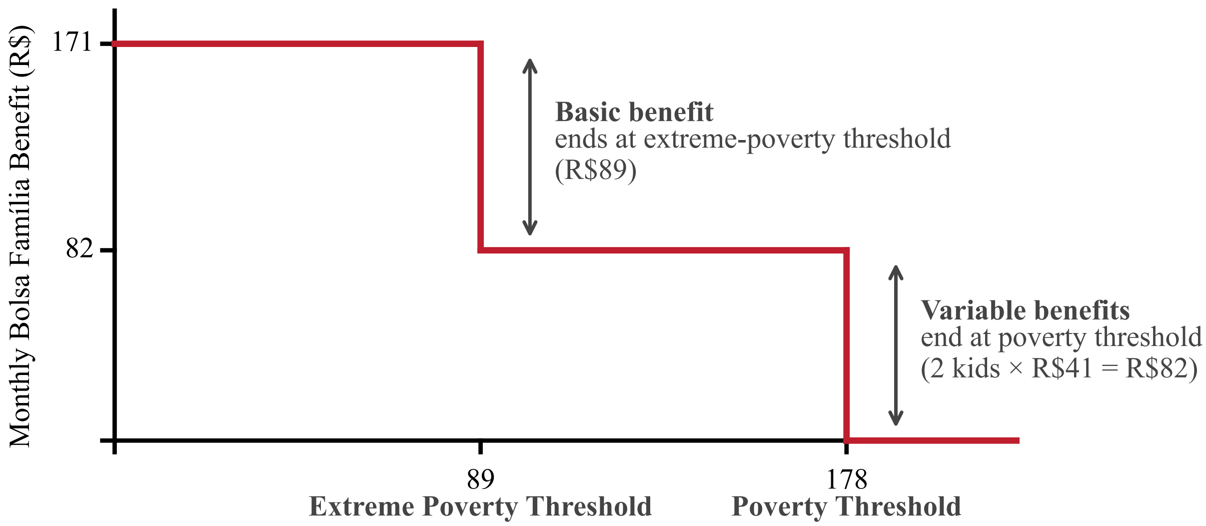
2.2 Program Incentives and Benefit Structure

From its inception in 2004, Bolsa Família's two-tier structure creates sharp discontinuities in benefit amounts at the eligibility thresholds. Households below the extreme poverty threshold receive both a basic benefit—a lump-sum transfer independent of family composition—and variable benefits that depend on the number of children and adolescents. Households between the extreme poverty and poverty thresholds receive only variable benefits. This design creates sharp discontinuities in benefit amounts at the thresholds, where crossing above the cutoffs eliminates the entire basic or variable benefit.

While the structure has remained constant, both eligibility thresholds and benefit amounts have been periodically adjusted for inflation. Table IA1 presents the evolution of eligibility thresholds since program inception. The extreme poverty threshold rose from R$50 per capita monthly in 2004 to R$89 in 2018, with the poverty threshold maintained at exactly twice the extreme poverty level. Table IA2 tracks corresponding cash transfer amounts. The basic benefit increased from R$50 in 2004 to R$89 in 2018, while variable benefits for children rose from R$15 to R$41 and adolescent benefits reached R$48.

Figure 2 illustrates the benefit schedule using 2018 program parameters for a family with two children. A household with per capita monthly income of R$88 receives the full basic benefit of R$89

Figure 2: Bolsa Família Benefit Structure: Two-Child Household Example



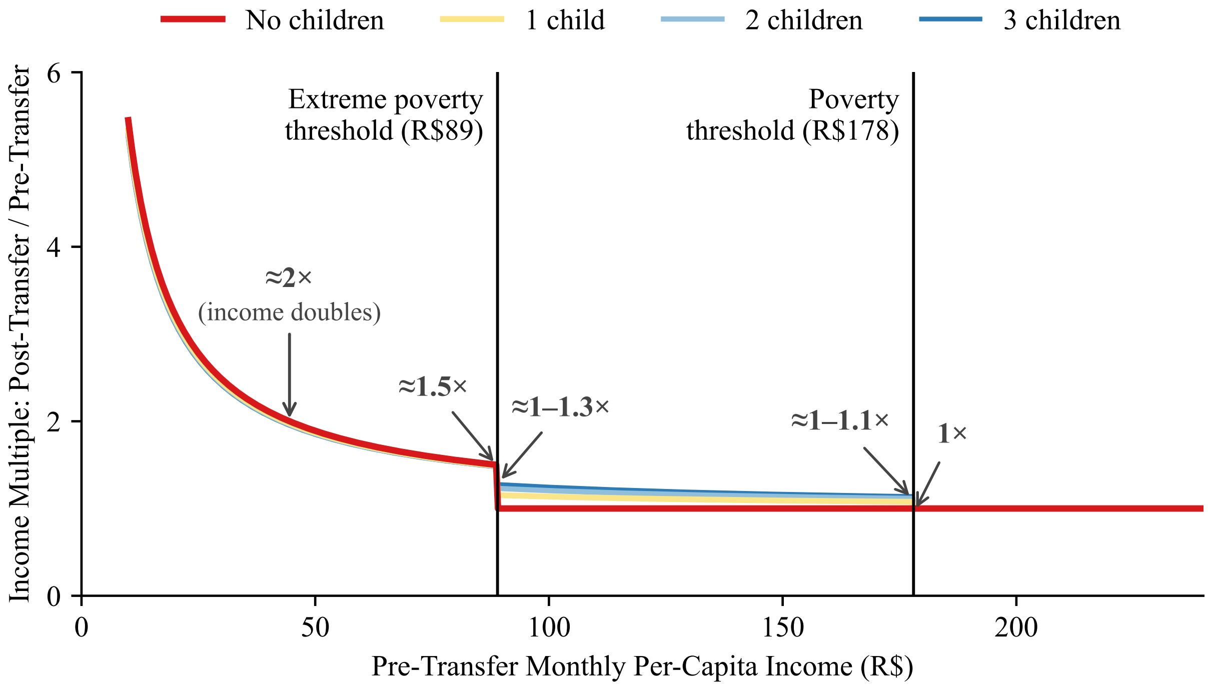
This figure illustrates the Bolsa Família two-tier benefit structure using 2018 program parameters and a family with two children. Households below the extreme poverty threshold (R$89 per capita monthly) qualify for both the basic benefit (R$89) and variable benefits based on family composition. Households between the extreme poverty and poverty thresholds qualify only for variable benefits (R$41 per child aged 0–15 or pregnant woman and R$48 per adolescent aged 16–17). Crossing the extreme poverty threshold eliminates the basic benefit. See Tables IA1 and IA2 for program parameters over time.

plus variable benefits of R$82 (2 children × R$41), for total transfers of R$171. If this same household's income increases by just R$2 to R$90 per capita—crossing the extreme poverty threshold—it loses the *entire* R$89 basic benefit, retaining only the variable benefits. The household continues receiving these variable benefits as income rises toward the poverty threshold (R$178), at which point all transfers cease.

Figure 3 illustrates the economic stakes by plotting the income multiplier—total household resources (income plus benefits) divided by *pre-transfer* income—across the eligibility distribution for two-adult households with varying numbers of children. For households deep in extreme poverty, benefits more than double total resources (multiplier exceeds 2.0×). At the extreme poverty threshold, the magnitude of the benefit loss varies substantially with family composition. Childless households—43% of Brazilian households (IBGE (2022))—experience the sharpest cliff: the multiplier drops from 1.5× to 1.0×, equivalent to losing one-third of total resources for a marginal R$2 per capita income increase.[3] Households with children face smaller but still substantial losses: with one child, the multiplier falls

[3] Single-person households face an even steeper drop—from 2.0× to 1.0×—losing half of total resources.

Figure 3: Household Income Multiplier from Bolsa Família by Family Composition (with Two Adults)



This figure plots the ratio of post-transfer to pre-transfer monthly household income across the Bolsa Família eligibility distribution using 2018 program parameters. Each line represents a household with varying numbers of children and adolescents. All households assume two adults. Households below the extreme poverty threshold (R$89) receive both basic and variable benefits; those between the extreme poverty and poverty thresholds (R$89–R$178) receive only variable benefits.

from 1.5× to 1.15×; with two children (close to Brazil's total fertility rate of 1.55), it falls from 1.5× to 1.23×. By contrast, the poverty threshold creates minimal discontinuities. Childless households experience no change in the multiplier (1.0× to 1.0×), while those with one or two children see modest declines from 1.08× to 1.0× and 1.11× to 1.0×, respectively.

Given these asymmetric stakes, theory suggests that strategic income manipulation should concentrate at the extreme poverty threshold. This prediction follows from the bunching literature: Kleven and Waseem (2013) show that the "dominated range"—the region where manipulation is a strictly dominant strategy—is proportional to the size of the benefit cliff, implying that small notches may produce negligible bunching even when manipulation capacity exists.[4] At the poverty threshold, manipulation

[4] Kleven and Waseem (2013) show that notches create a "strictly dominated range" above the threshold where individuals can increase both consumption and leisure by relocating to the threshold—making manipulation a dominant strategy regardless of preferences. The width of this dominated range is proportional to the size of the discrete benefit loss: $\Delta z^D = \frac{\Delta T}{1-t}$ for benefit loss ΔT at tax rate t. Applying this framework to Bolsa Família (where $t \approx 0$ for eligible households), the dominated range at the extreme poverty threshold equals approximately R$89 for childless households as of 2018—the full basic benefit.

incentives are further attenuated by a two-year "protection rule" (*regra de proteção*): beginning in 2010, households whose income rises above the poverty threshold may continue receiving benefits for up to two years, provided income remains below half the minimum wage.

Bolsa Família went through two changes in recent years. During 2020–2021, the temporary Auxílio Emergencial program replaced Bolsa Família with substantially higher emergency payments (up to R$600, or $165, monthly per household) in response to COVID-19, effectively suspending the program's normal threshold-based incentive structure. In November 2021, the government introduced Auxílio Brasil, which replaced Bolsa Família and imposed a minimum benefit floor of R$400 ($110) per family regardless of composition—a policy made permanent in 2022. This minimum benefit floor eliminated the discrete benefit loss at the extreme poverty threshold by guaranteeing all eligible households substantial transfers.

2.3 Firms in Brazil

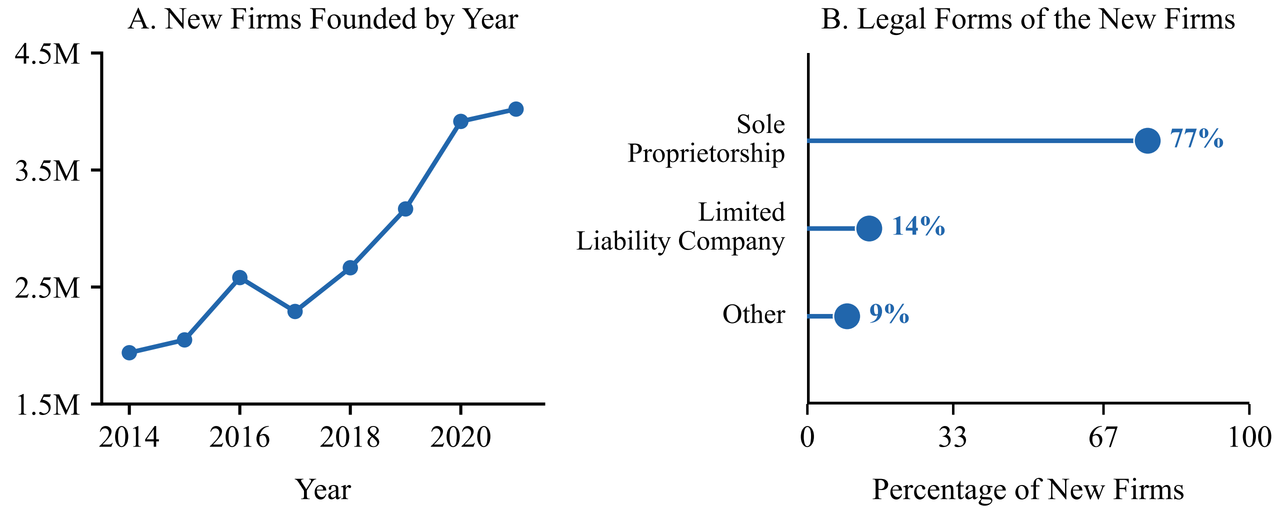
As Panel A of Figure 4 highlights, new business registrations in Brazil grew from two million to over four million a year between 2014 and 2021. Panel B shows that most of these businesses operate as sole proprietorships, which account for 77% of new establishments. Limited liability companies are the second most common business form, accounting for 14% of the new businesses in Brazil.[5] The primary distinction between these forms is that sole proprietorships can operate under the highly preferential *microempreendedor individual* (individual microentrepreneur; MEI) regime with minimal taxation and compliance costs, while LLCs cannot access MEI but provide owners with liability protection.

Nearly all sole proprietorship firms initially operate under the MEI regime. MEI firms may have annual revenues up to R$81,000 (approximately $22,000) and employ one worker besides the entrepreneur. These firms pay a fixed monthly tax of R$66.60 ($18.35; covering social security, municipal ISS tax, and federal ICMS tax), which represents less than 1% of their maximum allowed revenue. Notably, this payment provides access to social security benefits paid by INSS (the government social

At the poverty threshold, childless households face $\Delta T = 0$, so $\Delta z^D = 0$: there is no region where manipulation is strictly dominant. Even households with children face dominated ranges at the poverty threshold that are 70–85% smaller than at the extreme poverty threshold, substantially reducing the utility gain from manipulation relative to any adjustment costs.

[5] Under Brazilian commercial law, sole proprietorship firms and limited liability companies are formally termed "empresário individual" and "sociedade empresária limitada," respectively.

Figure 4: New Firm Creation and Legal Forms in Brazil



This figure shows new establishments in Brazil between 2014 and 2021. Panel A plots the number of establishments (millions) founded by year. Panel B shows the legal forms for the new establishments. Other legal forms include 85 categories, such as cooperatives, associations, foundations, publicly traded firms, and investment funds. Data are from Brazil's CNPJ dataset.

security system), including retirement, disability, and maternity leave at the minimum wage level. Additionally, the regime has minimal compliance requirements: they must file a simplified tax return (DASN-SIMEI) once a year, and can self-fill the tax return (they are not required to hire an accountant).

As sole proprietorships grow, they transition through different size categories while remaining individual entrepreneurs. The next tier, *microempresa* (microenterprise; ME), allows revenue up to R$360,000 annually (approximately $100,000) but requires more complex tax calculations under the Simples Nacional regime, with progressive rates starting at 4% and reaching up to 15.5% of gross revenue depending on business activity and revenue level.[6] Unlike MEI's restriction to one employee, ME firms can hire up to 9 employees in commerce and services or up to 19 in manufacturing. ME firms also face substantially higher compliance costs, including mandatory accounting services and monthly and annual filing obligations beyond MEI's simple annual revenue declaration.

The largest sole proprietorship category, *empresa de pequeno porte* (small enterprise; EPP), accommodates revenue between R$360,000 and R$4.8 million annually (approximately $100,000 to

[6] Simples Nacional is a simplified tax regime that consolidates federal, state, and municipal taxes into a single monthly payment. It offers reduced bureaucracy, exemptions from certain social contributions, and simplified accounting requirements. Simples under the ME or EPP categories is available to both sole proprietorships and LLCs.

$1.3 million) and may employ up to 49 employees in commerce and services or up to 99 in manufacturing. Progressive tax rates for EPP under Simples Nacional range 9.5% to 33% depending on business activity and revenue level. Sole proprietorships exceeding R$4.8 million ($1.3 million) lose Simples eligibility and must use more complex tax regimes like *lucro presumido* or *lucro real*.[7]

3 Data

This section describes the data and sample used in our analysis. We rely on two main data sources: a nationally representative household survey for analyzing bunching behavior and the effects of cash transfers on entrepreneurial entry (Section 4), and linked administrative records for examining firm-level performance, mechanisms, and post-entrepreneurship outcomes (Sections 5 to 8). We describe each data source, detail our sample construction, present summary statistics, and document industry composition.

3.1 Household Survey Data

We analyze household income distributions using PNAD Contínua, Brazil's continuous national household survey conducted by IBGE (the Brazilian Institute of Geography and Statistics, equivalent to the U.S. Census Bureau). The survey follows a rotating panel design covering approximately 211,000 households annually across all Brazilian states, designed to produce nationally representative estimates of household income, social program participation, and labor market outcomes. The survey organizes households into Survey Areas (UPAs—Unidades Primárias de Amostragem), geographically contiguous neighborhood clusters of approximately 60–70 households in urban areas.[8] For each household, we observe Bolsa Família participation, all income sources, occupation (including entrepreneurship, formality, and business characteristics), and household demographics. See Appendix IA1 for data details.

[7] Simples Nacional restricts businesses to a pre-approved list of about 400 activities. Excluded activities include financial institutions, insurance, investment funds, automobile manufacturing, some professional services requiring higher education degrees (such as legal and medical services), and businesses with foreign shareholders (Ministério da Fazenda 2018).

[8] Within each Survey Area, IBGE samples 14–18 households for the rotating panel. Our 2013–2021 sample includes over 1.2 million unique households across 28,471 Survey Areas, providing fine-grained geographic variation in program exposure.

3.2 Firm-Level Data

Our firm-level analysis relies on five administrative datasets from the Brazilian government. First, we use the *Cadastro Nacional da Pessoa Jurídica* (CNPJ)—Brazil's official national firm registry maintained by the Ministério da Fazenda (Ministry of Finance)—which contains comprehensive records for *all* registered firms in Brazil, including active and inactive businesses. Second, we obtain *Bolsa Família Payment* records from the Ministério do Desenvolvimento e Assistência Social (MDS; Ministry of Social Development). Third, we use the *Relação Anual de Informações Sociais* (RAIS)—Brazil's mandatory annual employment registry maintained by the Ministério do Trabalho e Emprego (Ministry of Labor)—including formal employment records for all workers in Brazil. Fourth, we utilize *Dívida Ativa da União* from the Procuradoria-Geral da Fazenda Nacional (Attorney General's Office of the National Treasury; PGFN), which includes obligations that have escalated to enforcement actions. Finally, we obtain *Operações Indiretas Automáticas* from the Banco Nacional de Desenvolvimento Econômico e Social (Brazilian Development Bank; BNDES), which includes data on companies' access to bank credit.

The CNPJ data includes information on each firm's initial equity capital (*capital social*), legal form, business activity classifications, founding date, and a comprehensive set of company events—including whether a company remains active, transitioned into a large legal form, or has had any tax filing violations. A key innovation in our data construction process is the systematic identification of *cadastros de pessoas físicas* (individual tax identifiers; CPFs) for sole-proprietorship founders. This matching process is essential because sole proprietorships represent the primary entry point to entrepreneurship in Brazil, particularly for low-income individuals such as those supported by Bolsa Família. We exploit the systematic pattern that CPFs are almost always embedded within the legal names of sole proprietorships in the CNPJ registry. We verify obtained CPFs against Serasa Experian, a major Brazilian credit bureau. Through this systematic approach, we successfully identify CPFs for the founders of 16.3 million of the 18.8 million sole proprietorship businesses started in Brazil between 2014 and 2021 (87% match rate).

The Bolsa Família Payments dataset provides comprehensive monthly payment records for 27.3 million conditional cash transfer beneficiaries between 2013 and 2021, including the exact amount received by beneficiary–month. For each beneficiary, the data contains their *número de identificação social* (social identification number; NIS), full name, and municipality of residence. This granular payment information allows us to track individuals' participation in the program over time.

The RAIS dataset encompasses all formal employment records in Brazil and includes both NIS and CPF identification for each worker. The RAIS data provides detailed employment–year histories including each individual's monthly salary, job title descriptions, type of payment received (monthly, biweekly, weekly, daily, hourly, or task-based), and comprehensive worker demographic characteristics such as race, gender, date of birth, and educational attainment. Additionally, RAIS contains detailed information about companies, including municipalities of operation and detailed industry classification.

The Dívida Ativa da União data includes unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions. It tracks each firm's entire debt collection lifecycle, including open balances and whether a company has made steps to renegotiate their debt. The data includes CNPJ ID numbers, which uniquely identifies each firm in Brazil.

The Operações Indiretas Automáticas dataset includes detailed records on subsidized credit extensions to small and medium enterprises through participating financial institutions (all major retail banks in Brazil). The dataset tracks individual credit events, including loan amounts and interest rates charged. For each borrower, it includes the firm's legal name, municipality of operation, and the last five digits of the CNPJ ID number, enabling us to measure formal credit access among sole proprietorships.

We link these datasets through a multi-step process, relying exclusively on exact matching to ensure data quality. First, we match RAIS employment records to CNPJ firm records using CPFs, and connect RAIS to Bolsa Família payments using NIS identifiers. This linkage allows us to observe each individual's complete employment history, demographic characteristics, Bolsa Família participation, and entrepreneurial activity. Second, we match the resulting dataset with Dívida Ativa da União using CNPJ ID numbers. Finally, we connect with Operações Indiretas Automáticas using a combination of firm legal name, municipality code, and the last five digits of the CNPJ ID number.

3.3 Sample Construction

We take several steps to ensure comparability between entrepreneurs receiving cash transfers and other entrepreneurs. First, we focus on sole proprietorships, which are the entry point to entrepreneurship in Brazil—especially for low-income individuals such as those supported by Bolsa Família. Second, we only consider the *first* business started by each individual, which ensures any results aren't biased through learning from previous entrepreneurial experiences. Third, we only consider founders with formal employment experience in the 12 months prior to starting their business, and we can observe from these pre-entrepreneurship experiences their detailed occupation, salary, and demographic characteristics.

With these sample restrictions in place, we track Bolsa Família recipients starting January 2013 and sole-proprietorship firms started by all entrepreneurs between January 2014 and December 2021. We track each firm's outcomes—described in detail below—from their founding date until December 2024. We define *cash-transfer entrepreneurs* as those enrolled in Bolsa Família when founding a business and recent graduates of the program.[9] Our final sample includes 2.3 million sole-proprietorship firms, of which 76.2 thousand were founded by cash-transfer entrepreneurs (3.3% of the total).

3.4 Key Variables and Summary Statistics

We now describe the key variables and summary statistics for our firm-level administrative sample. Using this data, we analyze the effects of cash transfers on entrepreneurial outcomes using comprehensive measures of firm performance, entrepreneur characteristics, and business dynamics. Our analysis examines outcomes at two levels: initial firm characteristics and investment decisions, and longer-term performance trajectories tracked over multiple years post-founding.

3.4.1 Firm Characteristics and Performance Outcomes

We examine firm equity and performance through several key dimensions. *Firm equity* measures the initial capital investment (in thousands of constant 2024 Brazilian Reais) that entrepreneurs contribute when founding their businesses. We categorize equity into five brackets: ≤R$1k, R$1k–5k, R$5k–10k, R$10k–25k, and >R$25k, capturing the distribution of initial capital commitments across our sample.[10]

Our primary performance measures are indicator variables tracking five categories of entrepreneurial outcomes over 1, 2, 3, and 5-year horizons. First, *business survival*, collected from

[9] We allow up to 12 months between Bolsa Família graduation and firm founding to classify a founder as a cash-transfer entrepreneur. In 89% of the cases, cash-transfer entrepreneurs are still enrolled in Bolsa Família when founding a business.

[10] Initial capital is a critical determinant of small business performance in developing markets (Jayachandran (2020)). The equity measure also serves as a proxy for the entrepreneur's wealth and access to informal financing networks, which are particularly important in environments with limited access to formal credit (de Mel et al. (2008); Karlan and Morduch (2010)).

the Ministry of Finance's CNPJ dataset, captures whether each firm remains active, providing a fundamental measure of entrepreneurial persistence (cf. Bernstein et al. (2022)).

Second, *business growth*, also collected from the CNPJ dataset, identifies transitions from MEI (individual microentrepreneur) to ME (microenterprise), indicating successful scaling beyond the entry-level individual entrepreneur threshold. These transitions occur when firms generate annual revenues exceeding R$81,000 ($22,000) or employ more than one person—representing meaningful business expansion. Such scaling is particularly significant in developing economies: the mean and dispersion of firm size are substantially smaller in developing countries than in developed countries (Poschke (2018)), with most microenterprises remaining perpetually small (Jayachandran (2020)).

Third, *employment creation*, collected from the Ministry of Labor's RAIS dataset, measures whether firms employ workers beyond the owner, capturing job creation and business expansion. It represents a key threshold in the transition from subsistence to growth-oriented entrepreneurship (Schoar (2010)). It is also a critical margin for economic development given that small companies represent substantial employment shares in developing economies (Ayyagari et al. (2011)).

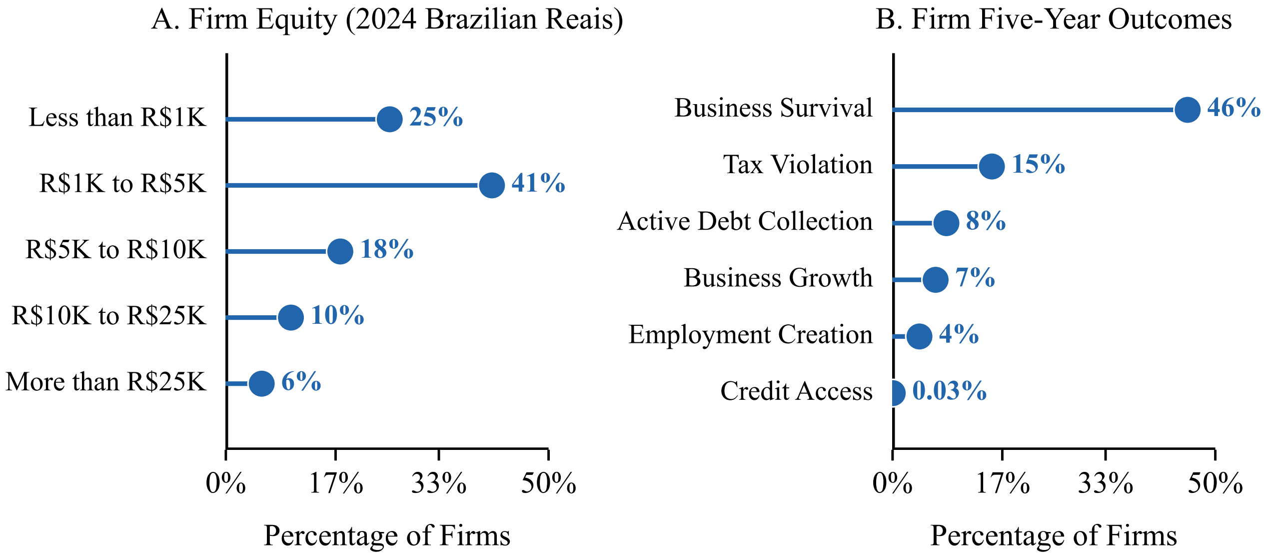
Fourth, *credit access* indicates whether firms received financing through the BNDES indirect automatic operations program, which provides loans to finance investment projects of small and medium enterprises through commercial banks and credit unions.[11] This measure proxies for entrepreneurs' successful access to formal credit markets—a critical constraint for business growth in developing markets (Banerjee and Duflo (2005); de Mel et al. (2008)). BNDES is the primary channel of subsidized small business financing in Brazil, where alternative credit sources remain prohibitively expensive.[12] BNDES indirect automatic operations rates average 12.2% annually in our data, substantially below the 25.1% average market rate for small and medium enterprise loans in Brazil (OECD (2019)).

Finally, we examine compliance and financial distress through two measures. *Tax violations*, collected from the CNPJ dataset, capture failures to file mandatory tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes), reflecting firms' capacity to meet administrative obligations. Tax violation is common in developing economies where enforcement is incomplete and size-dependent, and most often

[11]BNDES indirect automatic operations finance investments in productive capacity, including establishment, expansion, and modernization of fixed assets; acquisition of machinery, equipment, and capital goods; working capital associated with fixed investments; personnel training; research, development, and innovation; and software acquisition (BNDES (2025)).

[12]BNDES provides 70% of earmarked credit to firms in Brazil, with 99.4% of clients being small and medium enterprises (SME) and 93% of SME loans through indirect automatic operations (Junior et al. (2020); Pazarbasioglu-Dutz et al. (2017)).

Figure 5: Distribution of New Firm Equity Investment and Five-Year Outcomes



This figure shows the distribution of firm equity (in thousands of Brazilian Reais, inflation-adjusted to 2024) and business outcomes measured five years post-founding. Outcomes are not mutually exclusive. The sample includes 2.3 million sole-proprietorship firms founded between 2014 and 2021 by individuals with recent employment experience (within 12 months of business founding). Cash-transfer entrepreneurs are those enrolled in Bolsa Família when starting their business or recent program graduates. Data are from CNPJ, RAIS, and MDS.

reflects liquidity constraints rather than strategic evasion (Bachas et al. (2019); Alstadsæter et al. (2019)). Such violations trigger penalties and enforcement actions that impose costs on both firms and tax authorities (Slemrod and Yitzhaki 2002). *Active debt collection*, collected from PGFN's Dívida Ativa da União, indicates whether firms are subject to government collection proceedings for unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions.

The distribution of firm characteristics and performance outcomes in our sample, presented in Figure 5, highlights the capital-light nature of Brazilian sole proprietorship entrepreneurship. Panel A shows that the vast majority of firms start with minimal equity investment: 25% begin with less than R$1,000 and 41% invest between R$1,000–5,000, while only 6% invest more than R$25,000. Panel B reveals that business survival represents the dominant five-year outcome at 46% of firms. Tax violations affect 15% of businesses, while 8% face active debt collection. Positive growth outcomes remain relatively rare: only 7% achieve business growth through legal form transitions, 4% create employment beyond the owner, and fewer than 0.1% access formal credit markets through BNDES programs.

3.4.2 Entrepreneur Characteristics

We capture comprehensive demographic and pre-entrepreneurship characteristics for all founders. Demographic measures include age at founding, gender, nationality, and detailed racial/ethnic classifications (White, Brown/Mixed, Black, Yellow/Asian, Indigenous). Educational attainment spans eleven categories from illiterate to completed doctorate, providing granular measures of human capital.

Pre-entrepreneurship employment characteristics include monthly salary levels (in constant 2024 Brazilian Reais), payment structure (monthly, weekly, hourly, etc.), and whether entrepreneurs previously worked at a small firms (based on whether their employer was registered under Brazil's Simples Nacional tax regime). We also classify pre-entrepreneurship occupations using ten major categories: elementary occupations, agricultural/forestry/fishery workers, plant and process operators, craft and trades workers, service and sales workers, administrative support workers, technicians, science and arts professionals, business and public managers, and armed forces personnel.

3.4.3 Summary Statistics

Table 1 presents summary statistics comparing cash-transfer entrepreneurs with other entrepreneurs. Our sample includes 2.3 million observations covering sole-proprietorship firms founded between 2014 and 2021. Cash-transfer entrepreneurs represent 3.3% of the sample (76,200 firms), with substantially different characteristics from other entrepreneurs.

Cash-transfer entrepreneurs start businesses with lower average initial equity—averaging R$2.1 thousand compared to R$3.2 thousand for other entrepreneurs. They exhibit lower business survival rates (37.8% versus 46.0% at 5 years) and reduced business growth (4.6% versus 6.8% at 5 years). Employment creation rates are also lower (1.9% versus 4.3% at 5 years), as is access to formal credit through BNDES programs. However, cash-transfer entrepreneurs show higher rates of tax compliance violations (23.5% versus 15.1% at 5 years) and active debt collection proceedings (9.7% versus 8.3% at 5 years), suggesting greater financial distress over time. These patterns hold consistently across different time horizons, indicating persistent performance differences.

PLACE TABLE 1 ABOUT HERE

Table 2 reveals significant demographic differences between groups. Cash-transfer entrepreneurs are predominantly female (86.5% versus 38.8%), more likely to be racial minorities (43.1% versus 31.0%), and have lower educational attainment and pre-entrepreneurship wages (R$488 versus R$861 monthly). They concentrate in service-oriented occupations, particularly service and sales work (50.1% versus 26.4%), reflecting different human capital profiles and industry entry patterns.

PLACE TABLE 2 ABOUT HERE

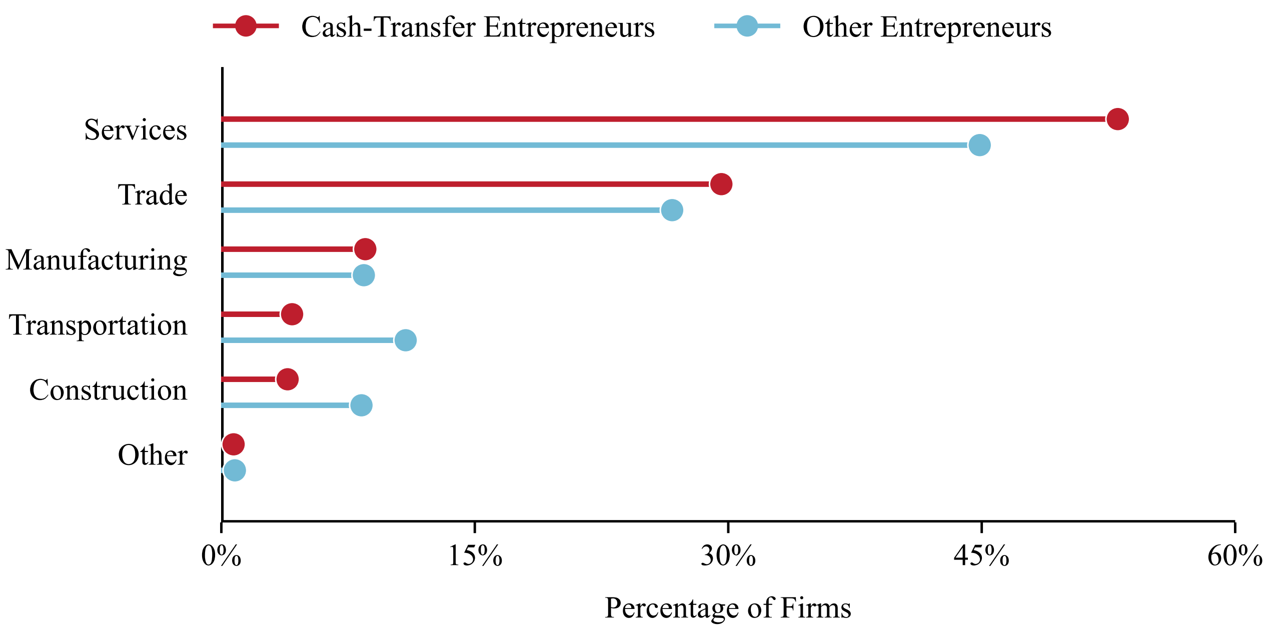
Tables IA3 and IA4 in the internet appendix provide detailed breakdowns of these occupation and demographic patterns, revealing that cash-transfer entrepreneurs concentrate particularly in personal service work (34.8% versus 14.4% for other entrepreneurs) and sales (15.3% versus 12.0%), with 68.3% earning less than R$500 monthly in their pre-entrepreneurship employment compared to 38.0% of other entrepreneurs. The age distribution shows cash-transfer entrepreneurs are concentrated in the 25–45 age range, comprising 74.9% of this group compared to 63.1% of other entrepreneurs.

3.5 Industry Composition

The industry distribution of cash-transfer and other entrepreneurs, shown in Figure 6, reveals broadly similar patterns across major sectors. Both groups concentrate primarily in services (53% and 45% respectively) and trade (30% and 27%), with smaller representations in manufacturing, transportation, and construction. A more notable difference occurs in transportation, where cash-transfer entrepreneurs are substantially underrepresented (4% versus 11%). These patterns suggest that while cash-transfer entrepreneurs face some industry-specific barriers or preferences, they generally enter entrepreneurship across similar broad sectors as other entrepreneurs.

Table IA5 provides a granular analysis of industry selection and highlights differences in capital requirements and entrepreneur characteristics. Within services, cash-transfer entrepreneurs concentrate heavily in specific subsectors: restaurant and food services (18% versus 10%) and beauty and personal services (12% versus 5%). These industries require minimal capital—median equity of R$1,000–2,000—and attract entrepreneurs with predominantly blue-collar backgrounds. In contrast, business support services attract fewer cash-transfer entrepreneurs (1% versus 4%) but require higher human capital, with only 8% having low education levels compared to over 20% in personal services.

Figure 6: Industry Distribution by Entrepreneur Type



This figure shows the industry distribution of sole-proprietorship firms in our sample by entrepreneur type. The sample includes 2.3 million sole-proprietorship firms founded 2014–2021 by individuals with recent employment experience. Cash-transfer entrepreneurs are those enrolled in Bolsa Família when starting their business or recent program graduates. Industry classifications follow Dix-Carneiro (2014). Data are from Brazil's CNPJ, MDS, and RAIS.

Trade sectors show different patterns, with cash-transfer entrepreneurs particularly concentrated in clothing retail (10% versus 8%) but underrepresented in vehicle services (1% versus 2%), which requires higher median equity (R$5,000) and technical skills. Construction and transportation industries, where cash-transfer entrepreneurs are underrepresented, consistently attract entrepreneurs with blue-collar occupational backgrounds (68% to 79%) and higher education deficits, suggesting these sectors may require specialized skills or networks that cash-transfer recipients are less likely to possess.

4 Cash Transfers and Entrepreneurial Entry

We examine whether cash transfers stimulate entrepreneurial entry. As discussed in Section 2.2, the program's two-tier benefit structure creates asymmetric incentives for income manipulation, with substantial benefit cliffs at the extreme poverty threshold but minimal discontinuities at the poverty threshold. We proceed in two steps. Using the PNAD household survey data described in Section 3.1, we first test for bunching behavior—strategic income manipulation to maintain eligibility for cash transfers—at both program thresholds. Second, we exploit differences in manipulation across thresholds to construct an instrumental variables (IV) strategy that identifies the causal effect of cash transfers on entrepreneurship.

4.1 Bunching at Bolsa Família Eligibility Thresholds

The sharp discontinuities in benefit amounts at eligibility thresholds create incentives for households to manipulate reported income. We test for such manipulation by examining whether the income distribution exhibits excess mass just below the thresholds—a phenomenon known as bunching (see Saez (2010)). The presence and magnitude of bunching reveals where manipulation is feasible, which households can adjust their income, and how policy changes affect manipulation incentives.

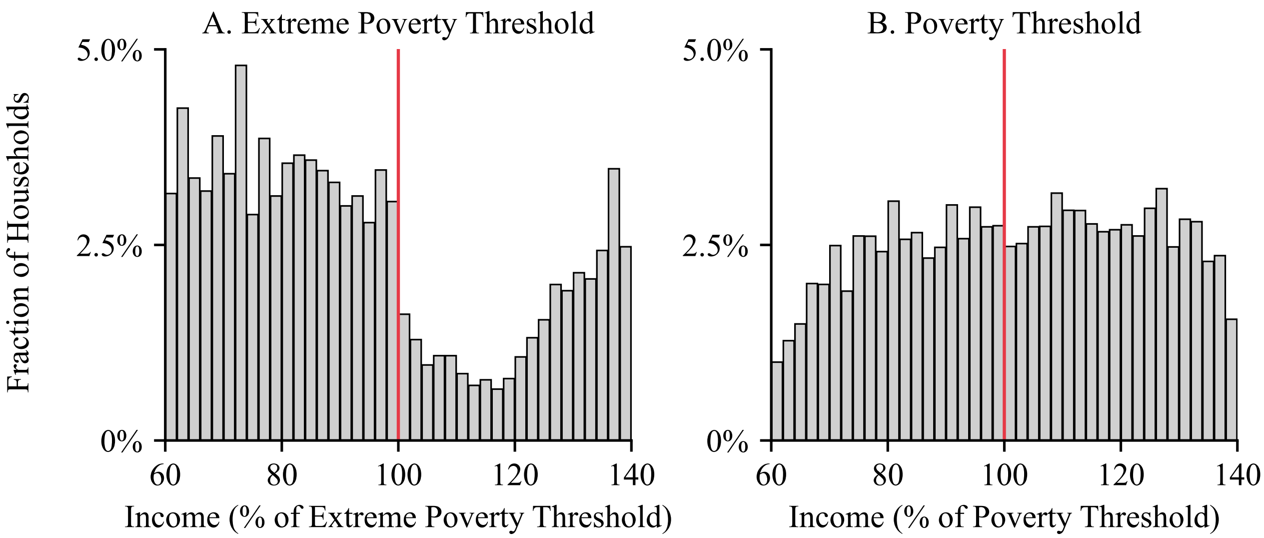
We analyze the distribution of pre-transfer income among Bolsa Família beneficiaries. Pre-transfer income is calculated as household per-capita income net of expected program payments based on family composition and program rules, allowing us to observe the income distribution households face before receiving transfers. To isolate manipulation from natural income variation, we normalize household incomes so that 100 corresponds to each year's threshold, allowing us to pool observations across years despite nominal Bolsa Família threshold adjustments. Figure 7 presents these distributions during 2013–2019. Panel A reveals substantial bunching at the extreme poverty threshold, with a visible spike immediately below the cutoff and a corresponding deficit above it. Panel B shows no comparable bunching at the poverty threshold, consistent with asymmetric incentives at the extreme poverty cutoff.

We formalize these patterns using the bunching estimation methodology introduced by Saez (2010) and Chetty et al. (2011). We estimate the counterfactual income distribution by fitting a polynomial to the observed distribution, excluding observations near the threshold:

$$c_j = \sum_{k=0}^{5} \beta_k z_j^k + \sum_{i=\ell}^{u} \gamma_i \cdot \mathbf{1}[z_j = i] + \epsilon_j \tag{1}$$

where c_j is the count of households in income bin j, z_j is normalized income (with threshold = 100), and bins $[\ell, u]$ define the excluded window around the threshold. The counterfactual density $\hat{c}_j$ is

Figure 7: Income Distribution at Eligibility Thresholds: Bolsa Família Beneficiaries



This figure displays the distribution of pre-transfer household per-capita income relative to Bolsa Família eligibility thresholds for program beneficiaries during 2013–2019. Pre-transfer income is calculated by subtracting expected Bolsa Família payments from reported income. Income is normalized such that 100 corresponds to the year-specific threshold in each year. Panel A shows the distribution relative to the extreme poverty threshold, below which households qualify for the basic benefit—a lump-sum transfer worth R$89 per month in 2018 that is entirely lost upon crossing this threshold. Panel B shows the distribution relative to the poverty threshold, which determines eligibility for variable benefits tied to family composition. The vertical red line marks the respective eligibility threshold. Data are from PNAD Contínua Annual Microdata (IBGE).

predicted from the polynomial terms alone. We calculate excess mass as:

$$b = \frac{\sum_{j=\ell}^{u} c_j - \sum_{j=\ell}^{u} \hat{c}_j}{\sum_{j=\ell}^{u} \hat{c}_j} \tag{2}$$

which measures the proportional excess of observed households relative to the counterfactual in the bunching region. We estimate specifications with exclusion windows of ±8%, ±10%, and ±12% around each threshold using 2-percentage-point bins, and compute bootstrap standard errors (1,000 replications) with resampling at the household level to account for within-household correlation in income reporting.

Table 3 presents the results. Panel A confirms significant bunching at the extreme poverty threshold: statistically significant excess mass estimates range from 0.197 to 0.238, indicating 20–24% more households locate *just below* the threshold than expected. The implied elasticities range from 0.165 to 0.192 reveal that for *each* 1% increase in the implicit tax rate from losing benefits, households reduce their reported income by about 0.2%. In contrast, Panel B shows no bunching at the poverty threshold—the excess mass estimates ranging from 0.007 to 0.045 are significantly smaller and statistically insignificant, confirming that bunching occurs *only* where the dominated range is substantial.

Place Table 3 About Here

To verify that bunching responds to program incentives rather than reflecting intrinsic features of the income distribution, we examine two placebo tests. First, Figure IA2 displays the income distribution during 2020–2021, when Auxílio Emergencial temporarily replaced Bolsa Família with higher benefit floors that eliminated the discrete loss at the extreme poverty threshold. The bunching visible in 2013–2019 disappears, leaving no meaningful excess mass at either threshold. Table IA6 confirms this pattern: excess mass estimates around the extreme poverty threshold range from −0.054 to 0.140 and are statistically insignificant. The elimination of bunching precisely when manipulation incentives disappeared provides strong evidence that bunching reflects strategic behavior by beneficiaries.

Second, Figure IA3 examines households that are not beneficiaries of Bolsa Família. Non-beneficiaries face no manipulation incentives at these thresholds since they do not receive cash transfers. Panels A and C show the distribution at the extreme poverty threshold (R$77–89 depending on year) during 2013–2019 and 2020–2021. The distribution shows no excess mass at either threshold—any visible peaks occur at 111–117% of the extreme poverty threshold (corresponding to approximately R$100 per capita), well above the policy cutoff. Table IA7 confirms these patterns using formal bunching methods: all estimates for non-beneficiaries show *negative* excess mass near the thresholds. These results confirm the prediction of the notch literature (Kleven and Waseem (2013)): bunching occurs *where and when* the program creates substantial discontinuous incentives, and is absent where stakes are small or nonexistent.

4.2 Effects of Cash Transfers on Entrepreneurship: IV Estimates

Understanding whether cash transfers affect entrepreneurial entry is a first-order question for evaluating these programs. Prior work establishes that transfers can enable occupational change among the poor (Bandiera et al. (2017); Balboni et al. (2022))and that relaxing insurance constraints facilitates entrepreneurial entry (Bianchi and Bobba (2013)). Yet whether transfer recipients actually enter entrepreneurship at higher rates—and from which labor market states—remains an open empirical question. We examine transitions into entrepreneurship from non-employment and from wage employment, as well as the representation of program beneficiaries among entrepreneurs. These entry patterns establish the foundation for our subsequent analysis of entrepreneurial performance and economic mobility.

The primary empirical challenge in estimating the causal effect of cash transfers on entrepreneurship is selection: households receiving Bolsa Família differ systematically from non-recipients in ways—such as wealth, risk tolerance, or local economic conditions—that independently affect entrepreneurial activity. Our bunching analysis suggests a solution. Because households strategically manipulate income at the extreme poverty threshold but not at the poverty threshold, the share of households below the poverty threshold provides plausibly exogenous variation in program exposure—variation reflecting genuine income differences rather than strategic positioning around the eligibility cutoffs.

We implement this strategy at the Survey Area level, measuring how local program exposure affects local entrepreneurship rates. Survey Areas—PNAD's primary sampling units comprising geographically contiguous neighborhood clusters of 60–70 households—provide granular, stable geographic units with repeated cross-sections over time, whereas the rotating panel design follows individual households for only 15 months. Our sample spans 2013–2019 and includes over 1.3 million households across 19,676 Survey Areas, aggregated to 66,374 Survey Area–year level observations.

We estimate the following two-stage least squares specification at the Survey Area-year level:

$$\begin{aligned}\text{Beneficiary Share of Households}_{st} &= \alpha + \beta \cdot \text{Share Below Poverty Threshold}_{st} + \gamma X_{st} \\ &\quad + \delta_s + \theta_{r(s),t} + \epsilon_{st} \qquad (3) \\ Y_{st} &= \alpha' + \rho \cdot \text{Share of }\widehat{\text{Beneficiary}}\text{ Households}_{st} + \gamma' X_{st} \\ &\quad + \delta'_s + \theta'_{r(s),t} + \varepsilon_{st} \qquad (4)\end{aligned}$$

where s indexes Survey Areas, t indexes years, Beneficiary $\widehat{\text{Share of}}$ Households$_{st}$ denotes fitted values from the first stage, and Share Below Poverty Threshold$_{st}$ is the share of households with pre-transfer income below the poverty threshold. We examine two types of outcome variables Y_{st}: *entry transitions* into entrepreneurship (year-over-year transition rates from non-employment and from wage employment among households observed in consecutive years) and *entrepreneur composition* (the share of entrepreneurs who are program beneficiaries). Survey Area fixed effects δ_s absorb time-invariant local characteristics, and state-year fixed effects $\theta_{r(s),t}$ control for region-specific shocks, where $r(s)$ denotes the state containing Survey Area s. The vector X_{st} includes demographic controls for household heads aggregated to the Survey Area–year level: share of males, mean age, literacy rate (defined as being able to read and write), share enrolled in educational programs, and share non-white. The parameter ρ captures the local average treatment effect of program participation on entrepreneurship (Imbens and Angrist 1994). Standard errors cluster at the Survey Area level to account for serial correlation.

Table 4 presents the first-stage results. Column (1) includes only fixed effects, while column (2) adds controls for demographic characteristics. A 10 percentage point increase in the share of households below the poverty threshold increases the share of beneficiaries by 2.47 percentage points without controls and 2.24 percentage points with controls. The Kleibergen-Paap F-statistics of 1,086.3 (without controls) and 927.6 (with controls) substantially exceed the Stock and Yogo (2005) threshold of 16.38, confirming strong instrument relevance and alleviating concerns about weak instrument bias (Staiger and Stock (1997)). The stability of the coefficient across specifications indicates that variation in the share below the poverty threshold is not systematically correlated with observable household head characteristics that might independently affect program participation.

PLACE TABLE 4 ABOUT HERE

Table 5 presents the second-stage estimates. We examine entry transitions and entrepreneur composition. For entry, we measure year-over-year transitions among households observed in consecutive years: from non-employment to entrepreneurship and from wage employment to entrepreneurship. For composition, we measure the share of entrepreneurs who are program beneficiaries. Results under Columns (1) and (2) show that for *each* 10 percentage point increase in the beneficiary share of households within a Survey Area, entry into entrepreneurship from non-employment increases by 16% (+0.006 relative to a mean of 0.036) and entry from employment increases by 8% (+0.009 relative to a mean of 0.106). Consistent with these entry effects, Column (3) reveals that entrepreneur composition shifts toward program recipients: the beneficiary share among entrepreneurs rises by 46% (+0.063 relative to a mean of 0.136) for each 10 percentage point increase in household program participation.

PLACE TABLE 5 ABOUT HERE

The exclusion restriction requires that the share of households below the poverty threshold affects entrepreneurship only through program participation. We address two potential threats to this assumption. First, the poverty threshold itself might carry economic content beyond program eligibility. Second, local economic expansions could simultaneously reduce the share below the threshold and independently push workers into necessity entrepreneurship through nominal wage ratcheting. We examine each in turn.

The economic circumstances of households near the poverty threshold make an independent poverty-to-entrepreneurship channel implausible. The threshold corresponds to monthly per capita income of R$178—equivalent to $49, or 20% of Brazil's minimum wage. At this income level, a household of four lives on approximately R$712 monthly ($196), or R$5.93 ($1.63) per capita daily—well below the World Bank's $3.00-per-day extreme poverty line, capturing the inability to meet basic food, clothing, and shelter needs (World Bank (2025a)).[13] At such income levels, marginal income differences between households just above versus below the threshold cannot plausibly determine capacity for business entry. Crucially, the R$178 threshold carries no policy significance beyond Bolsa Família eligibility: to our knowledge, it does not determine access to credit programs, tax benefits, housing assistance, or other interventions that might independently affect entrepreneurship.

We corroborate this reasoning with a placebo test exploiting Brazil's policy transition in 2020–2021, when the Auxílio Emergencial program replaced Bolsa Família with flat emergency transfers distributed regardless of the R$178 poverty threshold, severing the link between the threshold and program eligibility. If the instrument operates through transfer receipt rather than through an independent poverty-to-entrepreneurship channel, its predictive power should attenuate precisely in this period. Table 6 shows that the positive and statistically significant reduced-form coefficient from the main period (+0.048) falls by approximately 40%—to +0.029—and loses statistical significance in 2020–2021, despite a nearly identical mean entrepreneurship rate (0.380 versus 0.378). We note further that local economic shocks—the most plausible non-program channel through which poverty might affect entrepreneurship—would bias our estimates toward zero rather than away from it: a positive shock (new employer, infrastructure project) simultaneously raises incomes above the threshold and creates

[13] Brazil's mean household savings rate is 1.8% (Banco Central do Brasil 2021). For a four-person household at the poverty threshold, this implies savings of R$13 ($4) per month—insufficient to finance even modest business investments, where mean (median) initial equity in our sample is R$3,200 (R$1,000).

entrepreneurial opportunities, while a negative shock does the reverse. Our estimates are therefore conservative with respect to this class of confounders.

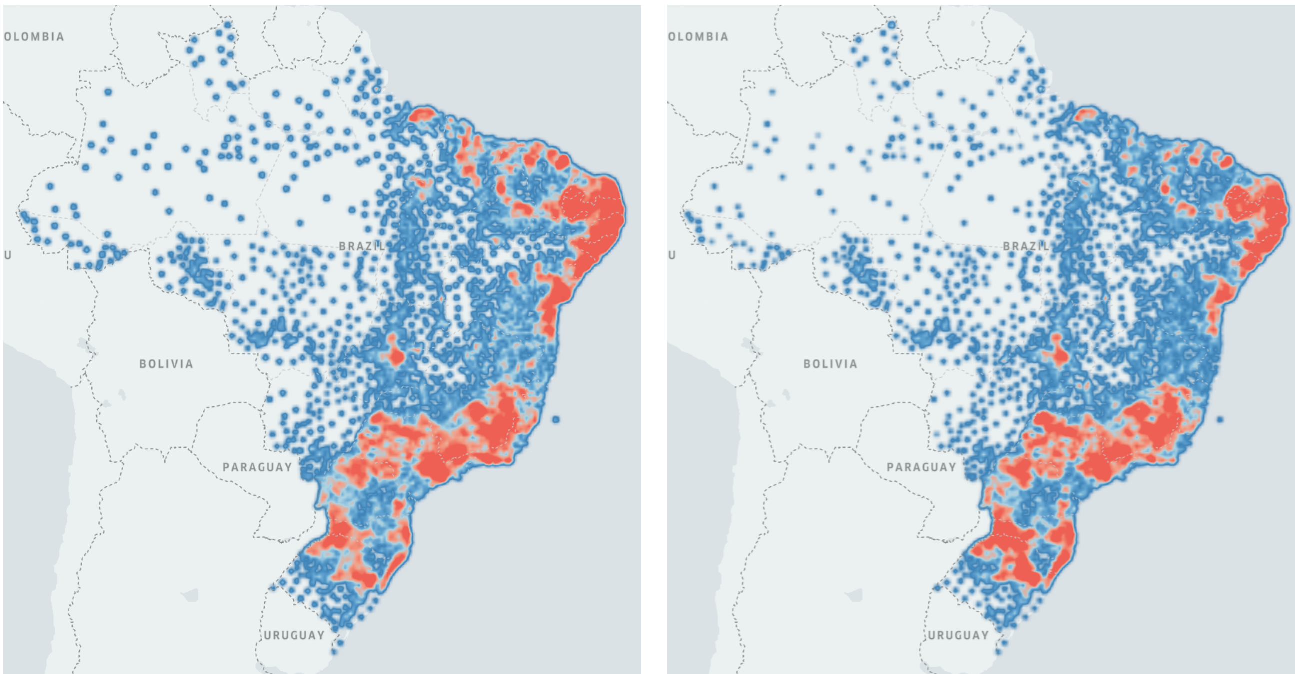
PLACE TABLE 6 ABOUT HERE

We next address the concern that local economic expansions may simultaneously increase the share of households below the poverty threshold and independently push employed workers into necessity entrepreneurship through nominal wage ratcheting (Kaur (2019)). The Kaur channel operates specifically through employed-to-entrepreneur transitions—rationed workers pushed from wage employment into necessity self-employment—so the test hinges on whether the interaction between the beneficiary share and lagged local GDP growth is positive and significant for this margin. Table IA8 in the internet appendix implements this test using a 2SLS specification with two endogenous variables—the beneficiary share of households and its interaction with lagged GDP growth—instrumented by the share below the poverty threshold and the corresponding interaction. Using three-year lagged GDP growth as our primary measure (wage rigidities accumulate over multiple years before manifesting as rationing), the interaction is economically negligible (+0.004, less than 5% of the baseline effect) and statistically insignificant ($t = 0.51$); the null is robust to one-year lagged growth and a post-boom indicator. These results rule out wage ratcheting as a confound for our main entry estimates.

Beyond the exclusion restriction, Table IA9 sheds light on complier composition by comparing IV estimates using the share of households below the poverty threshold (R$178 per capita) against the share below the extreme poverty threshold (R$89 per capita). Our bunching evidence documents strategic income manipulation at the extreme poverty threshold and none at the poverty threshold, implying that extreme poverty compliers are disproportionately households actively misreporting income to maintain eligibility—a behavior that requires flexibility in reporting earnings and leaves little margin for program-induced new entry. Both instruments are strongly relevant (KP F-statistics: 593–1,112) and both yield positive, significant estimates for the beneficiary share among entrepreneurs, confirming that each shifts program participation. However, the extreme poverty instrument produces null entry effects, while the poverty instrument delivers positive and significant estimates across all margins. This divergence is consistent with extreme poverty compliers having little margin for new entrepreneurial entry.

Figure 8: Bolsa Família Payment Distribution and Sole Proprietorship Growth

A. Bolsa Família Payment Amounts B. Growth in Sole Proprietorship Formation



This figure shows the natural logarithm of average annual municipality-level Bolsa Família payments between 2014 and 2021 (Panel A) and compound annual growth rates in sole-proprietorship formation in the same period (Panel B). Colors represent spatial density, with blue indicating lower values and red indicating higher values. Data are from MDS and CNPJ.

These results establish that cash transfers stimulate entrepreneurial entry. Households transition into self-employment at higher rates from both non-employment and wage employment, and program recipients become disproportionately represented among entrepreneurs. That entry increases from wage employment—where workers already have income—suggests the mechanism may operate in part through reduced risk exposure rather than solely through relaxed liquidity constraints, consistent with Bianchi and Bobba (2013). Whether these ventures generate economic returns and mobility for beneficiaries—or perpetuate dependency—is the central question we address in the following sections.

4.3 Geographic Patterns

As a confirmatory exercise, we draw on our administrative data to examine whether the causal effects documented above manifest in observable geographic patterns. Figure 8 shows the spatial distribution of Bolsa Família payments (Panel A) and growth in sole proprietorship formation (Panel B) across Brazil's municipalities. The correspondence is striking: regions with higher program intensity—particularly the Northeast coast and southern states—exhibit faster entrepreneurial growth. To quantify this relationship, we calculate the bivariate Moran's I statistic, which yields a Z-score of 20.12 ($p < 0.001$), confirming significant joint spatial clustering (Ward and Gleditsch 2008). We further assess the degree of geographic overlap by computing kernel density probability surfaces for both variables, following Aretz et al. (2020). The correlation between these probability surfaces is 0.973 ($p < 0.001$), indicating near-perfect correspondence in the geographic distributions of program payments and entrepreneurial activity. These patterns provide external validation for our IV estimates, and motivate the firm-level analysis we turn to next.

5 Empirical Strategy: Firm Performance

Ideally, one would identify both entry and performance effects within a unified framework. However, the household survey data underpinning our IV strategy do not track individual firms over time or provide firm-level outcomes, while the administrative data enabling our performance analysis do not contain the household-level income information needed to construct the instrument. We therefore adopt a complementary two-part design: having established in Section 4 that cash transfers causally increase entrepreneurial entry, we now ask a conditional question—among entrepreneurs who have already entered, do those supported by cash transfers perform differently from observationally equivalent non-recipients? This conditional comparison calls for a different empirical approach, and we address selection through the combination of granular fixed effects and Coarsened Exact Matching described below. Consequently, in our main tests, we estimate the causal effect of cash transfers on entrepreneurial outcomes using the following linear model:

$$Y_f = \alpha + \beta \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_f\} + \delta_i + \theta_s + \varepsilon_f \tag{5}$$

where Y_f represents outcome variables for firm f measured t years after founding (including business survival, business growth, employment creation, credit access, tax violation, and active debt collection), $\mathbb{1}\{\text{Cash-Transfer Entrepreneur}_f\}$ indicates whether the founder was enrolled in Bolsa Família when starting the business or graduated from the program within 12 months before founding, δ_i and θ_s

represent fixed effects described below, and ε_f is the error term. Our parameter of interest is β, which captures the differential performance of cash-transfer entrepreneurs relative to other entrepreneurs.

The primary identification challenge stems from systematic differences between cash-transfer and other entrepreneurs across multiple dimensions.[14] We address this concern through two complementary strategies. First, we employ comprehensive fixed effects to control for observable heterogeneity. *Entrepreneur fixed effects* (δ_i) absorb the joint profile of individual characteristics measured immediately before firm founding, including race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian versus foreign), gender, education level (11 categories from illiterate to completed doctorate), age at founding (under 25, 25–34, 35–45, 46–59, 60+), pre-entrepreneurship occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and whether the individual previously worked at a small firm registered under Brazil's Simples Nacional tax regime.

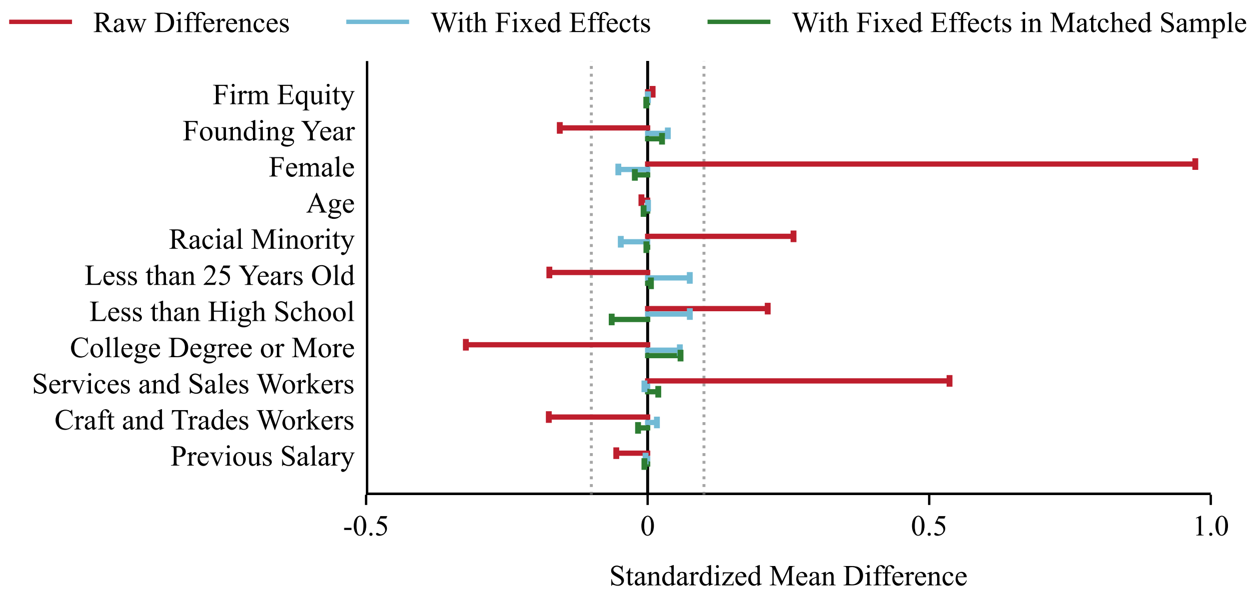
Industry × Equity × Year fixed effects (θ_s) control for time-varying industry conditions, capital requirements, and macroeconomic factors through the joint profile of industry classification (based on 2-digit CNAE codes, which includes 82 industry sectors), initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. This approach ensures comparisons occur among entrepreneurs with identical demographic profiles starting businesses in the same industries, with similar capital investments, in the same year.

Second, we implement Coarsened Exact Matching (CEM) following Iacus et al. (2012) and Aneja et al. (2025). CEM creates a similar counterfactual by matching cash-transfer and other entrepreneurs on key individual and firm characteristics. The procedure groups observations into strata defined by education level, gender, salary category, founding year, 2-digit industry classification, and initial equity category, retaining only strata containing both treatment and control units. Unlike propensity score matching, CEM requires no functional form assumptions and automatically determines appropriate weights for each matched stratum. This creates a sample where cash-transfer and other entrepreneurs are observationally identical along the matching dimensions, allowing us to estimate treatment effects by comparing similar entrepreneurs while preserving the natural joint distribution of covariates.

Figure 9 shows that our identification strategy successfully addresses observable differences

[14] Consistent with this concern, Gennaioli et al. (2013), document that education is a strong predictor of firm performance.

Figure 9: Covariate Balance Diagnostics



This figure presents standardized mean differences for key covariates. Standardized differences are computed as mean differences divided by each covariate's standard deviation, with fixed effects estimates obtained by residualizing covariates. Variables include entrepreneur demographics and pre-entrepreneurship work characteristics (occupation and salary from employment immediately before founding business). Three measures shown: raw differences without controls (red), differences with joint fixed effects for entrepreneur characteristics profiles (race, education, gender, age, pre-entrepreneurship occupation, salary) and industry-equity-year combinations in the full sample (blue), and with fixed effects in the matched sample (green). Vertical dotted lines mark the ±0.1 threshold commonly used to define groups as balanced (Ho et al. (2007); Austin (2009)). The sample includes 2.3 million sole-proprietorship firms founded 2014–2021. Data from Brazil's CNPJ, RAIS, and MDS.

using standardized mean differences, an approach recommended by Imbens and Rubin (2015). Raw differences without controls (red) exceed 0.1 standard deviations for most covariates, indicating substantial imbalance. Joint fixed effects in the full sample (blue) substantially reduce these differences, bringing variables within the commonly used ±0.1 threshold for balance (Ho et al. 2007; Austin 2009). The CEM-matched sample with fixed effects (green) achieves the tightest covariate balance.

Standard errors are clustered at the municipality level to account for potential correlation in entrepreneurial outcomes within local economic environments, which may arise from shared infrastructure, local business networks, or common regulatory conditions affecting all entrepreneurs in the same municipality. As a robustness check, we cluster standard errors at the 2-digit industry level and replace Industry × Equity × Year fixed effects with Municipality × Equity × Year fixed effects to control for location-specific economic conditions, capital market access, and temporal shocks that affect all entrepreneurs in the same municipality, equity category, and founding year.

6 The Impact of Cash Transfers on Entrepreneurial Performance

We now examine how cash transfers affect entrepreneurial performance across three key performance areas: business survival and growth, employment creation and credit access, and tax compliance and financial distress. We discuss these results in turn.

6.1 Business Survival and Growth

We begin by examining business survival and growth outcomes. Figure IA4 presents non-parametric Kaplan-Meier estimates that reveal systematic performance differences. Panel A shows that cash-transfer entrepreneurs exhibit consistently lower business survival probabilities across all time horizons, with survival gaps widening over time. Panel B reveals similar patterns for business growth, defined as transitions from Individual Microentrepreneur (MEI) status to larger business forms. Cash-transfer entrepreneurs show consistently lower cumulative growth probabilities across all time periods. These non-parametric estimates suggest that cash-transfer entrepreneurs perform consistently worse over time.

Table 7 presents regression estimates that quantify these performance gaps while controlling for observable entrepreneur and firm characteristics. Panel A shows that cash-transfer entrepreneurs exhibit statistically significant but economically modest survival disadvantages in the first year post-founding. Specifically, results under Column (1) show that cash-transfer entrepreneurs are 0.7% less likely to survive their first year (−0.57 percentage points relative to a mean of 81.3%). The matched sample results in Column (2) show similar patterns with slightly larger magnitudes.

Place Table 7 About Here

The survival disadvantage compounds substantially over time. Results under Column (1) of Panel B show that cash-transfer entrepreneurs are 3.4% less likely to survive two years (−2.3 percentage points relative to a mean of 68.5%). This gap continues expanding through Panel C, where Column (1) reveals that cash-transfer entrepreneurs are 8.9% less likely to survive three years (−5.0 percentage points relative to the mean). The survival deficit reaches its largest magnitude in Panel D, where Column (1) shows that cash-transfer entrepreneurs are 15.5% less likely to survive five years (−7.1 percentage points relative to a mean of 45.7%). The matched sample results in Column (2) show even larger magnitudes, reaching a 9.3% survival difference by year three and a 16.2% gap by year five.

Business growth patterns exhibit widening gaps in the short term that plateau over longer horizons. Results under Column (3) of Panel A indicate that cash-transfer entrepreneurs are 10.7% less likely to achieve business growth in their first year (−0.2 percentage points relative to a mean of 1.7%). This disadvantage expands through the second year, with Column (3) of Panel B showing that cash-transfer entrepreneurs are 12.2% less likely to achieve two-year growth (−0.3 percentage points relative to the mean). However, Columns (3) of Panels C and D reveal that three-year and five-year gaps stabilize at similar magnitudes of −0.3 percentage points. The matched sample results in Column (4) consistently show patterns in the same direction with slightly larger magnitudes.

These patterns remain stable under alternative econometric specifications that cluster standard errors at the 2-digit industry level (with 82 units) and employ Municipality × Equity × Year fixed effects in place of Industry × Equity × Year fixed effects (see Table IA10). The alternative specification yields similar coefficient magnitudes and statistical significance levels across all time horizons.

6.2 Employment Creation and Credit Access

We next examine whether cash transfers enable entrepreneurs to scale their businesses through job creation and formal credit access. Table 8 reveals significant disadvantages across both dimensions. Results under Columns (1) and (2) of Panel A show that cash-transfer entrepreneurs are 45% less likely to create employment in their first year (−0.89 percentage points relative to a mean of 2.0%). The matched sample results in Column (2) show similar patterns with comparable magnitudes.

PLACE TABLE 8 ABOUT HERE

This employment creation deficit persists with relatively stable absolute magnitudes across all time horizons. Results under Column (1) of Panel B show that cash-transfer entrepreneurs are 44% less likely to create employment by two years (−1.2 percentage points relative to the mean). The employment shortfall continues through Panel C, where Column (1) reveals that cash-transfer entrepreneurs are

42% less likely to create employment by three years (-1.4 percentage points relative to the mean). The employment creation gap remains substantial in Panel D, where Column (1) shows that cash-transfer entrepreneurs are 38% less likely to create employment by five years (-1.6 percentage points relative to a mean of 4.2%). The matched sample results under Column (2) consistently demonstrate nearly identical employment gaps among cash-transfer entrepreneurs.

These average gaps extend deep into the right tail of job creation. Table IA11 in the internet appendix examines extreme employment outcomes: reaching a peak headcount of at least 2, 5, 10, or 20 employees within five years of founding and, conditional on hiring at all, the firm's position in the distribution of total employment created. Cash-transfer entrepreneurs are under-represented across every employee-count threshold—they are roughly half as likely as observably comparable founders to ever reach five or more employees—and, among firms that hire, they are 8.4 percentage points less likely to rank above the median and 4.5 percentage points less likely to reach the top quartile of total employment created. The gaps remain negative but lose statistical significance at the very top (the top decile and top 1%), where few cash-transfer founders operate: of the 4,885 firms that reached five or more employees, only 56 were founded by cash-transfer entrepreneurs.

Credit access patterns reveal even more pronounced disadvantages for cash-transfer entrepreneurs. Results under Columns (3) and (4) of Panel A indicate that cash-transfer entrepreneurs are 40% less likely to access BNDES credit in their first year (-0.2 basis points relative to a mean of 0.5 basis points).

These credit access shortfalls compound over time. Results under Columns (3) and (4) of Panel B show that cash-transfer entrepreneurs are 45% less likely to access credit by two years (-0.5 basis points relative to the mean). The credit access deficit expands through Panel C, where Columns (3) and (4) reveal that cash-transfer entrepreneurs are 65% less likely to access credit by three years (-1.1 basis points relative to the mean). By five years post-founding, Columns (3) and (4) of Panel D show that cash-transfer entrepreneurs are 52% less likely to access credit (-1.5 basis points relative to a mean of 2.9 basis points). The extremely low baseline credit access rates highlight the broader challenges facing sole proprietorship entrepreneurs in Brazil, as fewer than 0.1% of firms access formal credit even after five years of operation. However, the consistent disadvantages faced by cash-transfer entrepreneurs suggest that program participation does not improve access to formal financing channels and may actually create additional barriers.

Our findings are robust to alternative model specifications employing Municipality $\times$ Equity

× Year fixed effects and clustering standard errors at the 2-digit industry level (see Table IA12). The robustness specification confirms both the statistical significance and economic magnitudes of the employment and credit access disadvantages across all time periods.

6.3 Tax and Regulatory Compliance

We next examine regulatory compliance outcomes. Figure IA5 presents non-parametric Kaplan-Meier estimates that reveal systematic differences. Panel A shows that cash-transfer entrepreneurs exhibit consistently higher cumulative probabilities of tax filing violations—failures to submit mandatory annual declarations—across all time horizons, with gaps widening over time. Panel B reveals similar patterns for active debt collection—unpaid tax obligations, social security contributions, or administrative penalties that have escalated to government enforcement actions. These non-parametric estimates suggest that cash-transfer entrepreneurs face persistent challenges in navigating Brazil's regulatory environment.

Table 9 presents regression estimates that quantify these disadvantages after controlling for observable entrepreneur and business characteristics. Tax filing violations are tracked beginning from the second year of operation, as firms are typically flagged only after more than one year of operation. Results under Columns (1) and (2) of Panel A show that cash-transfer entrepreneurs are 43% more likely to incur filing violations by two years post-founding (+2.3 percentage points relative to a mean of 5.3%). The matched sample results in Column (2) show similar patterns.

Place Table 9 About Here

These compliance gaps persist over longer time horizons. Results under Column (1) of Panel B reveal that cash-transfer entrepreneurs are 47% more likely to incur filing violations by three years (+5.3 percentage points relative to a mean of 11.3%). The gap reaches its largest magnitude by five years post-founding, where Column (1) of Panel C shows that cash-transfer entrepreneurs are 40% more likely to have filing violations (+6.1 percentage points relative to a mean of 15.4%). The matched sample results under Column (2) consistently show similar magnitudes across all time horizons.

The regulatory challenges extend beyond filing to payment. Cash-transfer entrepreneurs are 14% more likely to face active debt collection by two years (+0.08 percentage points relative to a mean of 0.6%), with gaps persisting through year five, where Column (3) of Panel C shows they are 17% more likely to face collection proceedings (+1.5 percentage points relative to a mean of 8.4%). These patterns suggest that cash-transfer entrepreneurs face systematic challenges in navigating Brazil's regulatory environment, even when operating sole proprietorships under Simples Nacional—Brazil's simplified tax regime with minimal rates and compliance requirements.

The conclusions hold under alternative econometric approaches that substitute Municipality × Equity × Year fixed effects for Industry × Equity × Year fixed effects while clustering standard errors at the 2-digit industry level (see Table IA13). This alternative specification preserves the magnitude and statistical significance of both tax compliance and debt collection disadvantages.

6.4 Robustness to Selection on Unobservables

Our identification strategy combines entrepreneur fixed effects, Industry × Equity × Year fixed effects, and Coarsened Exact Matching to address selection on observables. A remaining concern is whether unobserved differences between cash-transfer and other entrepreneurs drive our results. We address this using the Oster (2019) framework. The key insight in Oster (2019) is that coefficient stability alone is insufficient to evaluate omitted variable bias—it must be combined with information about R-squared movements. Under the assumption that selection on unobservables is proportional to selection on observables, one can recover a bias-adjusted treatment effect $\hat{\beta}^*$ and compute δ, the ratio of selection on unobservables to observables required to drive the estimated coefficient to zero. A value of $|\delta| > 1$ implies that unobservables would need to be more important than observables to overturn the result; $\delta < 0$ implies that selection would need to run counter to the direction controls move the coefficient—a stronger robustness condition. Following Oster (2019)'s recommended benchmark, we set $R_{\max} = 1.3 \times \tilde{R}^2$, where $\tilde{R}^2$ is the R-squared from the full model including both entrepreneur and Industry × Equity × Year fixed effects. The restricted model includes Industry × Equity × Year fixed effects only, so that the addition of entrepreneur fixed effects constitutes the "control" step in the Oster framework.

PLACE TABLE 10 ABOUT HERE

Table 10 reports these diagnostics for each outcome and time horizon. Panel A shows that for business survival, δ grows sharply with the time horizon—reaching 3.11 at two years, 21.19 at three years, and 33.94 at five years—meaning unobservables would need to be more than 3 to 34 times as important as observables to overturn the result. The exception is the one-year horizon, where $\hat{\beta}^* = 0.003$ nearly vanishes, consistent with the economically modest first-year gap documented above. Business growth shows $\delta < 0$ across all horizons—the stronger robustness condition, implying that selection on unobservables would need to run *counter* to the direction controls move the coefficient to eliminate the result. Panel B shows similarly negative δ for employment creation and credit access, with $|\delta|$ ranging from 3.40 to 11.74; moreover, $\hat{\beta}^*$ is larger in magnitude than $\hat{\beta}$ in every cell, indicating our baseline estimates are conservative. Panel C shows that δ is negative for both tax violations and active debt collection at all horizons. Across all outcome-horizon cells, $\hat{\beta}^*$ preserves the sign of $\hat{\beta}$, confirming that the direction of our performance results is robust to unobservable selection.[15]

7 Mechanisms Behind Performance Gaps

Having documented systematic performance differences between cash-transfer and other entrepreneurs, we next investigate their sources. We ask whether the gaps reflect insufficient cash (exploiting geographic variation in the transfer's purchasing power), program dependence (exploiting enrollment duration at founding), and managerial constraints (examining whom these entrepreneurs hire and on what terms). We discuss these in turn.

7.1 Insufficient Cash? Evidence from Purchasing Power

A natural question is whether the performance gaps simply reflect insufficient cash—whether beneficiaries would match other entrepreneurs if the transfer were larger. Bolsa Família offers a way to test this: all beneficiaries receive the same nominal transfer regardless of where they live, yet its real purchasing power varies substantially across municipalities due to differences in local price levels. For instance, R\$200 in São Paulo (São Paulo state) provides purchasing power approximately equivalent to R\$300 in Aracajú (Sergipe state) when adjusted for regional price differences.[16] This variation allows us to

[15]These results hold under alternative clustering at the 2-digit industry level and under municipality × equity × year fixed effects in place of industry × equity × year fixed effects (see Table IA14).

[16]Diamond and Moretti (2024) document that spatial cost-of-living differences are particularly large for low-income households, with the spatial standard deviation of price indices for low-income groups being almost double that of high-income

examine whether gaps narrow where the transfer is effectively more generous.

We measure each municipality's economic prosperity using the log of average annual GDP per capita over the three years preceding firm founding. Using pre-founding GDP avoids potential endogeneity concerns arising from the firm itself affecting local economic conditions. We then estimate the following specification:

$$
\begin{aligned}
Y_f = \alpha &+ \beta_1 \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_f\} + \beta_2 \cdot \text{GDP per Capita}_m \\
&+ \beta_3 \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_f\} \times \text{GDP per Capita}_m + \delta_i + \theta_s + \varepsilon_f
\end{aligned} \tag{6}
$$

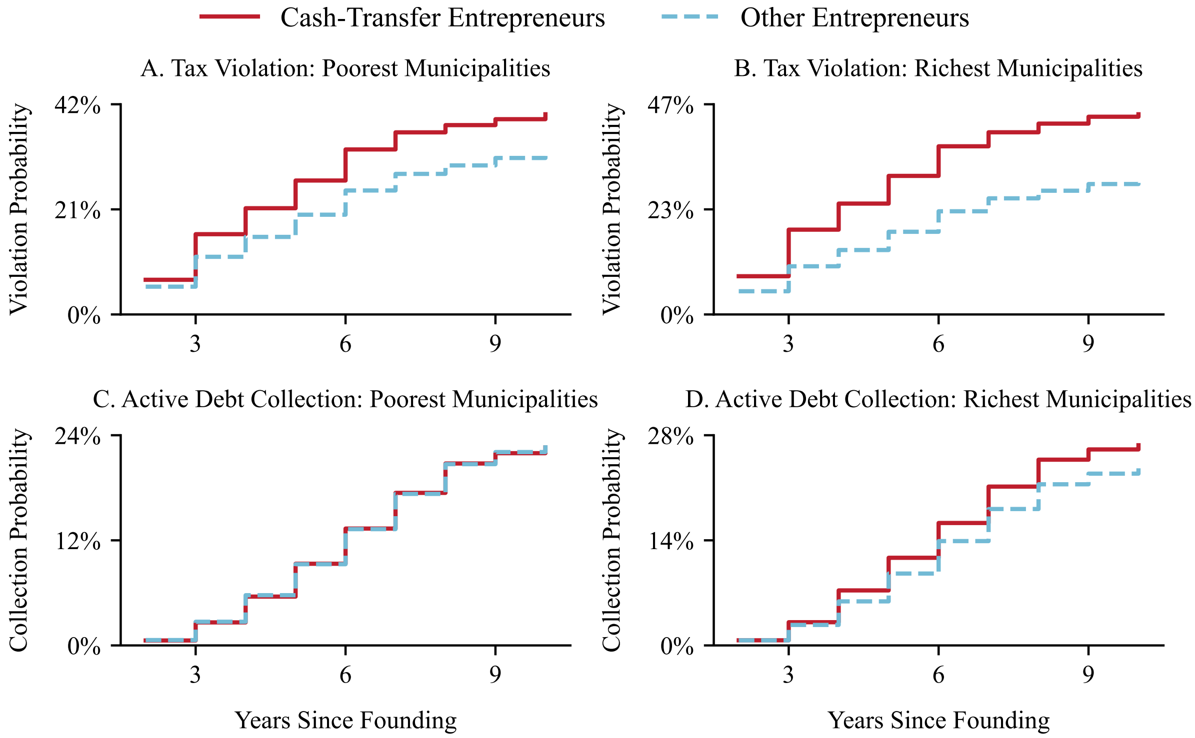
where Y_f represents firm outcomes measured five years post-founding, m indexes the municipality where the firm operates, and GDP per Capita$_m$ is the log of average annual municipal GDP per capita standardized to have mean zero and unit variance. The coefficient of interest, β_3, captures whether the performance gap between cash-transfer and other entrepreneurs widens or narrows in more prosperous municipalities. As before, δ_i represents entrepreneur fixed effects and θ_s denotes Industry × Equity × Year fixed effects, with standard errors clustered at the municipality level.

Figure 10 presents non-parametric evidence of how local economic conditions moderate cash transfer effects. Panels A and B compare tax violation rates in the poorest and richest municipalities, revealing that cash-transfer entrepreneurs in wealthier areas face substantially larger compliance gaps. Panels C and D show similar patterns for debt collection, with disadvantages being more pronounced in prosperous municipalities. These non-parametric estimates suggest that the challenges facing cash-transfer entrepreneurs vary systematically with local economic conditions.

Table 11 displays the interaction coefficients for six key outcomes. The results highlight important trade-offs in program design. Panel A examines business survival and growth outcomes. For business survival under Column (1), the negative interaction coefficient indicates that the survival gap widens by 18% for each standard deviation increase in municipal GDP per capita (−0.78 percentage points relative to the baseline gap of −4.4 percentage points). Similarly, for business growth under Column (2), the negative interaction coefficient shows that cash-transfer entrepreneurs' growth advantage narrows in more prosperous municipalities (−0.35 percentage points, reducing their baseline advantage

groups. Housing costs drive most of this variation, accounting for 95% of spatial price variation for low-income households.

Figure 10: Non-Parametric Estimates by Local Prices — Tax Compliance & Collection



This figure presents Kaplan-Meier estimates comparing cash-transfer entrepreneurs and other entrepreneurs, stratified by municipal wealth. Panels A and B show cumulative probabilities of tax filing violations, defined as failure to file mandatory annual tax declarations, in the poorest and richest municipalities respectively. Panels C and D show cumulative probabilities of active debt collection, indicating whether firms are subject to active collection proceedings by the federal government for unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions, in the poorest and richest municipalities respectively. Bottom quartile GDP and top quartile GDP refer to municipalities in the respective quartiles (by founding year) of GDP per capita (average annual GDP per capita of the municipality over the three years preceding firm founding). Cash-transfer entrepreneurs are those enrolled in Bolsa Família when starting their business or recent program graduates. The sample includes 2.3 million sole-proprietorship firms founded 2014–2021 by individuals with recent employment experience. Data are from Brazil's CNPJ, RAIS, MDS, IBGE, and PGFN.

of +0.90 percentage points by 39%).

PLACE TABLE 11 ABOUT HERE

Panel B examines employment creation and credit access. For employment creation under Column (3), the positive interaction coefficient reveals that the employment gap narrows by 18% for each standard deviation *increase* in municipal GDP per capita (+0.69 percentage points relative to the baseline gap of −3.9 percentage points). Similarly, for credit access under Column (4), the positive interaction coefficient of 0.008 percentage points reveals a 19% reduction for each standard deviation in local GDP per capita. These findings suggest that deeper labor markets and stronger business ecosystems in prosperous areas facilitate employment growth for cash-transfer entrepreneurs.

Panel C examines tax compliance outcomes. For tax violations under Column (5), the positive interaction coefficient indicates that compliance gaps widen substantially for each standard deviation increase in municipal GDP per capita—the interaction effect more than offsets the baseline compliance advantage, reversing the gap entirely (+2.5 percentage points relative to the baseline gap of −2.2 percentage points). For active debt collection under Column (6), the positive interaction coefficient shows that debt collection gaps widen by 78% for each standard deviation increase in municipal GDP per capita. These patterns suggest that the greater purchasing power of cash transfers in poorer regions helps beneficiaries maintain their businesses and meet tax obligations.

Table IA15 provides additional evidence by comparing cash-transfer effects in the bottom and top GDP quartiles. Panel A shows that in the poorest municipalities (bottom quartile of per capita GDP), cash-transfer entrepreneurs exhibit 26% better tax compliance (−1.8 percentage points relative to the baseline gap of +6.7 percentage points) and 50% lower debt collection rates (−0.9 percentage points relative to the baseline gap of +1.7 percentage points) relative to more affluent areas. Panel B reveals the opposite pattern in the richest municipalities (top quartile of per capita GDP), where employment creation gaps narrow by 73% (+1.4 percentage points relative to the baseline gap of −1.9 percentage points) and credit access gaps are more than offset, reversing the disadvantage entirely.

These heterogeneous effects highlight an important trade-off: uniform nominal transfers provide greater real purchasing power in economically disadvantaged areas—helping entrepreneurs survive and remain compliant—but the deeper labor markets and stronger business ecosystems in prosperous regions enable cash-transfer entrepreneurs to close employment creation gaps and access formal credit. Even where the transfer is worth most, however, the gaps narrow without closing: in bottom-quartile municipalities, cash-transfer entrepreneurs still face a 4.9 percentage-point tax violation gap and a 0.8 percentage-point debt collection gap (Table IA15). In all, these results suggest that more cash helps, but it is not enough, by itself, to close performance gaps.

7.2 Program Dependence? Evidence from Enrollment Duration

If more cash is not the whole story, the duration of program enrollment at founding offers a sharper test of a second mechanism: program dependence. Time on the program cuts two ways. Longer enrollment lets households accumulate resources, which should *improve* the businesses they eventually start; but if prolonged reliance erodes the incentives and skills needed to operate independently, outcomes should be *worse* the longer a founder was enrolled before founding. Because tenure also correlates with unobserved characteristics—depth of poverty, labor market attachment—we interpret the following patterns as consistent with, but not uniquely identifying, a dependence channel.

Table 12 stratifies cash-transfer entrepreneurs into three tenure groups at founding: recent enrollees (≤12 months), medium-tenure (13–24 months), and long-term enrollees (>24 months), with non-BF entrepreneurs as the omitted baseline. Results under Panel A, Column (1) show survival gaps that are large and significant across all tenure groups but remain roughly constant (−6.8 to −7.5 percentage points), while Column (2) shows that business growth disadvantages emerge only for long-term enrollees (−0.4 percentage points, significant at 1%), with shorter-tenure groups showing statistically insignificant gaps. Results under Panel B, Column (3) show that employment creation gaps widen monotonically with tenure, from −1.4 percentage points for recent enrollees to −1.8 for medium-tenure and −1.9 for long-term enrollees. The clearest evidence of a dependence channel, however, appears in tax compliance outcomes—which are not mechanically tied to business performance, as tax filing does not directly affect program eligibility. Results under Panel C, Column (5) show that tax violation gaps follow a pronounced dose-response: 4.6 percentage points for recent enrollees, declining to 3.1 for medium-tenure entrepreneurs, then surging to 7.8 for long-term enrollees. Column (6) shows that active debt collection follows a similarly monotonic pattern, rising from 0.8 to 0.9 to 1.9 percentage points across tenure groups.

PLACE TABLE 12 ABOUT HERE

Together with the income bunching documented in Section 4.1, these tenure gradients are consistent with a dependence channel: prolonged reliance on the program before founding is associated with systematically worse entrepreneurial outcomes, particularly on margins—tax filing and debt collection—that are not mechanically tied to business performance.

7.3 Managerial Constraints? Evidence from Hiring Practices

Finally, we examine whether cash-transfer entrepreneurs differ in their hiring practices—specifically, whom they employ, what roles they hire for, and what employment terms they offer. Focusing on firms that created at least one job within their first five years, we estimate a linear specification similar to our main performance analysis (see Equation (5)) but present two versions for each outcome. The first specification includes only Industry × Equity × Year fixed effects, while the second adds entrepreneur fixed effects—the joint profile of individual characteristics (race, nationality, gender, education, age, occupation, salary type, salary category, and firm size experience) measured before firm founding. This approach allows us to assess whether hiring differences reflect the characteristics of cash-transfer entrepreneurs themselves or persist even when controlling for founder characteristics.

Table IA16 presents the results. Panel A examines employee demographics. Results under Column (1) show that cash-transfer entrepreneurs are 15% more likely to hire racial minorities (+6.0 percentage points relative to a mean of 41.1%). Column (2) shows this pattern persists when controlling for entrepreneur characteristics, though the magnitude attenuates to 10% (+4.0 percentage points). Notably, Column (3) shows that cash-transfer entrepreneurs are 18% less likely to hire female employees (−10.9 percentage points relative to a mean of 60.2%), though Column (4) shows this pattern reverses when controlling for entrepreneur characteristics, with the gap narrowing to 11% (−6.7 percentage points). Column (5) reveals they also employ 9% more individuals with low educational attainment (+4.0 percentage points relative to a mean of 44.2%), though Column (6) shows this difference becomes statistically insignificant when controlling for entrepreneur characteristics.

Panel B analyzes occupation types. Results under Column (7) show that cash-transfer entrepreneurs are 14% more likely to hire for production and trades positions (+3.8 percentage points relative to a mean of 27.1%). Column (8) shows this pattern strengthens when controlling for entrepreneur characteristics, increasing to 24% (+6.5 percentage points). Column (9) reveals they are 12% less likely to hire for services and sales positions (−6.2 percentage points relative to a mean of 53.7%), with Column (10) showing this gap widens to 17% (−9.3 percentage points) when controlling for entrepreneur characteristics. Column (11) shows that cash-transfer entrepreneurs are 25% less likely to hire managers (−1.8 percentage points relative to a mean of 7.1%), consistent with their smaller firm sizes and simpler organizational structures, though Column (12) shows this gap becomes statistically insignificant when controlling for entrepreneur characteristics.

Panel C examines employment terms and reveals important differences in job quality. Results under Column (13) show that cash-transfer entrepreneurs are 28% less likely to offer part-time positions (−2.8 percentage points relative to a mean of 9.8%), with Column (14) showing this pattern persists when controlling for entrepreneur characteristics (−2.4 percentage points). Column (15) shows they are also 3% less likely to offer low-wage positions (defined as below R$500; −2.9 percentage points relative to a mean of 86.8%), with Column (16) showing this pattern remains when controlling for entrepreneur characteristics (−3.1 percentage points). Columns (17) and (18) reveal no significant difference in hourly salary rates in either specification, suggesting that cash-transfer entrepreneurs create value for disadvantaged workers by offering stable, full-time employment arrangements rather than through higher hourly wages, generating positive externalities through more secure employment opportunities.

These patterns suggest two important insights. First, cash-transfer entrepreneurs create employment opportunities for individuals who share similar socioeconomic disadvantages—individuals with lower educational attainment and from racial minority backgrounds—thereby generating positive spillover effects within marginalized communities. The Bolsa Família program thus creates a multiplier effect: not only do beneficiaries themselves gain opportunities through entrepreneurship, but they in turn provide employment to other disadvantaged individuals. Second, these hiring patterns help explain the observed performance gaps. The concentration of hiring in production roles, the employment of less educated workers, and the provision of stable, full-time employment at higher total wages—while beneficial for workers—may constrain resources available for firm growth and scaling.

7.4 Heterogeneity by Demographics and Industry

We examine additional heterogeneity by entrepreneur demographics and industry sector in Appendix IA2, finding that performance gaps persist across groups but narrow for racial minorities—consistent with co-ethnic network advantages—and in sectors with tangible outputs.

8 Economic Mobility Through Entrepreneurship

The prior sections document that cash-transfer entrepreneurs systematically underperform. Beyond explaining these performance gaps, a critical question is whether entrepreneurship nonetheless generates value through human capital accumulation. If the entrepreneurial experience itself builds human capital—through managerial skills, business networks, or employment credentials—it may improve subsequent labor market outcomes despite business closure.

We test this hypothesis by examining post-entrepreneurship trajectories. We first examine where failed entrepreneurs go—whether they return to wage employment, start a new venture, or fall into a residual state of unemployment, inactivity, or informal work. We then analyze employment outcomes for those transitioning to wage work through two complementary analyses: within-individual changes for cash-transfer entrepreneurs before versus after entrepreneurship, and comparisons with non-cash-transfer entrepreneurs to isolate differential human capital effects.

8.1 Pathways After Business Failure

We begin by asking what entrepreneurs do once their businesses fail. Among all founders in our sample whose firms closed, we track three near-exhaustive post-exit pathways within 6, 12, and 24 months of closure: returning to *formal wage employment*, starting a *new business*, or *neither*—a residual state that, as the complement of the two formal margins, captures unemployment, labor-force withdrawal, and informal activity, in the spirit of the "residual sector" of Dix-Carneiro (2014). For each pathway and horizon we estimate Equation (5), comparing cash-transfer entrepreneurs to other failed founders with the same joint profile of pre-founding characteristics (entrepreneur-characteristics fixed effects) and business characteristics (Industry × Equity × Year fixed effects).

Table 13 reports the results. Panel A shows that cash-transfer entrepreneurs re-attach to formal wage employment *more* readily than other failed founders, not less: they are 4.8%, 3.6%, and 3.8% more likely to hold a formal job within 6, 12, and 24 months of closure (+0.9, +1.1, and +1.6 percentage points relative to means of 18.6%, 30.0%, and 43.5%), with the absolute gap growing over the horizon. Panel B shows the mirror image on the serial-entrepreneurship margin: cash-transfer founders are no more likely to restart in the short run and become significantly *less* likely to do so by 24 months (10%

lower, or −0.7 percentage points relative to a mean of 6.4%), consistent with learning about comparative advantage rather than churning back into another subsistence venture.

Place Table 13 About Here

Panel C addresses the pathway of greatest policy concern. The residual category—neither formally re-employed nor a new-business owner, and hence the margin into which any drift toward informality or inactivity would fall—does *not* absorb cash-transfer founders; if anything, the opposite holds. Cash-transfer entrepreneurs are marginally *less* likely to occupy this residual state at every horizon: 0.9%, 1.2%, and 2.3% lower at 6, 12, and 24 months (−0.7, −0.8, and −1.2 percentage points relative to means of 79.5%, 67.3%, and 53.2%). Taken together, the three panels show that when their firms fail, cash-transfer founders move *toward* formal wage employment and *away* from both repeat entrepreneurship and the informal/inactive residual. This speaks directly to the concern that cash transfers might push beneficiaries into informality: in our setting the entrepreneurial spell does the reverse, routing failed founders back into the formal labor market rather than out of it.

8.2 Within-Individual Employment Trajectories

Having established that cash-transfer founders re-attach to formal employment more readily than other failed founders, we now examine, among those who do return to wage work, how their post-entrepreneurship jobs compare to the jobs they held before founding. Our analysis focuses on individuals who transition to formal employment that begins within 12 months before or after business closure (a 24-month window around closure). Using panel-level data with two observations per individual (representing pre-entrepreneurship and post-entrepreneurship employment), we estimate:

$$Y_{p,t} = \alpha + \beta \cdot \mathbb{1}\{\text{Post-Entrepreneurship}_{p,t}\} + \delta_p + \theta_s + \varepsilon_{p,t} \tag{7}$$

where $Y_{p,t}$ represents employment outcomes for individual p in period t (pre or post entrepreneurship), $\mathbb{1}\{\text{Post-Entrepreneurship}_{p,t}\}$ indicates the post-entrepreneurship period, δ_p denotes individual fixed effects capturing pure *within-person* changes, and θ_s captures Industry × Equity × Year fixed effects.

As in the other tests, standard errors are clustered at the municipality level to account for potential correlation in outcomes within local economic environments.

Table 14 presents the results for cash-transfer entrepreneurs. Panel A examines occupation and employer characteristics. Results under Column (1) show that cash-transfer entrepreneurs are 2.9% less likely to return to white-collar positions after their entrepreneurial experience (−0.99 percentage points relative to a pre-entrepreneurship mean of 33.8%). Column (2) reveals they are 17.3% less likely to return to managerial positions (−0.33 percentage points relative to a pre-entrepreneurship mean of 1.9%). Column (3) shows no significant change in employment at small firms.

Place Table 14 About Here

Panel B examines compensation outcomes. Results under Column (4) show that cash-transfer entrepreneurs experience a 7.7% decline in monthly salary (−R$39.36 relative to a pre-entrepreneurship mean of R$513.22). Column (5) reveals they earn 6.8% less per hour (−R$0.88 relative to a pre-entrepreneurship mean of R$12.95). Column (6) shows no significant change in stable pay schedules.

These within-individual results reveal that cash-transfer entrepreneurs who return to employment after business failure experience downward occupational mobility and wage declines. The entrepreneurial experience does not appear to provide skills or credentials that enable these individuals to access better employment opportunities than they had before starting their businesses.

8.3 Differential Employment Transitions

We next compare employment transitions of cash-transfer entrepreneurs with those of non-cash-transfer entrepreneurs using a difference-in-differences framework:

$$\begin{aligned} Y_{p,t} &= \alpha + \beta_1 \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_p\} + \beta_2 \cdot \mathbb{1}\{\text{Post}_{p,t}\} \\ &+\beta_3 \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_p\} \times \mathbb{1}\{\text{Post}_{p,t}\} + \delta_p + \theta_s + \varepsilon_{p,t} \end{aligned} \tag{8}$$

where the coefficient of interest, β_3, measures the differential employment transition for cash-transfer entrepreneurs relative to other entrepreneurs. The coefficient β_2 captures the average employment transition for non-cash-transfer entrepreneurs. As before, δ_p denotes individual fixed effects and θ_s captures Industry × Equity × Year fixed effects, with standard errors clustered at the municipality level.

Table 15 presents the results. Panel A examines occupation and employer characteristics. Results under Column (1) show that the interaction term for white-collar employment is statistically insignificant, indicating that cash-transfer entrepreneurs experience similar occupational transitions as other entrepreneurs. Column (2) shows no differential effect for managerial positions, with neither the interaction term nor the post-entrepreneurship coefficient reaching statistical significance. Column (3) shows that cash-transfer entrepreneurs are 3.5% *less likely* to return to small firms (−1.1 percentage points relative to a mean of 31.6%) compared to other entrepreneurs, indicating they are more likely to secure employment at larger firms after their entrepreneurial spell.

PLACE TABLE 15 ABOUT HERE

Panel B examines compensation outcomes. Column (4) shows that cash-transfer entrepreneurs experience significantly smaller salary declines than non-recipients when returning to employment. Non-cash-transfer entrepreneurs face a 14.8% salary drop (R$126.02 from a mean of R$850.17). Cash-transfer entrepreneurs, by contrast, experience a decline of only R$48.50—61% smaller than non-recipients, as indicated by the interaction coefficient of +R$77.52. Column (5) reveals similar patterns for hourly wages: cash-transfer entrepreneurs see declines that are 68% smaller (R$1.88 differential from a baseline decline of R$2.76). Column (6) shows that cash-transfer entrepreneurs are marginally less likely to transition to stable pay schedules—monthly or biweekly payment versus weekly, daily, hourly, or task-based payment (0.9 percentage points, or 1.0% of the baseline rate). This difference is economically negligible given that over 92% of both groups secure stable payment schedules.

These results are robust to controlling for detailed entrepreneur characteristics. Table IA19 replaces individual fixed effects with entrepreneur fixed effects—the joint profile of race, nationality, gender, education, age, and pre-entrepreneurship employment characteristics (occupation, salary type, salary category, and firm size). The key findings remain unchanged: cash-transfer entrepreneurs experience salary declines that are 61% smaller (+R$76.98 differential from a R$125.52 baseline decline) and hourly wage declines that are 68% smaller, and are less likely to return to small firms.

These findings reveal a striking pattern. While cash-transfer entrepreneurs experience absolute declines in employment outcomes following business closure, these declines are substantially smaller than those experienced by non-cash-transfer entrepreneurs. Specifically, cash-transfer entrepreneurs' wage declines are 61–68% smaller than those of other failed entrepreneurs. This relative advantage is surprising given that cash-transfer entrepreneurs achieve worse business performance. Yet when businesses fail, they appear relatively protected from the most severe employment losses.

Two mechanisms could explain this pattern. First, ongoing income support from cash transfers may enable more selective job search. Like unemployment insurance, cash transfers can reduce immediate financial pressure, potentially allowing beneficiaries to extend search duration while seeking better job matches (Marinescu and Skandalis 2021).[17] Second, entrepreneurial experience may provide valuable human capital through skills, networks, or credible labor market signals (Manso 2016; Braunerhjelm and Lappi 2023).[18] However, we find evidence inconsistent with the safety net mechanism: cash-transfer entrepreneurs transition to employment *earlier* than others (median of six months before business closure, versus four months; means of -4.1 versus -3.5 months) and at higher rates (Table 13), contradicting predictions that benefits enable extended search. The combination of faster reemployment and substantially smaller wage losses suggests that entrepreneurial experience itself generates valuable human capital that mitigates employment penalties for cash-transfer beneficiaries, even when ventures fail.

9 Concluding Remarks

This paper examines how social transfer programs affect entrepreneurship among low-income populations. Our analysis of Brazil's Bolsa Família program yields several findings. First, cash transfers stimulate entrepreneurial entry—program participation increases transitions into entrepreneurship from both non-employment and wage employment, raising the share of entrepreneurs who are program beneficiaries. Second, relative to observationally equivalent entrepreneurs, cash-transfer participants systematically underperform. They exhibit lower survival rates, reduced employment creation and

[17] Marinescu and Skandalis (2021) show that unemployment insurance (UE) reduces financial pressure during job search. UE recipients increase search effort by 45–70% as benefit exhaustion approaches and progressively lower their target wages.

[18] Manso (2016)'s model shows that individuals learn from entrepreneurial experience even when ventures fail. Braunerhjelm and Lappi (2023) find that employees with prior entrepreneurial experience increase firm-level productivity.

credit access, and higher tax violations and debt collection proceedings. Third, performance gaps do not reflect insufficient cash alone—they narrow where the uniform transfer buys more, yet persist even where its real value is highest—and are consistent with program dependence, revealed by income bunching at eligibility thresholds and by gaps that widen substantially among entrepreneurs with longer pre-founding program tenure. Fourth, entrepreneurial experience builds human capital. When their businesses fail, cash-transfer founders are more likely than other failed founders to return to formal employment and less likely to fall into informality or inactivity; and among those returning to wage work, their earnings hold up far better than those of other failed founders.

Our findings reveal that cash transfer programs facilitate entrepreneurship that generates meaningful social benefits despite systematic business underperformance. These programs create employment opportunities for underrepresented workers and produce human capital that protects participants from severe employment losses following business failure. However, the businesses themselves remain persistently disadvantaged and contribute little to economic growth. These results suggest that cash transfer programs succeed at their core poverty alleviation mission—providing income security and expanding economic opportunities for vulnerable populations—but the businesses they create remain trapped in subsistence, producing neither growth nor lasting economic transformation.

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Table 1: Summary Statistics: Firm Equity and Outcomes

	All Entrepreneurs				Cash-Transfer Entrepreneurs				Non-Cash-Transfer Entrepreneurs			
	Mean	Median	SD	N (Th.)	Mean	Median	SD	N (Th.)	Mean	Median	SD	N (Th.)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Firm Characteristics												
Firm Equity (R$ Thousands, 2024)	3.2	1.0	12.8	2,296.5	2.1	1.0	8.9	76.2	3.2	1.0	12.9	2,220.3
𝟙{Equity ≤ R$1k}	25.4	0.0	43.5	2,296.5	35.2	0.0	47.8	76.2	24.9	0.0	43.2	2,220.3
𝟙{Equity R$1k-5k}	41.2	0.0	49.2	2,296.5	45.8	0.0	49.8	76.2	41.0	0.0	49.2	2,220.3
𝟙{Equity R$5k-10k}	17.7	0.0	38.2	2,296.5	13.2	0.0	33.9	76.2	17.9	0.0	38.3	2,220.3
𝟙{Equity R$10k-25k}	10.1	0.0	30.1	2,296.5	4.8	0.0	21.4	76.2	10.3	0.0	30.4	2,220.3
𝟙{Equity > R$25k}	5.6	0.0	22.9	2,296.5	1.0	0.0	10.1	76.2	5.8	0.0	23.4	2,220.3
Panel B: Business Survival												
𝟙{Business Survival (1 Year)}	81.3	100.0	39.0	2,296.5	81.6	100.0	38.8	76.2	81.3	100.0	39.0	2,220.3
𝟙{Business Survival (2 Years)}	68.5	100.0	46.5	2,296.5	67.5	100.0	46.8	76.2	68.5	100.0	46.4	2,220.3
𝟙{Business Survival (3 Years)}	56.3	100.0	49.6	2,296.5	52.0	100.0	50.0	76.2	56.5	100.0	49.6	2,220.3
𝟙{Business Survival (5 Years)}	45.7	0.0	49.8	1,350.7	37.8	0.0	48.5	50.6	46.0	0.0	49.8	1,300.1
Panel C: Business Growth												
𝟙{Business Growth (1 Year)}	1.7	0.0	12.8	2,244.5	0.9	0.0	9.4	75.9	1.7	0.0	12.9	2,168.6
𝟙{Business Growth (2 Years)}	2.6	0.0	15.95	2,244.5	1.3	0.0	11.5	75.9	2.7	0.0	16.1	2,168.6
𝟙{Business Growth (3 Years)}	4.6	0.0	21.0	2,244.5	2.9	0.0	16.7	75.9	4.7	0.0	21.1	2,168.6
𝟙{Business Growth (5 Years)}	6.7	0.0	25.0	1,310.7	4.6	0.0	20.9	50.3	6.8	0.0	25.1	1,260.4
Panel D: Employment Creation												
𝟙{Employment Creation (1 Year)}	2.0	0.0	13.9	1,350.7	0.9	0.0	9.2	50.6	2.0	0.0	14.1	1,300.1
𝟙{Employment Creation (2 Years)}	2.7	0.0	16.2	1,020.8	1.2	0.0	10.9	38.7	2.8	0.0	16.4	982.2
𝟙{Employment Creation (3 Years)}	3.3	0.0	17.7	770.5	1.5	0.0	12.2	29.4	3.3	0.0	17.9	741.1
𝟙{Employment Creation (5 Years)}	4.2	0.0	20.0	353.6	1.9	0.0	13.8	14.4	4.3	0.0	20.2	339.2
Panel E: Credit Access												
𝟙{Credit Access (1 Year)}	0.0	0.0	0.7	2,296.5	0.0	0.0	0.0	76.2	0.0	0.0	0.7	2,220.3
𝟙{Credit Access (2 Years)}	0.0	0.0	1.0	2,296.5	0.0	0.0	0.0	76.2	0.0	0.0	1.0	2,220.3
𝟙{Credit Access (3 Years)}	0.0	0.0	1.3	2,296.5	0.0	0.0	0.0	76.2	0.0	0.0	1.3	2,220.3
𝟙{Credit Access (5 Years)}	0.0	0.0	1.7	1,350.7	0.0	0.0	0.4	50.6	0.0	0.0	1.7	1,300.1
Panel F: Tax Violation												
𝟙{Tax Violation (2 Years)}	5.3	0.0	22.5	2,296.5	7.8	0.0	26.8	76.2	5.3	0.0	22.3	2,220.3
𝟙{Tax Violation (3 Years)}	11.3	0.0	31.6	2,296.5	17.8	0.0	38.3	76.2	11.0	0.0	31.3	2,220.3
𝟙{Tax Violation (5 Years)}	15.4	0.0	36.1	1,350.7	23.5	0.0	42.4	50.6	15.1	0.0	35.8	1,300.1
Panel G: Active Debt Collection												
𝟙{Active Debt Collection (2 Years)}	0.6	0.0	7.6	2,296.5	0.6	0.0	7.6	76.2	0.6	0.0	7.6	2,220.3
𝟙{Active Debt Collection (3 Years)}	2.6	0.0	15.8	2,296.5	2.9	0.0	16.7	76.2	2.6	0.0	15.8	2,220.3
𝟙{Active Debt Collection (5 Years)}	8.3	0.0	27.6	1,350.7	9.7	0.0	29.6	50.6	8.3	0.0	27.6	1,300.1

This table presents business performance summary statistics comparing entrepreneurs who received Bolsa Família (Cash-Transfer) benefits before starting their business with other entrepreneurs (Non-Cash-Transfer). The sample includes observations from Brazilian administrative data covering 2014-2021. 𝟙{Business Survival} captures whether a firm remains active in government registries. 𝟙{Business Growth} captures transitions from MEI (Individual Microentrepreneur) to larger tax regimes. 𝟙{Employment Creation} indicates whether the firm employs any worker other than the owner. 𝟙{Credit Access} indicates whether the firm received financing from the Brazilian Development Bank (BNDES) through its indirect automatic operations program. 𝟙{Tax Violation} indicates whether the firm failed to file mandatory annual tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes). 𝟙{Active Debt Collection} indicates whether the firm is subject to active collection proceedings by the federal government (Dívida Ativa da União), reflecting unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions. Firm equity is measured in thousands of constant 2024 R$ at business founding. All indicator variables are multiplied by 100 to show percentages. Sample sizes (N) are reported in thousands. For binary variables, median equals 0.00 when mean < 50% and 100.00 when mean ≥ 50%. The analysis tracks outcomes over 1, 2, 3, and 5-year horizons following business founding. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Data are from CNPJ, RAIS, MDS, and BNDES.

Table 2: Individual Characteristics and Pre-Entrepreneurship Experience: Raw Statistics & Differences

	Cash-Transfer Entrepreneurs				Non-Cash-Transfer Entrepreneurs				Mean Diff.	
	Mean	Median	SD	N (Th.)	Mean	Median	SD	N (Th.)	Diff.	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Demographics										
Age	35.13	34.00	8.96	76.2	35.25	34.00	10.81	2,220.3	−0.12	0.00
$\mathbb{1}$\{Female\}	86.48	100.00	34.20	76.2	38.77	0.00	48.72	2,220.3	47.71	0.00
$\mathbb{1}$\{Brazilian\}	99.33	100.00	8.18	76.2	99.62	100.00	6.18	2,220.3	−0.29	0.00
Panel B: Race/Ethnicity										
$\mathbb{1}$\{White\}	51.13	100.00	49.99	76.2	63.10	100.00	48.25	2,220.3	−11.97	0.00
$\mathbb{1}$\{Brown/Mixed\}	35.85	0.00	47.96	76.2	26.22	0.00	43.98	2,220.3	9.63	0.00
$\mathbb{1}$\{Black\}	7.14	0.00	25.75	76.2	4.64	0.00	21.03	2,220.3	2.50	0.00
$\mathbb{1}$\{Yellow/Asian\}	0.29	0.00	5.39	76.2	0.38	0.00	6.21	2,220.3	−0.09	0.00
$\mathbb{1}$\{Indigenous\}	0.12	0.00	3.53	76.2	0.11	0.00	3.32	2,220.3	0.02	0.18
Panel C: Education										
$\mathbb{1}$\{Illiterate\}	0.20	0.00	4.50	76.2	0.09	0.00	3.06	2,220.3	0.11	0.00
$\mathbb{1}$\{Elementary Incomplete\}	2.20	0.00	14.70	76.2	1.22	0.00	10.96	2,220.3	0.99	0.00
$\mathbb{1}$\{5th Grade Complete\}	2.26	0.00	14.86	76.2	1.62	0.00	12.61	2,220.3	0.64	0.00
$\mathbb{1}$\{Middle School Incomplete\}	7.12	0.00	25.71	76.2	4.19	0.00	20.06	2,220.3	2.93	0.00
$\mathbb{1}$\{Elementary Complete\}	11.95	0.00	32.43	76.2	8.60	0.00	28.04	2,220.3	3.35	0.00
$\mathbb{1}$\{High School Incomplete\}	8.27	0.00	27.52	76.2	7.27	0.00	25.97	2,220.3	1.00	0.00
$\mathbb{1}$\{High School Complete\}	64.90	100.00	47.73	76.2	59.85	100.00	49.02	2,220.3	5.05	0.00
$\mathbb{1}$\{College Incomplete\}	1.05	0.00	10.18	76.2	4.35	0.00	20.43	2,220.3	−3.30	0.00
$\mathbb{1}$\{College Complete\}	2.04	0.00	14.13	76.2	12.64	0.00	33.22	2,220.3	−10.60	0.00
$\mathbb{1}$\{Master's Complete\}	0.01	0.00	1.14	76.2	0.13	0.00	3.61	2,220.3	−0.12	0.00
$\mathbb{1}$\{Doctorate Complete\}	0.00	0.00	0.51	76.2	0.04	0.00	2.06	2,220.3	−0.04	0.00
Panel D: Pre-Entrepreneurship Employment										
Salary (R$, 2024)	487.76	441.51	1,490.34	76.1	861.00	574.10	6,809.37	2,211.6	−373.24	0.00
$\mathbb{1}$\{Monthly Salary\}	93.69	100.00	24.31	76.2	92.36	100.00	26.56	2,220.3	1.33	0.00
$\mathbb{1}$\{Hourly Salary\}	4.71	0.00	21.18	76.2	5.89	0.00	23.54	2,220.3	−1.18	0.00
$\mathbb{1}$\{Worked for Small Firm\}	38.95	0.00	48.76	76.2	33.91	0.00	47.34	2,220.3	5.04	0.00
Panel E: Pre-Entrepreneurship Occupation										
$\mathbb{1}$\{Elementary Occupations\}	0.91	0.00	9.50	76.1	3.04	0.00	17.16	2,203.7	−2.14	0.00
$\mathbb{1}$\{Agri/Forestry/Fishery Workers\}	2.17	0.00	14.57	76.1	1.30	0.00	11.35	2,203.7	0.87	0.00
$\mathbb{1}$\{Plant & Process Operators\}	2.33	0.00	15.08	76.1	2.42	0.00	15.39	2,203.7	−0.09	0.32
$\mathbb{1}$\{Craft & Trades Workers\}	12.12	0.00	32.61	76.1	19.08	0.00	39.28	2,203.7	−6.96	0.00
$\mathbb{1}$\{Service & Sales Workers\}	50.06	100.00	50.00	76.1	26.38	0.00	44.07	2,203.7	23.68	0.00
$\mathbb{1}$\{Admin. Support Workers\}	22.10	0.00	41.53	76.1	21.50	0.00	41.08	2,203.7	0.60	0.00
$\mathbb{1}$\{Technicians\}	6.36	0.00	24.38	76.1	11.41	0.00	31.81	2,203.7	−5.05	0.00
$\mathbb{1}$\{Science & Arts Professionals\}	2.18	0.00	14.60	76.1	9.13	0.00	28.80	2,203.7	−6.95	0.00
$\mathbb{1}$\{Business & Public Managers\}	1.79	0.00	13.23	76.1	5.60	0.00	23.02	2,203.7	−3.82	0.00
$\mathbb{1}$\{Armed Forces/Police/Firefighters\}	0.00	0.00	0.36	76.1	0.13	0.00	3.62	2,203.7	−0.13	0.00

This table presents individual characteristics and pre-entrepreneurship employment experience comparing entrepreneurs who received Bolsa Família (BF) benefits before starting their business with other entrepreneurs. The sample includes 2,296,485 observations from 2014-2021. Salary values are in constant 2024 Brazilian Reais. All indicator variables are multiplied by 100 to show percentages. For indicator variables, median equals 0.00 when mean < 50% and 100.00 when mean ≥ 50%. "Worked for Small Firm" indicates pre-entrepreneurship employment at a firm registered under Brazil's simplified tax regime (SIMPLES). P-values from t-tests comparing means between groups. Differences calculated as Cash-Transfer minus Non-Cash-Transfer entrepreneurs. Data are from CNPJ, RAIS, MDS, and BNDES.

Table 3: Bunching at Eligibility Thresholds: Bolsa Família Beneficiaries

Exclusion Window	Excess Mass (b)	Elasticity (e)	t-statistic	95% Confidence Interval	Observations
	(1)	(2)	(3)	(4)	(5)
Panel A: Extreme Poverty Threshold					
±8%	0.197***	0.165	2.91	[0.059, 0.326]	3,709
±10%	0.232***	0.189	2.94	[0.081, 0.391]	4,507
±12%	0.238***	0.192	2.60	[0.146, 0.504]	5,277
Panel B: Poverty Threshold					
±8%	0.007	—	0.25	[−0.053, 0.060]	11,973
±10%	0.034	—	1.08	[−0.027, 0.090]	14,744
±12%	0.045	—	1.26	[−0.017, 0.122]	17,436

This table presents bunching estimates at Bolsa Família eligibility thresholds for program beneficiaries during 2013–2019 using pre-transfer income. Pre-transfer income is calculated as reported household per-capita income minus expected Bolsa Família payments. The extreme poverty threshold (Panel A) determines eligibility for the unconditional cash transfer; the poverty threshold (Panel B), set at twice the extreme poverty threshold, determines eligibility for variable benefits tied to family composition. Column (1) reports excess mass b relative to a polynomial counterfactual. Column (2) reports implied elasticity $e = b/(1 + b)$; elasticity is not reported when excess mass is negative or statistically insignificant. Column (3) reports t-statistics. Column (4) presents 95% bootstrap confidence intervals. Column (5) reports sample sizes within the exclusion window. Income is normalized such that threshold = 100, using 2-percentage-point bins. Bootstrap standard errors (1,000 replications with household-level clustering). *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Data are from PNAD Contínua Annual Microdata (IBGE).

Table 4: Instrument First Stage: Predicting Cash Transfer Program Participation

Dependent Variable:	Beneficiary Share of Households	
	(1)	(2)
Share Below Poverty Threshold	0.247***	0.224***
	(32.96)	(30.46)
Observations	66,374	66,374
Adjusted R-squared	0.838	0.841
F-statistic (instrument)	1,086.34	927.59
Survey Area FE	✓	✓
State × Year FE	✓	✓
Controls		✓
Clustered SE (Survey Area)	✓	✓

This table presents the first-stage regression for the instrumental variable strategy. The dependent variable is the share of households receiving Bolsa Família within each Survey Area-year during 2013–2019. *Share Below Poverty Threshold* measures the share of households with pre-transfer income below the poverty threshold (twice the extreme poverty threshold, R$140–178 per capita across 2013–2019). Pre-transfer income is calculated as reported household per-capita income minus expected Bolsa Família payments based on family composition and program rules. Column (1) includes only fixed effects; column (2) adds demographic controls relative to household heads (male share, mean age, literacy rate, school attendance rate, and racial minority share at the Survey Area-year level). All specifications include Survey Area fixed effects and state-year fixed effects. Survey Areas refer to UPAs (Unidades Primárias de Amostragem), PNAD's primary sampling units. Each UPA comprises a geographically contiguous cluster of 12–18 households. Standard errors are clustered at the Survey Area level. Data are from PNAD Contínua Annual Microdata (IBGE). *t*-statistics in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 5: Impact of Cash Transfers on Entrepreneurial Entry

	Entry Transitions		Composition
	From Non-employed to Entrepreneur	From Employed to Entrepreneur	Beneficiary Share of Entrepreneurs
	(1)	(2)	(3)
Beneficiary Share of Households	0.058***	0.088***	0.626***
	(2.65)	(2.74)	(9.93)
Mean of Dependent Variable	0.036	0.106	0.136
First-stage F-statistic	1,099.9	1,112.2	971.9
Observations	42,367	42,316	66,336
Survey Area FE	✓	✓	✓
State × Year FE	✓	✓	✓
Controls	✓	✓	✓
Clustered SE (Survey Area)	✓	✓	✓

This table presents instrumental variable estimates of the effect of Bolsa Família on entrepreneurial entry at the Survey Area-year level. *From Non-employment to Entrepreneur* (column 1) captures the share of households transitioning from no reported occupation in year $t-1$ to entrepreneurship in year t. *From Employment to Entrepreneur* (column 2) captures the share transitioning from wage employment in year $t-1$ to entrepreneurship in year t. *Beneficiary Share of Entrepreneurs* (column 3) measures the share of entrepreneur households that are Bolsa Família beneficiaries. The independent variable, *Beneficiary Share of Households*, represents the share of households receiving Bolsa Família within the Survey Area-year, instrumented by the share of households with pre-transfer income below the poverty threshold (R$140–178 per capita across 2013–2019, equal to twice the extreme poverty threshold). Pre-transfer income is calculated as reported household per-capita income minus expected Bolsa Família payments based on family composition and program rules. All specifications include Survey Area fixed effects and state-year fixed effects. Controls include household head characteristics aggregated to the Survey Area-year level: male share, mean age, literacy rate, school attendance rate, and racial minority share. Survey Areas refer to UPAs (Unidades Primárias de Amostragem), PNAD's primary sampling units comprising geographically contiguous clusters of 12–18 households. First-stage F-statistics test instrument strength (Kleibergen-Paap). Standard errors clustered at Survey Area level. Data: PNAD Contínua Annual Microdata (IBGE), 2013–2019. t-statistics in parentheses. *, **, and *** denote significance at 10%, 5%, 1% levels.

Table 6: Instrument Validity: Auxílio Emergencial as a Placebo Period

Dependent Variable: Entrepreneurship Rate	Main Period	Auxílio Period
	2013–2019	2020–2021
	(1)	(2)
Share Below Poverty Threshold	0.048***	0.029
	(5.72)	(1.05)
Mean Dependent Variable	0.378	0.380
Observations	99,118	13,640
Survey Area FE	✓	✓
State × Year FE	✓	✓
Controls	✓	✓
Clustered SE (Survey Area)	✓	✓

This table presents OLS reduced-form estimates of the relationship between the share of households with pre-transfer income below the poverty threshold and the Survey Area-year entrepreneurship rate. The dependent variable is the share of households reporting entrepreneurial activity within each Survey Area-year. Column (1) covers the main sample period (2013–2019), when the R$178 per capita monthly threshold determined Bolsa Família eligibility. Column (2) covers 2020–2021, when Auxílio Emergencial replaced Bolsa Família with flat transfers to virtually all low-income households regardless of the poverty threshold, severing the link between the R$178 cutoff and program eligibility. Under the null that the instrument operates through program eligibility rather than poverty per se, the coefficient in Column (2) should be statistically indistinguishable from zero. Cross-sectional entrepreneurship levels are used for 2020–2021, as consecutive household pairs required to construct year-over-year transition rates are unavailable due to COVID-19 panel attrition. Pre-transfer income is calculated as reported household per-capita income minus expected Bolsa Família payments based on family composition and program rules. All specifications include Survey Area fixed effects, state-year fixed effects, and demographic controls (male share, mean age, literacy rate, school attendance rate, and racial minority share) aggregated to the Survey Area-year level. Standard errors are clustered at the Survey Area level. Data: PNAD Contínua Annual Microdata (IBGE), 2013–2021. t-statistics in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 7: Impact of Cash Transfers on Business Survival & Growth

Dependent Variable:	$\mathbb{1}$\{Business Survival\}		$\mathbb{1}$\{Business Growth\}	
	(1)	(2)	(3)	(4)
Panel A: 1-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−0.567**	−0.693***	−0.179***	−0.202***
	(−2.25)	(−2.69)	(−4.96)	(−5.48)
Observations	2,246,740	2,103,518	2,195,389	2,067,359
Adjusted R^2	0.02	0.03	0.03	0.03
Mean Dependent Variable	81.255	81.294	1.671	1.138
Panel B: 2-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−2.336***	−2.615***	−0.318***	−0.345***
	(−8.79)	(−9.97)	(−7.40)	(−8.09)
Observations	2,246,740	2,103,518	2,195,389	2,067,359
Adjusted R^2	0.07	0.08	0.06	0.05
Mean Dependent Variable	68.467	69.401	2.604	1.761
Panel C: 3-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−4.981***	−5.303***	−0.256***	−0.277***
	(−18.96)	(−20.55)	(−3.99)	(−4.34)
Observations	2,246,740	2,103,518	2,195,389	2,067,359
Adjusted R^2	0.09	0.10	0.06	0.05
Mean Dependent Variable	56.289	57.065	4.618	3.219
Panel D: 5-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−7.082***	−7.295***	−0.309***	−0.327***
	(−27.58)	(−28.29)	(−3.51)	(−3.75)
Observations	1,316,732	1,217,363	1,277,309	1,189,929
Adjusted R^2	0.06	0.07	0.07	0.06
Mean Dependent Variable	45.690	45.119	6.661	5.037
Sample:	Full	Matched	Full	Matched
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓	✓

This table presents estimates of the effect of cash transfers on business survival and growth using both the full sample and a matched sample created through Coarsened Exact Matching (CEM). $\mathbb{1}$\{Cash-Transfer Entrepreneurs\} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). Dependent variables are indicator variables measured 1-year, 2-year, 3-year, and 5-year post-business-founding. $\mathbb{1}$\{Business Survival\} captures whether a firm remains active. $\mathbb{1}$\{Business Growth\} captures transitions from MEI (Individual Microentrepreneur) to larger tax regimes. The CEM procedure matches cash transfer and non-cash transfer entrepreneurs on education level, gender, salary category, founding year, 2-digit industry classification, and initial equity category to create a balanced sample of observationally similar firms. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Firm outcomes are tracked until the end of 2024. Data are from CNPJ, RAIS, and MDS. *t*-statistics shown in parentheses based on standard errors are clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 8: Impact of Cash Transfers on Employment Creation & Credit Access

Dependent Variable:	$\mathbb{1}$\{Employment Creation\}		$\mathbb{1}$\{Credit Access\}	
	(1)	(2)	(3)	(4)
Panel A: 1-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	-0.888^{***}	-0.845^{***}	-0.002^{***}	-0.002^{***}
	(−11.04)	(−10.62)	(−3.49)	(−3.52)
Observations	1,316,732	1,217,363	2,246,740	2,103,518
Adjusted R^2	0.04	0.05	0.01	0.06
Mean Dependent Variable	1.970	1.912	0.005	0.003
Panel B: 2-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	-1.193^{***}	-1.127^{***}	-0.005^{***}	-0.005^{***}
	(−10.85)	(−10.52)	(−4.73)	(−4.67)
Observations	990,848	907,131	2,246,740	2,103,518
Adjusted R^2	0.05	0.05	0.01	0.04
Mean Dependent Variable	2.698	2.622	0.010	0.008
Panel C: 3-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	-1.378^{***}	-1.302^{***}	-0.011^{***}	-0.011^{***}
	(−11.15)	(−10.96)	(−5.88)	(−5.87)
Observations	743,907	676,573	2,246,740	2,103,518
Adjusted R^2	0.05	0.06	0.01	0.02
Mean Dependent Variable	3.253	3.126	0.016	0.013
Panel D: 5-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	-1.599^{***}	-1.486^{***}	-0.015^{***}	-0.014^{***}
	(−9.12)	(−8.60)	(−4.16)	(−4.13)
Observations	334,741	302,782	1,316,732	1,217,363
Adjusted R^2	0.06	0.06	0.01	0.02
Mean Dependent Variable	4.156	3.836	0.029	0.022
Sample:	Full	Matched	Full	Matched
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓	✓

This table presents estimates of the effect of cash transfers on employment creation and credit access using both the full sample and a matched sample created through Coarsened Exact Matching (CEM). $\mathbb{1}$\{Cash-Transfer Entrepreneurs\} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). Dependent variables are indicator variables measured 1-year, 2-year, 3-year, and 5-year post-business-founding. $\mathbb{1}$\{Employment Creation\} indicates whether the firm employs any worker other than the owner. $\mathbb{1}$\{Credit Access\} indicates whether the firm received financing from the Brazilian Development Bank (BNDES) through its indirect automatic operations program (operações indiretas automáticas), which provides below-market-rate credit to small and medium enterprises through participating financial institutions. The CEM procedure matches cash transfer and non-cash transfer entrepreneurs on education level, gender, salary category, founding year, 2-digit industry classification, and initial equity category to create a balanced sample of observationally similar firms. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Firm outcomes are tracked until the end of 2024, except employment creation, which is tracked until the end of 2020 per data availability. Data are from CNPJ, RAIS, MDS, and BNDES. t-statistics shown in parentheses based on standard errors are clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 9: Impact of Cash Transfers on Entrepreneurial Tax Compliance

Dependent Variable:	$\mathbb{1}$\{Tax Violation\}		$\mathbb{1}$\{Active Debt Collection\}	
	(1)	(2)	(3)	(4)
Panel A: 2-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	2.272***	2.386***	0.078***	0.084***
	(18.30)	(18.38)	(2.74)	(2.73)
Observations	2,246,740	2,103,518	2,246,740	2,103,518
Adjusted R^2	0.11	0.12	0.02	0.02
Mean Dependent Variable	5.337	4.738	0.580	0.464
Panel B: 3-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	5.308***	5.445***	0.314***	0.328***
	(32.94)	(32.52)	(5.54)	(5.60)
Observations	2,246,740	2,103,518	2,246,740	2,103,518
Adjusted R^2	0.10	0.11	0.03	0.03
Mean Dependent Variable	11.268	11.014	2.579	2.379
Panel C: 5-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	6.111***	6.198***	1.453***	1.421***
	(28.20)	(28.62)	(10.12)	(9.31)
Observations	1,316,732	1,217,363	1,316,732	1,217,363
Adjusted R^2	0.10	0.10	0.06	0.07
Mean Dependent Variable	15.403	15.631	8.373	7.911
Sample:	Full	Matched	Full	Matched
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓	✓

This table presents estimates of the effect of cash transfers on entrepreneurial tax compliance using both the full sample and a matched sample created through Coarsened Exact Matching (CEM). $\mathbb{1}$\{Cash-Transfer Entrepreneurs\} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). Dependent variables are indicator variables measured 2-year, 3-year, and 5-year post-business-founding. Tax compliance violations are tracked starting from the second year of operation, as firms are typically flagged for violations only after 2+ years of operation. $\mathbb{1}$\{Tax Violation\} indicates whether the firm failed to file mandatory annual tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes). $\mathbb{1}$\{Active Debt Collection\} indicates whether the firm is subject to active collection proceedings by the federal government (Dívida Ativa da União), reflecting unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions. The CEM procedure matches cash transfer and non-cash transfer entrepreneurs on education level, gender, salary category, founding year, 2-digit industry classification, and initial equity category to create a balanced sample of observationally similar firms. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Tax compliance outcomes are tracked until the end of 2024. Data are from CNPJ, RAIS, MDS (Ministério do Desenvolvimento Social), and federal tax debt registry (PGFN) datasets. *t*-statistics shown in parentheses based on standard errors are clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 10: Coefficient Stability: Robustness to Selection on Unobservables

Horizon	$\mathbb{1}\{\text{Business Survival}\}$			$\mathbb{1}\{\text{Business Growth}\}$		
	$\hat{\beta}$	δ	$\hat{\beta}^*$	$\hat{\beta}$	δ	$\hat{\beta}^*$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Business Survival & Growth						
1 Year	−0.567	1.00	0.003	−0.179	−0.88	−0.382
2 Years	−2.336	3.11	−1.585	−0.318	−0.71	−0.767
3 Years	−4.980	21.19	−4.745	−0.256	−0.43	−0.846
5 Years	−7.082	33.94	−6.873	−0.309	−0.45	−0.991
Horizon	$\mathbb{1}\{\text{Employment Creation}\}$			$\mathbb{1}\{\text{Credit Access}\}$		
	$\hat{\beta}$	δ	$\hat{\beta}^*$	$\hat{\beta}$	δ	$\hat{\beta}^*$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel B: Employment Creation & Credit Access						
1 Year	−0.973	−10.99	−1.062	−0.002	−3.40	−0.003
2 Years	−1.302	−11.31	−1.417	−0.005	−4.20	−0.007
3 Years	−1.499	−11.74	−1.627	−0.011	−7.76	−0.012
5 Years	−1.723	−9.85	−1.898	−0.015	−4.30	−0.018
Horizon	$\mathbb{1}\{\text{Tax Violation}\}$			$\mathbb{1}\{\text{Active Debt Collection}\}$		
	$\hat{\beta}$	δ	$\hat{\beta}^*$	$\hat{\beta}$	δ	$\hat{\beta}^*$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel C: Tax Violation & Active Debt Collection						
2 Years	2.272	−1.91	3.464	0.078	−5.82	0.091
3 Years	5.308	−3.11	7.015	0.314	−2.66	0.432
5 Years	6.111	−3.74	7.745	1.453	−3.58	1.859

This table reports Oster (2019) coefficient stability diagnostics for each outcome and time horizon. $\hat{\beta}$ is the coefficient on $\mathbb{1}\{\text{Cash-Transfer Entrepreneur}\}$ from the full model including entrepreneur and industry × equity × year fixed effects, with standard errors clustered at the municipality level. δ is the ratio of selection on unobservables to observables required to drive $\hat{\beta}$ to zero ($R_{\max} = 1.3 \times R^2_{\text{full}}$; the restricted model includes industry × equity × year fixed effects only, excluding entrepreneur fixed effects). $|\delta| > 1$ means unobserved confounders would need to be more important than observed controls to overturn the result; $\delta < 0$ means selection would need to run counter to the direction controls move the coefficient, a stronger robustness condition. $\hat{\beta}^*$ is the bias-adjusted estimate assuming $\delta = 1$. Tax violation is unavailable at 1 year as MEI firms are only flagged for reporting failures from the second year of operation onward. Coefficients are in percentage points except for credit access (BNDES), which is reported in basis points.

Table 11: Heterogeneity by Purchasing Power: Municipal GDP per Capita

Dependent Variable:	$\mathbb{1}$\{Business Survival\}	$\mathbb{1}$\{Business Growth\}
	(1)	(2)
Panel A: Business Survival & Growth (5-Year)		
$\mathbb{1}$\{Cash-Transfer Entrepreneur\} × GDP per Capita	−0.782**	−0.353**
	(−2.31)	(−2.45)
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−4.436***	0.898*
	(−3.70)	(1.74)
Observations	1,316,687	1,277,265
Adjusted R^2	0.07	0.07
Mean Dependent Variable	45.689	6.662
Panel B: Employment Creation & Credit Access (5-Year)		
Dependent Variable:	$\mathbb{1}$\{Employment Creation\}	$\mathbb{1}$\{Credit Access\}
	(3)	(4)
$\mathbb{1}$\{Cash-Transfer Entrepreneur\} × GDP per Capita	0.687***	0.008*
	(2.64)	(1.65)
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−3.869***	−0.043**
	(−4.54)	(−2.49)
Observations	334,693	1,316,687
Adjusted R^2	0.06	0.01
Mean Dependent Variable	4.156	0.029
Panel C: Tax Compliance (5-Year)		
Dependent Variable:	$\mathbb{1}$\{Tax Violation\}	$\mathbb{1}$\{Active Debt Collection\}
	(5)	(6)
$\mathbb{1}$\{Cash-Transfer Entrepreneur\} × GDP per Capita	2.476***	0.697***
	(5.65)	(3.03)
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−2.239	−0.891
	(−1.62)	(−1.15)
Observations	1,316,687	1,316,687
Adjusted R^2	0.10	0.06
Mean Dependent Variable	15.404	8.374
Sample:	Full	Full
Entrepreneur FE (all characteristics jointly)	✓	✓
Industry × Equity × Year FE	✓	✓
Clustered SE (Municipality)	✓	✓

This table presents estimates of the heterogeneous effects of cash transfers on entrepreneurial outcomes by municipal GDP per capita. $\mathbb{1}$\{Cash-Transfer Entrepreneurs\} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). All outcome variables are measured five years post-business-founding. GDP per Capita is measured as the log of average annual GDP per capita of the municipality over the three years preceding firm founding, standardized to have mean zero and unit variance. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race, nationality, gender, education level, age at founding, occupation, salary type, salary category in constant 2024 R$, and an indicator for whether the individual was previously employed in a small firm. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Outcomes are tracked until the end of 2024, except employment creation, which is tracked until the end of 2020 per data availability. Data are from CNPJ, RAIS, MDS (Ministério do Desenvolvimento Social), BNDES, federal tax debt registry (PGFN), and IBGE. t-statistics shown in parentheses based on standard errors are clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 12: Performance Gaps by Bolsa Família Enrollment Duration at Founding

Dependent Variable:	𝟙{Business Survival}	𝟙{Business Growth}
	(1)	(2)
Panel A: Business Survival & Growth (5-Year)		
𝟙{BF Tenure ≤ 12 Months}	−6.771***	−0.205
	(−12.13)	(−0.98)
𝟙{BF Tenure 13–24 Months}	−7.495***	−0.144
	(−13.82)	(−0.84)
𝟙{BF Tenure > 24 Months}	−7.014***	−0.407***
	(−23.16)	(−3.24)
Observations	1,316,732	1,277,309
Adjusted R^2	0.06	0.07
Non-BF Mean	45.998	6.744
Panel B: Employment Creation & Credit Access (5-Year)		
Dependent Variable:	𝟙{Employment Creation}	𝟙{Credit Access}
	(3)	(4)
𝟙{BF Tenure ≤ 12 Months}	−1.394***	−0.015***
	(−4.13)	(−4.83)
𝟙{BF Tenure 13–24 Months}	−1.783***	−0.004
	(−7.60)	(−0.44)
𝟙{BF Tenure > 24 Months}	−1.852***	−0.019***
	(−6.33)	(−5.46)
Observations	334,741	1,316,732
Adjusted R^2	0.06	0.01
Non-BF Mean	4.654	0.030
Panel C: Tax Compliance (5-Year)		
Dependent Variable:	𝟙{Tax Violation}	𝟙{Active Debt Collection}
	(5)	(6)
𝟙{BF Tenure ≤ 12 Months}	4.604***	0.767***
	(11.20)	(2.77)
𝟙{BF Tenure 13–24 Months}	3.125***	0.883***
	(10.13)	(4.08)
𝟙{BF Tenure > 24 Months}	7.758***	1.892***
	(24.00)	(7.38)
Observations	1,316,732	1,316,732
Adjusted R^2	0.10	0.06
Non-BF Mean	15.085	8.319
Sample:	Full	Full
Entrepreneur FE (all characteristics jointly)	✓	✓
Industry × Equity × Year FE	✓	✓
Clustered SE (Municipality)	✓	✓

This table presents performance gaps by Bolsa Família enrollment duration at founding, measured five years post-business-founding. Each row is an indicator for one of three tenure categories—≤12 months, 13–24 months, and >24 months—with non-BF entrepreneurs as the omitted baseline. Duration is the number of months between first Bolsa Família payment and founding month, pre-determined at founding. All dependent variables are multiplied by 100 except 𝟙{Credit Access}. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race, nationality, gender, education level, age at founding, occupation, salary type, salary category in constant 2024 R$, and an indicator for whether the individual was previously employed in a small firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit CNAE, initial equity category, and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Outcomes are tracked until the end of 2024, except employment creation, which is tracked until the end of 2020 per data availability. Data are from CNPJ, RAIS, MDS (Ministério do Desenvolvimento Social), BNDES, federal tax debt registry (PGFN), and IBGE. *t*-statistics shown in parentheses based on standard errors clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 13: Post-Exit Pathways: Wage Employment, New Business, or Neither

	Transitions Post-Entrepreneurship		
Made the Transition Within:	6 Months (1)	12 Months (2)	24 Months (3)
Panel A: $\mathbb{1}$\{*Returned to Wage Employment*\}			
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	0.884**	1.076**	1.644***
	(2.31)	(2.46)	(2.72)
Observations	360,336	320,821	235,446
Adjusted R^2	0.02	0.03	0.05
Mean Dependent Variable	18.572	29.955	43.478
Panel B: $\mathbb{1}$\{*Started a New Business*\}			
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−0.199	−0.197	−0.655**
	(−1.63)	(−1.13)	(−2.57)
Observations	360,336	320,821	235,446
Adjusted R^2	0.00	0.00	0.00
Mean Dependent Variable	2.348	3.941	6.398
Panel C: $\mathbb{1}$\{*Residual (unemployed + out-of-labor-force + informal)*\}			
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−0.688*	−0.835*	−1.226*
	(−1.72)	(−1.87)	(−1.92)
Observations	360,336	320,821	235,446
Adjusted R^2	0.02	0.03	0.05
Mean Dependent Variable	79.482	67.303	53.165
Entrepreneur FE (all characteristics jointly)	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓

This table presents estimates of the post-exit pathways of entrepreneurs whose businesses closed, comparing those who received Bolsa Família (Cash-Transfer) benefits before founding with other entrepreneurs. The sample consists of failed founders—individuals whose sole proprietorship is no longer active in the CNPJ registry—with one observation per individual (their most recent closure); the closure date is taken from the CNPJ registration-status date. Within 6, 12, and 24 months after closure, we construct indicators for three post-exit pathways. $\mathbb{1}$\{Returned to Wage Employment\} (Panel A) equals 100 if the individual began a formal wage job (observed in RAIS) within k months of closure. $\mathbb{1}$\{Started a New Business\} (Panel B) equals 100 if the individual founded a different firm (a distinct basic CNPJ) within k months of closure, identified from the universe of CNPJ founders. $\mathbb{1}$\{Residual\} (Panel C) equals 100 if the individual did neither—i.e., is observed neither in formal wage employment nor as the founder of a new formal firm; this complement captures unemployment, exit from the labor force, and informal activity, in the spirit of the "residual sector" of Dix-Carneiro (2014). Because re-employment is observed in RAIS only through December 2020, each founder is required to have at least k months of observable post-closure window before that date, so the three panels are scored on an identical set of founders within each horizon (the columns are near-exhaustive, summing to approximately 100 net of the small share counted in both Panels A and B). Each cell reports the coefficient on $\mathbb{1}$\{Cash-Transfer Entrepreneur\}—those enrolled in Bolsa Família when founding their (now-closed) business or recent program graduates (within 12 months)—with the mean of the dependent variable reported below; all dependent variables are multiplied by 100. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Standard errors are clustered at the municipality level. t-statistics shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Data are from CNPJ, RAIS, and MDS.

Table 14: Employment Trajectories of Cash-Transfer Entrepreneurs Post-Entrepreneurship

Panel A: Occupation and Employer Size			
Dependent Variable:	$\mathbb{1}$\{White Collar\}	$\mathbb{1}$\{Manager\}	$\mathbb{1}$\{Small Firm\}
	(1)	(2)	(3)
$\mathbb{1}$\{Post-Entrepreneurship\}	−0.990**	−0.333**	−0.039
	(−2.49)	(−2.41)	(−0.08)
Pre-Entrepreneurship Mean	33.811	1.922	35.953
Post-Entrepreneurship Mean	32.820	1.589	35.913
Observations	20,396	20,396	20,438
Adjusted R^2	0.54	0.31	0.35
Panel B: Compensation			
Dependent Variable:	Monthly Salary	Salary per Hour	$\mathbb{1}$\{Stable Pay\}
	(4)	(5)	(6)
$\mathbb{1}$\{Post-Entrepreneurship\}	−39.356***	−0.876***	−0.303
	(−16.46)	(−6.66)	(−0.96)
Pre-Entrepreneurship Mean	513.217	12.946	93.179
Post-Entrepreneurship Mean	473.862	12.070	92.876
Observations	20,414	20,326	20,438
Adjusted R^2	0.41	0.37	0.35
Individual FE	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓

This table presents within-individual estimates of employment transitions before and after entrepreneurship for Bolsa Família recipients. The sample includes entrepreneurs who transitioned to employment within 12 months of firm closure and is structured as a panel with two observations per individual: one for their pre-entrepreneurship employment and one for their post-entrepreneurship employment. The unit of observation is individual-period. All regressions include individual fixed effects, capturing pure within-person changes, and Industry × Equity × Year fixed effects. *White Collar* indicates employment in management, professional, technical, or administrative positions (categories 1-4). *Manager* specifically identifies senior officials and business managers (occupation category 1). *Small Firm* indicates employment at firms registered under the SIMPLES regime. *Stable Pay* indicates monthly or biweekly payment schedules (versus weekly, daily, hourly, or task-based). Monthly and hourly salaries are inflation-adjusted to 2024 Brazilian Reais and winsorized at the 1st and 99th percentiles. The sample covers Bolsa Família recipients who founded firms between 2014-2019, experienced firm closure, and subsequently transitioned to employment, tracked through 2024. Standard errors are clustered at the municipality level. Data sources: CNPJ (firm registrations), RAIS (employment records), and MDS (Bolsa Família records). *t*-statistics in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 15: Differential Employment Transitions: Cash-Transfer versus Other Entrepreneurs

Panel A: Occupation and Employer Size			
Dependent Variable:	$\mathbb{1}\{$White Collar$\}$	$\mathbb{1}\{$Manager$\}$	$\mathbb{1}\{$Small Firm$\}$
	(1)	(2)	(3)
$\mathbb{1}\{$Cash-Transfer Entrepreneur$\} \times \mathbb{1}\{$Post$\}$	0.009	−0.182	-1.122^{**}
	(0.02)	(−1.02)	(−2.20)
$\mathbb{1}\{$Post-Entrepreneurship$\}$	-0.999^{***}	−0.152	1.082^{***}
	(−11.82)	(−1.45)	(6.65)
Pre-Entrepreneurship Mean	46.930	4.655	31.613
Post-Entrepreneurship Mean	45.931	4.496	32.652
Observations	520,190	520,190	523,164
Adjusted R^2	0.63	0.38	0.38
Panel B: Compensation			
Dependent Variable:	Monthly Salary	Salary per Hour	$\mathbb{1}\{$Stable Pay$\}$
	(4)	(5)	(6)
$\mathbb{1}\{$Cash-Transfer Entrepreneur$\} \times \mathbb{1}\{$Post$\}$	77.520^{***}	1.879^{***}	-0.870^{***}
	(23.11)	(16.04)	(−2.75)
$\mathbb{1}\{$Post-Entrepreneurship$\}$	-126.022^{***}	-2.755^{***}	0.528^{***}
	(−34.65)	(−36.64)	(6.15)
Pre-Entrepreneurship Mean	850.166	20.905	92.045
Post-Entrepreneurship Mean	727.175	18.223	92.538
Observations	522,014	517,218	523,164
Adjusted R^2	0.65	0.61	0.35
Individual FE	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓

This table presents difference-in-differences estimates of employment transitions before and after entrepreneurship, comparing Bolsa Família recipients to non-recipients. The sample includes all entrepreneurs who transitioned to employment within 12 months of firm closure, structured as a panel with two observations per individual: pre-entrepreneurship and post-entrepreneurship employment. The unit of observation is individual-period. All regressions include individual fixed effects, controlling for time-invariant differences between cash-transfer and non-cash-transfer entrepreneurs, and Industry × Equity × Year fixed effects. The interaction term (Cash-Transfer Entrepreneur × Post) captures the differential transition for cash-transfer recipients—whether their pre-to-post change differs from that of non-recipients. The coefficient on Post-Entrepreneurship captures the average employment transition for non-cash-transfer entrepreneurs. *White Collar* indicates employment in management, professional, technical, or administrative positions (categories 1-4). *Manager* specifically identifies senior officials and business managers (occupation category 1). *Small Firm* indicates employment at firms registered under the SIMPLES regime. *Stable Pay* indicates monthly or biweekly payment schedules (versus weekly, daily, hourly, or task-based). Monthly and hourly salaries are inflation-adjusted to 2024 Brazilian Reais and winsorized at the 1st and 99th percentiles. The sample covers entrepreneurs who founded firms between 2014-2019, experienced firm closure, and subsequently transitioned to employment, tracked through 2024. Standard errors are clustered at the municipality level. Data sources: CNPJ (firm registrations), RAIS (employment records), and MDS (Bolsa Família records). *t*-statistics in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Internet Appendix to

"Entrepreneurship on a Safety Net: Evidence from the World's Largest Cash Transfer Program"

Murillo Campello

University of Florida & NBER

Guilherme Junqueira

University of Florida

Spyridon Lagaras

University of Illinois at Urbana Champaign

IA1 Data Appendix: PNAD Contínua Survey Design

IA1.1 Survey Overview and Microdata Structure

PNAD Contínua (Pesquisa Nacional por Amostra de Domicílios Contínua) is Brazil's primary labor force survey, conducted quarterly by IBGE (Instituto Brasileiro de Geografia e Estatística), the Brazilian Census Bureau. PNAD Contínua implements a rotating panel design in which each sampled household is interviewed five times over approximately 15 months at three-month intervals.

IBGE releases two types of microdata: *quarterly files* containing core questionnaire responses from all visits, and *annual files* that consolidate households' interviews across all five visits of the year and include supplementary modules administered during specific visits. Our analysis uses the annual microdata because they contain detailed information on Bolsa Família program participation and entrepreneurship characteristics. The annual files include three relevant supplements: the "Income from Other Sources" supplement (collected at Visit 1) records government cash transfer receipt and amounts; the "Additional Labor Market Characteristics" supplement (Visit 1) provides entrepreneurship details including formal registration, partnership structure, and physical establishment; and the "General Household Characteristics" supplement (Visit 5) provides education and literacy variables used as controls.

IA1.2 Sample Design and Geographic Coverage

PNAD Contínua employs a stratified three-stage cluster sampling design:

- **Stage 1—Primary Sampling Units (UPAs)**: UPAs (Unidades Primárias de Amostragem) consist of one or more contiguous census tracts (setores censitários) from the 2010 Brazilian Census. Each UPA contains approximately 60–70 households in urban areas and 30–40 households in rural areas. Approximately 16,000 UPAs are active nationally each year during 2013–2021.
- **Stage 2—Household Selection**: Within each UPA, IBGE systematically samples 14 households for the rotating panel (18 in some large metropolitan areas). These 14 households constitute the Survey Area used in our instrumental variables analysis. Sampled households remain in the rotating panel for five consecutive quarters unless they refuse participation or move.
- **Stage 3—Respondent Selection**: Within each household, the survey collects information on all resident household members. Labor force questions are asked of all individuals aged 14 or older; social program questions cover all household members.

The sample provides national coverage of all 27 Brazilian states (26 states plus the Federal District) and produces representative estimates at the state level and for major metropolitan areas.

IA1.3 Key Variable Definitions

Pre-Transfer Income We calculate pre-transfer per-capita income by subtracting expected Bolsa Família payments from reported income. Expected payments use year-specific program rules (Tables IA1 and IA2) and observed family composition: basic benefit (below extreme poverty threshold) plus variable benefits per child aged 0–15 (maximum 5) and per adolescent aged 16–17 (maximum 2).

Entrepreneurship We classify households as *entrepreneur households* if any member reports being self-employed or an employer (variable `v4012`). *Formal entrepreneurs* possess CNPJ business registration (`v4019`=1); *informal entrepreneurs* lack CNPJ. We classify businesses by partnership structure (`v4017`) and whether they operate from a physical location (`v4020`).

Entrepreneurial Transitions We link households across consecutive years using stable identifiers (UPA, household number, dwelling number) and construct indicators for entry (from non-employment or employment) and exit (to employment or non-employment).

IA1.4 Sample Construction and Period Coverage

We use annual microdata for 2013–2021. We exclude 2012 due to incomplete geographic coverage in PNAD Contínua's inaugural year, and years after 2021 because IBGE discontinued the detailed entrepreneurship supplement. Our primary analysis uses 2013–2019, when Bolsa Família's two-tier benefit structure operated consistently. We separately analyze 2020–2021 as a placebo test during the Auxílio Emergencial period, when IBGE conducted telephone interviews due to COVID-19 but maintained the survey's sampling design and questionnaire.

We process the microdata by: (1) creating household identifiers; (2) generating entrepreneurship and income variables at the individual level; (3) aggregating to household-year level (some households contribute observations from both Visit 1 and Visit 5); and (4) calculating expected Bolsa Família payments using year-specific program rules. For IV analysis, we further aggregate to Survey Area-year level, calculating shares of beneficiary households, entrepreneurs, households below program thresholds, and demographic controls (male share, mean age, literacy rate, school attendance rate, racial minority share).

Our 2013–2019 household-level sample includes 1.64 million households across 26,096 Survey Areas. Aggregating to Survey Area-year level yields 102,915 observations. The instrumental variables regression sample includes 66,374 Survey Area-year observations across 19,676 Survey Areas, after excluding Survey Areas with missing data on program participation or control variables and Survey Areas observed in only one year (which provide no within-unit variation for fixed effects estimation). Survey Areas in the regression sample are observed for an average of 4.9 years during 2013–2019.

IA2 Additional Performance Heterogeneity Analyses

This appendix examines additional dimensions of heterogeneity in cash-transfer entrepreneur performance. We first analyze how effects vary with entrepreneur demographics, finding that racial minorities show relative resilience while female entrepreneurs face compounded challenges. We then examine industry heterogeneity, documenting that performance gaps persist across sectors but narrow in industries with tangible outputs.

IA2.1 Heterogeneity by Entrepreneur Demographics

Beyond the mechanisms examined in the main text, we examine how cash transfer effects vary with entrepreneur characteristics that may influence business management capabilities, access to resources, or risk tolerance. Following the same approach as in our purchasing power analysis, we estimate Equation (6) replacing municipal GDP with interactions between the cash-transfer entrepreneur indicator and key demographic variables: low education (up to 5th grade complete), young (under 25), female, racial minority status, blue-collar occupation background, prior employment at small firms, and variable salary experience.

Figure IA6 presents non-parametric evidence of demographic differences in entrepreneurial performance. Panels A and B show cumulative probabilities of tax violations for white and racial minority entrepreneurs respectively, revealing that among white entrepreneurs, cash-transfer recipients exhibit substantially higher tax violation rates across all time horizons. However, among racial minority entrepreneurs, the gap between cash-transfer and other entrepreneurs is considerably smaller, with convergence occurring by year 7. Panels C and D show similar patterns for active debt collection, with disadvantages being more pronounced among white entrepreneurs than racial minorities. These estimates suggest that demographic characteristics may moderate the effects of cash transfer entrepreneurship.

Table IA17 presents the regression estimates with demographic interactions, focusing on five-year outcomes. The baseline coefficient represents the effect for the omitted category (high education, older, male, white, white-collar occupation, large firm experience, and fixed salary workers), while interaction terms show differential effects for other demographic groups. Results in Column (1) show that the baseline five-year survival disadvantage is 8.7% (-4.0 percentage points relative to a mean of 45.7%). This disadvantage is amplified among entrepreneurs with low education (additional -1.0 percentage points) and female entrepreneurs (additional -1.9 percentage points), but attenuated for young entrepreneurs (+2.5 percentage points) and racial minorities (+1.4 percentage points). Cash-transfer entrepreneurs who previously worked at small firms face severe survival challenges (additional -2.5 percentage points).

Results under Column (2) reveal modest effects on business growth, with entrepreneurs with variable salary backgrounds showing 16.8% better growth outcomes (+1.1 percentage points relative to the mean of 6.7%). Other demographic interactions show statistically insignificant effects. Column (3) indicates that the baseline employment disadvantage of 63% (−2.6 percentage points relative to a mean of 4.2%) is partially offset for racial minorities (+1.0 percentage points) and entrepreneurs with blue-collar backgrounds (+0.8 percentage points), suggesting that working-class networks may facilitate job creation. Column (4) shows that female cash-transfer entrepreneurs experience 48% better credit access (+0.014 percentage points), and racial minorities show 76% better access (+0.022 percentage points), though absolute rates remain extremely low. Columns (5) and (6) reveal that tax compliance and debt collection patterns vary substantially by demographics. Female entrepreneurs face particularly severe tax compliance challenges (additional +2.3 percentage points in violations) and higher debt collection rates (+0.9 percentage points), while racial minorities show 15.2% better tax compliance (−2.3 percentage points) and lower debt collection rates (−0.6 percentage points).

These patterns reveal important heterogeneity in who succeeds among cash-transfer entrepreneurs. Young entrepreneurs and racial minorities show relative resilience in survival and compliance outcomes, consistent with evidence that racial minority entrepreneurs rely more heavily on co-ethnic networks, enclave demand, and own-group socialization channels (Kerr and Mandorff 2025; Yimfor et al. 2024; Fairlie et al. 2022; Borjas and Bronars 1989), which appear to buffer disadvantages faced by cash-transfer recipients.[19] In contrast, female entrepreneurs face compounded challenges to sustain business survival and tax compliance, aligning with findings that women entrepreneurs face disadvantaged networks and and peer learning opportunities (Kerr et al. 2018; Wallskog 2025).[20]

IA2.2 Heterogeneity by Industry

Finally, we examine whether performance gaps vary across industry sectors, reflecting differences in capital requirements, skill demands, and market dynamics. Using the same specification as Equation (6), we replace municipal GDP with interactions between the cash-transfer entrepreneur indicator and five major industry categories: construction, manufacturing, services (the baseline), trade, and transportation. Industry classifications follow Dix-Carneiro (2014) and are mapped based on four-digit CNAE codes.

Figure IA7 presents non-parametric evidence of tax compliance patterns across different industries. The figure reveals that cash-transfer entrepreneurs exhibit consistently higher tax violation

[19] Kerr and Mandorff (2025) show that social interactions within ethnic groups—including family gatherings, religious and cultural functions, and informal advice sharing—facilitate the acquisition of sector-specific skills and generate entrepreneurial specialization. These networks provide access to industry knowledge, supplier and customer relationships, and advice on navigating regulatory requirements, creating comparative advantages for ethnic entrepreneurship.

[20] Wallskog (2025) finds that knowledge spillovers occur primarily within demographic groups: women learn entrepreneurship primarily from their rare female entrepreneurial coworkers, while men benefit from more abundant male role models.

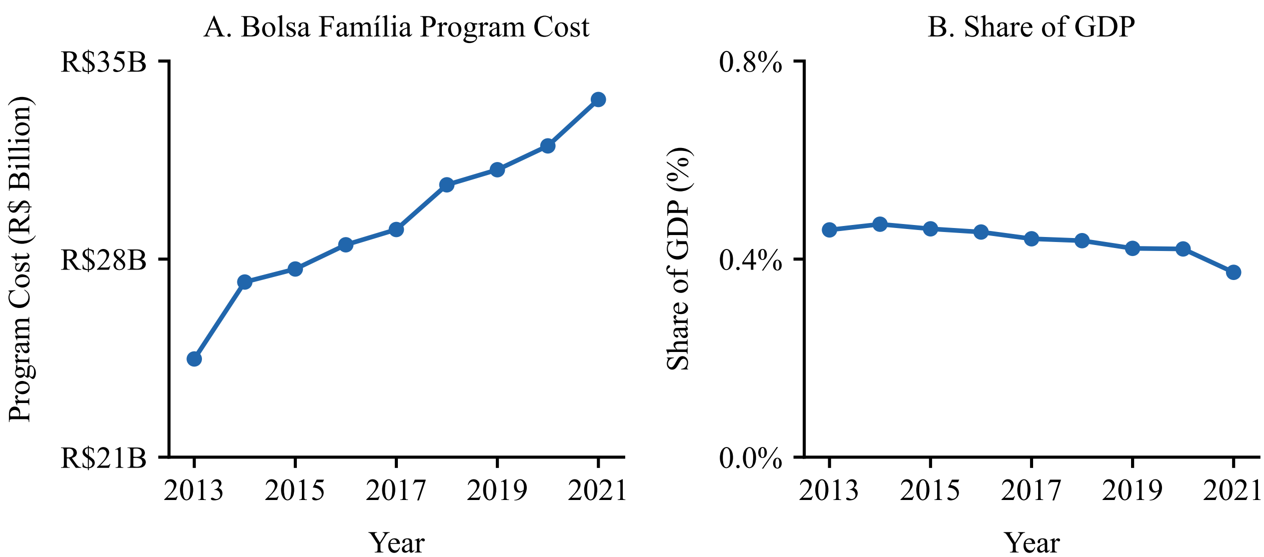
rates than other entrepreneurs across all five major industry sectors. Panel C shows that the services sector experiences particularly large compliance gaps, with cash-transfer entrepreneurs reaching 47% violation rates by year 10 compared to 23% for other entrepreneurs. Notably, Panel E shows that in transportation, the compliance gap narrows considerably after year 7, with both groups converging toward similar violation rates. While the magnitude of compliance gaps varies across industries, the persistent disadvantages in all sectors suggest that the challenges facing cash-transfer entrepreneurs represent systematic difficulties in business management rather than industry-specific factors.

Table IA18 presents the regression estimates with industry interactions. The baseline coefficient represents service sector outcomes, while interaction terms capture differential effects in other industries. Results under Column (1) show that service sector cash-transfer entrepreneurs face 18.7% lower survival rates (−8.5 percentage points relative to a mean of 45.7%). However, these disadvantages are partially offset in trade (+2.6 percentage points), transportation (+4.2 percentage points), and manufacturing sectors. Column (2) reveals similar patterns for business growth, with the services sector disadvantage of 13.3% (−0.9 percentage points relative to a mean of 6.7%) being offset in construction (+1.4 percentage points), manufacturing (+0.8 percentage points), and trade (+1.0 percentage points). These positive interaction terms suggest that cash-transfer entrepreneurs may be better able to scale their firms in sectors requiring physical products or tangible outputs rather than knowledge-intensive services.

Results under Column (3) show that the baseline services sector employment disadvantage of 30.7% (−1.3 percentage points relative to a mean of 4.2%) is amplified in the trade sector (additional −0.8 percentage points). Column (4) reveals that manufacturing entrepreneurs face particularly severe credit constraints. Column (5) shows that tax compliance patterns reveal substantial industry variation, with the services sector disadvantage of 47.9% (+7.4 percentage points relative to a mean of 15.4%) being significantly attenuated in transportation (−7.6 percentage points, eliminating the entire gap), trade (−1.7 percentage points), and manufacturing (−1.6 percentage points). The dramatically better compliance in transportation may reflect industry-specific reporting requirements or greater formalization pressures. Column (6) shows that the baseline services sector debt collection disadvantage of 20.1% (+1.7 percentage points relative to a mean of 8.4%) persists across most industries, with interaction terms being statistically insignificant. This pattern suggests that while tax filing compliance varies by industry, the fundamental financial stress that leads to debt collection is more universal across sectors.

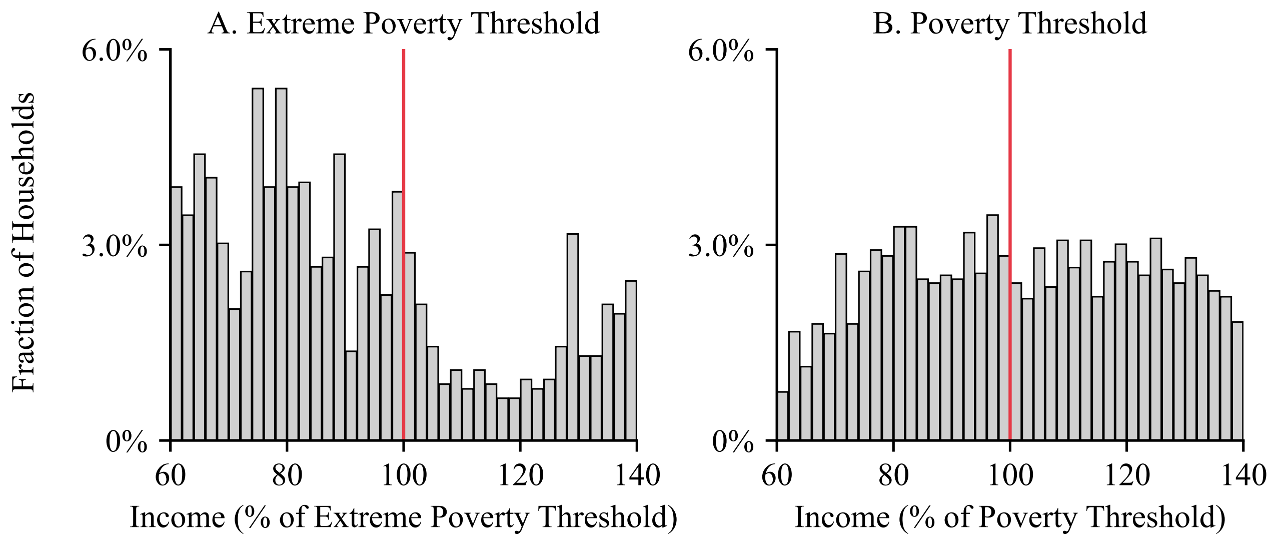
These industry-specific patterns reinforce our interpretation that cash-transfer entrepreneurs show performance gaps that transcend industry boundaries, even as the magnitude of specific challenges varies by sector. Cash-transfer entrepreneurs appear to face smaller gaps in industries with tangible outputs (trade, manufacturing, construction, transportation) compared to knowledge-intensive services. This pattern is consistent with recent evidence that tangible assets help overcome credit rationing for entrepreneurs who are harder to evaluate on human capital dimensions (Jensen et al. (2022)).

Figure IA1: Fiscal Impact of Bolsa Familia



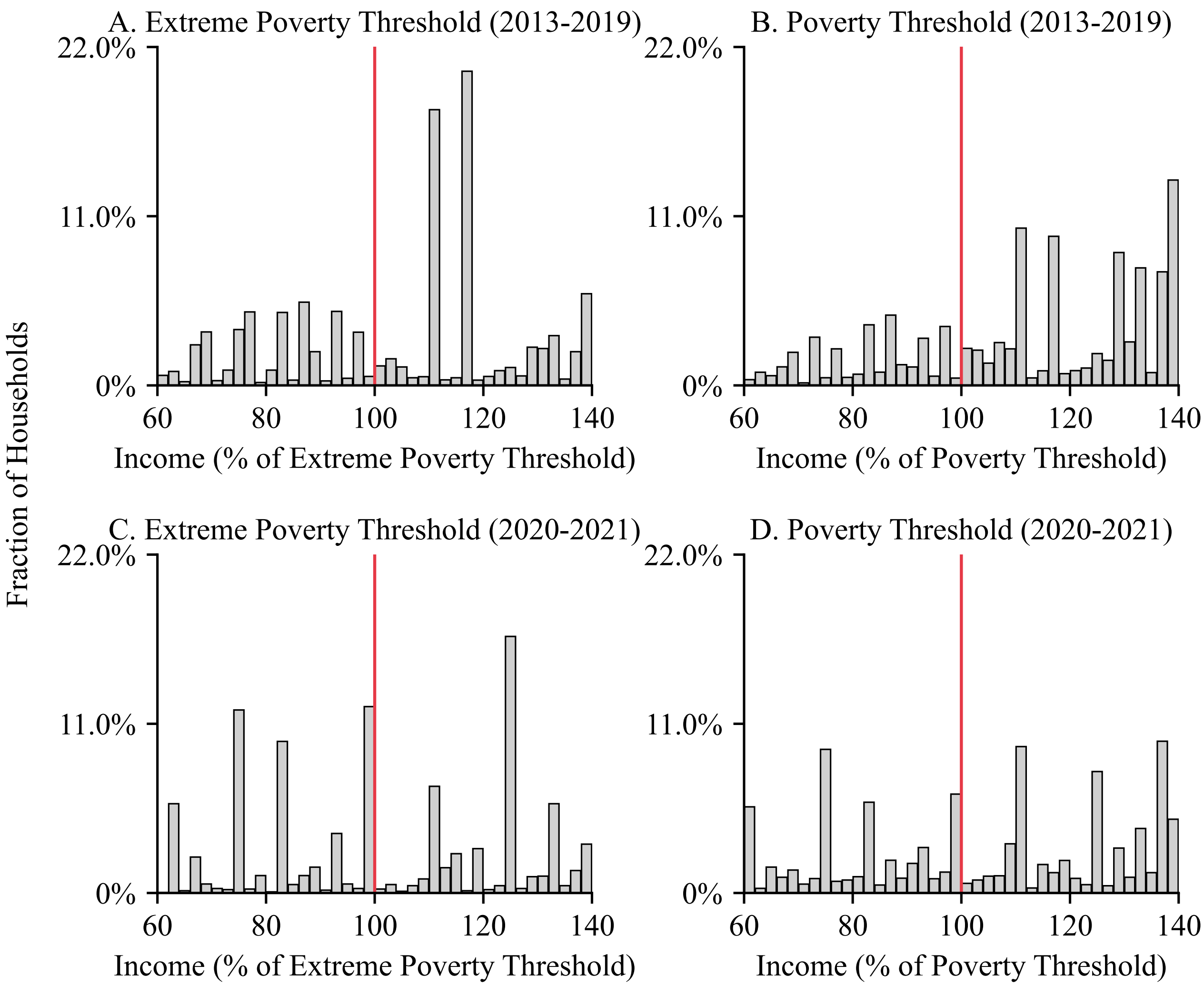
This figure shows the fiscal impact of Brazil's Bolsa Família program from 2013 to 2021. Panel A plots the total annual program cost in billions of Brazilian Reais. Panel B shows program cost as a percentage of the Brazilian GDP in nominal terms. GDP data are from the Brazilian Ministry of Finance and IBGE.

Figure IA2: Income Distribution at Eligibility Thresholds: Bolsa Família Beneficiaries (2020–2021)



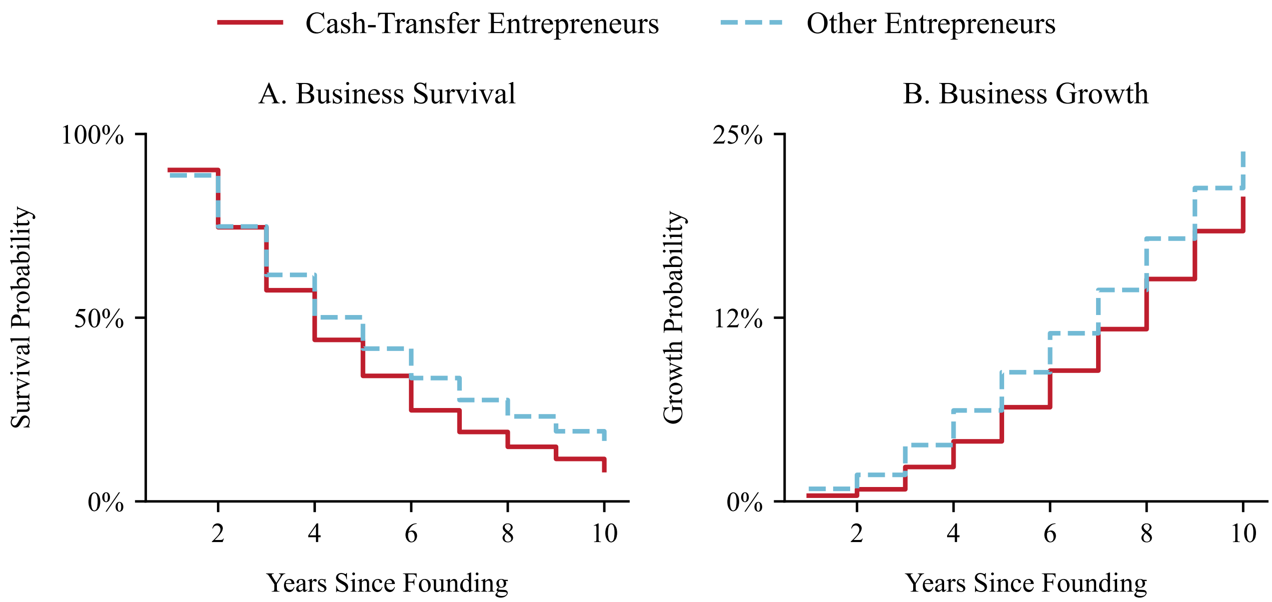
This figure displays the distribution of pre-transfer household per-capita income relative to Bolsa Família eligibility thresholds for program beneficiaries during 2020–2021. During this period, the Auxílio Emergencial program temporarily replaced Bolsa Família benefits with substantially higher transfer floors (up to R$400 monthly). Pre-transfer income is calculated by subtracting expected Bolsa Família payments from reported income. Income is normalized such that 100 corresponds to the year-specific threshold. Panel A shows the distribution relative to the extreme poverty threshold, which determines basic benefit eligibility. Panel B shows the distribution relative to the poverty threshold, which determines eligibility for variable benefits tied to family composition. The vertical red line marks the respective eligibility threshold. Data are from PNAD Contínua Annual Microdata (IBGE).

Figure IA3: Income Distribution at Eligibility Thresholds: Non-Beneficiaries



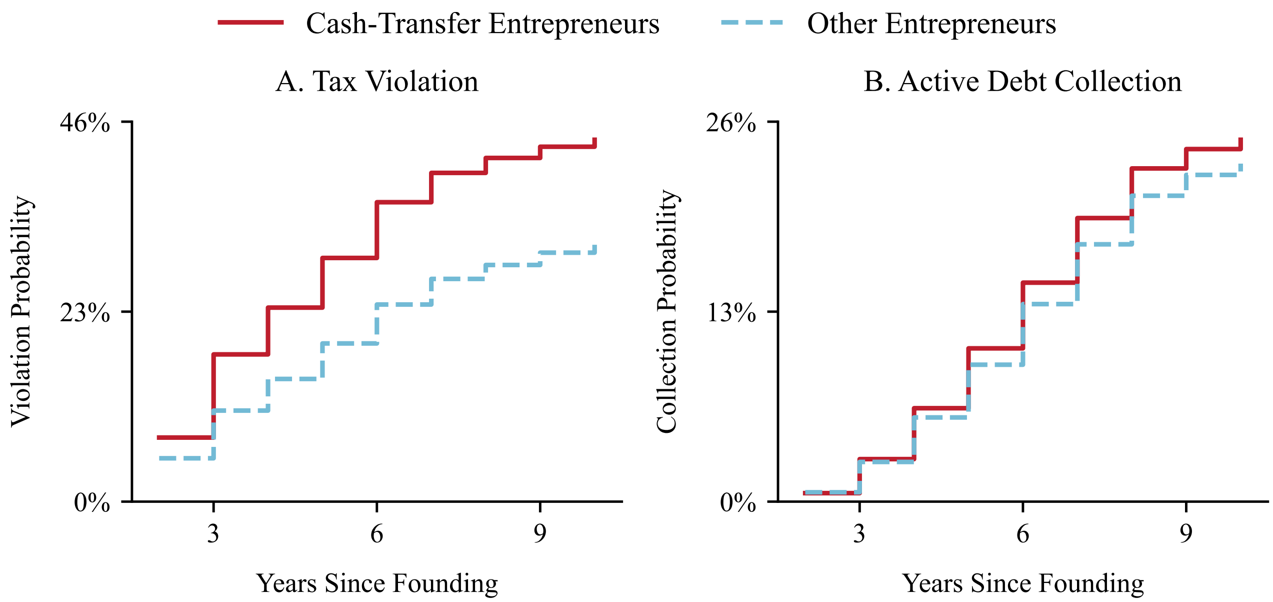
This figure displays the distribution of household per-capita income relative to Bolsa Família eligibility thresholds for households not receiving program benefits. Non-beneficiary households use raw reported income. Income is normalized such that 100 corresponds to the year-specific threshold. Panels A and C show the distribution relative to the extreme poverty threshold for 2013–2019 and 2020–2021, respectively. Panels B and D show the distribution relative to the poverty threshold for 2013–2019 and 2020–2021, respectively. The vertical red line marks the respective eligibility threshold. Data are from PNAD Contínua Annual Microdata (IBGE).

Figure IA4: Non-Parametric Estimates — Business Survival & Growth



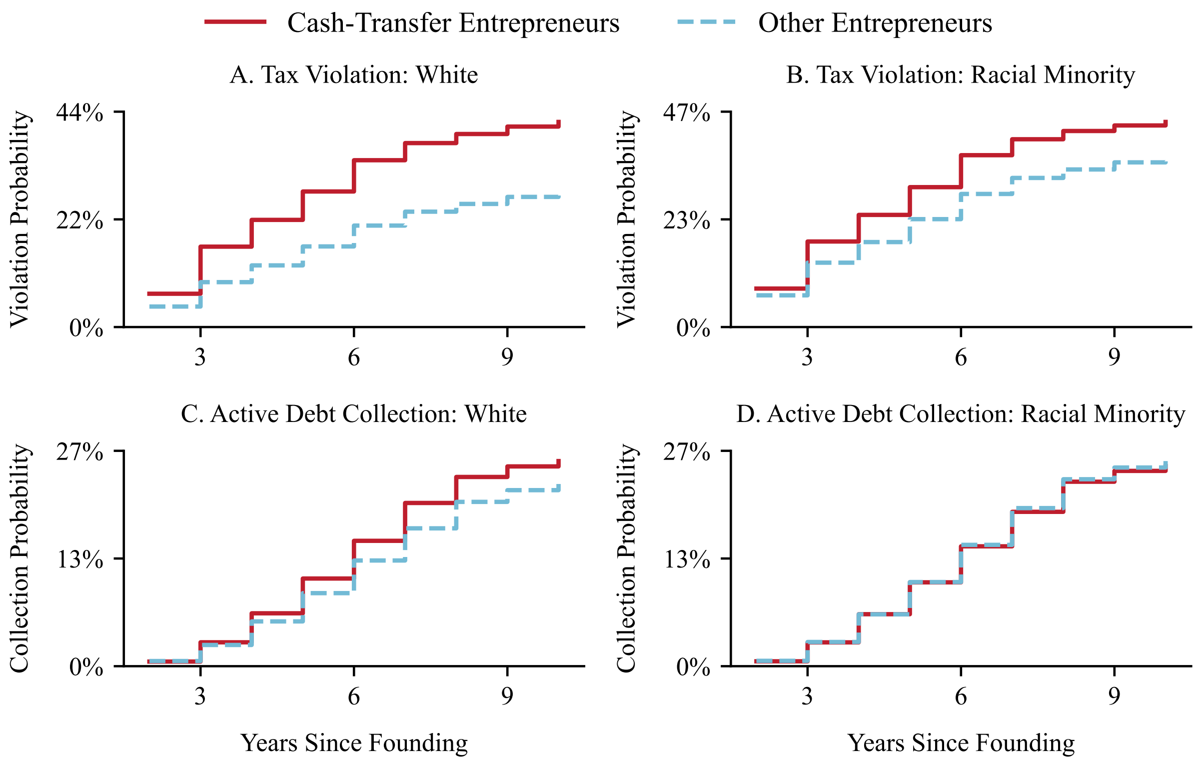
This figure presents Kaplan-Meier estimates comparing cash-transfer entrepreneurs and other entrepreneurs. Panel A shows business survival probabilities. Panel B shows cumulative probabilities of business growth, defined as transitions from Individual Microentrepreneur (MEI) status to larger business forms. Cash-transfer entrepreneurs are those enrolled in Bolsa Família when starting their business or recent program graduates. The sample includes 2.3 million sole-proprietorship firms founded 2014–2021 by individuals with recent employment experience. Data are from CNPJ, RAIS, and MDS.

Figure IA5: Non-Parametric Estimates — Tax Compliance & Debt Collection



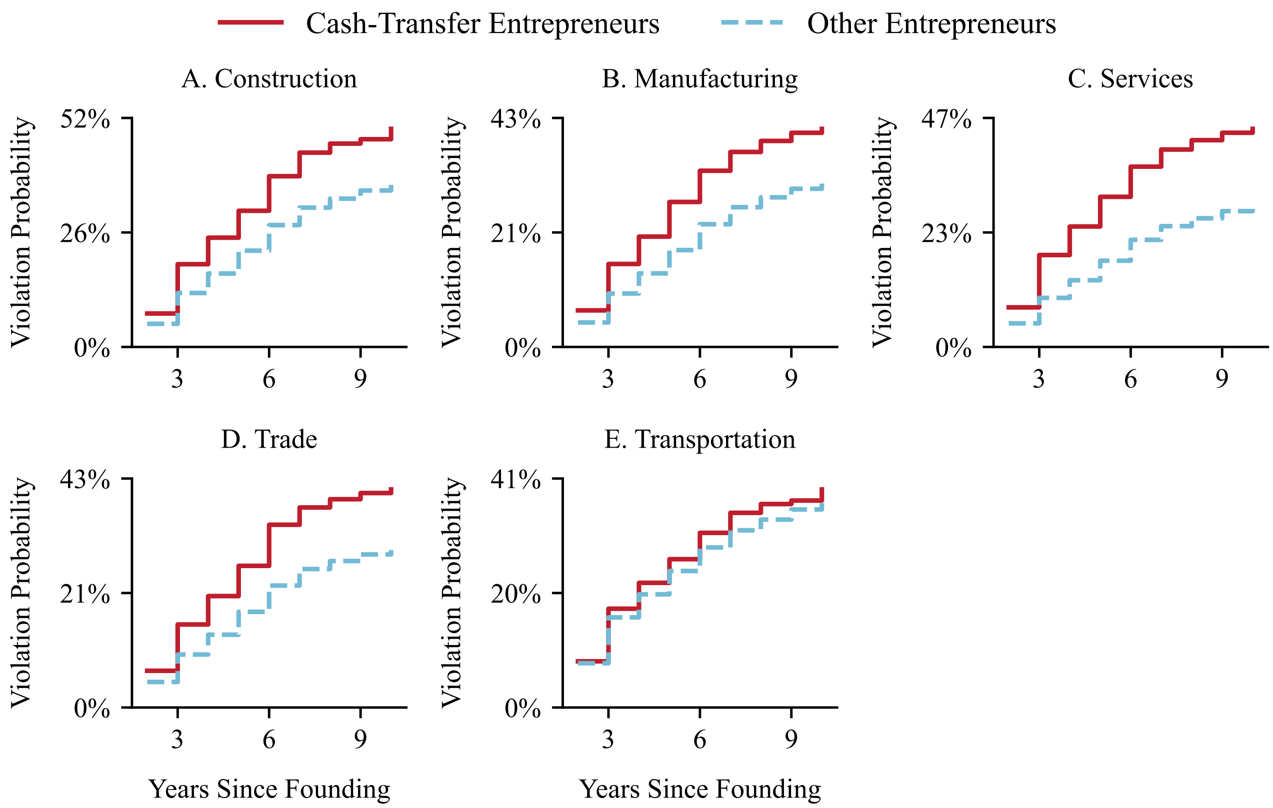
This figure presents Kaplan-Meier estimates comparing cash-transfer entrepreneurs and other entrepreneurs. Panel A shows cumulative probabilities of tax filing violations, defined as failure to file mandatory annual tax declarations. Panel B shows cumulative probabilities of active debt collection, indicating whether firms are subject to active collection proceedings by the federal government for unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions. Cash-transfer entrepreneurs are those enrolled in Bolsa Família when starting their business or recent program graduates. The sample includes 2.3 million sole-proprietorship firms founded 2014–2021 by individuals with recent employment experience. Data are from Brazil's CNPJ, RAIS, MDS, and PGFN.

Figure IA6: Non-Parametric Estimates by Entrepreneur's Race — Tax Compliance and Debt Collection



This figure presents Kaplan-Meier estimates comparing cash-transfer entrepreneurs and other entrepreneurs, stratified by racial background. Panels A and B show cumulative probabilities of tax filing violations, defined as failure to file mandatory annual tax declarations, for white and racial minority entrepreneurs respectively. Panels C and D show cumulative probabilities of active debt collection, indicating whether firms are subject to active collection proceedings by the federal government for unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions, for white and racial minority entrepreneurs respectively. Racial minority includes brown/mixed, black, Asian, and indigenous entrepreneurs. Cash-transfer entrepreneurs are those enrolled in Bolsa Família when starting their business or recent program graduates. The sample includes 2.3 million sole-proprietorship firms founded 2014–2021 by individuals with recent employment experience. Data are from Brazil's CNPJ, RAIS, MDS, and PGFN.

Figure IA7: Non-Parametric Estimates by Industry Sector — Tax Violation



This figure presents Kaplan-Meier estimates comparing cash-transfer entrepreneurs and other entrepreneurs. Each panel shows cumulative probabilities of tax violations, defined as failure to file mandatory annual tax declarations, for different industry sectors. Industry classifications follow Dix-Carneiro (2014) and are mapped based on four-digit CNAE codes. Cash-transfer entrepreneurs are those enrolled in Bolsa Família when starting their business or recent program graduates. The sample includes 2.3 million sole proprietorship firms founded 2014–2021 by individuals with recent employment experience. Data are from Brazil's CNPJ, RAIS, MDS, and PGFN.

Table IA1: Timeline of Bolsa Família Income Per Capita Eligibility Cutoffs

Year	**Extreme Poverty (R$ per capita)**	**Poverty (R$ per capita)**	**Policy Event**
2004	Up to R$ 50	R$ 50–100	Program creation (Law 10.836, Decree 5.209)
2006	Up to R$ 60	R$ 60–120	First adjustment
2011	Up to R$ 70	R$ 70–140	Brasil Sem Miséria (Decree 7.492)
2014	Up to R$ 77	R$ 77–154	Decree 8.232 (June 1)
2016	Up to R$ 85	R$ 85–170	Decree 8.794 (July 1)
2018	Up to R$ 89	R$ 89–178	Decree 9.396 (July 1)
2021	Up to R$ 100	R$ 100–200	Auxílio Brasil (Decree 10.851; November)
2022	Up to R$ 105	R$ 105–210	Auxílio Brasil (Law 14.284)
2023	Single criterion: up to R$ 218		Return to Bolsa Família (Law 14.601; March)

This table provides a timeline of income per capita eligibility cutoffs for the Bolsa Família program and its successor Auxílio Brasil. The program was created in 2004 to provide cash transfers to families in poverty and extreme poverty. Cutoffs were periodically adjusted to account for inflation. In November 2021, the program was replaced by Auxílio Brasil, which continued until March 2023 when Bolsa Família returned with a unified eligibility criterion of R$ 218 per capita, eliminating the distinction between extreme poverty and poverty categories.

Table IA2: Timeline of Bolsa Família Benefit Payment Amounts

Year	Basic Benefit (Extreme Poverty)	Variable Benefit (per child 0–15)	Adolescent Benefit (16–17)	Policy Event
2004	R$ 50	R$ 15 (max 5)	—	Program creation (Law 10.836)
2007	R$ 58	R$ 18 (max 5)	R$ 30 (max 2)	Creation of BVJ (July)
2011	R$ 70	R$ 32 (max 5)	R$ 38 (max 2)	Brasil Sem Miséria (Decree 7.492)
2014	R$ 77	R$ 35 (max 5)	R$ 42 (max 2)	Decree 8.232 (June 1)
2016	R$ 85	R$ 39 (max 5)	R$ 46 (max 2)	Decree 8.794 (July 1)
2018	R$ 89	R$ 41 (max 5)	R$ 48 (max 2)	Decree 9.396 (July 1)
2021	R$ 100	R$ 49 (max 5)	R$ 57 (max 2)	Transition to Auxílio Brasil
2022	New structure: R$ 400 minimum per family			Law 14.342 (May)
2023	R$ 600 minimum; R$ 142 per capita base			Return to Bolsa Família (March)

This table tracks benefit amounts for the Bolsa Família program from 2004 to 2023. The Basic Benefit was paid only to families in extreme poverty. Variable Benefits (for children and adolescents) were available to families in both poverty and extreme poverty categories. For example, in 2018, a family in extreme poverty with 3 children (ages 5, 10, 14) and 1 adolescent (age 16) would receive R$ 89 + (3 × R$ 41) + R$ 48 = R$ 260. A similar family in poverty (not extreme) would receive only (3 × R$ 41) + R$ 48 = R$ 171. In 2023, the structure changed to guarantee R$ 600 minimum per family, with R$ 150 additional per child 0–6 years and R$ 50 per child/adolescent 7–18 years.

Table IA3: Pre-Entrepreneurship Occupation Breakdown: Raw Statistics & Differences

	Cash-Transfer Entrepreneurs				Non-Cash-Transfer Entrepreneurs				Mean Diff.	
	Mean	Median	SD	N (Th.)	Mean	Median	SD	N (Th.)	Diff.	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Armed Forces/Police/Firefighters										
$\mathbb{1}${Military Police}	0.00	0.00	0.36	76.1	0.12	0.00	3.50	2,203.7	−0.13	0.00
Panel B: Senior Officials & Business Managers										
$\mathbb{1}${Other Managers}	1.03	0.00	10.07	76.1	4.34	0.00	20.31	2,203.7	−3.31	0.00
$\mathbb{1}${Senior Public Officials}	0.64	0.00	7.98	76.1	0.87	0.00	9.31	2,203.7	−0.24	0.08
$\mathbb{1}${Business Directors}	0.07	0.00	2.63	76.1	0.22	0.00	4.70	2,203.7	−0.16	0.02
$\mathbb{1}${Production Managers}	0.06	0.00	2.42	76.1	0.16	0.00	4.01	2,203.7	−0.11	0.06
Panel C: Science & Arts Professionals										
$\mathbb{1}${Business Professionals}	0.79	0.00	8.82	76.1	2.63	0.00	15.93	2,203.7	−1.85	0.00
$\mathbb{1}${Teaching Professionals}	0.95	0.00	9.67	76.1	2.48	0.00	15.51	2,203.7	−1.54	0.00
$\mathbb{1}${Engineering Professionals}	0.11	0.00	3.26	76.1	1.63	0.00	12.61	2,203.7	−1.53	0.00
$\mathbb{1}${Health Professionals}	0.15	0.00	3.91	76.1	1.13	0.00	10.51	2,203.7	−0.98	0.00
$\mathbb{1}${IT Professionals}	0.13	0.00	3.58	76.1	1.00	0.00	9.89	2,203.7	−0.87	0.00
$\mathbb{1}${Legal Professionals}	0.02	0.00	1.44	76.1	0.13	0.00	3.64	2,203.7	−0.12	0.02
$\mathbb{1}${Arts Professionals}	0.04	0.00	1.98	76.1	0.08	0.00	2.80	2,203.7	−0.04	0.25
Panel D: Technicians (Mid-level)										
$\mathbb{1}${IT Technicians}	1.82	0.00	13.38	76.1	3.06	0.00	17.15	2,203.7	−1.23	0.00
$\mathbb{1}${Health Technicians}	0.48	0.00	6.91	76.1	2.93	0.00	16.82	2,203.7	−2.45	0.00
$\mathbb{1}${Business Technicians}	1.59	0.00	12.51	76.1	1.77	0.00	13.17	2,203.7	−0.17	0.00
$\mathbb{1}${Teaching Technicians}	1.66	0.00	12.78	76.1	1.52	0.00	12.19	2,203.7	0.15	0.00
$\mathbb{1}${Other Technicians}	0.33	0.00	5.74	76.1	0.94	0.00	9.64	2,203.7	−0.61	0.00
$\mathbb{1}${Arts Technicians}	0.32	0.00	5.69	76.1	0.64	0.00	7.96	2,203.7	−0.31	0.01
$\mathbb{1}${Legal Technicians}	0.11	0.00	3.30	76.1	0.45	0.00	6.69	2,203.7	−0.34	0.00
$\mathbb{1}${Science & Engineering Technicians}	0.03	0.00	1.72	76.1	0.11	0.00	3.30	2,203.7	−0.08	0.08
Panel E: Administrative Support Workers										
$\mathbb{1}${Office Clerks}	9.48	0.00	29.27	76.1	14.86	0.00	35.56	2,203.7	−5.38	0.00
$\mathbb{1}${Customer Service Clerks}	12.61	0.00	33.18	76.1	6.64	0.00	24.81	2,203.7	5.97	0.00
Panel F: Service & Sales Workers										
$\mathbb{1}${Personal Service Workers}	34.80	0.00	47.61	76.1	14.42	0.00	35.13	2,203.7	20.38	0.00
$\mathbb{1}${Sales Workers}	15.26	0.00	35.93	76.1	11.97	0.00	32.45	2,203.7	3.29	0.00
Panel G: Agri/Forestry/Fishery Workers										
$\mathbb{1}${Forestry Workers}	1.95	0.00	13.81	76.1	0.97	0.00	9.80	2,203.7	0.98	0.00
$\mathbb{1}${Subsistence Forestry Workers}	0.08	0.00	2.78	76.1	0.22	0.00	4.70	2,203.7	−0.15	0.02
$\mathbb{1}${Subsistence Agricultural Workers}	0.12	0.00	3.42	76.1	0.10	0.00	3.14	2,203.7	0.02	0.65
$\mathbb{1}${Market-oriented Agricultural Workers}	0.02	0.00	1.43	76.1	0.01	0.00	1.07	2,203.7	0.01	0.58
Panel H: Craft & Related Trades Workers										
$\mathbb{1}${Extraction Workers}	4.69	0.00	21.13	76.1	7.49	0.00	26.22	2,203.7	−2.80	0.00
$\mathbb{1}${Construction Workers}	2.43	0.00	15.39	76.1	5.06	0.00	21.85	2,203.7	−2.63	0.00
$\mathbb{1}${Metal Workers}	0.66	0.00	8.06	76.1	2.83	0.00	16.53	2,203.7	−2.18	0.00
$\mathbb{1}${Wood, Textile & Clothing}	3.71	0.00	18.88	76.1	2.04	0.00	14.07	2,203.7	1.67	0.00
$\mathbb{1}${Handicraft Workers}	0.33	0.00	5.72	76.1	0.79	0.00	8.84	2,203.7	−0.46	0.00
$\mathbb{1}${Other Craft Workers}	0.20	0.00	4.54	76.1	0.74	0.00	8.58	2,203.7	−0.54	0.00
$\mathbb{1}${Food Processing Workers}	0.08	0.00	2.89	76.1	0.10	0.00	3.17	2,203.7	−0.02	0.61
$\mathbb{1}${Printing Workers}	0.01	0.00	1.11	76.1	0.03	0.00	1.74	2,203.7	−0.02	0.37
Panel I: Plant & Process Operators										
$\mathbb{1}${Agricultural Laborers}	1.80	0.00	13.29	76.1	1.37	0.00	11.56	2,203.7	0.43	0.00
$\mathbb{1}${Stationary Plant Operators}	0.20	0.00	4.47	76.1	0.40	0.00	6.31	2,203.7	−0.20	0.03
$\mathbb{1}${Freight Handlers}	0.15	0.00	3.84	76.1	0.36	0.00	6.00	2,203.7	−0.22	0.01
$\mathbb{1}${Machine Operators}	0.13	0.00	3.62	76.1	0.23	0.00	4.81	2,203.7	−0.10	0.16
$\mathbb{1}${Drivers}	0.05	0.00	2.21	76.1	0.06	0.00	2.43	2,203.7	−0.01	0.78
$\mathbb{1}${Other Production Workers}	0.00	0.00	0.36	76.1	0.00	0.00	0.61	2,203.7	0.00	0.68
Panel J: Elementary Occupations										
$\mathbb{1}${Street Vendors}	0.20	0.00	4.46	76.1	1.82	0.00	13.30	2,203.7	−1.62	0.00
$\mathbb{1}${Domestic Workers}	0.15	0.00	3.91	76.1	0.73	0.00	8.51	2,203.7	−0.58	0.00
$\mathbb{1}${Other Elementary Workers}	0.55	0.00	7.40	76.1	0.49	0.00	6.93	2,203.7	0.07	0.01

This table presents complete pre-entrepreneurship occupation breakdown comparing entrepreneurs who received Bolsa Família (BF) benefits before starting their business with other entrepreneurs. The sample includes 2,279,774 observations from 2014-2021. Data are from CNPJ, RAIS, and MDS.

Table IA4: Entrepreneur Age and Previous Salary Breakdown: Raw Statistics & Differences

	Cash-Transfer Entrepreneurs				Non-Cash-Transfer Entrepreneurs				Mean Diff.	
	Mean	Median	SD	N (Th.)	Mean	Median	SD	N (Th.)	Diff.	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Age Categories at Business Founding										
$\mathbb{1}\{$Under 25$\}$	11.11	0.00	31.42	76.2	17.74	0.00	38.20	2,220.3	−6.64	0.00
$\mathbb{1}\{$25-34$\}$	40.30	0.00	49.05	76.2	35.24	0.00	47.77	2,220.3	5.06	0.00
$\mathbb{1}\{$35-45$\}$	34.58	0.00	47.56	76.2	27.88	0.00	44.84	2,220.3	6.70	0.00
$\mathbb{1}\{$46-59$\}$	13.38	0.00	34.04	76.2	17.01	0.00	37.58	2,220.3	−3.63	0.00
$\mathbb{1}\{$60+$\}$	0.63	0.00	7.94	76.2	2.12	0.00	14.41	2,220.3	−1.49	0.00
Panel B: Pre-Entrepreneurship Salary Categories (in constant 2024 R$)										
$\mathbb{1}\{$Less than R500\}$	68.30	100.00	46.53	76.2	37.97	0.00	48.53	2,220.3	30.33	0.00
$\mathbb{1}\{$R$500 to R$1,000$\}$	29.00	0.00	45.38	76.2	41.45	0.00	49.26	2,220.3	−12.44	0.00
$\mathbb{1}\{$R$1,000 to R$2,000$\}$	2.12	0.00	14.41	76.2	14.11	0.00	34.81	2,220.3	−11.98	0.00
$\mathbb{1}\{$R$2,000 to R$3,000$\}$	0.22	0.00	4.68	76.2	3.30	0.00	17.87	2,220.3	−3.08	0.00
$\mathbb{1}\{$More than R$3,000$\}$	0.36	0.00	5.95	76.2	3.17	0.00	17.53	2,220.3	−2.82	0.00
Panel C: Pre-Entrepreneurship Salary Type										
$\mathbb{1}\{$Monthly$\}$	93.69	100.00	24.31	76.2	92.36	100.00	26.56	2,220.3	1.33	0.00
$\mathbb{1}\{$Hourly$\}$	4.71	0.00	21.18	76.2	5.89	0.00	23.54	2,220.3	−1.18	0.00
$\mathbb{1}\{$Other$\}$	0.80	0.00	8.91	76.2	1.27	0.00	11.19	2,220.3	−0.47	0.00
$\mathbb{1}\{$Task-based$\}$	0.35	0.00	5.94	76.2	0.17	0.00	4.09	2,220.3	0.19	0.00
$\mathbb{1}\{$Daily$\}$	0.31	0.00	5.60	76.2	0.16	0.00	4.06	2,220.3	0.15	0.00
$\mathbb{1}\{$Weekly$\}$	0.06	0.00	2.43	76.2	0.11	0.00	3.25	2,220.3	−0.05	0.00
$\mathbb{1}\{$Biweekly$\}$	0.07	0.00	2.66	76.2	0.04	0.00	2.06	2,220.3	0.03	0.00

Notes: This table presents age categories, salary categories, and salary type distribution comparing entrepreneurs who received Bolsa Família (BF) benefits before starting their business with other entrepreneurs. The sample includes 2,296,485 observations from 2014-2021. Salary values are in constant 2024 Brazilian Reais. All indicator variables are multiplied by 100 to show percentages. For indicator variables, median equals 0.00 when mean < 50% and 100.00 when mean ≥ 50%. Sample sizes (N) are reported in thousands. P-values from t-tests comparing means between groups. Differences calculated as Cash-Transfer minus Non-Cash-Transfer entrepreneurs. Data are from CNPJ, RAIS, and MDS.

Table IA5: Industry Selection by Cash Transfer and Other Entrepreneurs and Industry Characteristics

	Distribution by Type of Entrepreneur (%)		Firm Equity (Thousands, 2024 R$)		Entrepreneur Characteristics (% of All Entrepreneurs)		
	Cash-Transfer (1)	Other (2)	Median Equity (3)	% Less than R$5K (4)	% Low Education (5)	% Had Blue-Collar Job (6)	% Young (< 25) (7)
Panel A: Services	53.1	44.9	1	68.7	17.7	41.3	18.6
Restaurant and Food Services	17.7	10.0	1	73.3	23.2	55.0	18.6
Sales and Marketing Services	5.3	5.9	1	73.3	12.4	44.3	21.4
Beauty and Personal Services	11.8	5.1	2	73.4	24.8	62.0	27.8
Business Support Services	1.3	3.8	1	78.7	8.3	15.1	15.8
Other Services	16.9	20.0	1	79.3	6.5	14.0	10.4
Panel B: Trade	29.6	26.7	3	50.7	24.2	53.7	18.9
Clothing and Accessories Retail	10.4	7.5	3	56.5	19.1	44.6	21.4
Food and Beverage Retail	5.6	4.5	5	46.0	29.6	61.2	20.2
Vehicle Services	0.9	2.0	5	48.5	35.1	80.2	15.7
Cosmetics and Personal Care Retail	1.9	1.2	3	61.2	17.2	43.3	17.7
Other Trade	10.8	11.5	3	56.1	18.2	42.3	16.2
Panel C: Manufacturing	8.5	8.4	1	62.6	27.8	61.4	14.3
Clothing and Textile Production	2.6	1.2	2	65.7	35.5	71.3	11.3
Food Production	1.8	1.2	2	72.2	18.3	46.8	19.9
Furniture and Woodworking	0.5	1.1	4	52.6	33.1	74.3	15.4
Metal Products and Locksmith	0.3	0.5	3	55.9	38.4	84.2	12.7
Other Manufacturing	3.4	4.5	1	77.1	15.5	36.1	10.9
Panel D: Transportation	4.2	10.9	2	66.9	26.4	68.4	16.4
Freight Transport	1.2	3.7	2	64.4	26.3	68.9	14.6
Delivery Services	1.1	3.2	1	79.1	26.9	76.2	27.3
Passenger Transport	0.8	1.6	2	68.6	24.9	68.3	9.9
Transportation Support	0.5	1.5	2	69.5	22.0	65.0	11.8
Other Transportation	0.7	0.9	2	69.8	11.6	28.3	19.0
Panel E: Construction	3.9	8.3	2	65.4	41.9	78.9	12.3
Masonry and General Construction	1.7	3.2	2	67.4	58.4	87.7	10.6
Electrical Services	0.7	2.3	2	65.2	24.0	68.0	13.0
Painting Services	0.7	1.0	2	70.7	46.2	85.0	12.6
Hvac Installation	0.2	0.6	3	57.3	23.9	69.1	13.3
Other Construction	0.6	1.3	2	68.7	42.3	80.5	10.1
Panel F: Other	0.7	0.8	1	62.9	28.8	54.3	13.6
Textile and Fabric Production	0.5	0.5	1	76.0	14.8	34.6	8.7
Agricultural Support Services	0.2	0.3	2	62.0	43.8	69.0	13.7
Other Miscellaneous	0.1	0.1	3	57.8	23.4	49.0	13.5

This table shows industry characteristics and entrepreneur selection patterns. Cash-transfer entrepreneurs are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). Share of Total Entrepreneurs shows the percentage of each entrepreneur type founding a business in each industry. Firm Equity columns report the median firm equity (in thousands of Brazilian Reais, inflation-adjusted to 2024) and the share with initial equity below R$ 5,000. Entrepreneur Characteristics columns report the share with less than complete high school education, who held blue-collar jobs in their last pre-entrepreneurship occupation, and who are younger than 25 at business founding. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Industries classified using the Brazilian CNAE system following Dix-Carneiro (2014). Data are from CNPJ, RAIS, and MDS datasets.

Table IA6: Bunching at Eligibility Thresholds: Bolsa Família Beneficiaries (2020–2021)

Exclusion Window	Excess Mass (b)	Elasticity (e)	t-statistic	95% Confidence Interval	Observations
	(1)	(2)	(3)	(4)	(5)
Panel A: Extreme Poverty Threshold					
±8%	0.140	—	0.71	[−0.382, 0.391]	382
±10%	0.005	—	0.02	[−0.288, 0.475]	448
±12%	−0.054	—	−0.27	[−0.563, 0.239]	526
Panel B: Poverty Threshold					
±8%	0.059	—	0.60	[−0.114, 0.275]	1,139
±10%	0.013	—	0.13	[−0.274, 0.115]	1,371
±12%	0.022	—	0.20	[−0.211, 0.221]	1,626

This table presents bunching estimates at Bolsa Família eligibility thresholds for program beneficiaries during 2020–2021 using pre-transfer income. During this period, the Auxílio Emergencial program temporarily replaced Bolsa Família with higher benefit floors (up to R$400 monthly). Pre-transfer income is calculated as reported household per-capita income minus expected Bolsa Família payments. The extreme poverty threshold (Panel A) determines eligibility for the unconditional cash transfer; the poverty threshold (Panel B), set at twice the extreme poverty threshold, determines eligibility for variable benefits tied to family composition. Column (1) reports excess mass b relative to a polynomial counterfactual. Column (2) reports implied elasticity $e = b/(1 + b)$; elasticity is not reported when excess mass is negative or statistically insignificant. Column (3) reports t-statistics. Column (4) presents 95% bootstrap confidence intervals. Column (5) reports sample sizes within the exclusion window. Income is normalized such that threshold = 100, using 2-percentage-point bins. Bootstrap standard errors (1,000 replications with household-level clustering). *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Data are from PNAD Contínua Annual Microdata (IBGE).

Table IA7: Bunching at Eligibility Thresholds: Non-Beneficiaries

Exclusion Window	Excess Mass (b)	Elasticity (e)	t-statistic	95% Confidence Interval	Observations
	(1)	(2)	(3)	(4)	(5)
Panel A: Extreme Poverty Threshold (2013–2019)					
±8%	−0.751***	—	−51.19	[−0.788, −0.731]	1,067
±10%	−0.846***	—	−90.48	[−0.867, −0.830]	1,123
±12%	−0.449***	—	−14.70	[−0.475, −0.355]	2,932
Panel B: Poverty Threshold (2013–2019)					
±8%	−0.557***	—	−41.05	[−0.601, −0.547]	5,539
±10%	−0.640***	—	−57.68	[−0.671, −0.628]	6,688
±12%	−0.102***	—	−2.91	[−0.198, −0.061]	11,538
Panel C: Extreme Poverty Threshold (2020–2021)					
±8%	−0.334***	—	−3.94	[−0.510, −0.178]	543
±10%	−0.550***	—	−10.36	[−0.643, −0.435]	602
±12%	0.290	—	1.19	[−0.292, 0.660]	1,018
Panel D: Poverty Threshold (2020–2021)					
±8%	−0.523***	—	−17.96	[−0.583, −0.469]	1,539
±10%	−0.553***	—	−21.55	[−0.588, −0.487]	1,999
±12%	0.108	—	1.16	[−0.057, 0.306]	3,263

This table presents bunching estimates at Bolsa Família eligibility thresholds for households not receiving program benefits. Non-beneficiary households use raw reported per-capita income. The extreme poverty threshold (Panels A and C) determines basic benefit eligibility; the poverty threshold (Panels B and D), set at twice the extreme poverty threshold, determines eligibility for variable benefits tied to family composition. Panels A and B present estimates for 2013–2019; Panels C and D present estimates for 2020–2021. Column (1) reports excess mass b relative to a polynomial counterfactual. Column (2) reports implied elasticity $e = b/(1 + b)$; elasticity is not reported when excess mass is negative or statistically insignificant. Column (3) reports t-statistics. Column (4) presents 95% bootstrap confidence intervals. Column (5) reports sample sizes within the exclusion window. Income is normalized such that threshold = 100, using 2-percentage-point bins. Bootstrap standard errors (1,000 replications with household-level clustering). Negative excess mass reflects sparse observations near the threshold among non-beneficiary households. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Data are from PNAD Contínua Annual Microdata (IBGE).

Table IA8: Robustness: Ruling Out Necessity Entrepreneurship from Wage Ratcheting

Dependent Variable:	Transitions from Employed to Entrepreneur		
GDP Measure:	3-Year Lag (1)	1-Year Lag (2)	Post-Boom (3)
$\mathbb{1}\{\text{Beneficiary HH}\} \times \text{GDP Measure}$	0.004	−0.004	−0.015
	(0.51)	(−0.67)	(−1.29)
Beneficiary Share of Households	0.089***	0.089***	0.097***
	(2.76)	(2.77)	(2.94)
Mean Dependent Variable	0.106	0.106	0.106
First-stage F-statistic	553.1	551.7	550.6
Observations	42,316	42,316	42,316
Survey Area FE	✓	✓	✓
Year FE	✓	✓	✓
State Dummies	✓	✓	✓
Controls	✓	✓	✓
Clustered SE (Survey Area)	✓	✓	✓

This table tests whether the IV-estimated effects of cash transfers on entrepreneurial entry are amplified following local economic expansions, as predicted by Kaur (2019)'s wage rigidity mechanism. Under that mechanism, positive wage shocks ratchet up nominal wages, generating subsequent employment rationing that could simultaneously push households below the poverty threshold and independently drive rationed workers into necessity entrepreneurship—potentially violating the exclusion restriction. The Kaur channel operates specifically through employed-to-entrepreneur transitions, so the test hinges on whether the interaction between the beneficiary share and lagged local GDP growth is positive and significant. We implement a 2SLS specification with two endogenous variables—*Beneficiary Share of Households* and its interaction with a GDP measure—instrumented by the share of households below the poverty threshold and the corresponding interaction. Column (1) uses three-year lagged state GDP growth ($t-3$ to $t-1$), our primary measure given that wage rigidities accumulate over multiple years before manifesting as rationing. Column (2) uses one-year lagged state GDP growth ($t-2$ to $t-1$). Column (3) uses an indicator for post-boom years, equal to one if one-year lagged state GDP growth exceeds the sample median. In all three specifications, the interaction is economically negligible and statistically insignificant, ruling out wage ratcheting as a confound for the main entry estimates. GDP is measured at the state-year level, collapsed from IBGE municipality-level data. All specifications include Survey Area fixed effects, year fixed effects, state dummies, and demographic controls (male share, mean age, literacy rate, school attendance rate, and racial minority share). State dummies replace state-year fixed effects because state-year fixed effects would absorb the state-level GDP growth measure. First-stage F-statistics report the Kleibergen-Paap Wald F-statistic. Standard errors are clustered at the Survey Area level. Data: PNAD Contínua Annual Microdata (IBGE), 2013–2019. t-statistics in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA9: Instrument Comparison: Poverty vs. Extreme Poverty Threshold

	Any Entrep. Rate		Non-Empl. → Entrep.		Empl. → Entrep.		BF Share of Entrep.	
	Poverty IV	Extreme IV	Poverty IV	Extreme IV	Poverty IV	Extreme IV	Poverty IV	Extreme IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Beneficiary Share of Households	0.241***	−0.103	0.058***	0.019	0.088***	0.039	0.626***	0.319***
	(5.09)	(−1.59)	(2.65)	(0.70)	(2.74)	(0.98)	(9.93)	(3.67)
Mean of Dependent Variable	0.378	0.378	0.036	0.036	0.106	0.106	0.136	0.136
First-stage F-statistic	971.9	593.2	1,099.9	716.2	1,112.2	717.1	971.9	593.2
Observations	66,336	66,336	42,367	42,367	42,316	42,316	66,336	66,336
Survey Area FE	✓	✓	✓	✓	✓	✓	✓	✓
State × Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓	✓	✓
Clustered SE (Survey Area)	✓	✓	✓	✓	✓	✓	✓	✓

This table compares IV estimates using two alternative instruments: the share of households with pre-transfer income below the poverty threshold (R$178 per capita, *Poverty IV*, odd columns) and the share below the extreme poverty threshold (R$89 per capita, *Extreme IV*, even columns). Both instruments are strongly relevant (first-stage Kleibergen-Paap F-statistics of 593–1,112). The key distinction is that our bunching analysis documents significant income manipulation at the extreme poverty threshold but not at the poverty threshold, implying that compliers under the extreme poverty instrument include households actively misreporting income to maintain eligibility. Because income manipulation requires flexibility in reporting earnings—a flexibility disproportionately available to the self-employed—compliers near the extreme poverty threshold are more likely to already be entrepreneurs, leaving little margin for program-induced new entry. This complier composition difference, rather than a failure of the poverty threshold exclusion restriction, likely explains the divergence in entry estimates across columns. Pre-transfer income is calculated as reported household per-capita income minus expected BF payments based on family composition and program rules. All specifications include Survey Area fixed effects, state-year fixed effects, and demographic controls (male share, mean age, literacy rate, school attendance rate, and racial minority share). First-stage F-statistics report the Kleibergen-Paap Wald F-statistic. Standard errors are clustered at the Survey Area level. Data: PNAD Contínua Annual Microdata (IBGE), 2013–2019. *t*-statistics in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA10: Impact of Cash Transfers on Business Survival & Growth — Robustness

Dependent Variable:	$\mathbb{1}$\{Business Survival\}		$\mathbb{1}$\{Business Growth\}	
	(1)	(2)	(3)	(4)
Panel A: 1-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−0.843**	−0.835**	−0.186***	−0.189***
	(−2.41)	(−2.17)	(−4.93)	(−4.92)
Observations	2,205,012	2,062,025	2,154,353	2,026,671
Adjusted R^2	0.02	0.08	0.03	0.10
Mean Dependent Variable	81.209	81.241	1.659	1.118
Panel B: 2-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−2.685***	−2.882***	−0.315***	−0.318***
	(−5.69)	(−6.39)	(−5.52)	(−5.88)
Observations	2,205,012	2,062,025	2,154,353	2,026,671
Adjusted R^2	0.07	0.12	0.03	0.09
Mean Dependent Variable	68.353	69.282	2.585	1.737
Panel C: 3-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−5.308***	−5.589***	−0.281***	−0.274***
	(−6.78)	(−7.43)	(−2.82)	(−2.82)
Observations	2,205,012	2,062,025	2,154,353	2,026,671
Adjusted R^2	0.08	0.14	0.04	0.08
Mean Dependent Variable	56.127	56.879	4.606	3.197
Panel D: 5-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−7.484***	−7.670***	−0.433***	−0.439***
	(−7.10)	(−7.34)	(−3.39)	(−3.21)
Observations	1,285,255	1,186,090	1,246,397	1,159,327
Adjusted R^2	0.06	0.12	0.03	0.08
Mean Dependent Variable	45.571	44.966	6.654	5.014
Sample:	Full	Matched	Full	Matched
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓
Municipality × Equity × Year FE	✓	✓	✓	✓
Clustered SE (Industry)	✓	✓	✓	✓

This table presents estimates of the effect of cash transfers on business survival and growth using both the full sample and a matched sample created through Coarsened Exact Matching (CEM). $\mathbb{1}$\{Cash-Transfer Entrepreneurs\} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). Dependent variables are indicator variables measured 1-year, 2-year, 3-year, and 5-year post-business-founding. $\mathbb{1}$\{Business Survival\} captures whether a firm remains active. $\mathbb{1}$\{Business Growth\} captures transitions from MEI (Individual Microentrepreneur) to larger tax regimes. The CEM procedure matches cash transfer and non-cash transfer entrepreneurs on education level, gender, salary category, founding year, 2-digit industry classification, and initial equity category to create a balanced sample of observationally similar firms. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Municipality × Equity × Year fixed effects are the joint profile of municipality, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Firm outcomes are tracked until the end of 2024. Data are from CNPJ, RAIS, and MDS. t-statistics shown in parentheses based on standard errors are clustered at the 2-digit CNAE industry level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA11: Cash-Transfer Entrepreneurs and the Right Tail of Job Creation

Panel A: $\mathbb{1}\{$Peak Headcount $\geq k\}$ — All Sole Proprietorships				
Threshold k:	2	5	10	20
	(1)	(2)	(3)	(4)
$\mathbb{1}\{$Cash-Transfer Entrepreneur$\}$	-0.318^{***}	-0.106^{***}	-0.032^{***}	-0.008^{*}
	(-10.64)	(-7.85)	(-4.40)	(-1.69)
Observations	2,246,740	2,246,740	2,246,740	2,246,740
Adjusted R^2	0.06	0.04	0.04	0.04
Mean Dependent Variable	0.656	0.213	0.077	0.025
Panel B: Total Employment Created — Position in Distribution (Employers Only)				
	Above Median	Top Quartile	Top Decile	Top 1%
	(5)	(6)	(7)	(8)
$\mathbb{1}\{$Cash-Transfer Entrepreneur$\}$	-8.395^{***}	-4.524^{**}	-1.751	-0.204
	(-3.60)	(-2.50)	(-1.36)	(-0.50)
Observations	34,696	34,696	34,696	34,696
Adjusted R^2	0.12	0.13	0.11	0.07
Mean Dependent Variable	47.559	26.660	10.774	0.980
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓	✓

This table examines whether cash-transfer entrepreneurs reach the right tail of job creation, comparing entrepreneurs who received Bolsa Família benefits before founding with other entrepreneurs. Panel A includes all sole proprietorships in our sample. Peak headcount is the maximum number of employees (excluding the entrepreneur) observed in any single year within five years of founding, from RAIS; firms that never hire are coded zero. Each column is an indicator equal to 100 if peak headcount reaches at least 2, 5, 10, or 20 employees; these thresholds are reached by 0.66%, 0.21%, 0.08%, and 0.03% of all sole proprietorships, respectively. Panel B restricts the sample to firms that hire at least one employee and measures each firm's position in the distribution of total formal employee-years accumulated over the first five years of operation; the cutoffs are the median (2 employee-years), the top quartile (5), the top decile (11), and the top 1% (58) of that distribution. Estimates at the very top of Panel B are imprecise because few cash-transfer founders reach that far: of the 4,885 firms whose peak headcount reached five or more employees, 56 were founded by cash-transfer entrepreneurs, versus approximately 162 expected at their 3.3% sample share. All dependent variables are multiplied by 100. Employment is observed in RAIS through the end of 2020. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Standard errors are clustered at the municipality level. t-statistics shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Data are from CNPJ, RAIS, and MDS.

Table IA12: Impact of Cash Transfers on Employment & Credit Access — Robustness

Dependent Variable:	$\mathbb{1}$\{Employment Creation\}		$\mathbb{1}$\{Credit Access\}	
	(1)	(2)	(3)	(4)
Panel A: 1-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−0.600***	−0.551***	−0.002***	−0.001**
	(−5.85)	(−5.79)	(−3.01)	(−2.21)
Observations	1,285,255	1,186,090	2,205,012	2,062,025
Adjusted R^2	0.09	0.20	0.13	0.30
Mean Dependent Variable	1.913	1.845	0.004	0.003
Panel B: 2-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−0.833***	−0.751***	−0.003***	−0.002***
	(−5.93)	(−6.60)	(−4.03)	(−4.58)
Observations	964,352	880,900	2,205,012	2,062,025
Adjusted R^2	0.10	0.21	0.15	0.34
Mean Dependent Variable	2.625	2.537	0.009	0.006
Panel C: 3-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−0.987***	−0.903***	−0.007***	−0.007***
	(−6.08)	(−6.62)	(−5.83)	(−4.48)
Observations	722,459	655,349	2,205,012	2,062,025
Adjusted R^2	0.10	0.22	0.14	0.29
Mean Dependent Variable	3.167	3.033	0.014	0.011
Panel D: 5-Year Post-Founding				
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−1.186***	−1.102***	−0.006**	−0.008***
	(−5.09)	(−5.44)	(−2.61)	(−3.08)
Observations	323,813	291,941	1,285,255	1,186,090
Adjusted R^2	0.11	0.22	0.14	0.28
Mean Dependent Variable	4.040	3.717	0.025	0.016
Sample:	Full	Matched	Full	Matched
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓
Municipality × Equity × Year FE	✓	✓	✓	✓
Clustered SE (Industry)	✓	✓	✓	✓

This table presents estimates of the effect of cash transfers on employment creation and credit access using both the full sample and a matched sample created through Coarsened Exact Matching (CEM). $\mathbb{1}$\{Cash-Transfer Entrepreneurs\} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). Dependent variables are indicator variables measured 1-year, 2-year, 3-year, and 5-year post-business-founding. $\mathbb{1}$\{Employment Creation\} indicates whether the firm employs any worker other than the owner. $\mathbb{1}$\{Credit Access\} indicates whether the firm received financing from the Brazilian Development Bank (BNDES) through its indirect automatic operations program (operações indiretas automáticas), which provides below-market-rate credit to small and medium enterprises through participating financial institutions. The CEM procedure matches cash transfer and non-cash transfer entrepreneurs on education level, gender, salary category, founding year, 2-digit industry classification, and initial equity category to create a balanced sample of observationally similar firms. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R\$ (≤R\$500; R\$500–1,000; R\$1,000–2,000; R\$2,000–3,000; >R\$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Municipality × Equity × Year fixed effects are the joint profile of municipality, initial equity category in constant 2024 R\$ (≤R\$1k; R\$1k–5k; R\$5k–10k; R\$10k–25k; >R\$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Firm outcomes are tracked until the end of 2024, except employment creation, which is tracked until the end of 2020 per data availability. Data are from CNPJ, RAIS, Bolsa Família, and BNDES datasets. t-statistics shown in parentheses based on standard errors are clustered at the 2-digit industry level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA13: Impact of Cash Transfers on Entrepreneurial Tax Compliance — Robustness

Dependent Variable:	𝟙{Tax Violation}		𝟙{Active Debt Collection}	
	(1)	(2)	(3)	(4)
Panel A: 2-Year Post-Founding				
𝟙{Cash-Transfer Entrepreneur}	2.250***	2.394***	0.080*	0.093**
	(20.59)	(19.44)	(1.88)	(2.41)
Observations	2,205,012	2,062,025	2,205,012	2,062,025
Adjusted R^2	0.09	0.13	0.01	0.05
Mean Dependent Variable	5.392	4.803	0.581	0.465
Panel B: 3-Year Post-Founding				
𝟙{Cash-Transfer Entrepreneur}	5.248***	5.437***	0.327***	0.354***
	(16.08)	(17.58)	(4.69)	(5.28)
Observations	2,205,012	2,062,025	2,205,012	2,062,025
Adjusted R^2	0.10	0.13	0.02	0.06
Mean Dependent Variable	11.356	11.130	2.592	2.398
Panel C: 5-Year Post-Founding				
𝟙{Cash-Transfer Entrepreneur}	6.029***	6.190***	1.383***	1.376***
	(11.78)	(11.24)	(7.90)	(8.08)
Observations	1,285,255	1,186,090	1,285,255	1,186,090
Adjusted R^2	0.09	0.14	0.06	0.10
Mean Dependent Variable	15.478	15.750	8.438	7.994
Sample	Full	Matched	Full	Matched
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓
Municipality × Equity × Year FE	✓	✓	✓	✓
Clustered SE (Industry)	✓	✓	✓	✓

This table presents estimates of the effect of cash transfers on entrepreneurial tax compliance using both the full sample and a matched sample created through Coarsened Exact Matching (CEM). 𝟙{Cash-Transfer Entrepreneurs} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). Dependent variables are indicator variables measured 2-year, 3-year, and 5-year post-business-founding. Tax compliance violations are tracked starting from the second year of operation, as firms are typically flagged for violations only after 2+ years of operation. 𝟙{Tax Violation} indicates whether the firm failed to file mandatory annual tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes). 𝟙{Active Debt Collection} indicates whether the firm is subject to active collection proceedings by the federal government (Dívida Ativa da União), reflecting unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions. The CEM procedure matches cash transfer and non-cash transfer entrepreneurs on education level, gender, salary category, founding year, 2-digit industry classification, and initial equity category to create a balanced sample of observationally similar firms. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Municipality × Equity × Year fixed effects are the joint profile of municipality, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Tax compliance outcomes are tracked until the end of 2024. Data are from CNPJ, RAIS, Bolsa Família, and federal tax debt registry (PGFN) datasets. *t*-statistics shown in parentheses based on standard errors are clustered at the 2-digit industry level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA14: Coefficient Stability: Robustness to Selection on Unobservables — Clustered by Industry

Horizon	$\mathbb{1}\{\text{Business Survival}\}$			$\mathbb{1}\{\text{Business Growth}\}$		
	$\hat{\beta}$	δ	$\hat{\beta}^*$	$\hat{\beta}$	δ	$\hat{\beta}^*$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Business Survival & Growth						
1 Year	−0.843	0.93	0.064	−0.187	−0.42	−0.626
2 Years	−2.685	5.00	−2.148	−0.315	−0.43	−1.038
3 Years	−5.309	−13.32	−5.707	−0.281	−0.28	−1.300
5 Years	−7.484	−65.60	−7.598	−0.433	−0.36	−1.642
Horizon	$\mathbb{1}\{\text{Employment Creation}\}$			$\mathbb{1}\{\text{Credit Access}\}$		
	$\hat{\beta}$	δ	$\hat{\beta}^*$	$\hat{\beta}$	δ	$\hat{\beta}^*$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel B: Employment Creation & Credit Access						
1 Year	−0.666	−5.21	−0.793	−0.002	−0.66	−0.004
2 Years	−0.920	−4.40	−1.129	−0.003	−0.56	−0.010
3 Years	−1.076	−4.36	−1.322	−0.007	−0.84	−0.014
5 Years	−1.230	−3.47	−1.584	−0.006	−0.36	−0.022
Horizon	$\mathbb{1}\{\text{Tax Violation}\}$			$\mathbb{1}\{\text{Active Debt Collection}\}$		
	$\hat{\beta}$	δ	$\hat{\beta}^*$	$\hat{\beta}$	δ	$\hat{\beta}^*$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel C: Tax Violation & Active Debt Collection						
2 Years	2.250	−1.35	3.912	0.080	−20.38	0.084
3 Years	5.248	−2.32	7.510	0.327	−2.17	0.478
5 Years	6.029	−2.54	8.403	1.383	−2.72	1.892

This table reports Oster (2019) coefficient stability diagnostics for each outcome and time horizon. $\hat{\beta}$ is the coefficient on $\mathbb{1}\{\text{Cash-Transfer Entrepreneur}\}$ from the full model including entrepreneur and municipality × equity × year fixed effects, with standard errors clustered at the 2-digit industry level. δ is the ratio of selection on unobservables to observables required to drive $\hat{\beta}$ to zero ($R_{\max} = 1.3 \times R^2_{\text{full}}$; the restricted model includes municipality × equity × year fixed effects only, excluding entrepreneur fixed effects). $|\delta| > 1$ means unobserved confounders would need to be more important than observed controls to overturn the result; $\delta < 0$ means selection would need to run counter to the direction controls move the coefficient, a stronger robustness condition. $\hat{\beta}^*$ is the bias-adjusted estimate assuming $\delta = 1$. Tax violation is unavailable at 1 year as MEI firms are only flagged for reporting failures from the second year of operation onward. Coefficients are in percentage points except for credit access (BNDES), which is reported in basis points.

Table IA15: Heterogeneity by Municipal Prosperity: Rich versus Poor Areas

Dependent Variable:	𝟙{Business Survival}	𝟙{Business} Growth}	𝟙{Employment Creation}	𝟙{Credit Access}	𝟙{Tax Violation}	𝟙{Active Debt Collection}
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Bottom Quartile GDP (Poorest Areas)						
𝟙{CT Entrepreneur} × 𝟙{Bottom Quartile GDP}	0.604	0.490**	−0.270	−0.007	−1.758***	−0.869***
	(1.26)	(2.41)	(−0.75)	(−0.89)	(−3.80)	(−3.20)
𝟙{CT Entrepreneur}	−7.278***	−0.447***	−1.528***	−0.013***	6.694***	1.744***
	(−22.99)	(−4.51)	(−6.97)	(−2.73)	(23.32)	(11.21)
𝟙{Bottom Quartile GDP}	0.156	−0.535***	0.443	0.002	−0.846*	−0.499***
	(0.61)	(−3.26)	(1.31)	(0.26)	(−1.85)	(−3.20)
Observations	1,316,732	1,277,309	334,741	1,316,732	1,316,732	1,316,732
Adjusted R^2	0.065	0.069	0.057	0.008	0.097	0.062
Mean Dependent Variable	45.689	6.662	4.156	0.029	15.403	8.373
Panel B: Top Quartile GDP (Richest Areas)						
𝟙{CT Entrepreneur} × 𝟙{Top Quartile GDP}	−0.131	−0.573***	1.376***	0.024***	0.479	−0.018
	(−0.27)	(−3.14)	(4.31)	(4.35)	(0.75)	(−0.06)
𝟙{CT Entrepreneur}	−7.065***	−0.191	−1.892***	−0.020***	5.968***	1.446***
	(−21.96)	(−1.58)	(−10.07)	(−4.45)	(22.10)	(9.56)
𝟙{Top Quartile GDP}	0.555	0.670***	−1.917***	−0.027***	1.113***	0.450***
	(1.24)	(2.72)	(−4.90)	(−6.02)	(2.66)	(2.72)
Observations	1,316,732	1,277,309	334,741	1,316,732	1,316,732	1,316,732
Adjusted R^2	0.065	0.069	0.059	0.008	0.097	0.062
Mean Dependent Variable	45.689	6.662	4.156	0.029	15.403	8.373
Years Post-Founding:	5-Year	5-Year	5-Year	5-Year	5-Year	5-Year
Sample:	Full	Full	Full	Full	Full	Full
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓	✓	✓	✓

This table presents estimates of the heterogeneous effects of cash transfers on entrepreneurial outcomes by municipal GDP per capita. 𝟙{Cash-Transfer Entrepreneurs} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). All outcome variables are measured five years post-business-founding. Bottom Quartile GDP and Top Quartile GDP are indicators for municipalities in the respective quartiles (by founding year) of GDP per capita, where municipal GDP per capita represents the average annual GDP per capita of the municipality over the three years preceding firm founding. 𝟙{Business Survival} captures whether a firm remains active. 𝟙{Business Growth} captures transitions from MEI (Individual Microentrepreneur) to larger tax regimes. 𝟙{Employment Creation} indicates whether the firm employs any worker other than the owner. 𝟙{Credit Access} indicates whether the firm received financing from the Brazilian Development Bank (BNDES) through its indirect automatic operations program, which provides below-market-rate credit to small and medium enterprises through participating financial institutions. 𝟙{Tax Violation} indicates whether the firm failed to file mandatory annual tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes). 𝟙{Active Debt Collection} indicates whether the firm is subject to active collection proceedings by the federal government (Dívida Ativa da União), reflecting unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Outcomes are tracked until the end of 2024, except employment creation, which is tracked until the end of 2020 per data availability. Data are from CNPJ, RAIS, Bolsa Família, BNDES, federal tax debt registry (PGFN), and IBGE datasets. *t*-statistics shown in parentheses based on standard errors are clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA16: Who Do Cash-Transfer Entrepreneurs Hire?

Panel A: Employee Demographics						
Dependent Variable:	𝟙{Racial Minority}		𝟙{Female}		𝟙{Low Education}	
	(1)	(2)	(3)	(4)	(5)	(6)
𝟙{Cash-Transfer Entrepreneur}	6.022***	4.012*	−10.948***	−6.743**	4.043**	1.297
	(3.06)	(1.83)	(−5.23)	(−2.47)	(2.01)	(0.55)
Observations	37,364	30,542	37,364	30,542	37,362	30,542
Adjusted R^2	0.06	0.26	0.23	0.36	0.09	0.25
Mean Dependent Variable	41.144	40.371	60.218	60.438	44.213	43.949
Panel B: Occupation Types						
Dependent Variable:	𝟙{Production & Trades}		𝟙{Services & Sales}		𝟙{Manager}	
	(7)	(8)	(9)	(10)	(11)	(12)
𝟙{Cash-Transfer Entrepreneur}	3.824***	6.529***	−6.219***	−9.300***	−1.776*	−0.997
	(2.62)	(3.28)	(−3.44)	(−4.07)	(−1.87)	(−0.84)
Observations	37,150	30,362	37,364	30,542	37,364	30,542
Adjusted R^2	0.37	0.47	0.33	0.45	0.05	0.21
Mean Dependent Variable	27.079	26.810	53.699	54.446	7.103	7.161
Panel C: Employment Terms						
Dependent Variable:	𝟙{Part-Time Job}		𝟙{Low Wage}		Salary per Hour	
	(13)	(14)	(15)	(16)	(17)	(18)
𝟙{Cash-Transfer Entrepreneur}	−2.774***	−2.446*	−2.904**	−3.112*	−0.061	0.161
	(−2.62)	(−1.90)	(−2.13)	(−1.96)	(−0.42)	(0.93)
Observations	37,364	30,542	37,364	30,542	40,857	33,729
Adjusted R^2	0.07	0.22	0.10	0.26	0.12	0.27
Mean Dependent Variable	9.809	9.832	86.824	86.864	10.630	10.642
Years Post-Founding:	5-Year	5-Year	5-Year	5-Year	5-Year	5-Year
Sample:	Full	Full	Full	Full	Full	Full
Entrepreneur FE (all characteristics jointly)		✓		✓		✓
Industry × Equity × Year FE	✓	✓	✓	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓	✓	✓	✓

This table presents linear estimates of the effect of Brazil's cash transfer program (Bolsa Família) on hiring patterns among entrepreneurs, conditional on hiring at least one employee. All outcomes in Panels A and B are measured as percentages of total hires. Racial Minority includes employees classified as Black, Brown/Mixed, Asian, and Indigenous. Low Education refers to employees without completed high school education. Production & Trades includes agricultural/forestry/fishery workers, craft & related trades workers, plant & process operators, and elementary occupations. Services & Sales includes service workers and sales representatives. Manager includes senior officials and business managers. Part-Time indicates employees working less than 30 hours per week. Low Wage refers to employees in the lowest wage category (less than R$500 in constant 2024 values). Salary per Hour is calculated as monthly salary divided by hours worked per month, inflation-adjusted to 2024 Brazilian Reais and winsorized at the 1st and 99th percentiles. Cash-transfer entrepreneurs are defined as those enrolled in Bolsa Família when starting their business or recent program graduates (within 12 months of program exit before founding). *Entrepreneur fixed effects* include the joint profile of individual characteristics measured immediately before firm founding: race, nationality, gender, education level, age, occupation, salary type, salary category, and firm size experience. Industry × Equity × Year fixed effects include initial equity category and founding year interactions. The sample includes all sole proprietorship firms founded between 2014 and 2019 that hired at least one employee, with 5-year outcomes tracked until 2024. Standard errors are clustered at the municipality level. Data are from CNPJ, RAIS, and MDS. *t*-statistics shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA17: Heterogeneity by Entrepreneur Demographics

Dependent Variable:	$\mathbb{1}$\{Business Survival\}	$\mathbb{1}$\{Business\} Growth\}	$\mathbb{1}$\{Employment Creation\}	$\mathbb{1}$\{Credit Access\}	$\mathbb{1}$\{Tax Violation\}	$\mathbb{1}$\{Active Debt Collection\}
	(1)	(2)	(3)	(4)	(5)	(6)
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−3.995***	−0.343	−2.618***	−0.035***	3.885***	1.670***
	(−5.25)	(−1.06)	(−5.51)	(−3.54)	(5.57)	(3.51)
Interactions with $\mathbb{1}$\{Cash-Transfer Entrepreneur\}:						
× $\mathbb{1}$\{Low Education\}	−0.998**	0.103	0.380	−0.003	0.780*	−0.556
	(−1.97)	(0.50)	(1.02)	(−0.62)	(1.84)	(−1.64)
× $\mathbb{1}$\{Young\}	2.544***	−0.442	0.205	0.000	1.193*	−0.603
	(3.03)	(−1.25)	(0.46)	(0.01)	(1.67)	(−1.40)
× $\mathbb{1}$\{Female\}	−1.913***	0.211	0.266	0.014**	2.347***	0.931**
	(−3.30)	(0.81)	(0.65)	(2.43)	(3.36)	(2.14)
× $\mathbb{1}$\{Racial Minority\}	1.445***	0.032	0.973***	0.022***	−2.335***	−0.642**
	(3.18)	(0.14)	(3.31)	(3.70)	(−5.87)	(−2.39)
× $\mathbb{1}$\{Had Blue Collar Job\}	−1.556***	−0.030	0.806**	−0.001	0.903**	−0.960**
	(−3.03)	(−0.13)	(2.44)	(−0.06)	(2.17)	(−2.28)
× $\mathbb{1}$\{Worked at Small Firm\}	−2.536***	−0.414**	−0.747**	0.002	0.525	0.179
	(−4.52)	(−2.08)	(−2.18)	(0.31)	(1.39)	(0.61)
× $\mathbb{1}$\{Had Variable Salary\}	0.836	1.119**	−0.197	−0.016	−0.077	1.391**
	(0.80)	(2.11)	(−0.23)	(−0.80)	(−0.09)	(1.99)
Observations	1,316,732	1,277,309	334,741	1,316,732	1,316,732	1,316,732
Adjusted R^2	0.07	0.07	0.06	0.01	0.10	0.06
Mean Dependent Variable	45.689	6.662	4.156	0.029	15.403	8.373
Control Mean Dependent Variable	45.998	6.744	4.249	0.030	15.085	8.319
Years Post-Founding:	5-Year	5-Year	5-Year	5-Year	5-Year	5-Year
Sample:	Full	Full	Full	Full	Full	Full
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓	✓	✓	✓

This table presents estimates of the heterogeneous effects of Brazil's cash transfer program (Bolsa Família) on entrepreneurial outcomes by entrepreneur demographics. $\mathbb{1}$\{Cash-Transfer Entrepreneurs\} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). All outcome variables are measured five years post-business-founding. Low Education refers to entrepreneurs with education up to 5th grade complete. Young refers to entrepreneurs under 25 years of age at business founding. Female indicates female entrepreneurs. Racial Minority includes Indigenous, Black, Yellow/Asian, and Brown/Mixed entrepreneurs. Had Blue Collar Job refers to entrepreneurs whose last formal employment before starting their business was in service & sales, agriculture/forestry/fishery, craft & related trades, plant & process operations, or elementary occupations. Worked at Small Firm indicates entrepreneurs whose last formal employment was at a firm registered under the SIMPLES Nacional tax regime. Had Variable Salary indicates entrepreneurs whose last formal employment featured variable compensation (weekly, daily, hourly, or task-based pay) rather than fixed monthly or biweekly salaries. $\mathbb{1}$\{Business Survival\} captures whether a firm remains active since founding. $\mathbb{1}$\{Business Growth\} captures transitions from MEI (Individual Microentrepreneur) to larger tax regimes. $\mathbb{1}$\{Employment Creation\} indicates whether the firm employs any worker other than the owner. $\mathbb{1}$\{Credit Access\} indicates whether the firm received financing from the Brazilian Development Bank (BNDES) through its indirect automatic operations program, which provides below-market-rate credit to small and medium enterprises. $\mathbb{1}$\{Tax Violation\} indicates whether the firm failed to file mandatory annual tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes). $\mathbb{1}$\{Active Debt Collection\} indicates whether the firm is subject to active collection proceedings by the federal government (Dívida Ativa da União), reflecting unpaid tax obligations, social security contributions, or administrative penalties. *Entrepreneur fixed effects* include the joint profile of individual characteristics measured immediately before firm founding: race, nationality, gender, education level (11 categories from illiterate to completed doctorate), age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects include 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2019, with 5-year outcomes tracked until 2024. We only consider firms in which the founder had formal employment experience within 12 months of starting the firm. Outcomes are tracked until the end of 2024, except employment creation, which is tracked until the end of 2020 per data availability. Data are from CNPJ, RAIS, MDS (Ministério do Desenvolvimento Social), BNDES, federal tax debt registry (PGFN), and IBGE. *t*-statistics shown in parentheses based on standard errors clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA18: Heterogeneity by Industry Sector

Dependent Variable:	$\mathbb{1}$\{Business Survival\}	$\mathbb{1}$\{Business\} Growth\}	$\mathbb{1}$\{Employment Creation\}	$\mathbb{1}$\{Credit Access\}	$\mathbb{1}$\{Tax Violation\}	$\mathbb{1}$\{Active Debt Collection\}
	(1)	(2)	(3)	(4)	(5)	(6)
$\mathbb{1}$\{Cash-Transfer Entrepreneur\}	−8.549***	−0.886***	−1.277***	−0.006**	7.371***	1.684***
	(−30.30)	(−4.92)	(−6.09)	(−2.47)	(23.97)	(7.13)
Interactions with $\mathbb{1}$\{Cash-Transfer Entrepreneur\}:						
× $\mathbb{1}$\{Construction\}	0.920	1.396**	0.570	−0.015	−1.673*	−1.079
	(0.71)	(2.48)	(0.83)	(−1.16)	(−1.73)	(−1.39)
× $\mathbb{1}$\{Manufacturing\}	−0.727	0.838**	−0.017	−0.030***	−1.610**	0.171
	(−0.98)	(2.57)	(−0.03)	(−3.39)	(−2.52)	(0.31)
× $\mathbb{1}$\{Trade\}	2.593***	1.042***	−0.817***	−0.012	−1.726***	−0.489
	(5.13)	(3.06)	(−3.00)	(−1.52)	(−3.60)	(−1.40)
× $\mathbb{1}$\{Transportation\}	4.234***	0.881*	0.521	−0.011	−7.642***	−1.039
	(3.92)	(1.68)	(0.66)	(−1.32)	(−8.27)	(−1.12)
Observations	1,307,074	1,267,988	332,768	1,307,074	1,307,074	1,307,074
Adjusted R^2	0.05	0.03	0.05	0.00	0.09	0.06
Mean Dependent Variable	45.710	6.675	4.159	0.029	15.400	8.380
Control Mean Dependent Variable	46.019	6.757	4.252	0.030	15.081	8.326
Years Post-Founding:	5-Year	5-Year	5-Year	5-Year	5-Year	5-Year
Sample:	Full	Full	Full	Full	Full	Full
Entrepreneur FE (all characteristics jointly)	✓	✓	✓	✓	✓	✓
Equity × Year FE	✓	✓	✓	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓	✓	✓	✓

This table presents estimates of the heterogeneous effects of Brazil's cash transfer program (Bolsa Família) on entrepreneurial outcomes by industry sector. $\mathbb{1}$\{Cash-Transfer Entrepreneurs\} are those enrolled in Bolsa Família and recent graduates from the program (up to 12 months). All outcome variables are measured five years post-business-founding. Industry classifications follow Dix-Carneiro (2014) and are mapped based on four-digit CNAE codes. The baseline category is Services, so the main cash-transfer entrepreneur coefficient represents the effect for service sector entrepreneurs. Industry main effects show baseline performance differences relative to Services. Interactions show differential cash-transfer effects for other industries relative to Services. Construction includes construction and related activities. Manufacturing combines high-tech and low-tech manufacturing. Trade includes wholesale and retail trade activities. Transportation includes transportation, storage, utilities, and communications sectors. $\mathbb{1}$\{Business Survival\} captures whether a firm remains active since founding. $\mathbb{1}$\{Business Growth\} captures transitions from MEI (Individual Microentrepreneur) to larger tax regimes. $\mathbb{1}$\{Employment Creation\} indicates whether the firm employs any worker other than the owner. $\mathbb{1}$\{Credit Access\} indicates whether the firm received financing from the Brazilian Development Bank (BNDES) through its indirect automatic operations program, which provides below-market-rate credit to small and medium enterprises. $\mathbb{1}$\{Tax Violation\} indicates whether the firm failed to file mandatory annual tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes). $\mathbb{1}$\{Active Debt Collection\} indicates whether the firm is subject to active collection proceedings by the federal government (Dívida Ativa da União), reflecting unpaid tax obligations, social security contributions, or administrative penalties. *Entrepreneur fixed effects* include the joint profile of individual characteristics measured immediately before firm founding: race, nationality, gender, education level, age, occupation, salary type, salary category, and firm size experience. Equity × Year fixed effects include initial equity category and founding year interactions. All regressions include industry main effects as controls, which are omitted from the table for brevity. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2019, with 5-year outcomes tracked until 2024. We only consider firms in which the founder had formal employment experience within 12 months of starting the firm. Outcomes are tracked until the end of 2024, except employment creation, which is tracked until the end of 2020 per data availability. Data are from CNPJ, RAIS, MDS, BNDES, federal tax debt registry (PGFN), and IBGE. *t*-statistics shown in parentheses based on standard errors clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA19: Differential Employment Transitions: with Entrepreneur Controls — Robustness

Panel A: Occupation and Employer Size			
Dependent Variable:	$\mathbb{1}$\{White Collar\}	$\mathbb{1}$\{Manager\}	$\mathbb{1}$\{Small Firm\}
	(1)	(2)	(3)
$\mathbb{1}$\{Cash-Transfer Entrepreneur\} × $\mathbb{1}$\{Post\}	0.011	−0.181	−1.056**
	(0.03)	(−0.99)	(−2.02)
$\mathbb{1}$\{Post-Entrepreneurship\}	−1.002***	−0.152	0.988***
	(−11.53)	(−1.40)	(6.21)
Pre-Entrepreneurship Mean	46.956	4.659	31.751
Post-Entrepreneurship Mean	45.931	4.496	32.698
Observations	520,446	520,446	520,748
Adjusted R^2	0.68	0.49	0.48
Panel B: Compensation			
Dependent Variable:	Monthly Salary	Salary per Hour Worked	$\mathbb{1}$\{Stable Pay\}
	(4)	(5)	(6)
$\mathbb{1}$\{Cash-Transfer Entrepreneur\} × $\mathbb{1}$\{Post\}	76.980***	1.886***	−0.812**
	(22.13)	(15.28)	(−2.50)
$\mathbb{1}$\{Post-Entrepreneurship\}	−125.520***	−2.758***	0.450***
	(−33.89)	(−36.15)	(5.20)
Pre-Entrepreneurship Mean	849.367	20.951	92.121
Post-Entrepreneurship Mean	727.159	18.232	92.538
Observations	520,344	517,558	520,748
Adjusted R^2	0.70	0.63	0.47
Entrepreneur FE (all characteristics jointly)	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓
Clustered SE (Municipality)	✓	✓	✓

This table presents difference-in-differences estimates of employment transitions before and after entrepreneurship, comparing Bolsa Família recipients to non-recipients with similar observable characteristics. The sample includes all entrepreneurs who transitioned to employment within 12 months of firm closure, structured as a panel with two observations per individual: pre-entrepreneurship and post-entrepreneurship employment. The unit of observation is individual-period. *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. All regressions include Industry × Equity × Year fixed effects. The interaction term (Cash-Transfer Entrepreneur × Post) captures the differential transition for cash-transfer recipients—whether their pre-to-post change differs from that of non-recipients with the same observable profile. The coefficient on Post-Entrepreneurship captures the average employment transition for non-cash-transfer entrepreneurs. *White Collar* indicates employment in management, professional, technical, or administrative positions (categories 1-4). *Manager* specifically identifies senior officials and business managers (occupation category 1). *Small Firm* indicates employment at firms registered under the SIMPLES regime. *Stable Pay* indicates monthly or biweekly payment schedules (versus weekly, daily, hourly, or task-based). Monthly and hourly salaries are inflation-adjusted to 2024 Brazilian Reais and winsorized at the 1st and 99th percentiles. The sample covers entrepreneurs who founded firms between 2014-2019, experienced firm closure, and subsequently transitioned to employment, tracked through 2024. Standard errors are clustered at the municipality level. Data sources: CNPJ (firm registrations), RAIS (employment records), and MDS (Bolsa Família records). t-statistics in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.