Social Transfers and Entrepreneurship

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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 conditional cash transfer program—and its effects on entrepreneurial entry, performance, and long-term outcomes. Using comprehensive administrative datasets covering 2.3 million sole-proprietorship firms, we link firm registries, cash transfer records, employment histories, and tax collection information. We address selection concerns through Coarsened Exact Matching and a multiplicity of fixed effects that create observationally identical comparison groups across entrepreneur demographics, industries, locations, and founding years. We first document that municipalities with higher program exposure experience significant increases in sole proprietorship formation, with no effects on larger business structures. At the individual level, cash-transfer entrepreneurs exhibit systematic performance disadvantages: lower survival rates, reduced employment creation, and lower credit access. They also exhibit higher rates of both tax violations and debt collection proceedings. Critically, entrepreneurial experiences generate no human capital returns for program participants. Among entrepreneurs returning to wage employment post-entrepreneurship, cash-transfer entrepreneurs are less likely to achieve upward occupational mobility to white-collar positions, more likely to experience occupational downgrading, and earn lower salaries. However, cash-transfer entrepreneurs generate multiplier benefits beyond the entrepreneurs themselves: they are more likely to hire racial minorities and offer full-time, higher-wage positions. Our study is the first to track cash-transfer entrepreneurs through the complete business lifecycle, revealing that while such programs facilitate business formation with positive externalities to non-beneficiaries, they fail to enable transformational entrepreneurship or provide stepping stones to better economic opportunities.

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JEL Classification: G28, I38, J24, L26

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1 Introduction

Governments worldwide have implemented social transfer programs that provide cash payments to vulnerable populations, with over 70 countries now distributing approximately 1% of national GDP through such programs (World Bank (2025)). These programs increasingly aim beyond consumption insurance toward promoting human capital accumulation and long-term economic mobility (Baird et al. (2011)). A key pathway through which recipients might achieve economic advancement is entrepreneurship, as business ownership historically enables individuals to build assets, develop skills, and create pathways out of poverty (Banerjee et al. (2015); Levine and Rubinstein (2017); Blattman et al. (2020)).

A central policy question concerns how cash transfer programs affect entrepreneurial activity and outcomes. While the guaranteed income stream from transfers may reduce business failure risks and enable experimentation (Bianchi and Bobba (2013)), income-based eligibility requirements can discourage venture growth as successful entrepreneurs risk losing program benefits. Despite the policy importance and fiscal scale of these programs, little is known about the characteristics and performance of businesses created by cash transfer recipients, or whether entrepreneurial experiences generate lasting benefits for participants. Understanding these outcomes is crucial for designing effective programs that balance immediate poverty alleviation with longer-term economic mobility objectives.

This paper examines how social transfers affect entrepreneurial entry, performance, and long-term outcomes among low-income populations. We address several key questions. First, do cash transfer programs stimulate entrepreneurial activity, and if so, what types of businesses are formed? Second, how do cash-transfer entrepreneurs perform relative to other entrepreneurs across survival, growth, employment creation, credit access, and tax compliance? Third, what types of workers do cash-transfer entrepreneurs hire, and how do their employment practices differ from other entrepreneurs? Fourth, do entrepreneurial experiences generate human capital returns that benefit individuals even when ventures fail? Fifth, how do these vary across entrepreneur characteristics and local economic conditions?

We examine these questions using Brazil's Bolsa Família program—the world's largest conditional cash transfer program, reaching over 17 million families, which represents 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 (under 1% of gross revenues, which also counts toward retirement contributions) and minimal regulatory compliance requirements. As such, it represents an ideal setting for studying cash transfers and entrepreneurship.

Our empirical analysis leverages five Brazilian government administrative databases. They cover the universe of Brazilian firms and their outcomes (from survival and growth to tax compliance), Bolsa Família payments by individual–month, formal employment and salary records by individual–firm–year, bank credit records by loan, and debt collection proceedings. A key innovation in our data construction involves systematically identifying individual tax identifiers (CPFs) for sole-proprietorship founders; this matching process is unprecedented and allowed us to these five datasets for the first time, to the best of our knowledge. We track firm performance annually from inception through up to five years of operation, observing survival, growth, employment creation, credit access, tax compliance, and financial distress.

We start by examining whether cash transfers affect overall entrepreneurial entry at the aggregate level using Poisson Pseudo Maximum Likelihood. Our analysis compares annual municipal-level business creation across Brazil's 5,570 municipalities with different intensities of Bolsa Família program exposure, controlling for municipality and year fixed effects. Municipalities with higher program exposure experience significant increases in sole proprietorship formation: each ten-unit increase in the beneficiary-to-population ratio generates 12 additional sole proprietorship firms per municipality per year, representing a 3% increase. Notably, we observe no significant effect on formation of more formal business structures, suggesting that cash transfers specifically promote the entry point most accessible to low-income individuals. When examining program intensity through transfer amounts relative to local GDP, the effects are even stronger: each ten-unit increase in the transfer-to-GDP ratio generates 21% increases in sole proprietorship creation while showing *reductions* in other business forms.

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 other entrepreneurs. A key challenge in studying cash transfers and entrepreneurship at the individual level lies in ensuring valid comparisons between program recipients and other entrepreneurs.

Transfer recipients typically have lower incomes, education levels, and access to capital than general entrepreneur populations. We address this identification challenge through multiple complementary strategies designed to create observationally identical comparison groups. First, we focus exclusively on sole proprietorships—the primary entry point to entrepreneurship for low-income individuals—and restrict our analysis to entrepreneurs with recent formal employment experience (within 12 months of business founding), ensuring both groups have similar pre-entrepreneurship labor market attachment.

Second, we employ comprehensive fixed effects that absorb the joint profile of individual characteristics (race, gender, education, age, pre-entrepreneurship occupation and salary levels) and industry–initial equity–year combinations. Third, we implement Coarsened Exact Matching (cf. Iacus et al. (2012); Aneja et al. (2025)) that groups entrepreneurs into strata defined by education, gender, salary, founding year, industry, and initial equity, retaining only strata containing both cash-transfer and other entrepreneurs. This process yields a sample of 2.3 million sole-proprietorship where treatment and control groups are observationally identical along multiple dimensions. We define as *cash-transfer entrepreneurs* those enrolled in Bolsa Família when founding their business and recent graduates of the program (up to 12 months). Standard errors are clustered at the municipality level to account for potential correlation in entrepreneurial outcomes within local economic environments.[1]

We begin our individual-level analysis by examining business survival and growth outcomes. Cash-transfer entrepreneurs exhibit systematically lower survival rates that compound over time. While first-year survival disadvantages are modest—0.7% lower survival rates (−0.57 percentage points relative to a mean of 81.3%)—these gaps widen substantially over longer horizons. By five years post-founding, cash-transfer entrepreneurs are 15.5% less likely to survive (−7.1 percentage points relative to a mean of 45.7%). Business growth patterns show similar disadvantages: cash-transfer entrepreneurs are 12.2% less likely to transition from entre-level sole-proprietorships (under the individual microentrepreneur (MEI) regime) to larger business forms that allow higher revenue thresholds and expanded employment by the second year, a deficit that persists through five years post-founding.

We next investigate whether cash transfers enable entrepreneurs to scale their businesses through job creation and formal credit access. Notably, Brazil's entry-level sole proprietorships (MEI) can formally employ one worker beyond the entrepreneur. The results reveal significant disadvantages across

[1] We show in robustness checks that our results hold under alternative error-clustering schemes.

both dimensions. 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%), with this employment creation deficit persisting across all time horizons and reaching 38% lower likelihood by five years (−1.6 percentage points relative to a mean of 4.2% sole proprietorships employing workers). Credit access disadvantages are even more pronounced: cash-transfer entrepreneurs are 52% less likely to access formal credit markets by five years post-founding (−1.5 basis points relative to a mean of 2.9 basis points). These scaling disadvantages persist despite Brazil's simplified business regime designed to facilitate the scaling of small businesses.

The analysis of regulatory compliance reveals systematic challenges in navigating Brazil's business environment, even when operating sole proprietorships with minimum regulatory requirements. Cash-transfer entrepreneurs exhibit substantially 43% higher likelihood of tax violations by two years post-founding (+2.3 percentage points relative to a mean of 5.3%). These compliance disadvantages persist over time, reaching 40% higher violation rates by five years (+6.1 percentage points relative to a mean of 15.4%). The regulatory challenges extend to debt collection: cash-transfer entrepreneurs are 17% more likely to face active debt collection proceedings by five years (+1.5 percentage points relative to a mean of 8.4%), indicating systematic financial distress that compounds their performance disadvantages.

To better understand the mechanisms underlying these performance disadvantages, we examine the characteristics of workers hired by cash-transfer entrepreneurs. Conditional on employing at least one worker beyond the entrepreneur, the analysis reveals systematic differences in employee demographics and occupational categories. Cash-transfer entrepreneurs are 14.6% more likely to hire racial minorities (+6.0 percentage points relative to a mean of 41.1%) and concentrate their employment in more elementary job categories: they are 14.1% more likely to hire workers in production and trades occupations but 25.0% less likely to hire managers. These hiring patterns suggest that cash-transfer entrepreneurs may lack access to higher-skilled workers, potentially contributing to their scaling difficulties.

Despite employing workers with lower skill levels, cash-transfer entrepreneurs offer more stable employment arrangements and better compensation than other entrepreneurs. They are 28.3% less likely to offer part-time positions (−2.8 percentage points relative to a mean of 9.8%) and 3.3% less likely to pay wages below R$500 monthly (−2.9 percentage points relative to a mean of 86.8%). These employment practices create a multiplier effect where social transfer programs indirectly benefit additional workers beyond the entrepreneur recipients themselves, providing stable employment opportunities to

traditionally underrepresented groups (analogous to the spillover effects documented by Egger et al. (2022) and Muralidharan et al. (2023)). However, this focus on stable, higher-wage employment for lower-skilled workers may come at the cost of business performance optimization, helping explain the systematic disadvantages documented across survival, growth, and scaling outcomes.

While cash-transfer entrepreneurs provide employment opportunities for underrepresented workers, a central policy question concerns whether business ownership experiences generate human capital returns that benefit cash-transfer entrepreneurs themselves, even when ventures fail. If entrepreneurship provides valuable learning experiences, skill development, or network effects, then cash transfer programs that facilitate business entry might yield positive returns through improved post-entrepreneurship employment outcomes. We examine this hypothesis by analyzing the employment trajectories of entrepreneurs who transition back to wage employment after closing their businesses, constructing a sample of 261,582 entrepreneurs who founded firms between 2014–2021 and subsequently returned to formal employment within a window of 12 months before or after firm closure.

The analysis reveals no evidence that entrepreneurial experiences generate positive human capital returns for cash-transfer recipients. Cash-transfer entrepreneurs are 36.9% less likely to achieve upward occupational mobility from blue-collar to white-collar positions (−3.2 percentage points relative to a mean of 8.7%) and 24.1% more likely to experience downward mobility from white-collar to blue-collar work (+2.3 percentage points relative to a mean of 9.6%). These occupational disadvantages extend to compensation: cash-transfer entrepreneurs earn 5.1% lower monthly salaries in their post-entrepreneurship employment (−R$36 relative to a mean of R$717) and are 12.7% less likely to achieve salary increases relative to their pre-entrepreneurship wages. Rather than serving as stepping stones to better employment opportunities, businesses founded by cash-transfer recipients appear to represent economic activities that neither enhance future earnings potential nor facilitate skill development.

The documented performance disadvantages and lack of human capital returns vary meaningfully across entrepreneur characteristics and local economic conditions. Demographic characteristics significantly moderate cash transfer effects, with young entrepreneurs and racial minorities showing better survival outcomes among cash-transfer recipients. Specifically, young cash-transfer entrepreneurs experience 5.6% better five-year survival rates (+2.5 percentage points) and racial minority entrepreneurs show 3.2% better survival (+1.4 percentage points) relative to their respective compar-

ison groups. However, female entrepreneurs face particularly severe challenges: they experience an additional 1.9 percentage points reduction in survival rates and 2.3 percentage points increase in tax violations beyond the baseline disadvantages. These results are 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 can buffer some of the disadvantages faced by cash-transfer recipients. They also align with findings that women entrepreneurs face disadvantaged networks and limited spillovers (Kerr et al. (2018); Wallskog (2025)), which can constrain their ability to grow and sustain businesses.

Local economic prosperity also significantly moderates the effects of cash transfer entrepreneurship. Since Bolsa Família provides uniform transfer amounts across all municipalities, recipients in lower-income areas effectively receive larger benefits in purchasing power parity terms, which likely explains the smaller performance gaps observed in these regions. In the poorest municipalities (bottom quartile GDP per capita), cash-transfer entrepreneurs show 7.3% better business growth outcomes (+0.49 percentage points relative to a mean of 6.7%) and 11.4% better tax compliance (-1.8 percentage points relative to a mean of 15.4%). Conversely, in the richest municipalities (top quartile GDP), cash-transfer entrepreneurs demonstrate 33.1% higher employment creation rates and 82.8% better credit access, indicating that prosperous areas offer better scaling opportunities despite other growth challenges. These geographic patterns suggest that both the relative purchasing power of transfers and local economic conditions fundamentally shape the types of opportunities available to cash-transfer entrepreneurs and their ability to overcome the systematic disadvantages documented in our main analysis.

Our paper contributes to several 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 nonroutine 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 also expands this literature by showing that subsistence entrepreneurship facilitated by social transfers neither enhances future earnings potential nor facilitates skill development that translates to the broader labor market.

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); Karlan and Morduch (2010); Adelino et al. (2015); Buera 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)), we show that social insurance mechanisms can create unintended consequences. 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)) and higher female labor supply through relaxed childcare constraints (Mariante (2025)). We advance this literature by providing the first comprehensive analysis of cash-transfer entrepreneurship across all economic sectors and the complete business lifecycle, revealing that insurance mechanisms simultaneously facilitate entry while creating systematic performance disadvantages. We further expand this research by showing that cash-transfer entrepreneurs generate no human capital returns for participants, contrasting with the positive investment outcomes documented in prior studies.

The remainder of the paper is organized as follows. Section 2 describes institutional details, Section 3 covers data construction, and Section 4 examines entrepreneurial entry. Section 5 presents our empirical strategy, Section 6 analyzes performance, Section 7 examines hiring patterns, and Section 8 studies post-entrepreneurship employment. Section 9 explores heterogeneity and Section 10 concludes.

2 Institutional Background

2.1 Bolsa Família Program

Bolsa Família is the world's largest conditional cash transfer program. The program combines strict income thresholds with direct support. To qualify, households must demonstrate per capita monthly income below R$178 (equivalent to $49, or 20% of Brazil's minimum wage) and register in the national Unified Registry (CadÚnico). All eligible families receive a basic benefit of R$89 monthly (approximately US$25) plus a variable benefit of R$41 (US$28) per children, pregnant women, and nursing mothers (which increases to R$48 for children between 16 and 17 years old).[2]

Panel A of Figure 1 shows that since 2016, over 17 million families benefit from Bolsa Família—representing over one-quarter of the Brazilian households. As Panel B shows, beneficiaries receive on average R$170 ($47) monthly payment from the program—which is equivalent to 19% of Brazil's minimum wage.[3] Figure IA1 shows that Bolsa Família has a fiscal cost of over R$30 billion ($8 billion) a year to the Brazilian government, representing about 0.5% of Brazil's GDP between 2014 and 2021.

To maintain enrollment, families must fulfill health and education 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 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.

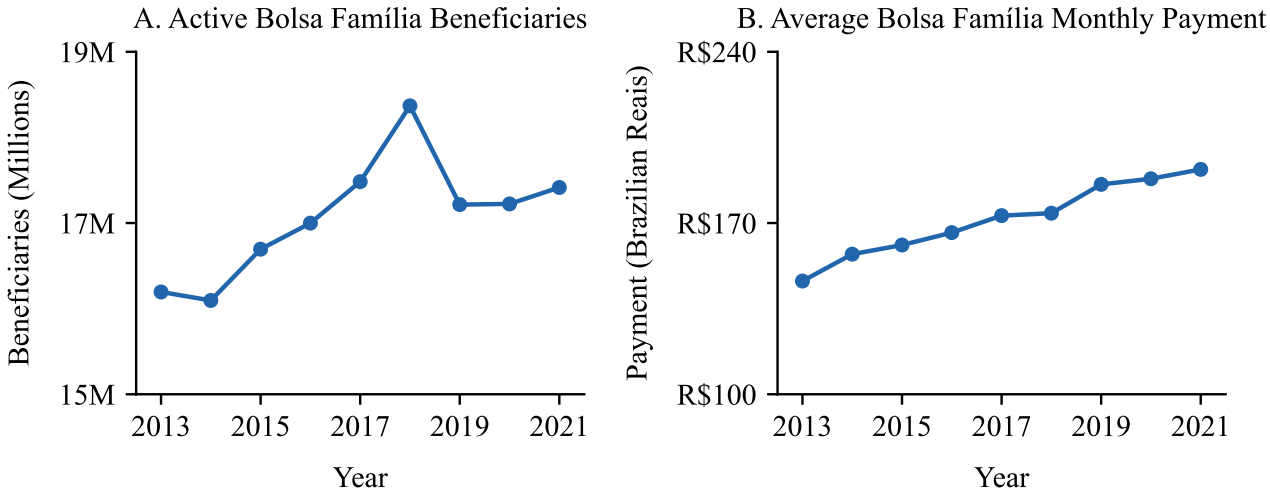
2.2 Firms in Brazil

As Panel A of Figure 2 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

[2]Starting 2022, the Bolsa Família income threshold increased from R$ 178 to R$ 210 per capita—which allowed the inclusion of 2.2 million beneficiaries—and the minimum program payment increased from R$89 to R$600 per family.

[3]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)).

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).

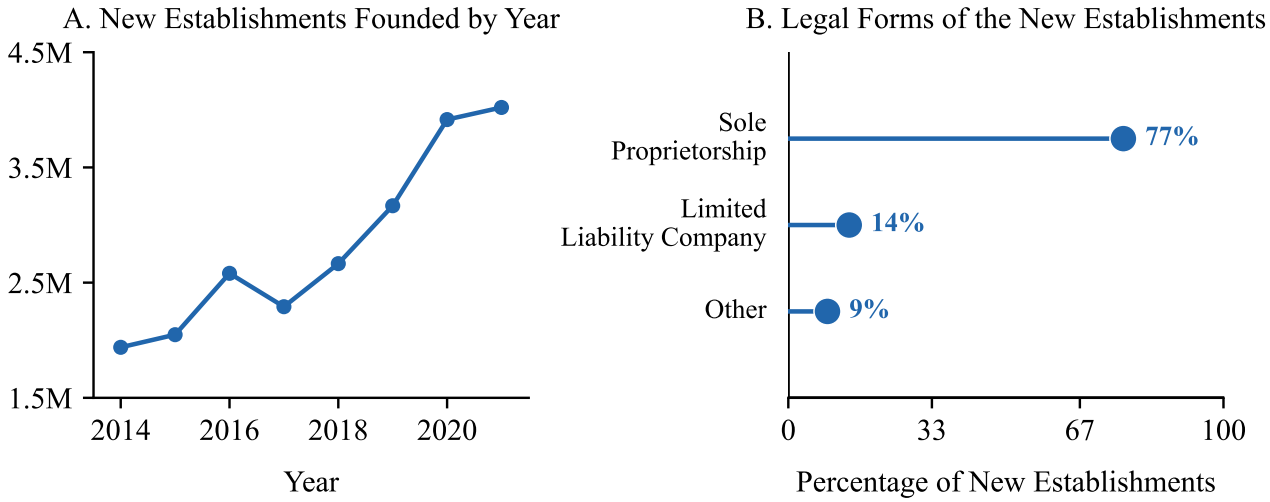
sole proprietorships, which account for 77% of new establishments. Limited liability companies are the second most common business form, accounting for 14% of the new businesses in Brazil.

Nearly all sole proprietorships initially operate under the *Microempreendedor Individual* (MEI) regime. MEI registration requires annual revenue below R$81,000 (approximately $22,000). MEI entrepreneurs pay a fixed monthly tax of R$66.60 (covering social security, municipal ISS tax, and federal ICMS tax), which represents 1% of their maximum allowed revenue. This payment provides access to social security benefits including retirement, disability, and maternity leave. Additionally, MEI firms can employ one worker and must file a simplified annual tax return (DASN-SIMEI).

As sole proprietorships grow, they transition through different size categories while remaining individual entrepreneurs. The next tier, *Microempresa* (ME), allows revenue up to R$360,000 annually but requires more complex tax calculations under the SIMPLES Nacional regime[4], with progressive rates starting at 4% and reaching up to 15.5% of gross revenue depending on business activity and revenue level. 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 also faces substantially higher compliance

[4]SIMPLES Nacional is a simplified tax regime introduced in 2006 that unifies federal, state, and municipal taxes into a single monthly payment for small businesses. It benefits micro and small enterprises through reduced bureaucracy, exemptions from certain social contributions (SESC, SESI, SENAI, SENAC), and simplified accounting requirements.

Figure 2: 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.

costs, including mandatory accounting services and multiple monthly and annual filing obligations beyond MEI's simple monthly payment and annual revenue declaration.[5]

The largest sole proprietorship category, *Empresa de Pequeno Porte* (EPP), accommodates revenue between R$360,000 and R$4.8 million annually under SIMPLES Nacional, though with higher progressive tax rates than ME. Individual entrepreneurs exceeding R$4.8 million lose SIMPLES eligibility and must use more complex tax regimes like *Lucro Presumido* or *Lucro Real*, though they can remain sole proprietorships. However, many entrepreneurs at this scale choose to establish limited liability companies for liability protection, easier access to capital, or when they need business partners.[6]

[5]MEI pays a fixed monthly amount (R$66.60) with one annual declaration, while ME must calculate progressive tax rates, file monthly revenue declarations (PGDAS-D), and typically requires professional accounting due to the complexity.

[6]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).

3 Data

3.1 Data Construction

Our analysis relies on five comprehensive administrative datasets from the Brazilian government. First, we use the *Cadastro Nacional da Pessoa Jurídica* (CNPJ), which includes all firms founded in Brazil, sourced from the Ministério da Fazenda. Second, we obtain *Bolsa Família Payment* records from the Ministério do Desenvolvimento e Assistência Social, Família e Combate à Fome (MDS). Third, we use the *Relação Anual de Informações Sociais* (RAIS), sourced from the Ministério do Trabalho e Emprego, which contains formal employment records for all workers in Brazil. Fourth, we utilize *Dívida Ativa da União* from the Procuradoria-Geral da Fazenda Nacional, which includes obligations that have escalated to enforcement actions. Finally, we obtain *Operações Indiretas Automáticas* from the Brazilian Development Bank (BNDES), which includes data on companies' access to bank credit.

The CNPJ data also 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 novelty of our data construction process is the identification of individual tax identifiers (CPFs) for sole-proprietorship firms. We focus on sole proprietorships because they are the primary entry point to entrepreneurship in Brazil. We observe in the CNPJ data that CPFs are almost always embedded within the legal names of sole proprietorships in the firm registry. We verify obtained CPFs with Serasa Experian (a major credit bureau) based on each person's full name and municipality. Exploiting this pattern systematically, we successfully identify CPFs for the founders of 21.6 million of the universe of 27.3 million sole proprietorships started in Brazil between 2013 and 2024.

The Bolsa Família Payments dataset provides comprehensive monthly payment records for 37.9 million conditional cash transfer beneficiaries between 2013 and 2024, including the exact amount received by beneficiary–month. For all beneficiaries, the data contains their 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 and identify periods of enrollment and disenrollment.

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.

Operações Indiretas Automáticas includes detailed data on below-market-rate credit extensions to small and medium enterprises through participating financial institutions (all major retail banks participate in this program). It tracks individual credit extension events, the amount of credit borrowed, and the charged interest rate. It includes the legal firm name of the borrower, the municipality where the borrower is based, and five last digits of the borrower's CNPJ ID number.

We link these datasets datasets through a multi-step process, relying exclusively on exact matching. First, we match RAIS employment records to CNPJ firm records using CPFs, and connect RAIS to Bolsa Família payments using NIS identifiers. 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.

3.2 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—specially 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.[7] 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).

3.3 Key Variables and Summary Statistics

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.

3.3.1 Firm Characteristics and Performance Outcomes

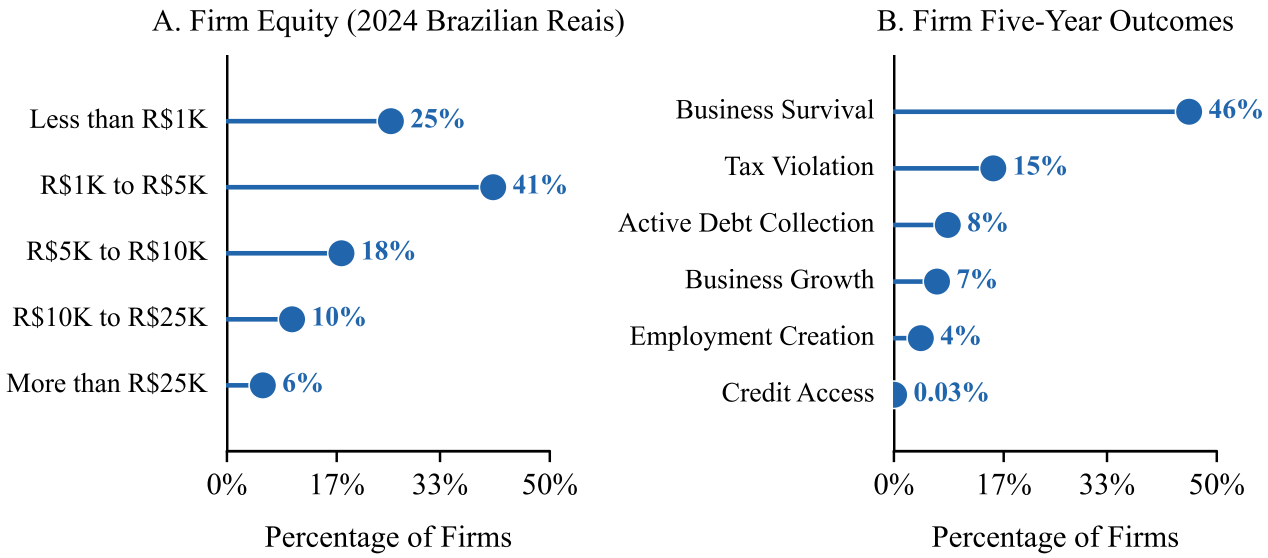
We examine firm equity and performance through several key dimensions. *Firm equity* measures the initial capital investment (in thousands of constant 2024 Brazilian Reais) that entrepreneurs contribute when founding their businesses. We categorize equity into five brackets: ≤R$1k, R$1k–5k, R$5k–10k,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

Our primary performance measures track five key entrepreneurial outcomes over 1, 2, 3, and 5-year horizons. First, *business survival* captures whether firms remain active in government registries, providing a fundamental measure of entrepreneurial persistence (cf. Bernstein et al. (2022)). Second, *business growth* identifies transitions from MEI (Individual Microentrepreneur) status to larger tax regimes, indicating successful scaling beyond the entry-level micro-enterprise thresholds.

Third, *employment creation* measures whether firms employ workers beyond the owner, capturing job creation and business expansion. Fourth, *credit access* indicates whether firms received financing from BNDES through its indirect automatic operations program, which provides credit to small and medium enterprises through participating financial institutions. This measure captures entrepreneurs' ability to access formal credit markets—a critical constraint for business growth.

[7] 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.

Figure 3: 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-year post-business 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.

Finally, we examine compliance and financial distress through two measures. *Tax violations* capture failures to file mandatory annual tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes), while *active debt collection* indicates whether firms are subject to federal government collection proceedings for unpaid tax obligations (the most common situation), 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 3, 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.

3.3.2 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 Brazilians Reals), 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.

3.3.3 Summary Statistics

Table 1 presents summary statistics comparing entrepreneurs who received Bolsa Família benefits before starting their businesses 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

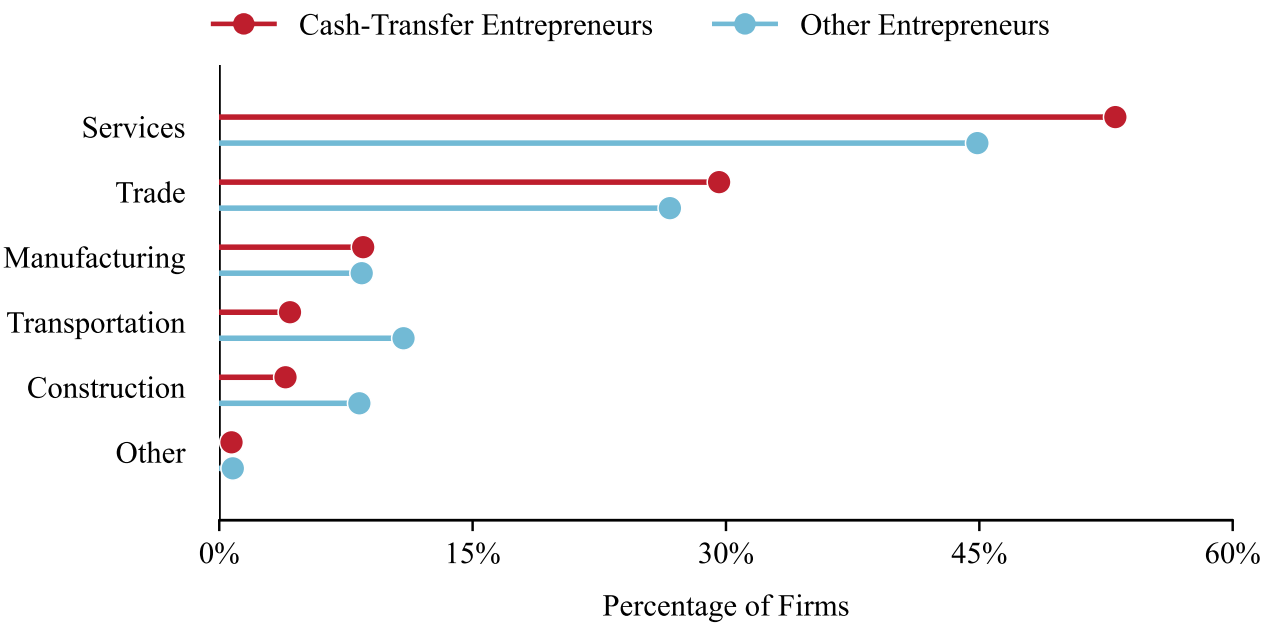
Tables IA1 and IA2 in the internet appendix provide detailed breakdowns of these occupation and demographic patterns, revealing that cash-transfer entrepreneurs concentrate particularly in personal service work (34.8% versus 14.4% for other entrepreneurs) and sales (15.3% versus 12.0%), with 68.3% earning 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.

3.4 Industry Composition

The industry distribution of cash-transfer and other entrepreneurs, shown in Figure 4, 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 3 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 4: Industry Distribution by Sole Proprietorship Type



This figure shows the industry distribution of sole-proprietorship firms in our sample. 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. Data are from CNPJ, RAIS, and MDS. Industry classifications follow Dix-Carneiro (2014). Data are from Brazil's CNPJ, MDS, and RAIS.

PLACE TABLE 3 ABOUT HERE

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.

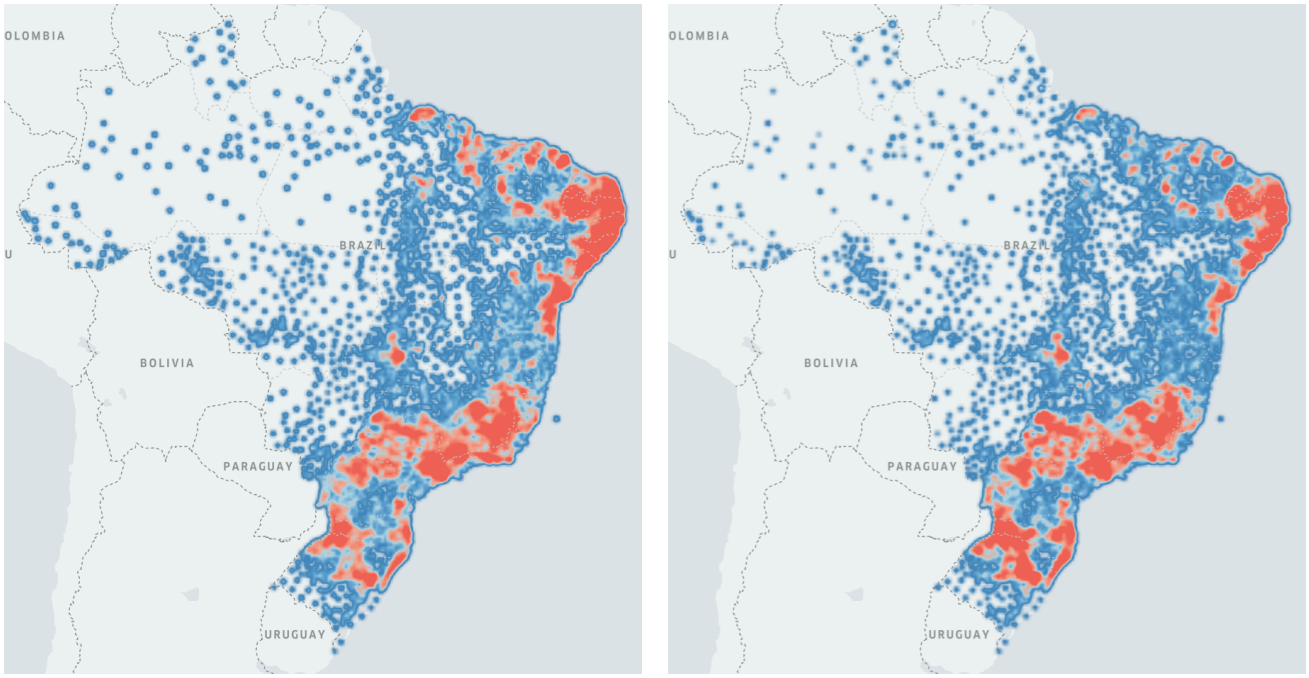
4 Cash Transfers and Entrepreneurial Entry

We examine whether cash transfers affect overall entrepreneurial entry at the aggregate level through two complementary approaches. We first document the geographic distribution of program payments and

Figure 5: 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 from MDS, CNPJ, and IBGE.

entrepreneurial activity across Brazil's municipalities, then estimate the causal impact using municipal-level panel regressions. We discuss these in turn.

4.1 Geographic Distribution

Figure 5 examines the geographic distribution of social transfer payments and entrepreneurial growth across Brazil's municipalities. Panel A shows the log of average annual Bolsa Família payments, with the highest payment levels concentrated in municipalities along Brazil's Northeast coast, the southern states of Rio Grande do Sul and Santa Catarina, and scattered interior municipalities. Panel B presents compound annual growth rates in sole proprietorship formation, revealing remarkably similar spatial clustering patterns. The correspondence between program payment intensity and entrepreneurial activity is particularly pronounced in the Northeast coast and southern regions, while the Amazon region exhibits consistently lower values in both measures.

To examine the spatial relationship between program payments and entrepreneurial growth, we calculate the bivariate Moran's I statistic, which yields a Z-score of 20.12 ($p < 0.001$), confirming significant joint spatial clustering (see Ward and Gleditsch (2008)). We further assess the degree of geographic overlap by computing kernel density probability surfaces for both variables and calculating their correlation. Following the methodology in Aretz et al. (2020), this approach creates continuous spatial distributions that smooth local variation while preserving regional patterns. 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 across Brazil's territory.

4.2 Municipal-Level Analysis

Our analysis of annual municipal-level business creation compares business formation rates across municipalities with different intensities of Bolsa Família program exposure. This design exploits variation in program rollout and beneficiary concentration across Brazil's 5,570 municipalities between 2014 and 2021. Given the count nature of our dependent variables, we employ Poisson Pseudo Maximum Likelihood (PPML). We estimate the following specification:

$$\text{New Firms}_{m,t} = \exp[\beta \cdot \text{Program Exposure}_{m,t} + \alpha_m + \lambda_t] + \epsilon_{m,t} \tag{1}$$

where $\text{New Firms}_{m,t}$ measures annual counts of new business establishments in municipality m and year t, estimated separately for sole proprietorships and other firm types. We construct two measures of program exposure: the ratio of active Bolsa Família beneficiaries to municipal population, and the ratio of total transfer payments to municipal GDP. Municipality fixed effects (α_m) control for time-invariant local characteristics affecting business formation, while year fixed effects (λ_t) absorb aggregate economic conditions and policy changes affecting all municipalities.

Table 4 presents our results. Panel A shows that a ten-unit increase in the beneficiary-to-population ratio is associated with 12 additional sole proprietorship firms per municipality per year, representing a 3% increase relative to the sample mean of 390 firms. Notably, we observe no significant effect on non-sole proprietorship formation, suggesting that cash transfers specifically promote the entry point most accessible to low-income individuals. Panel B confirms these patterns persist using lagged

program exposure measures, helping address potential reverse causality concerns.

PLACE TABLE 4 ABOUT HERE

Panels C and D examine program intensity through transfer amounts relative to local economic activity. The results reveal even stronger patterns: municipalities receiving larger transfer amounts (relative to GDP) experience significant increases in sole proprietorship creation while showing reductions in more formal business structures. Specifically, Panel C shows that a ten-unit increase in the transfer-to-GDP ratio is associated with 83 additional sole proprietorships (a 21% increase relative to the mean) but 31 *fewer* non-sole proprietorship firms (a 38% increase relative to the mean). Panel D shows that these results persist using lagged program exposure measures. We cannot completely separate whether beneficiaries themselves are starting new sole proprietorships or if cash transfers create broader demand spillovers that stimulate business formation by non-beneficiaries. However, if transfers operated primarily through consumption, we would expect to see increases in larger firms, consistent with demand effects documented by earlier studies (Sedláček and Sterk (2017); Schoar (2010)).[8]

5 Main Empirical Strategy

In our main tests, we estimate the causal effect of cash transfers on entrepreneurial outcomes using the following linear model:

$$Y_{f,t} = \alpha + \beta \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_f\} + \delta_i + \theta_s + \varepsilon_{f,t} \tag{2}$$

where $Y_{i,t}$ 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

[8] Sedláček and Sterk (2017) document that companies formed in response to demand shocks are primarily scalable, mass-market firms with high growth potential. Schoar (2010) shows that transformational entrepreneurs, who seek to create growth-oriented businesses, are fundamentally distinct from subsistence entrepreneurs who focus on basic income provision, such as sole proprietorships. Critically, the author documents minimal transition between entrepreneur types.

represent fixed effects described below, and $\varepsilon_{f,t}$ 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.[9] 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.

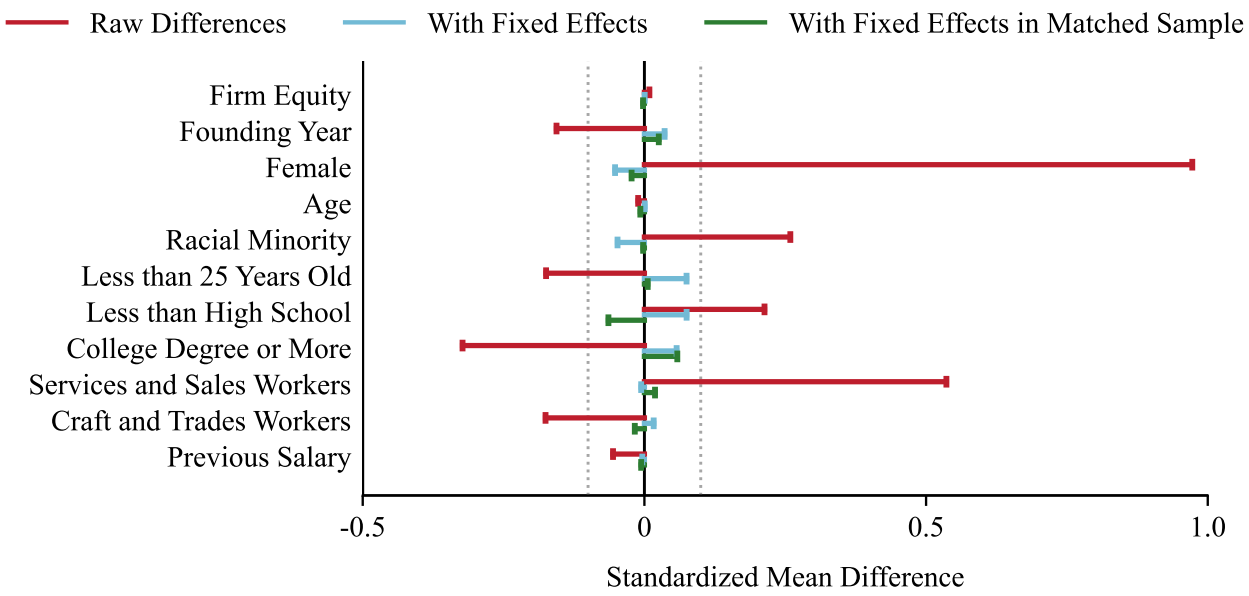
Industry × *Equity* × *Year fixed effects* (θ_s) control for time-varying industry conditions, capital requirements, and macroeconomic factors through the joint profile of industry classification (based on 2-digit CNAE codes, which includes 82 industry sectors), initial equity category in constant 2024 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 6 shows that our identification strategy successfully addresses observable differences

[9] Relatedly, Gennaioli et al. (2013), document that education is a strong predictor of firm performance.

Figure 6: 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 most 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

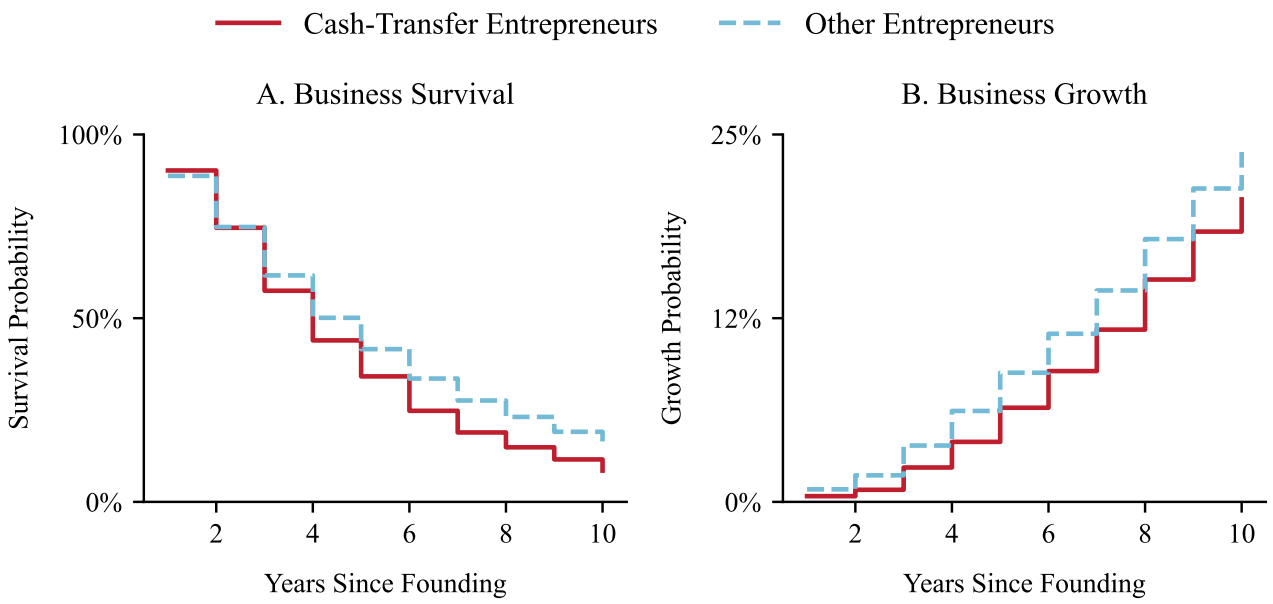
We begin by examining business survival and growth outcomes. Figure 7 presents non-parametric Kaplan-Meier estimates that reveal systematic performance differences. Panel A shows that cash-transfer entrepreneurs exhibit consistently lower business survival probabilities across all time horizons, with 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 5 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 5 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

Figure 7: 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.

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 IA3). 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 6 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 6 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.

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 × Equity × Year fixed effects and clustering standard errors at the 2-digit industry level (see Table IA4). 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 Compliance and Financial Distress

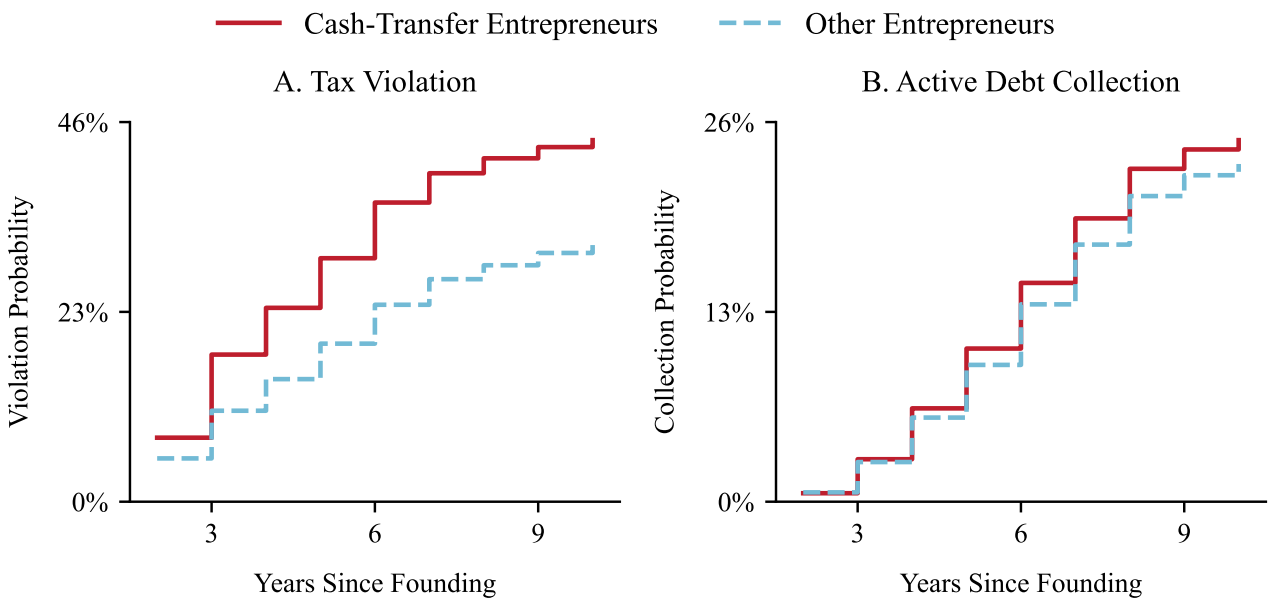
We next examine tax compliance and financial distress outcomes. Figure 8 presents non-parametric Kaplan-Meier estimates that reveal systematic performance differences. Panel A shows that cash-transfer entrepreneurs exhibit consistently higher cumulative probabilities of tax filing violations across all time horizons, with compliance gaps widening over time. Panel B reveals similar patterns for active debt collection proceedings, defined as firms subject to active collection proceedings by the federal government for unpaid obligations. Cash-transfer entrepreneurs show consistently higher cumulative probabilities of entering government collection processes over time. These non-parametric estimates suggest that cash-transfer entrepreneurs perform consistently worse in regulatory compliance over time.

Table 7 presents regression estimates that quantify these compliance disadvantages after controlling for observable entrepreneur and business characteristics. Tax compliance violations are tracked beginning from the second year of operation, as firms are typically flagged for violations only after multiple years of operation. Results under Columns (1) and (2) of Panel A show that cash-transfer entrepreneurs are 43% more likely to commit tax 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 7 ABOUT HERE

These compliance persist over longer time horizons. Results under Column (1) of Panel B

Figure 8: 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.

reveal that cash-transfer entrepreneurs are 47% more likely to commit tax violations by three years (+5.3 percentage points relative to a mean of 11.3%). The tax compliance deficit 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 violate tax requirements (+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.

Active debt collection patterns also persist over time. Results under Column (3) of Panel A indicate that 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%). Column (3) of Panel B shows that cash-transfer entrepreneurs are 12% more likely to face debt collection by three years (+0.31 percentage points relative to the mean). The debt collection disadvantage reaches its peak in Panel C, where Column (3) shows that cash-transfer entrepreneurs are 17% more likely to face active debt collection by five years (+1.5 percentage points relative to a mean of 8.4%). The persistence and magnitude of these tax compliance and

debt collection effects suggest that cash-transfer entrepreneurs face systematic challenges in navigating Brazil's business regulatory environment, even when operating sole-proprietorship firms that benefit from significantly lower tax rates and minimum regulatory requirements under SIMPLES Nacional.

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 IA5). This alternative specification preserves the magnitude and statistical significance of both tax compliance and debt collection disadvantages.

7 Hiring Patterns and Employee Characteristics

We next examine hiring patterns among cash-transfer entrepreneurs to better understand the mechanisms underlying their performance disadvantages. Conditional on employing at least one worker (other than the entrepreneur), we analyze the characteristics of employees hired by cash-transfer entrepreneurs relative to other entrepreneurs. We employ the same empirical specification as our main performance tests, comparing results both without and with comprehensive entrepreneur demographic controls.

Table 8 presents these results across three dimensions of hiring patterns. Panel A examines employee demographics, revealing that cash-transfer entrepreneurs systematically hire different types of workers. Results under Column (1) show that cash-transfer entrepreneurs are 14.6% more likely to hire racial minorities (+6.0 percentage points relative to a mean of 41.1%). However, Column (3) reveals they are 18.2% less likely to hire female employees (−10.9 percentage points relative to a mean of 60.2%). Column (5) indicates that cash-transfer entrepreneurs are 9.1% more likely to hire workers with low educational attainment—i.e., with less than a complete high school (+4.0 percentage points relative to a mean of 44.2%). The results with entrepreneur demographic controls in even-numbered columns show similar patterns with smaller magnitudes, confirming these hiring differences (except for low education, which becomes insignificant) persist beyond observable founder characteristics.

PLACE TABLE 8 ABOUT HERE

Panel B reveals distinct occupational hiring patterns that may contribute to performance differences. Results under Column (7) show that cash-transfer entrepreneurs are 14.1% more likely to hire

workers in production and trades occupations (+3.8 percentage points relative to a mean of 27.1%). Conversely, Column (9) indicates they are 11.6% less likely to hire workers in services and sales roles (−6.2 percentage points relative to a mean of 53.7%). Column (11) shows they are also 25.0% less likely to hire managers (−1.8 percentage points relative to a mean of 7.1%). These patterns suggest that cash-transfer entrepreneurs concentrate their hiring in more elementary occupational categories.

Panel C examines employment terms and compensation structures, revealing patterns that partially offset concerns about worker quality. Results under Column (13) show that cash-transfer entrepreneurs are 28.3% less likely to offer part-time positions (−2.8 percentage points relative to a mean of 9.8%). Column (17) indicates they are also 3.3% less likely to pay low wages (less than R$500 a month) (−2.9 percentage points relative to a mean of 86.8%). However, Column (15) reveals they are 3.7% less likely to offer performance-based compensation (−3.2 percentage points relative to a mean of 86.9%).

These hiring patterns suggest cash-transfer entrepreneurs may underperform partly due to employing workers with lower skill levels and concentrating in elementary occupations. However, the results also reveal that these businesses help democratize labor market access by providing opportunities to racial minorities and offering more stable, higher-wage employment. This creates a multiplier effect where social transfer programs indirectly benefit additional workers beyond the entrepreneur recipients themselves, though potentially at the cost of business performance optimization.

8 Post-Entrepreneurship Employment Outcomes

A central question in entrepreneurship policy concerns whether business ownership experiences generate human capital returns that benefit individuals even after their ventures end. If entrepreneurship provides valuable learning experiences, skill development, or network effects, then cash transfer programs that facilitate business entry might yield positive returns through improved post-entrepreneurship employment outcomes. We examine this hypothesis by analyzing the employment trajectories of entrepreneurs who transition back to wage employment after closing their businesses.

We construct our post-entrepreneurship employment sample by identifying entrepreneurs who transitioned to formal employment within 12 months of firm closure, allowing for potential delays during the transition period. Firm closure is defined as businesses with registration status indicating inactive

status in the CNPJ registry. We match these former entrepreneurs to their first post-entrepreneurship employment using employment start dates from RAIS data, yielding a sample of 261,582 entrepreneurs who founded firms between 2014–2021 and subsequently returned to wage employment.

Our analysis examines employment outcomes across three dimensions: occupational categories, mobility patterns, and compensation structures. We classify occupations into blue-collar and white-collar categories based on skill requirements and job characteristics. *Blue-collar occupations* include service and sales workers, agricultural/forestry/fishery workers, craft and related trades workers, plant and process operators, and elementary occupations (categories 5–9 in Brazil's CBO occupational classification system). *White-collar occupations* encompass senior officials and business managers, science and arts professionals, technicians, and administrative support workers (categories 1–4). We construct several measures of occupational mobility relative to entrepreneurs' pre-entrepreneurship employment. *Blue to White Collar* captures upward mobility from blue-collar pre-entrepreneurship jobs to white-collar post-entrepreneurship positions, while *White to Blue Collar* indicates downward occupational mobility. *Remained Blue Collar* and *Remained White Collar* measure occupational persistence within the same broad category. Educational mobility is captured through *Education Upgrade*, which indicates any advancement across Brazil's eleven educational categories, ranging from illiterate to completed doctorate. Compensation outcomes include *New Monthly Salary* (inflation-adjusted wages), *Salary Increase* (indicating whether post-entrepreneurship wages exceed pre-entrepreneurship levels), and *Variable to Stable Pay* (transitions from variable payment schedules to stable monthly or biweekly payment).

Table 9 presents our analysis using the same empirical specification as our main performance tests with comprehensive entrepreneur demographic controls and Industry × Equity × Year fixed effects. Panel A reveals systematic differences in post-entrepreneurship job placement. Results under Column (1) show that cash-transfer entrepreneurs are 10.2% more likely to secure blue-collar positions post-entrepreneurship (+5.5 percentage points relative to a mean of 54.0%). Conversely, Column (2) indicates they are 6.2% less likely to remain in white-collar positions (−2.3 percentage points relative to a mean of 37.3%). Results under Column (3) show that among entrepreneurs who were in blue-collar occupations before starting their businesses, cash-transfer entrepreneurs are 7.2% more likely to remain in blue-collar work, indicating limited occupational advancement through entrepreneurial experience.

PLACE TABLE 9 ABOUT HERE

Panel B examines mobility patterns more directly. Results under Column (4) show that cash-transfer entrepreneurs are 36.9% less likely to achieve upward occupational mobility from blue-collar to white-collar positions (−3.2 percentage points relative to a mean of 8.7%). Conversely, Column (5) indicates they are 24.1% more likely to experience downward mobility from white-collar to blue-collar work (+2.3 percentage points relative to a mean of 9.6%). The education results under Column (6) reveal no differences in formal educational advancement between cash-transfer and other entrepreneurs.

Panel C examines compensation outcomes. Results under Column (7) show that cash-transfer entrepreneurs earn 5.1% lower monthly salaries post-entrepreneurship (−R$36 relative to a mean of R$717), even after controlling for comprehensive entrepreneur and business characteristics. Column (8) shows that cash-transfer entrepreneurs are 12.7% less likely to achieve salary increases relative to their pre-entrepreneurship wages (−4.0 percentage points relative to a mean of 31.9%). The results under Column (9) on payment structure stability show no meaningful differences, with cash-transfer entrepreneurs being equally likely to transition from variable to stable payment arrangements.[10]

These results provide little evidence that entrepreneurial experiences generate human capital returns for cash-transfer recipients. Across multiple dimensions—occupational advancement, educational attainment, and wage growth—cash-transfer entrepreneurs either show no improvement or experience systematic disadvantages relative to other entrepreneurs. The patterns are particularly concerning for upward occupational mobility, where cash-transfer entrepreneurs are substantially less likely to transition to higher-skill positions and more likely to experience occupational downgrading. Rather than serving as stepping stones to better employment opportunities, businesses founded by cash-transfer recipients appear to represent economic activities that neither enhance their future earnings potential nor facilitate skill development that translates to the broader labor market.

9 Heterogeneity in Entrepreneurial Outcomes

We examine whether the effects of cash transfers on entrepreneurial performance vary across entrepreneur characteristics, local economic conditions, and industry sectors. Understanding this heterogeneity helps identify the mechanisms underlying our main findings and reveals which entrepreneurs

[10] All results remain stable under alternative clustering and fixed effects specifications (see Table IA6)

and contexts are most affected by cash transfer programs. We discuss these results in turn.

9.1 Heterogeneity by Entrepreneur Demographics

We first investigate how cash transfer effects vary with entrepreneur characteristics that may influence business management capabilities, access to resources, or risk tolerance. Figure 9 presents non-parametric evidence of demographic differences in entrepreneurial performance. Panel A shows that among white entrepreneurs, cash-transfer recipients exhibit substantially higher tax violation rates across all time horizons, with gaps widening over time. However, Panel B reveals that among racial minority entrepreneurs, the gap between cash-transfer and other entrepreneurs is considerably smaller, with convergence occurring by year 7. Similarly, Panels C and D show that debt collection disadvantages are more pronounced among white entrepreneurs than racial minorities, suggesting that demographic characteristics may moderate the effects of cash transfer entrepreneurship.

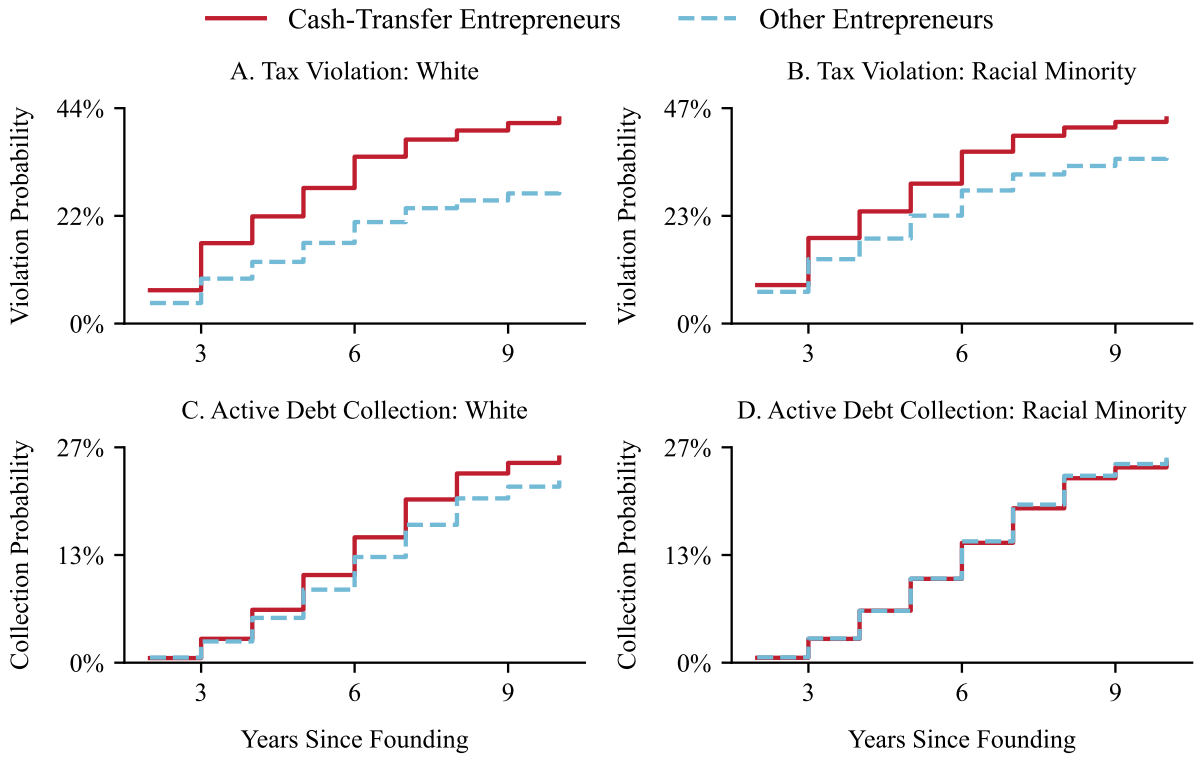
Table 10 presents interaction effects with key demographic variables, focusing on five-year outcomes to capture long-term performance patterns. The baseline coefficient represents the effect for the omitted category (high education, older, male, white, white-collar occupation, large firm experience, and fixed salary workers), while interaction terms show differential effects for other demographic groups.

PLACE TABLE 10 ABOUT HERE

The regression results confirm that demographic characteristics significantly moderate cash transfer effects. Results under Column (1) of Table 10 show that the baseline five-year survival disadvantage for cash-transfer entrepreneurs is 8.7% (−4.0 percentage points relative to a mean of 45.7%), but this disadvantage is amplified among entrepreneurs with low education (additional −1.0 percentage points) and female entrepreneurs (additional −1.9 percentage points). Conversely, young entrepreneurs and racial minorities show improved survival outcomes, with young cash-transfer entrepreneurs experiencing 5.6% better survival rates (+2.5 percentage points) and racial minority entrepreneurs showing 3.2% better survival (+1.4 percentage points) relative to their respective comparison groups.

Tax compliance patterns vary substantially across demographic groups. Results under Column (5) show that while all cash-transfer entrepreneurs exhibit higher violation rates, female entrepreneurs

Figure 9: 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.

face particularly severe challenges, with an additional 2.3 percentage points increase in tax violations beyond the baseline 3.9 percentage point increase. Racial minority entrepreneurs, however, show 15.2% better tax compliance (−2.3 percentage points relative to the baseline), suggesting these entrepreneurs may have different support networks or compliance behaviors that help mitigate some of the disadvantages associated with cash transfer entrepreneurship. These demographic patterns extend to post-entrepreneurship employment outcomes, where racial minority cash-transfer entrepreneurs show better occupational persistence and reduced downward mobility, though they experience disadvantages in shifts from variable to stable payment structures (see Table IA10).

9.2 Heterogeneity by Local Economic Prosperity

We next examine how local economic conditions affect cash transfer entrepreneurship outcomes. Figure 10 provides non-parametric evidence of geographic differences in entrepreneurial performance. Panels A and B show that tax violation gaps between cash-transfer and other entrepreneurs are more pronounced in poor municipalities than rich ones. Specifically, Panel A reveals substantial and persistent tax compliance disadvantages in poor areas, while Panel B shows smaller gaps that plateau earlier in rich municipalities. Debt collection patterns in Panels C and D show similar geographic variation, with cash-transfer entrepreneurs in poor areas facing higher debt collection rates relative to their local counterparts than those in rich areas.

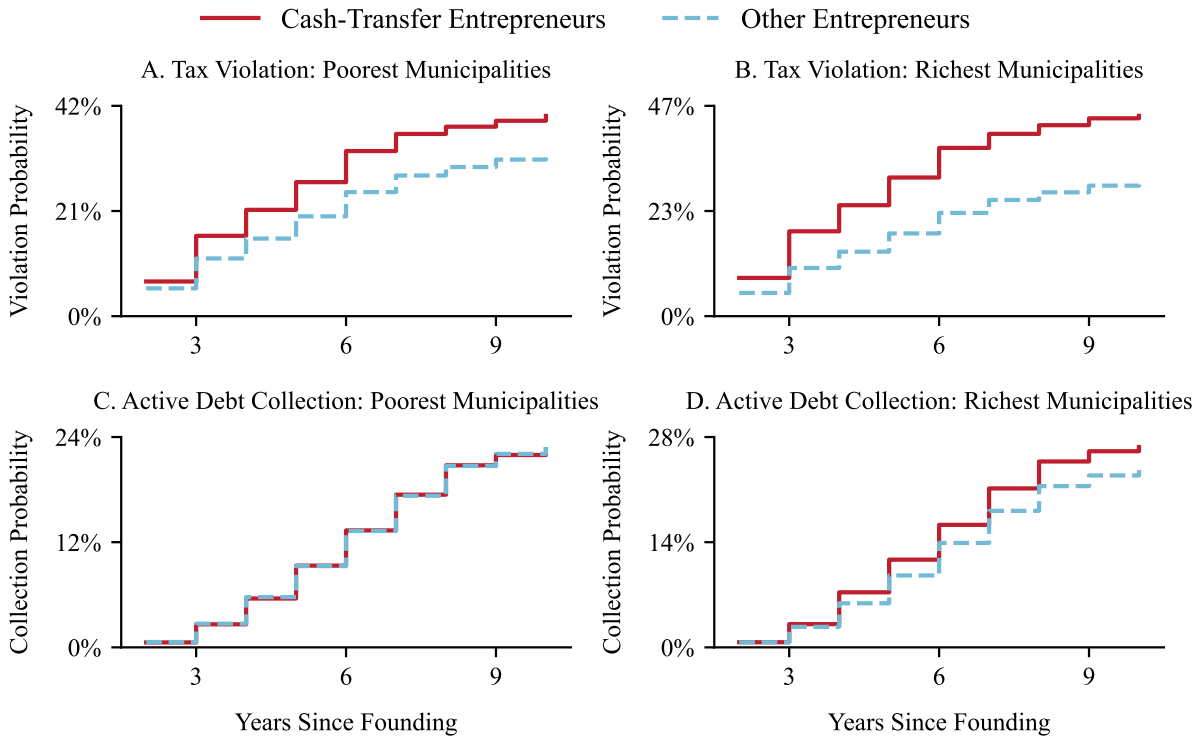
Table 11 analyzes interactions with municipal GDP per capita, allowing us to assess whether cash transfer effects vary with local economic development, market opportunities, and institutional quality.

PLACE TABLE 11 ABOUT HERE

The regression results reveal that economic prosperity significantly moderates cash transfer effects, with more prosperous areas showing stronger negative outcomes for some dimensions but better outcomes for others. Panel A shows that in the poorest municipalities (bottom quartile GDP), cash-transfer entrepreneurs experience only modest additional disadvantages, with no significant effects on survival or employment creation. However, Panel A also reveals that these entrepreneurs show 7.3% better business growth outcomes (+0.49 percentage points relative to a mean of 6.7%) and 11.4% better tax compliance (-1.8 percentage points relative to a mean of 15.4%).

Panel B examines outcomes in the richest municipalities (top quartile GDP), revealing different patterns. Cash-transfer entrepreneurs in prosperous areas show no additional survival disadvantages but experience 8.6% worse business growth outcomes (-0.57 percentage points relative to the mean). However, they demonstrate substantially better employment creation performance, with 33.1% higher employment creation rates (+1.4 percentage points relative to a mean of 4.2%) and 82.8% better credit access (+0.024 percentage points relative to a mean of 0.029%). These patterns suggest that local economic conditions shape the types of opportunities available to cash-transfer entrepreneurs, with

Figure 10: Non-Parametric Estimates by Local Economic Prosperity — 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.

prosperous areas offering better scaling opportunities despite growth challenges.[11]

Local economic conditions also affect post-entrepreneurship employment outcomes, with cash-transfer entrepreneurs in poor areas being less likely to secure blue-collar positions and more likely to maintain white-collar employment, suggesting that entrepreneurial experiences may provide different human capital returns depending on local economic opportunities (see Table IA9).

[11] Additional analysis examining top versus bottom quartile municipalities (Table IA7) confirms these geographic differences across the full distribution of municipal prosperity.

9.3 Heterogeneity by Firm Industry

Industry-specific factors may also influence how cash transfers affect entrepreneurial performance, reflecting differences in capital requirements, skill demands, and market dynamics across sectors. Figure IA2 presents non-parametric evidence of tax compliance patterns across different industries. The figure reveals that cash-transfer entrepreneurs exhibit consistently higher tax violation rates than other entrepreneurs across all five major industry sectors—construction, manufacturing, services, trade, and transportation. While the magnitude of compliance gaps varies somewhat by industry, the persistent disadvantages across all sectors suggest that the challenges facing cash-transfer entrepreneurs are not confined to specific industries but represent systematic difficulties in business management.

Table IA8 examines these patterns through regression analysis with industry interactions, focusing on five-year outcomes. The baseline effects represent service sector outcomes, while interaction terms capture differential effects in other industries. Results show that cash transfer effects vary meaningfully across industries. Trade sector entrepreneurs show 5.7% better survival outcomes (+2.6 percentage points) and 15.6% better business growth (+1.0 percentage points) relative to service sector entrepreneurs, while transportation entrepreneurs exhibit 9.3% better survival (+4.2 percentage points). However, transportation entrepreneurs also show substantially worse tax compliance, with 49.6% worse violation rates (−7.6 percentage points), suggesting industry-specific compliance challenges.

10 Concluding Remarks

This paper examines whether social transfer programs enable beneficial entrepreneurship among low-income populations. Our analysis of Brazil's Bolsa Família program yields several findings. First, cash transfers stimulate entrepreneurial entry—municipalities with higher program exposure experience significant increases in sole proprietorship formation. Second, cash-transfer entrepreneurs systematically underperform across multiple dimensions. They exhibit lower five-year survival rates, are less likely to generate employment, and have reduced access to bank credit. They also show higher tax compliance violations and debt collection proceedings. Third, entrepreneurial experiences do not appear to generate human capital returns—cash-transfer entrepreneurs who return to wage employment often experience occupational downgrading and earn lower salaries. Fourth, these disadvantages persist across most

demographic groups, local economic conditions, and industry sectors.

Our findings advance the understanding of how poverty alleviation programs interact with entrepreneurial activity. Among otherwise comparable entrepreneurs, cash transfer participation is associated with systematically worse business performance. These disadvantages persist even under Brazil's most simplified business regime, suggesting regulatory complexity is not the primary constraint. Cash-transfer entrepreneurs do provide employment opportunities to racial minorities and offer higher wages, creating positive spillover effects. However, this entrepreneurial activity does not contribute to economic growth or long-term outcomes for participants. Future research could examine whether alternative social program designs might better support sustainable economic advancement.

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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
$\mathbb{1}$\{Equity $\leq$ 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
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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												
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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												
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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												
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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												
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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												
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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												
$\mathbb{1}$\{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
$\mathbb{1}$\{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
$\mathbb{1}$\{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. $\mathbb{1}$\{Business Survival\} captures whether a firm remains active in government registries. $\mathbb{1}$\{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. $\mathbb{1}$\{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. 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 $\geq$ 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
𝟙{Female}	86.48	100.00	34.20	76.2	38.77	0.00	48.72	2,220.3	47.71	0.00
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										
𝟙{White}	51.13	100.00	49.99	76.2	63.10	100.00	48.25	2,220.3	−11.97	0.00
𝟙{Brown/Mixed}	35.85	0.00	47.96	76.2	26.22	0.00	43.98	2,220.3	9.63	0.00
𝟙{Black}	7.14	0.00	25.75	76.2	4.64	0.00	21.03	2,220.3	2.50	0.00
𝟙{Yellow/Asian}	0.29	0.00	5.39	76.2	0.38	0.00	6.21	2,220.3	−0.09	0.00
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										
𝟙{Illiterate}	0.20	0.00	4.50	76.2	0.09	0.00	3.06	2,220.3	0.11	0.00
𝟙{Elementary Incomplete}	2.20	0.00	14.70	76.2	1.22	0.00	10.96	2,220.3	0.99	0.00
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
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
𝟙{Elementary Complete}	11.95	0.00	32.43	76.2	8.60	0.00	28.04	2,220.3	3.35	0.00
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
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
𝟙{College Incomplete}	1.05	0.00	10.18	76.2	4.35	0.00	20.43	2,220.3	−3.30	0.00
𝟙{College Complete}	2.04	0.00	14.13	76.2	12.64	0.00	33.22	2,220.3	−10.60	0.00
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
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
𝟙{Monthly Salary}	93.69	100.00	24.31	76.2	92.36	100.00	26.56	2,220.3	1.33	0.00
𝟙{Hourly Salary}	4.71	0.00	21.18	76.2	5.89	0.00	23.54	2,220.3	−1.18	0.00
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										
𝟙{Elementary Occupations}	0.91	0.00	9.50	76.1	3.04	0.00	17.16	2,203.7	−2.14	0.00
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
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
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
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
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
𝟙{Technicians}	6.36	0.00	24.38	76.1	11.41	0.00	31.81	2,203.7	−5.05	0.00
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
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
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 Non-BF minus BF entrepreneurs.

Table 3: 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	Other	Median Equity	% Less than R$5K	% Low Education	% Had Blue-Collar Job	% Young (< 25)
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 4: Impact of Bolsa Família on Municipal Firm Creation

Dependent Variable:	New Sole Proprietorship Firms	New Non-Sole Proprietorship Firms
	(1)	(2)
Panel A: Number of Beneficiaries to Population Ratio		
Number of Beneficiaries/Population	1.187***	0.028
	(3.74)	(0.07)
Observations	44,472	44,464
Pseudo R^2	0.99	0.99
Mean Dependent Variable	390.463	83.640
Panel B: Lagged Number of Beneficiaries to Population Ratio		
Lag (Number of Beneficiaries/Population)	0.821**	−0.199
	(2.32)	(−0.65)
Observations	44,500	44,492
Pseudo R^2	0.99	0.99
Mean Dependent Variable	390.402	83.629
Panel C: Total Transfer Amount to GDP Ratio		
Total Transfer Amount/GDP	8.344***	−3.146**
	(10.76)	(−2.57)
Observations	44,472	44,464
Pseudo R^2	0.99	0.99
Mean Dependent Variable	390.463	83.640
Panel D: Lagged Total Transfer Amount to GDP Ratio		
Lag (Total Transfer Amount/GDP)	2.061**	−1.805**
	(1.98)	(−2.04)
Observations	44,500	44,492
Pseudo R^2	0.99	0.99
Mean Dependent Variable	390.402	83.629
Municipality FE	✓	✓
Year FE	✓	✓
Clustered SE (Municipality)	✓	✓

This table presents estimates from Poisson Pseudo Maximum Likelihood (PPML) regressions examining the relationship between Bolsa Família program exposure and municipal firm creation. PPML is used to address the count nature of the dependent variable and the presence of zero observations. The dependent variables measure the annual count of new firm establishments by municipality and legal form. New Sole Proprietorship Firms captures the count of establishments registered under sole proprietorship regimes, including MEI (Microempreendedor Individual). New Non-Sole Proprietorship Firms captures the count of all other business formations, comprising primarily limited liability companies. Number of Beneficiaries/Population represents the ratio of active Bolsa Família beneficiaries to total municipal population in a given year. Total Transfer Amount/GDP represents the ratio of total Bolsa Família transfer payments made within the municipality in a given year to municipal GDP. Lagged variables are measured in the previous year. The sample is at the municipality-year level and includes all Brazilian municipalities from 2014 to 2021. All specifications include municipality and year fixed effects. Standard errors are clustered at the municipality level. *t*-statistics shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 5: Impact of Cash Transfers on Business Survival & Growth

Dependent Variable:	𝟙{Business Survival}		𝟙{Business Growth}	
	(1)	(2)	(3)	(4)
Panel A: 1-Year Post-Founding				
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				
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				
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				
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). 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. 𝟙{Business Survival} captures whether a firm remains active. 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* is 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, 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 6: Impact of Cash Transfers on Employment Creation & Credit Access

Dependent Variable:	𝟙{Employment Creation}		𝟙{Credit Access}	
	(1)	(2)	(3)	(4)
Panel A: 1-Year Post-Founding				
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				
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				
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				
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). 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. 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 (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* is 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 7: Impact of Cash Transfers on Entrepreneurial Tax Compliance

Dependent Variable:	𝟙{Tax Violation}		𝟙{Active Debt Collection}	
	(1)	(2)	(3)	(4)
Panel A: 2-Year Post-Founding				
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				
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				
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). 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* is 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 8: Impact of Cash Transfers on Entrepreneurial Hiring Patterns

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{Performance Pay}		𝟙{Low Wage}	
	(13)	(14)	(15)	(16)	(17)	(18)
𝟙{Cash-Transfer Entrepreneur}	−2.774***	−2.446*	−3.171**	−3.814*	−2.904**	−3.112*
	(−2.62)	(−1.90)	(−2.07)	(−1.96)	(−2.13)	(−1.96)
Observations	37,364	30,542	37,364	30,542	37,364	30,542
Adjusted R^2	0.07	0.22	0.07	0.22	0.10	0.26
Mean Dependent Variable	9.809	9.832	86.896	86.851	86.824	86.864
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 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. Performance Pay indicates whether firms offer performance-based compensation. Low Wage refers to employees in the lowest wage category (less than R$500 in constant 2024 values). Cash-transfer entrepreneurs are defined as those receiving their first Bolsa Família payment before founding their business, and if they left the program, they did so no earlier than one year after 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 9: Impact of Cash Transfers on Post-Entrepreneurship Employment Outcomes

Panel A: Job Types			
Dependent Variable:	𝟙{Blue Collar Job}	𝟙{Remained White Collar}	𝟙{Remained Blue Collar}
	(1)	(2)	(3)
𝟙{Cash-Transfer Entrepreneur}	5.530***	−2.320***	3.218***
	(13.11)	(−7.55)	(10.14)
Observations	246,399	246,399	246,399
Adjusted R^2	0.46	0.71	0.73
Mean Dependent Variable	53.983	37.278	44.388
Panel B: Occupational and Educational Mobility			
Dependent Variable:	𝟙{Blue to White Collar}	𝟙{White to Blue Collar}	𝟙{Education Upgrade}
	(4)	(5)	(6)
𝟙{Cash-Transfer Entrepreneur}	−3.196***	2.312***	−0.012
	(−10.05)	(7.55)	(−0.77)
Observations	246,399	246,399	246,667
Adjusted R^2	0.17	0.23	0.05
Mean Dependent Variable	8.663	9.589	0.016
Panel C: Salary Outcomes			
Dependent Variable:	New Monthly Salary	𝟙{Salary Increase}	𝟙{Variable to Stable Pay}
	(7)	(8)	(9)
𝟙{Cash-Transfer Entrepreneur}	−36.262***	−4.034***	−0.087
	(−15.72)	(−7.97)	(−0.89)
Observations	246,543	246,450	246,667
Adjusted R^2	0.53	0.13	0.65
Mean Dependent Variable	717.504	31.889	3.589
Sample:	Full	Full	Full
Entrepreneur FE (all characteristics jointly)	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓
Clustered SE (Industry)	✓	✓	✓

This table presents linear estimates of the effect of Brazil's cash transfer program (Bolsa Família) on post-entrepreneurship employment outcomes. The sample includes former entrepreneurs who transitioned to employment within 12 months of firm closure (defined as registration_status ≠ 2). Employment transitions are identified by matching entrepreneurs to their first post-entrepreneurship employment using employment start dates from RAIS data. *Blue Collar Job* indicates employment in service & sales, agriculture/forestry/fishery, craft & trades, plant & process operations, or elementary occupations (categories 5-9). *Blue to White Collar* and *White to Blue Collar* capture occupational mobility between blue collar (categories 5-9) and white collar (categories 1-4: managers, professionals, technicians, administrative workers) positions. *Salary Increase* indicates inflation-adjusted salary in new employment exceeds pre-entrepreneurship salary. *Remained Blue/White Collar* indicates staying within the same occupational category. *Variable to Stable Pay* indicates transition from variable payment schedules (weekly, daily, hourly, task-based) to stable schedules (monthly, biweekly). *Stable to Variable Pay* indicates the opposite transition. *Salary Growth Rate* is calculated as ((new salary - old salary)/old salary) × 100, winsorized at the 1st and 99th percentiles. Cash-transfer entrepreneurs are defined as those receiving Bolsa Família before founding their business who, if they exited the program, did so no earlier than one year after founding. *Entrepreneur fixed effects* include race, nationality, gender, education, age, occupation, salary type, salary category, and firm size experience measured before firm founding. Industry × Equity × Year fixed effects include initial equity category, founding year, and 2-digit industry interactions. The sample covers entrepreneurs who founded firms between 2014-2019 and subsequently transitioned to employment, tracked through 2024. Standard errors are clustered at the 2-digit industry 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 10: Heterogeneity by Entrepreneur Demographics

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)
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 𝟙{Cash-Transfer Entrepreneur}:						
× 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)
× 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)
× 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)
× 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)
× 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)
× 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)
× 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. 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. 𝟙{Business Survival} captures whether a firm remains active since founding. 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. 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. *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 11: Heterogeneity by Local Economic Prosperity — Municipal GDP per Capita

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)
𝟙{CT Entrepreneur} × GDP per Capita	−0.782**	−0.353**	0.687***	0.008*	2.476***	0.697***
	(−2.31)	(−2.45)	(2.64)	(1.65)	(5.65)	(3.03)
𝟙{CT Entrepreneur}	−4.436***	0.898*	−3.869***	−0.043**	−2.239	−0.891
	(−3.70)	(1.74)	(−4.54)	(−2.49)	(−1.62)	(−1.15)
GDP per Capita	−0.089	0.360**	−0.997***	−0.010**	1.226***	0.524***
	(−0.38)	(2.52)	(−3.28)	(−2.11)	(3.63)	(5.24)
Observations	1,316,687	1,277,265	334,693	1,316,687	1,316,687	1,316,687
Adjusted R^2	0.065	0.069	0.058	0.008	0.097	0.062
Mean Dependent Variable	45.689	6.662	4.156	0.029	15.404	8.374
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. GDP per Capita represents the log of municipal GDP per capita in thousands of constant 2024 R$, calculated as the average annual GDP per capita of the municipality over the three years preceding firm founding. 𝟙{Business Survival} captures whether a firm remains active. 𝟙{Business Growth} captures transitions from MEI (Individual Microentrepreneur) to larger tax regimes. 𝟙{Employment Creation} indicates whether the firm employs any worker other than the owner. 𝟙{Credit Access} indicates whether the firm received financing from the Brazilian Development Bank (BNDES) through its indirect automatic operations program, which provides below-market-rate credit to small and medium enterprises through participating financial institutions. 𝟙{Tax Violation} indicates whether the firm failed to file mandatory annual tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes). 𝟙{Active Debt Collection} indicates whether the firm is subject to active collection proceedings by the federal government (Dívida Ativa da União), reflecting unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions. *Entrepreneur fixed effects* is the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤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, 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.

Internet Appendix to

"Social Transfers and Entrepreneurship"

Murillo Campello

University of Florida & NBER

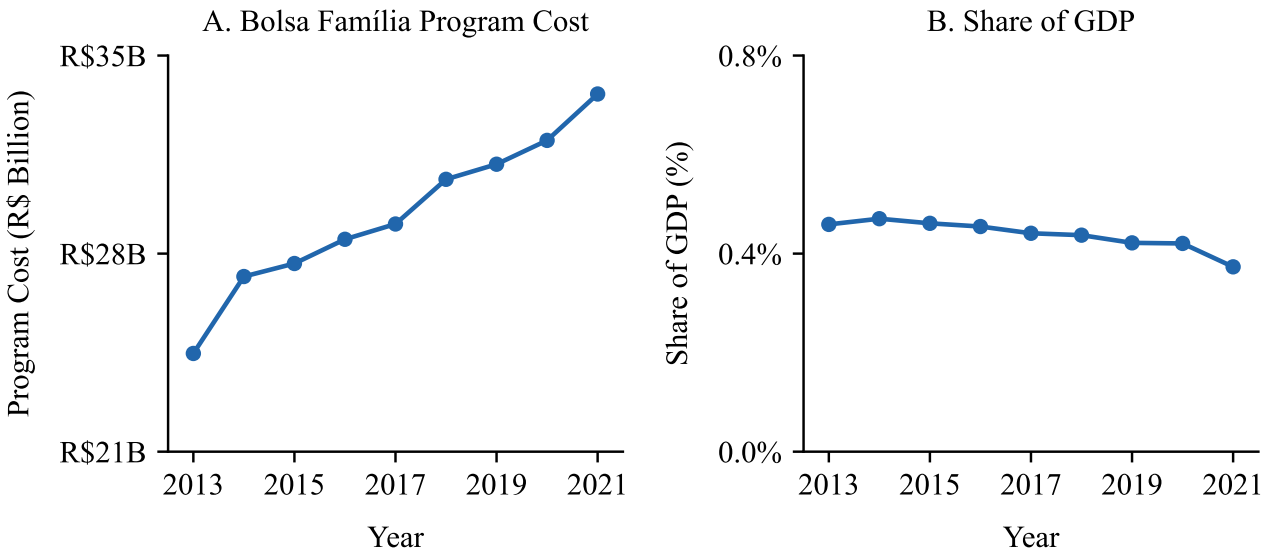
Guilherme Junqueira

University of Florida

Spyridon Lagaras

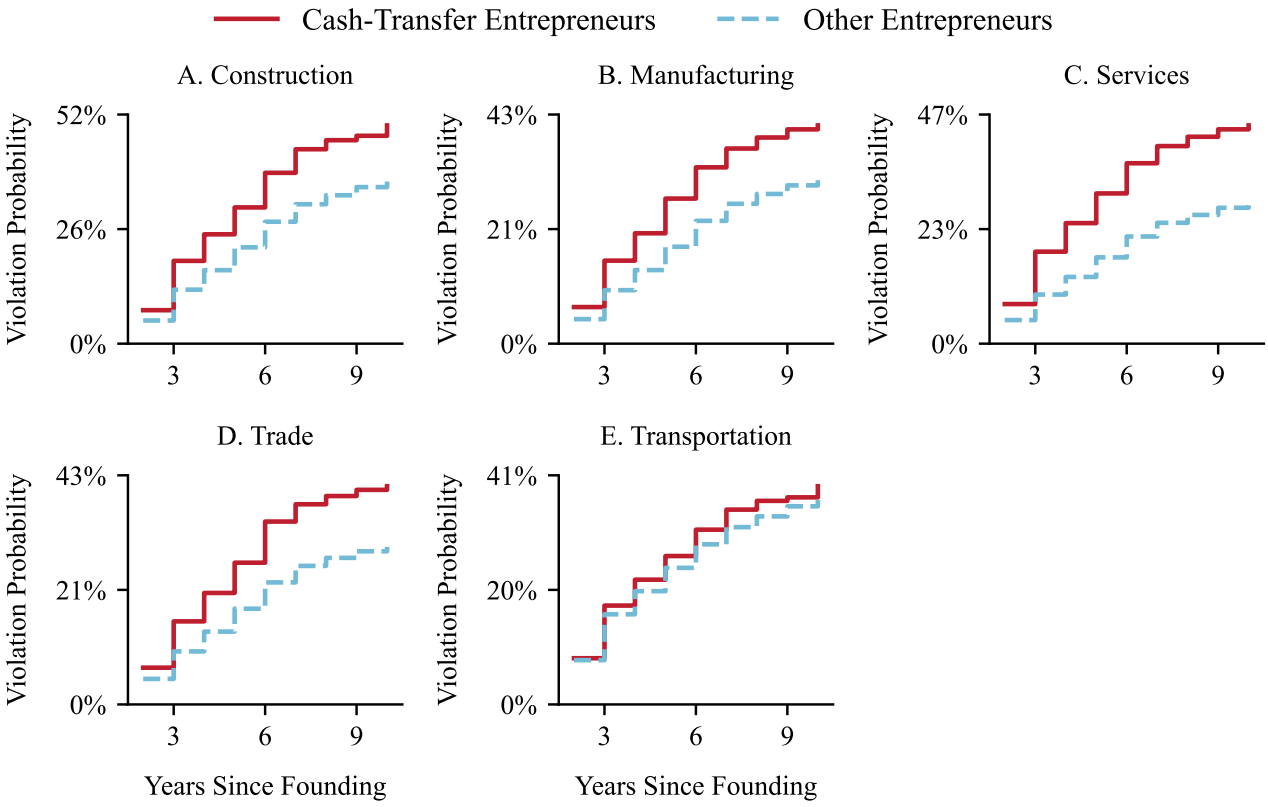
University of Illinois at Urbana Champaign

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: 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: 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										
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										
1{Other Managers}	1.03	0.00	10.07	76.1	4.34	0.00	20.31	2,203.7	−3.31	0.00
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
1{Business Directors}	0.07	0.00	2.63	76.1	0.22	0.00	4.70	2,203.7	−0.16	0.02
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										
1{Business Professionals}	0.79	0.00	8.82	76.1	2.63	0.00	15.93	2,203.7	−1.85	0.00
1{Teaching Professionals}	0.95	0.00	9.67	76.1	2.48	0.00	15.51	2,203.7	−1.54	0.00
1{Engineering Professionals}	0.11	0.00	3.26	76.1	1.63	0.00	12.61	2,203.7	−1.53	0.00
1{Health Professionals}	0.15	0.00	3.91	76.1	1.13	0.00	10.51	2,203.7	−0.98	0.00
1{IT Professionals}	0.13	0.00	3.58	76.1	1.00	0.00	9.89	2,203.7	−0.87	0.00
1{Legal Professionals}	0.02	0.00	1.44	76.1	0.13	0.00	3.64	2,203.7	−0.12	0.02
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)										
1{IT Technicians}	1.82	0.00	13.38	76.1	3.06	0.00	17.15	2,203.7	−1.23	0.00
1{Health Technicians}	0.48	0.00	6.91	76.1	2.93	0.00	16.82	2,203.7	−2.45	0.00
1{Business Technicians}	1.59	0.00	12.51	76.1	1.77	0.00	13.17	2,203.7	−0.17	0.00
1{Teaching Technicians}	1.66	0.00	12.78	76.1	1.52	0.00	12.19	2,203.7	0.15	0.00
1{Other Technicians}	0.33	0.00	5.74	76.1	0.94	0.00	9.64	2,203.7	−0.61	0.00
1{Arts Technicians}	0.32	0.00	5.69	76.1	0.64	0.00	7.96	2,203.7	−0.31	0.01
1{Legal Technicians}	0.11	0.00	3.30	76.1	0.45	0.00	6.69	2,203.7	−0.34	0.00
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										
1{Office Clerks}	9.48	0.00	29.27	76.1	14.86	0.00	35.56	2,203.7	−5.38	0.00
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										
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
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										
1{Forestry Workers}	1.95	0.00	13.81	76.1	0.97	0.00	9.80	2,203.7	0.98	0.00
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
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
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										
1{Extraction Workers}	4.69	0.00	21.13	76.1	7.49	0.00	26.22	2,203.7	−2.80	0.00
1{Construction Workers}	2.43	0.00	15.39	76.1	5.06	0.00	21.85	2,203.7	−2.63	0.00
1{Metal Workers}	0.66	0.00	8.06	76.1	2.83	0.00	16.53	2,203.7	−2.18	0.00
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
1{Handicraft Workers}	0.33	0.00	5.72	76.1	0.79	0.00	8.84	2,203.7	−0.46	0.00
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
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
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										
1{Agricultural Laborers}	1.80	0.00	13.29	76.1	1.37	0.00	11.56	2,203.7	0.43	0.00
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
1{Freight Handlers}	0.15	0.00	3.84	76.1	0.36	0.00	6.00	2,203.7	−0.22	0.01
1{Machine Operators}	0.13	0.00	3.62	76.1	0.23	0.00	4.81	2,203.7	−0.10	0.16
1{Drivers}	0.05	0.00	2.21	76.1	0.06	0.00	2.43	2,203.7	−0.01	0.78
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										
1{Street Vendors}	0.20	0.00	4.46	76.1	1.82	0.00	13.30	2,203.7	−1.62	0.00
1{Domestic Workers}	0.15	0.00	3.91	76.1	0.73	0.00	8.51	2,203.7	−0.58	0.00
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. Occupations are organized by major occupation groups (0-9) following the Classificação Brasileira de Ocupações (CBO) of 2002. 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. Data are from CNPJ, RAIS, and MDS.

Table IA2: 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 (Azoulay Thresholds)										
𝟙{Under 25}	11.11	0.00	31.42	76.2	17.74	0.00	38.20	2,220.3	−6.64	0.00
𝟙{25-34}	40.30	0.00	49.05	76.2	35.24	0.00	47.77	2,220.3	5.06	0.00
𝟙{35-45}	34.58	0.00	47.56	76.2	27.88	0.00	44.84	2,220.3	6.70	0.00
𝟙{46-59}	13.38	0.00	34.04	76.2	17.01	0.00	37.58	2,220.3	−3.63	0.00
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$)										
𝟙{Less than R$500}	68.30	100.00	46.53	76.2	37.97	0.00	48.53	2,220.3	30.33	0.00
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
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
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
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										
𝟙{Monthly}	93.69	100.00	24.31	76.2	92.36	100.00	26.56	2,220.3	1.33	0.00
𝟙{Hourly}	4.71	0.00	21.18	76.2	5.89	0.00	23.54	2,220.3	−1.18	0.00
𝟙{Other}	0.80	0.00	8.91	76.2	1.27	0.00	11.19	2,220.3	−0.47	0.00
𝟙{Task-based}	0.35	0.00	5.94	76.2	0.17	0.00	4.09	2,220.3	0.19	0.00
𝟙{Daily}	0.31	0.00	5.60	76.2	0.16	0.00	4.06	2,220.3	0.15	0.00
𝟙{Weekly}	0.06	0.00	2.43	76.2	0.11	0.00	3.25	2,220.3	−0.05	0.00
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. Age categories follow Azoulay et al. thresholds for entrepreneurial analysis. 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 Non-BF minus BF entrepreneurs. Data are from CNPJ, RAIS, and MDS.

Table IA3: Impact of Cash Transfers on Business Survival & Growth — Alternative Specification

Dependent Variable:	𝟙{Business Survival}		𝟙{Business Growth}	
	(1)	(2)	(3)	(4)
Panel A: 1-Year Post-Founding				
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				
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				
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				
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). 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. 𝟙{Business Survival} captures whether a firm remains active. 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* is 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, 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 IA4: Impact of Cash Transfers on Employment & Credit Access — Alternative Specification

Dependent Variable:	𝟙{Employment Creation}		𝟙{Credit Access}	
	(1)	(2)	(3)	(4)
Panel A: 1-Year Post-Founding				
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				
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				
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				
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). 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. 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 (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* is 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 IA5: Impact of Cash Transfers on Entrepreneurial Tax Compliance — Alternative Specification

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* is 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 IA6: Impact on Post-Entrepreneurship Employment Outcomes — Alternative Specification

Panel A: Job Types			
Dependent Variable:	𝟙{Blue Collar Job}	𝟙{Remained White Collar}	𝟙{Remained Blue Collar}
	(1)	(2)	(3)
𝟙{Cash-Transfer Entrepreneur}	6.708***	−3.235***	3.493***
	(11.09)	(−8.34)	(9.77)
Observations	223,700	223,700	223,700
Adjusted R^2	0.46	0.71	0.73
Mean Dependent Variable	52.793	38.451	43.086
Panel B: Occupational and Educational Mobility			
Dependent Variable:	𝟙{Blue to White Collar}	𝟙{White to Blue Collar}	𝟙{Education Upgrade}
	(4)	(5)	(6)
𝟙{Cash-Transfer Entrepreneur}	−3.473***	3.217***	−0.008
	(−9.57)	(8.28)	(−0.38)
Observations	223,700	223,700	223,949
Adjusted R^2	0.17	0.21	0.10
Mean Dependent Variable	8.680	9.700	0.017
Panel C: Salary Outcomes			
Dependent Variable:	Monthly Salary (R$ 2024)	𝟙{Salary Increase}	𝟙{Variable to Stable Pay}
	(7)	(8)	(9)
𝟙{Cash-Transfer Entrepreneur}	−41.939***	−4.245***	−0.073
	(−11.77)	(−8.31)	(−0.51)
Observations	223,830	223,738	223,949
Adjusted R^2	0.52	0.13	0.66
Mean Dependent Variable	728.834	32.041	3.540
Sample:	Full	Full	Full
Entrepreneur FE (all characteristics jointly)	✓	✓	✓
Municipality × Equity × Year FE	✓	✓	✓
Clustered SE (Industry)	✓	✓	✓

This table presents linear estimates of the effect of Brazil's cash transfer program (Bolsa Família) on post-entrepreneurship employment outcomes. The sample includes former entrepreneurs who transitioned to employment within 12 months of firm closure (defined as registration_status ≠ 2). Employment transitions are identified by matching entrepreneurs to their first post-entrepreneurship employment using employment start dates from RAIS data. *Blue Collar Job* indicates employment in service & sales, agriculture/forestry/fishery, craft & trades, plant & process operations, or elementary occupations (categories 5-9). *Education Upgrade* indicates higher educational attainment in the new job compared to pre-entrepreneurship levels. *Blue to White Collar* and *White to Blue Collar* capture occupational mobility between blue collar (categories 5-9) and white collar (categories 1-4: managers, professionals, technicians, administrative workers) positions. *Salary Increase* indicates inflation-adjusted salary in new employment exceeds pre-entrepreneurship salary. *Remained Blue/White Collar* indicates staying within the same occupational category. *Monthly Salary* is measured in constant 2024 Brazilian Reais, winsorized at the 1st and 99th percentiles. *Variable to Stable Pay* indicates transition from variable payment schedules (weekly, daily, hourly, task-based) to stable schedules (monthly, biweekly). Cash-transfer entrepreneurs are defined as those receiving Bolsa Família before founding their business who, if they exited the program, did so no earlier than one year after founding. *Entrepreneur fixed effects* include race, nationality, gender, education, age, occupation, salary type, salary category, and firm size experience measured before firm founding. Municipality × Equity × Year fixed effects include initial equity category, founding year, and 2-digit municipality interactions. The sample covers entrepreneurs who founded firms between 2014-2019 and subsequently transitioned to employment, tracked through 2024. *t*-statistics shown in parentheses based on standard errors are clustered at the 2-digit industry level. Data sources: CNPJ (firm registrations), RAIS (employment records), and MDS (Bolsa Família records). *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table IA7: Heterogeneity by Local Economic Prosperity — Top *versus* Bottom Municipal GDP

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* is 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 IA8: Heterogeneity by Industry Sector

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)
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 𝟙{Cash-Transfer Entrepreneur}:						
× 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)
× 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)
× 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)
× 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. 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. 𝟙{Business Survival} captures whether a firm remains active since founding. 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. 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. *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 IA9: Heterogeneity of Post-Entrepreneurship Outcomes: Local Economic Prosperity

Panel A: Job Types			
Dependent Variable:	𝟙{Blue Collar Job}	𝟙{Remained White Collar}	𝟙{Remained Blue Collar}
	(1)	(2)	(3)
𝟙{Cash-Transfer Entrepreneur} × 𝟙{Bottom Quartile GDP}	−2.624***	2.028***	−0.602
	(−2.98)	(3.42)	(−0.91)
𝟙{Cash-Transfer Entrepreneur}	6.334***	−2.943***	3.400***
	(14.11)	(−8.67)	(9.65)
𝟙{Bottom Quartile GDP}	0.249	−0.153	0.122
	(0.63)	(−0.51)	(0.73)
Observations	246,399	246,399	246,399
Adjusted R^2	0.46	0.71	0.73
Mean Dependent Variable	53.983	37.278	44.388
Panel B: Occupational and Educational Mobility			
Dependent Variable:	𝟙{Blue to White Collar}	𝟙{White to Blue Collar}	𝟙{Education Upgrade}
	(4)	(5)	(6)
𝟙{Cash-Transfer Entrepreneur} × 𝟙{Bottom Quartile GDP}	0.601	−2.028***	0.007
	(0.91)	(−3.41)	(0.18)
𝟙{Cash-Transfer Entrepreneur}	−3.378***	2.936***	−0.014
	(−9.54)	(8.58)	(−0.81)
𝟙{Bottom Quartile GDP}	−0.112	0.134	0.004
	(−0.67)	(0.46)	(0.68)
Observations	246,399	246,399	246,667
Adjusted R^2	0.17	0.23	0.05
Mean Dependent Variable	8.663	9.589	0.016
Panel C: Salary Outcomes			
Dependent Variable:	New Monthly Salary	𝟙{Salary Increase}	𝟙{Variable to Stable Pay}
	(7)	(8)	(9)
𝟙{Cash-Transfer Entrepreneur} × 𝟙{Bottom Quartile GDP}	6.780	−0.724	−0.061
	(1.24)	(−0.66)	(−0.30)
𝟙{Cash-Transfer Entrepreneur}	−37.052***	−3.679***	−0.067
	(−12.17)	(−6.16)	(−0.56)
𝟙{Bottom Quartile GDP}	−35.134***	−3.486***	−0.016
	(−6.14)	(−7.56)	(−0.27)
Observations	246,543	246,450	246,667
Adjusted R^2	0.54	0.13	0.65
Mean Dependent Variable	717.504	31.889	3.589
Sample:	Full	Full	Full
Entrepreneur FE (all characteristics jointly)	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓
Clustered SE (Industry)	✓	✓	✓

This table presents linear estimates of the effect of Brazil's cash transfer program (Bolsa Família) on post-entrepreneurship employment outcomes, including interactions with municipal GDP per capita. The sample includes former entrepreneurs who transitioned to employment within 12 months of firm closure (defined as registration_status ≠ 2). Employment transitions are identified by matching entrepreneurs to their first post-entrepreneurship employment using employment start dates from RAIS data. *Blue Collar Job* indicates employment in service & sales, agriculture/forestry/fishery, craft & trades, plant & process operations, or elementary occupations (categories 5-9). *Blue to White Collar* and *White to Blue Collar* capture occupational mobility between blue collar (categories 5-9) and white collar (categories 1-4: managers, professionals, technicians, administrative workers) positions. *Salary Increase* indicates inflation-adjusted salary in new employment exceeds pre-entrepreneurship salary. *Remained Blue/White Collar* indicates staying within the same occupational category. *Variable to Stable Pay* indicates transition from variable payment schedules (weekly, daily, hourly, task-based) to stable schedules (monthly, biweekly). *Education Upgrade* indicates higher educational attainment in the new job compared to pre-entrepreneurship levels. *New Monthly Salary* is measured in constant Brazilian Reais, winsorized at the 1st and 99th percentiles. 𝟙{Bottom Quartile GDP} is an indicator for municipalities in the bottom quartile (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 founding of their firms. Cash-transfer entrepreneurs are defined as those receiving Bolsa Família before founding their business who, if they exited the program, did so no earlier than one year after founding. *Entrepreneur fixed effects* include race, nationality, gender, education, age, occupation, salary type, salary category, and firm size experience measured before firm founding. Industry × Equity × Year fixed effects include initial equity category, founding year, and 2-digit industry interactions. The sample covers entrepreneurs who founded firms between 2014-2019 and subsequently transitioned to employment, tracked through 2024. Standard errors are clustered at the 2-digit industry 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 IA10: Heterogeneity of Post-Entrepreneurship Outcomes: Racial Minorities

Panel A: Job Types			
Dependent Variable:	𝟙{Blue Collar Job}	𝟙{Remained White Collar}	𝟙{Remained Blue Collar}
	(1)	(2)	(3)
𝟙{Cash-Transfer Entrepreneur} × 𝟙{Racial Minority}	−0.915	1.132*	0.210
	(−1.01)	(1.75)	(0.35)
𝟙{Cash-Transfer Entrepreneur}	5.889***	−2.764***	3.135***
	(11.64)	(−7.17)	(7.94)
Observations	246,399	246,399	246,399
Adjusted R^2	0.46	0.71	0.73
Mean Dependent Variable	53.983	37.278	44.388
Panel B: Occupational and Educational Mobility			
Dependent Variable:	𝟙{Blue to White Collar}	𝟙{White to Blue Collar}	𝟙{Education Upgrade}
	(4)	(5)	(6)
𝟙{Cash-Transfer Entrepreneur} × 𝟙{Racial Minority}	−0.182	−1.123*	0.021
	(−0.30)	(−1.71)	(0.57)
𝟙{Cash-Transfer Entrepreneur}	−3.124***	2.753***	−0.021**
	(−7.91)	(7.08)	(−2.09)
Observations	246,399	246,399	246,667
Adjusted R^2	0.17	0.23	0.05
Mean Dependent Variable	8.663	9.589	0.016
Panel C: Salary Outcomes			
Dependent Variable:	New Monthly Salary	𝟙{Salary Increase}	𝟙{Variable to Stable Pay}
	(7)	(8)	(9)
𝟙{Cash-Transfer Entrepreneur} × 𝟙{Racial Minority}	3.796	16.625	−0.413**
	(0.80)	(1.02)	(−2.07)
𝟙{Cash-Transfer Entrepreneur}	−37.753***	−33.224***	0.075
	(−11.55)	(−3.57)	(0.53)
Observations	246,543	246,450	246,667
Adjusted R^2	0.53	0.12	0.65
Mean Dependent Variable	717.504	69.279	3.589
Sample:	Full	Full	Full
Entrepreneur FE (all characteristics jointly)	✓	✓	✓
Industry × Equity × Year FE	✓	✓	✓
Clustered SE (Industry)	✓	✓	✓

This table presents linear estimates of the effect of Brazil's cash transfer program (Bolsa Família) on post-entrepreneurship employment outcomes, including interactions with racial minority status. The sample includes former entrepreneurs who transitioned to employment within 12 months of firm closure (defined as registration_status ≠ 2). Employment transitions are identified by matching entrepreneurs to their first post-entrepreneurship employment using employment start dates from RAIS data. *Blue Collar Job* indicates employment in service & sales, agriculture/forestry/fishery, craft & trades, plant & process operations, or elementary occupations (categories 5-9). *Blue to White Collar* and *White to Blue Collar* capture occupational mobility between blue collar (categories 5-9) and white collar (categories 1-4: managers, professionals, technicians, administrative workers) positions. *Salary Increase* indicates inflation-adjusted salary in new employment exceeds pre-entrepreneurship salary. *Remained Blue/White Collar* indicates staying within the same occupational category. *Variable to Stable Pay* indicates transition from variable payment schedules (weekly, daily, hourly, task-based) to stable schedules (monthly, biweekly). *Education Upgrade* indicates higher educational attainment in the new job compared to pre-entrepreneurship levels. *New Monthly Salary* is measured in constant Brazilian Reais, winsorized at the 1st and 99th percentiles. 𝟙{Racial Minority} is defined as being Black, Brown/Mixed, Asian, or Indigenous. Cash-transfer entrepreneurs are defined as those receiving Bolsa Família before founding their business who, if they exited the program, did so no earlier than one year after founding. *Entrepreneur fixed effects* include race, nationality, gender, education, age, occupation, salary type, salary category, and firm size experience measured before firm founding. Industry × Equity × Year fixed effects include initial equity category, founding year, and 2-digit industry interactions. The sample covers entrepreneurs who founded firms between 2014-2019 and subsequently transitioned to employment, tracked through 2024. Standard errors are clustered at the 2-digit industry 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.