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

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Abstract

Do social transfer programs boost entrepreneurship among low-income populations? We address this question by examining Brazil's Bolsa Família—the world's largest cash transfer program—and its effects on entrepreneurial entry, performance, and economic mobility. Using administrative data covering 2.3 million sole-proprietorship firms, we link firm registries, cash transfer records, employment histories, and tax information. We address selection through Coarsened Exact Matching and fixed effects that create observationally equivalent comparison groups. We first document that municipalities with higher program exposure experience significant increases in sole proprietorship formation, with no effects on larger business structures. We then identify systematic performance disadvantages: cash-transfer entrepreneurs exhibit lower survival, business growth, employment creation, and credit access, eventually facing higher rates of tax violations and debt collection proceedings. Employment practices suggest managerial constraints underlie these performance gaps, even among entrepreneurs with similar observable characteristics: cash-transfer entrepreneurs hire less-educated workers while paying higher wages and providing more stable, full-time employment—practices that undermine performance. On the flip side, these hiring patterns, along with stronger recruitment of racial minorities, produce positive spillovers extending beyond cash-transfer recipients. Examining post-entrepreneurship trajectories, we find that cash-transfer entrepreneurs secure worse jobs after business failure—lower occupational attainment and reduced earnings. However, their wage losses are 61% smaller than other failed entrepreneurs, indicating entrepreneurship generates greater labor market returns for cash-transfer participants despite worse business performance. Our study is the first to track cash-transfer entrepreneurs through the complete business lifecycle, revealing that while such programs succeed at poverty alleviation——expanding economic participation and generating employment spillovers——the entrepreneurship they enable remains trapped in subsistence, generating neither transformational businesses nor pathways to upward mobility.

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JEL Classification: G28, I38, J24, L26

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1 Introduction

Governments worldwide have implemented social protection 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 beneficiaries, 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 entrepreneurship among low-income populations, addressing three central questions. First, do cash transfer programs stimulate entrepreneurial entry, and if so, what types of businesses are formed? Second, how do cash-transfer entrepreneurs perform relative to other entrepreneurs across business survival, growth, employment creation, credit access, and tax compliance—and what mechanisms explain performance differentials? Third, do entrepreneurial experiences generate economic mobility for beneficiaries, even when ventures fail?

We examine these questions using Brazil's Bolsa Família—the world's largest cash transfer program. Bolsa Família reaches over 17 million families, representing one-quarter of Brazilian households. The program combines strict income eligibility thresholds (monthly per capita income below R$178, equivalent to $49 or 20% of Brazil's minimum wage) with direct cash support averaging R$170 ($47) per beneficiary per month. Beneficiaries must fulfill education and health requirements, including regular school attendance for children and health check-ups for pregnant and lactating women. Brazil's sim-

plified business registration system (SIMPLES Nacional) facilitates entry into entrepreneurship among low-income individuals by offering low taxation (effective rates of about 1%, with payments also counting toward social security benefits including retirement and maternity leave) and minimal compliance requirements. As such, it represents an ideal setting for studying cash transfers and entrepreneurship.

Our empirical analysis leverages five Brazilian government administrative datasets: firm registries with outcomes for all active and inactive firms, individual-level Bolsa Família payment records, formal employment histories including wages and demographics, subsidized small business loans, and government debt collection proceedings. A key innovation is our systematic identification of individual tax identifiers (CPFs) for sole-proprietorship founders, enabling us to link these datasets for the first time, to the best of our knowledge. We track firms annually from inception through five years, measuring survival, growth, employment, credit access, tax compliance, and debt collection.

We start by examining whether cash transfers 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 the formation of larger 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 larger new businesses.

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 equivalent comparison groups. First, we focus exclusively on sole

proprietorships—the primary entry point to entrepreneurship for low-income individuals—and restrict our analysis to *first-time entrepreneurs* with recent formal employment experience (within 12 months of business founding), ensuring both groups have similar pre-entrepreneurship labor market attachment.

Second, we employ granular fixed effects that absorb both entrepreneur-level and business-level heterogeneity. Entrepreneur fixed effects capture the *joint* profile of individual characteristics including race, gender, education, age, and pre-entrepreneurship job attributes (occupation, salary level, salary type, and employer size). Business fixed effects control for industry, initial equity, and founding year combinations. Third, we implement Coarsened Exact Matching (Iacus et al. 2012; Aneja et al. 2025) that groups entrepreneurs into strata defined by education, gender, pre-entrepreneurship salary, founding year, industry, and initial equity, retaining only strata containing both cash-transfer and non-transfer entrepreneurs. This procedure yields a matched sample of 2.3 million sole-proprietorships where treatment and control groups achieve excellent covariate balance, with standardized mean differences well within the recommended ±0.10 threshold across observable characteristics. We define as *cash-transfer entrepreneurs* those enrolled in Bolsa Família at business founding or who recently graduated from the program (within 12 months prior). 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. 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 time: by year five, cash-transfer entrepreneurs are 15.5% less likely to survive. Business growth patterns reveal similar disadvantages. Nearly all sole proprietorships start under the individual microentrepreneur (MEI) regime, which caps annual revenues at R$81,000 ($22,000) and limits employment to one worker; firms that outgrow these constraints transition to the microenterprise (ME) regime, which allows revenues up to R$360,000 (R$100,000) and 9–19 employees depending on sector. We measure business growth as this MEI-to-ME transition. Cash-transfer entrepreneurs are 12.2% less likely to achieve this growth threshold by year two, a gap that persists through year five.

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 for-

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

mally employ one worker beyond the entrepreneur. The results reveal significant disadvantages across both dimensions. Cash-transfer entrepreneurs are 45% less likely to create employment in their first year, with this employment creation deficit persisting across all time horizons and reaching 38% lower likelihood by five years. Credit access disadvantages are even more pronounced: cash-transfer entrepreneurs are 52% less likely to access formal credit by five years, measured through BNDES-subsidized commercial bank loans—the main source of accessible small business financing in Brazil. These scaling disadvantages persist despite Brazil's simplified business regime designed to facilitate small business growth.

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 a 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 financial distress: 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 sources of underperformance among cash-transfer entrepreneurs, we examine hiring patterns among cash-transfer entrepreneurs who employ workers. Conditional on employing at least one worker, the analysis reveals systematic differences in employee demographics and occupational categories. Cash-transfer entrepreneurs are 14.6% more likely to hire racial minorities and 8.5% more likely to hire workers with low education levels. They 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. Despite employing workers with lower skill levels, cash-transfer entrepreneurs offer more stable employment arrangements and better compensation. They are 28.3% less likely to offer part-time positions and 3.3% less likely to pay wages below R$500 monthly. These employment practices create positive externalities where social transfer programs indirectly benefit additional workers, providing stable employment opportunities to traditionally underrepresented groups. However, the combination of hiring lower-educated workers in elementary occupations while paying higher wages appears to reflect managerial constraints that impede performance optimization.

A key feature of Bolsa Família is that all beneficiaries receive identical nominal transfers re-

gardless of location. However, the real purchasing power of these transfers varies substantially across municipalities due to differences in local price levels. For instance, R$200 in São Paulo (SP) provides purchasing power approximately equivalent to R$300 in Aracajú (SE). This variation allows us to examine whether performance gaps depend on the effective value of transfers. In poorer municipalities, cash-transfer entrepreneurs show smaller gaps in business survival (18% narrower per standard deviation), business growth from MEI to ME (39% narrower), tax compliance (26% better), and debt collection (50% lower). Conversely, in richer municipalities, employment creation gaps narrow by 73% per standard deviation and credit access gaps improve by 19%. These patterns reveal a trade-off: uniform transfers provide greater real purchasing power in economically disadvantaged areas—helping with survival and compliance—while prosperous regions offer deeper labor markets that enable scaling.

Additionally, entrepreneur characteristics may moderate performance gaps through differential access to networks, resources, and market opportunities. Indeed, racial minority cash-transfer entrepreneurs show 3.2% smaller survival disadvantages, consistent with evidence that racial minority entrepreneurs rely more heavily on co-ethnic networks and enclave demand (Kerr and Mandorff (2025); Fairlie et al. (2022)), which can buffer disadvantages. On the flip side, female cash-transfer entrepreneurs face particularly severe challenges: their survival disadvantages are 48% larger and tax violation rates are 60% higher than baseline cash-transfer disadvantages—which aligns with findings that women entrepreneurs face disadvantaged networks and limited spillovers (Kerr et al. (2018); Wallskog (2025)).

Beyond explaining performance gaps, a central question is whether entrepreneurship generates human capital returns for cash-transfer beneficiaries even when ventures fail. If so, programs facilitating business entry might yield positive returns through improved post-entrepreneurship employment. We test this by analyzing employment trajectories of 262 thousand entrepreneurs who founded firms between 2014 and 2021 and transitioned to formal employment within 12 months before or after business closure. We conduct two complementary analyses: first, examining within-individual employment changes for cash-transfer entrepreneurs before versus after entrepreneurship; second, comparing their transitions with those of non-cash-transfer entrepreneurs to isolate differential human capital effects.

The results reveal a striking contrast between absolute and relative outcomes. Cash-transfer entrepreneurs experience absolute employment declines relative to their pre-entrepreneurship jobs: they are 2.9% less likely to return to white-collar positions, 17.3% less likely to secure managerial roles,

and face 7.7% salary reductions relative to their pre-entrepreneurship wages. However, compared to other failed entrepreneurs, cash-transfer entrepreneurs demonstrate substantially better transitions. Their salary declines are 61% smaller and hourly wage losses are 68% smaller than non-cash-transfer entrepreneurs. Moreover, they transition back to employment faster than other entrepreneurs (median of six months before closure versus four months). These patterns suggest entrepreneurship generates valuable human capital—skills, networks, or labor market signals—that disproportionately benefits cash-transfer entrepreneurs, mitigating employment penalties even when businesses fail.

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

Second, we expand the literature on capital constraints and risk in entrepreneurship by examining how social insurance affects entrepreneurial outcomes. While extensive research shows that capital constraints hinder entrepreneurial entry (Evans and Jovanovic (1989); Hurst and Lusardi (2004); Banerjee and Duflo (2005); Cagetti and De Nardi (2006); de Mel et al. (2008); Karlan and Morduch (2010); Adelino et al. (2015); Chodorow-Reich et al. (2024)) and that career risk deters potential entrepreneurs

(Gottlieb et al. (2022); Landier (2005); Gromb and Scharfstein (2002)), 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. We document that while cash transfer programs facilitate entrepreneurial entry, cash-transfer entrepreneurs exhibit systematic performance disadvantages relative to observationally equivalent non-recipients. Notably, these disadvantages partly reflect managerial constraints, visible in employment practices that—while limiting performance optimization—generate positive externalities by providing higher-wage, stable employment to less-educated workers and racial minorities.

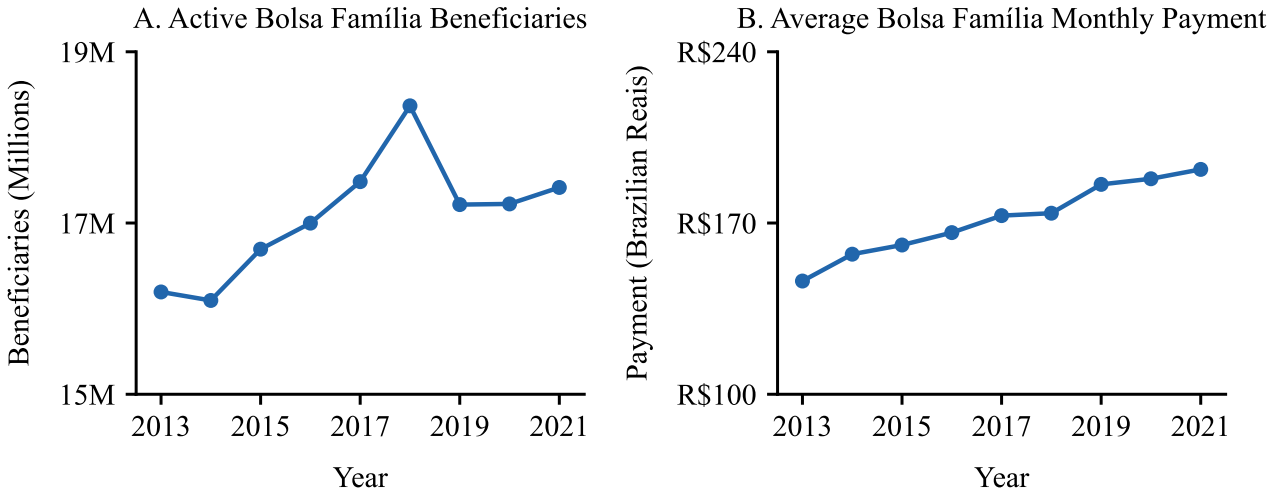
The remainder of the paper is organized as follows. Section 2 describes institutional details, Section 3 covers data construction, and Section 4 examines entrepreneurial entry. Section 5 presents our empirical strategy, Section 6 analyzes performance, Section 7 examines mechanisms behind performance differentials, and Section 8 studies economic mobility through entrepreneurship. Section 9 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 cash support through a two-tier eligibility structure. To qualify, households must register in the national Unified Registry (CadÚnico) and demonstrate monthly per capita income below specified thresholds. Prior to 2023, households were classified into two categories: *extreme poverty* and *poverty*. As of 2018 (approximately the midpoint of our study period), the extreme poverty

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).

threshold was R$89 monthly per capita (equivalent to $25, or 10% of Brazil's minimum wage), while the poverty threshold was R$178 (equivalent to $49, or 20% of the minimum wage).[2]

Benefit amounts varied by poverty category and family composition. As of 2018, families in extreme poverty received a basic benefit of R$89 monthly (approximately $25) plus variable benefits of R$41 ($11) per child aged 0–15 (maximum five children) and R$48 ($13) per adolescent aged 16–17 (maximum two adolescents). Families in the poverty category received only the variable benefits for children and adolescents, not the basic benefit. For example, a family in extreme poverty with two young children and one adolescent would receive R$89 + (2 × R$41) + R$48 = R$219 monthly, while a similar family in the poverty category would receive only (2 × R$41) + R$48 = R$130.

Panel A of Figure 1 shows that since 2016, over 17 million families benefit from Bolsa Família—representing over one-quarter of Brazilian households. As Panel B shows, beneficiaries receive on average R$170 ($47) monthly, equivalent to 19% of Brazil's minimum wage.[3] Figure IA1 shows that

[2]These thresholds and benefit amounts were periodically adjusted for inflation throughout the program's history. See Table IA1 for the complete timeline of eligibility cutoffs and Table IA2 for benefit amounts. Starting in 2023, the program eliminated the distinction between extreme poverty and poverty, establishing a single eligibility threshold of R$218 per capita.

[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).

Bolsa Família has a fiscal cost of over R$30 billion ($8 billion) annually to the Brazilian government, representing about 0.5% of Brazil's GDP between 2014 and 2021.

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

2.2 Firms in Brazil

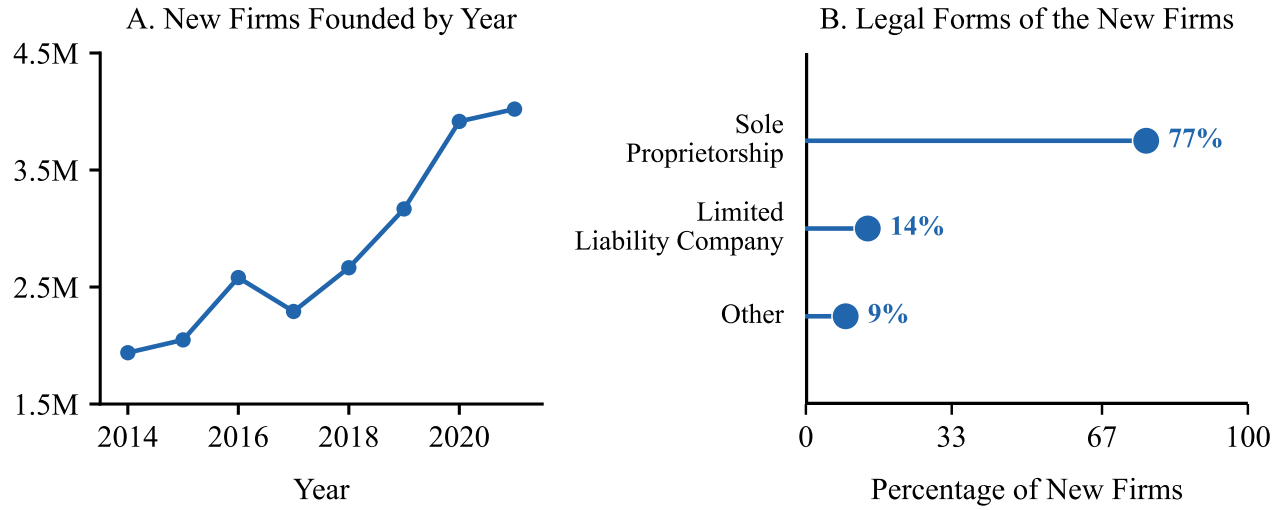
As Panel A of Figure 2 highlights, new business registrations in Brazil grew from two million to over four million a year between 2014 and 2021. Panel B shows that most of these businesses operate as sole proprietorships, which account for 77% of new establishments. Limited liability companies are the second most common business form, accounting for 14% of the new businesses in Brazil.[4] The primary distinction between these forms is that sole proprietorships can operate under the highly preferential *microempreendedor individual* (individual microentrepreneur; MEI) regime with minimal taxation and compliance costs, while LLCs cannot access MEI but provide owners with liability protection.

Nearly all sole proprietorship firms initially operate under the MEI regime. MEI firms may have annual revenues up to R$81,000 (approximately $22,000) and employ one worker besides the entrepreneur. These firms pay a fixed monthly tax of R$66.60 ($18.35; covering social security, municipal ISS tax, and federal ICMS tax), which represents less than 1% of their maximum allowed revenue. Notably, this payment provides access to social security benefits paid by INSS (the government social security system), including retirement, disability, and maternity leave at the minimum wage level. Additionally, the regime has minimal compliance requirements: they must file a simplified tax return (DASN-SIMEI) once a year, and can self-fill the tax return (they are not required to hire an accountant).

As sole proprietorships grow, they transition through different size categories while remaining

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

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.

individual entrepreneurs. The next tier, *microempresa* (microenterprise; ME), allows revenue up to R$360,000 annually (approximately $100,000) but requires more complex tax calculations under the SIMPLES Nacional regime, with progressive rates starting at 4% and reaching up to 15.5% of gross revenue depending on business activity and revenue level.[5] Unlike MEI's restriction to one employee, ME firms can hire up to 9 employees in commerce and services or up to 19 in manufacturing. ME firms also face substantially higher compliance costs, including mandatory accounting services and monthly and annual filing obligations beyond MEI's simple annual revenue declaration.

The largest sole proprietorship category, *empresa de pequeno porte* (small enterprise; EPP), accommodates revenue between R$360,000 and R$4.8 million annually (approximately $100,000 to $1.3 million) and may employ up to 49 employees in commerce and services or up to 99 in manufacturing. Progressive tax rates for EPP under SIMPLES Nacional range 9.5% to 33% depending on business activity and revenue level. Sole proprietorships exceeding R$4.8 million ($1.3 million) lose SIMPLES eligibility and must use more complex tax regimes like *lucro presumido* or *lucro real*.[6]

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

[6]SIMPLES Nacional restricts businesses to a pre-approved list of about 400 activities. Excluded activities include finan-

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

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

The Bolsa Família Payments dataset provides comprehensive monthly payment records for 27.3

cial 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).

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

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

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

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

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

3.2 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—especially for low-income individuals such as those supported by Bolsa Família. Second, we only consider the *first* business started by each individual, which ensures any results aren't biased through learning from previous entrepreneurial experiences. Third, we only consider founders with formal employment experience in the 12 months prior to starting their business, and we can observe from these pre-entrepreneurship experiences their detailed occupation, salary, and demographic characteristics.

With these sample restrictions in place, we track Bolsa Família recipients starting January 2013 and sole-proprietorship firms started by all entrepreneurs between January 2014 and December 2021. We track each firm's outcomes—described in detail below—from their founding date until December 2024. We define *cash-transfer entrepreneurs* as those enrolled in Bolsa Família when founding a business and recent graduates of the program.[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,

[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.

R$10k–25k, and >R$25k, capturing the distribution of initial capital commitments across our sample.[8]

Our primary performance measures are indicator variables tracking five categories of entrepreneurial outcomes over 1, 2, 3, and 5-year horizons. First, *business survival*, collected from the Ministry of Finance's CNPJ dataset, captures whether each firm remains active, providing a fundamental measure of entrepreneurial persistence (cf. Bernstein et al. (2022)).

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

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

Fourth, *credit access* indicates whether firms received financing through the BNDES indirect automatic operations program, which provides loans to finance investment projects of small and medium enterprises through commercial banks and credit unions.[9] This measure proxies for entrepreneurs' successful access to formal credit markets—a critical constraint for business growth in developing markets (Banerjee and Duflo (2005); de Mel et al. (2008)). BNDES is the primary channel of subsidized small business financing in Brazil, where alternative credit sources remain prohibitively expensive.[10] BNDES indirect automatic operations rates average 12.2% annually in our data, substantially below the 25.1%

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

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

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

average market rate for small and medium enterprise loans in Brazil (OECD (2019)).

Finally, we examine compliance and financial distress through two measures. *Tax violations*, collected from the CNPJ dataset, capture failures to file mandatory tax declarations (DEFIS for MEI firms, DIPJ for other tax regimes), reflecting firms' capacity to meet administrative obligations. Tax violation is common in developing economies where enforcement is incomplete and size-dependent, and most often reflects liquidity constraints rather than strategic evasion (Bachas et al. (2019); Alstadsæter et al. (2019)). Such violations trigger penalties and enforcement actions that impose costs on both firms and tax authorities (Slemrod and Yitzhaki 2002). *Active debt collection*, collected from PGFN's Dívida Ativa da União, indicates whether firms are subject to government collection proceedings for unpaid tax obligations, social security contributions, or administrative penalties that have escalated to enforcement actions.

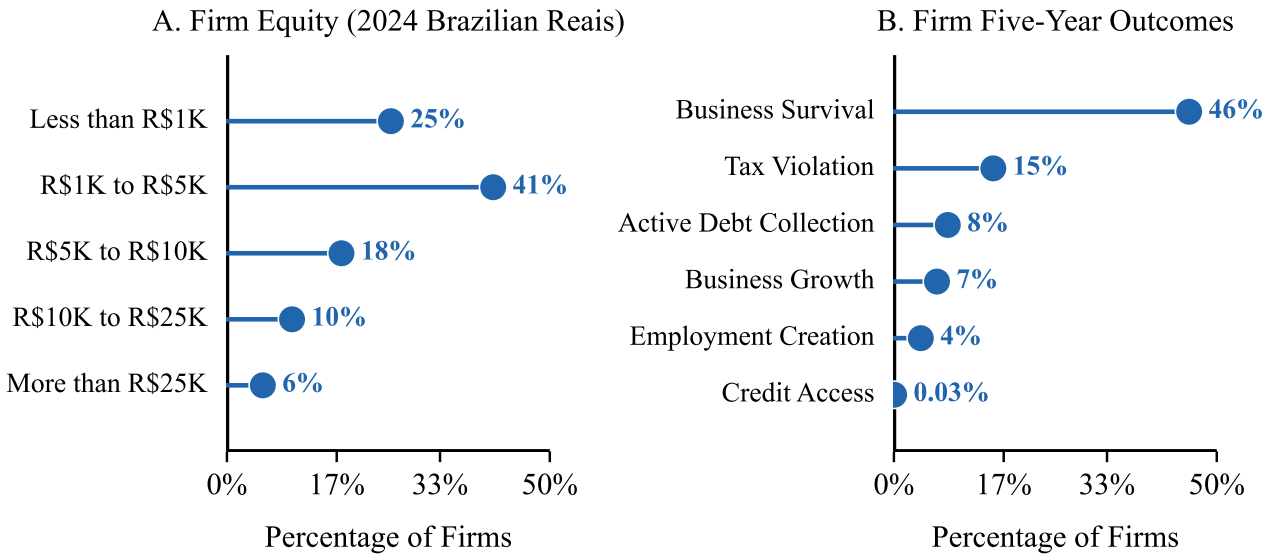
The distribution of firm characteristics and performance outcomes in our sample, presented in Figure 3, highlights the capital-light nature of Brazilian sole proprietorship entrepreneurship. Panel A shows that the vast majority of firms start with minimal equity investment: 25% begin with less than R$1,000 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 Brazilian Reais), payment structure (monthly, weekly, hourly, etc.), and whether entrepreneurs previously worked at a small firms (based on whether their employer was registered under Brazil's SIMPLES Nacional tax regime). We also classify pre-entrepreneurship occupations using ten major categories: elementary occupations, agricultural/forestry/fishery workers, plant and process operators,

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 years post-founding. Outcomes are not mutually exclusive. The sample includes 2.3 million sole-proprietorship firms founded between 2014 and 2021 by individuals with recent employment experience (within 12 months of business founding). Cash-transfer entrepreneurs are those enrolled in Bolsa Família when starting their business or recent program graduates. Data are from CNPJ, RAIS, and MDS.

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

Cash-transfer entrepreneurs start businesses with lower average initial equity—averaging R$2.1 thousand compared to R$3.2 thousand for other entrepreneurs. They exhibit lower business survival rates (37.8% versus 46.0% at 5 years) and reduced business growth (4.6% versus 6.8% at 5 years). Employment creation rates are also lower (1.9% versus 4.3% at 5 years), as is access to formal credit through BNDES programs. However, cash-transfer entrepreneurs show higher rates of tax compliance

violations (23.5% versus 15.1% at 5 years) and active debt collection proceedings (9.7% versus 8.3% at 5 years), suggesting greater financial distress over time. These patterns hold consistently across different time horizons, indicating persistent performance differences.

PLACE TABLE 1 ABOUT HERE

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

PLACE TABLE 2 ABOUT HERE

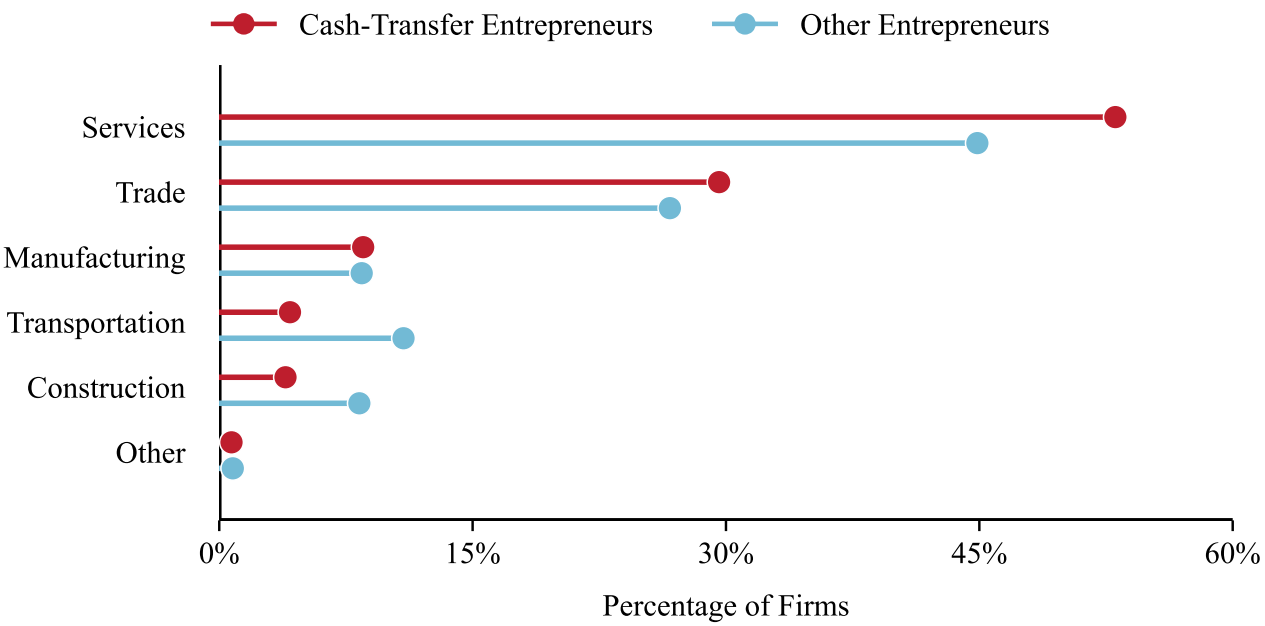
Tables IA3 and IA4 in the internet appendix provide detailed breakdowns of these occupation and demographic patterns, revealing that cash-transfer entrepreneurs concentrate particularly in personal service work (34.8% versus 14.4% for other entrepreneurs) and sales (15.3% versus 12.0%), with 68.3% earning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

3.4 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

Figure 4: Industry Distribution by Entrepreneur Type



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

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.

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 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.

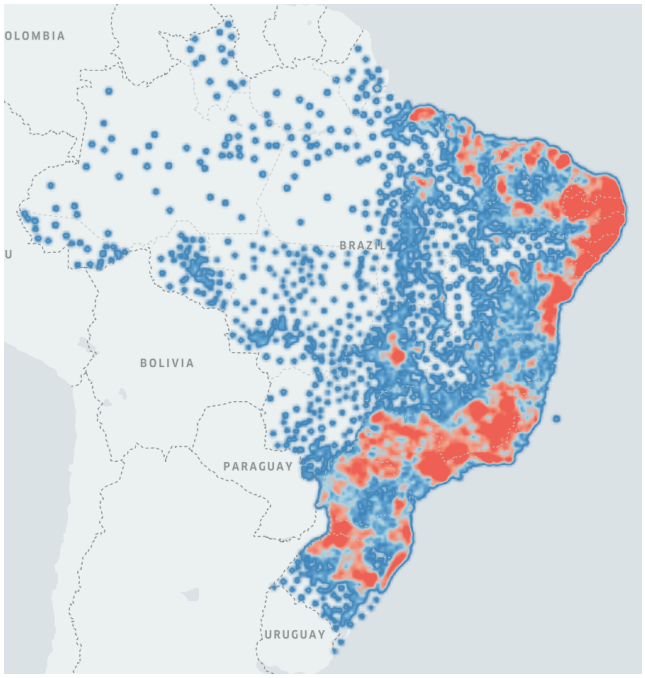
To examine the spatial relationship between program payments and entrepreneurial growth, we calculate the bivariate Moran's I statistic, which yields a Z-score of 20.12 ($p < 0.001$), confirming significant joint spatial clustering (see Ward and Gleditsch (2008)). We further assess the degree of geographic 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

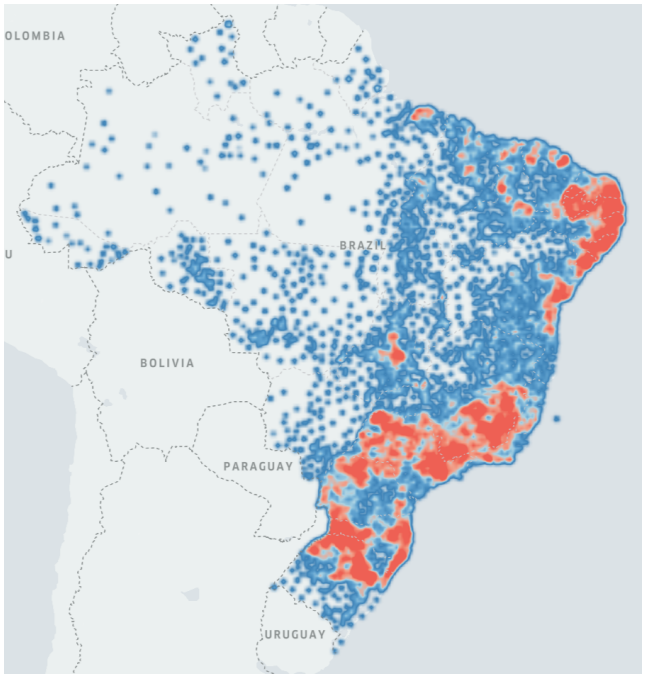
Our analysis of annual municipal-level business creation compares business formation rates across municipalities with different intensities of Bolsa Família program exposure. This design exploits

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 are from MDS and CNPJ.

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. The coefficient of interest, β, measures the proportional change in new firm counts associated with a one-unit increase in program exposure. 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% decline relative to the mean). Panel D shows that these results persist using lagged program exposure measures. These tests do not 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)).[11]

5 Main Empirical Strategy

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

$$Y_f = \alpha + \beta \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_f\} + \delta_i + \theta_s + \varepsilon_f \tag{2}$$

[11] 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.

where Y_f represents outcome variables for firm f measured t years after founding (including business survival, business growth, employment creation, credit access, tax violation, and active debt collection), $\mathbb{1}\{\text{Cash-Transfer Entrepreneur}_f\}$ indicates whether the founder was enrolled in Bolsa Família when starting the business or graduated from the program within 12 months before founding, δ_i and θ_s represent fixed effects described below, and ε_f is the error term. Our parameter of interest is β, which captures the differential performance of cash-transfer entrepreneurs relative to other entrepreneurs.

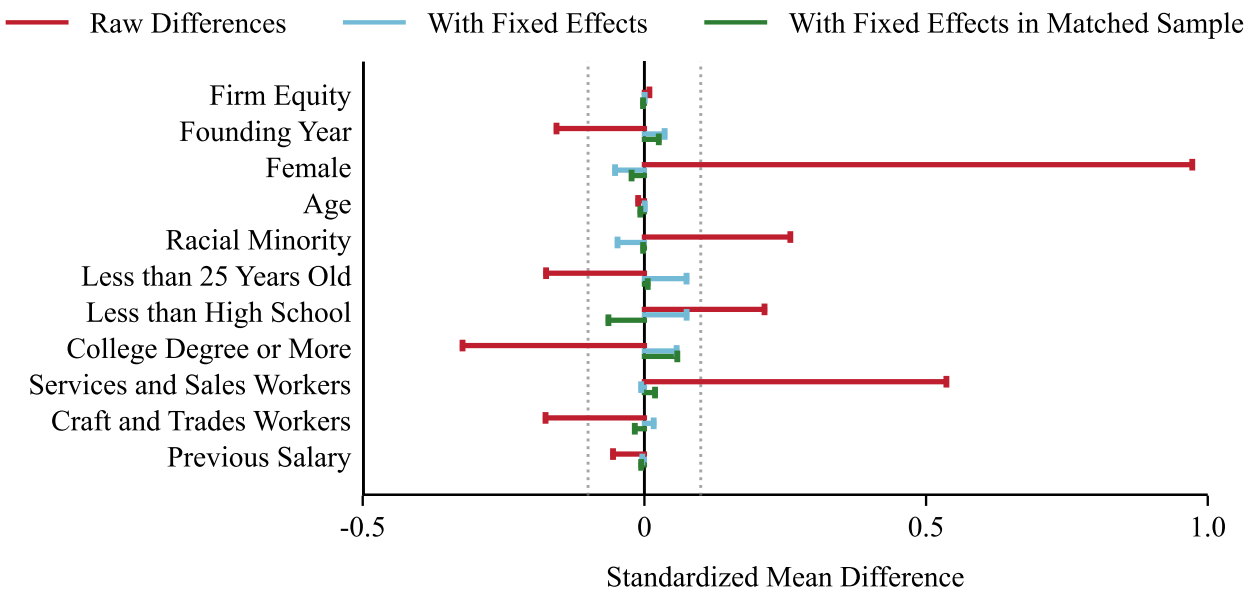
The primary identification challenge stems from systematic differences between cash-transfer and other entrepreneurs across multiple dimensions.[12] We address this concern through two complementary strategies. First, we employ comprehensive fixed effects to control for observable heterogeneity. *Entrepreneur 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 appropri-

[12] Consistent with this concern, 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.

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

Standard errors are clustered at the municipality level to account for potential correlation in entrepreneurial outcomes within local economic environments, which may arise from shared infras-

tructure, 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.

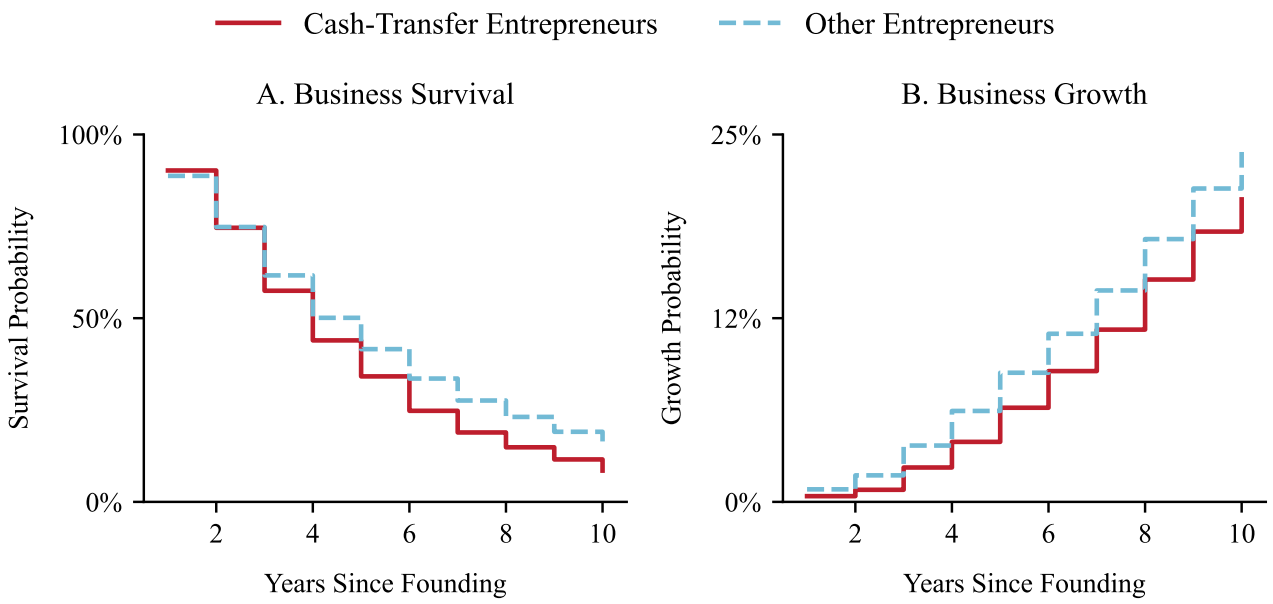
6.1 Business Survival and Growth

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

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.

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

Business growth patterns exhibit widening gaps in the short term that plateau over longer horizons. Results under Column (3) of Panel A indicate that cash-transfer entrepreneurs are 10.7% less likely to achieve business growth in their first year (−0.2 percentage points relative to a mean of 1.7%). This disadvantage expands through the second year, with Column (3) of Panel B showing that cash-transfer entrepreneurs are 12.2% less likely to achieve two-year growth (−0.3 percentage points

relative to the mean). However, Columns (3) of Panels C and D reveal that three-year and five-year gaps stabilize at similar magnitudes of −0.3 percentage points. The matched sample results in Column (4) consistently show patterns in the same direction with slightly larger magnitudes.

These patterns remain stable under alternative econometric specifications that cluster standard errors at the 2-digit industry level (with 82 units) and employ Municipality × Equity × Year fixed effects in place of Industry × Equity × Year fixed effects (see Table IA5). 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.

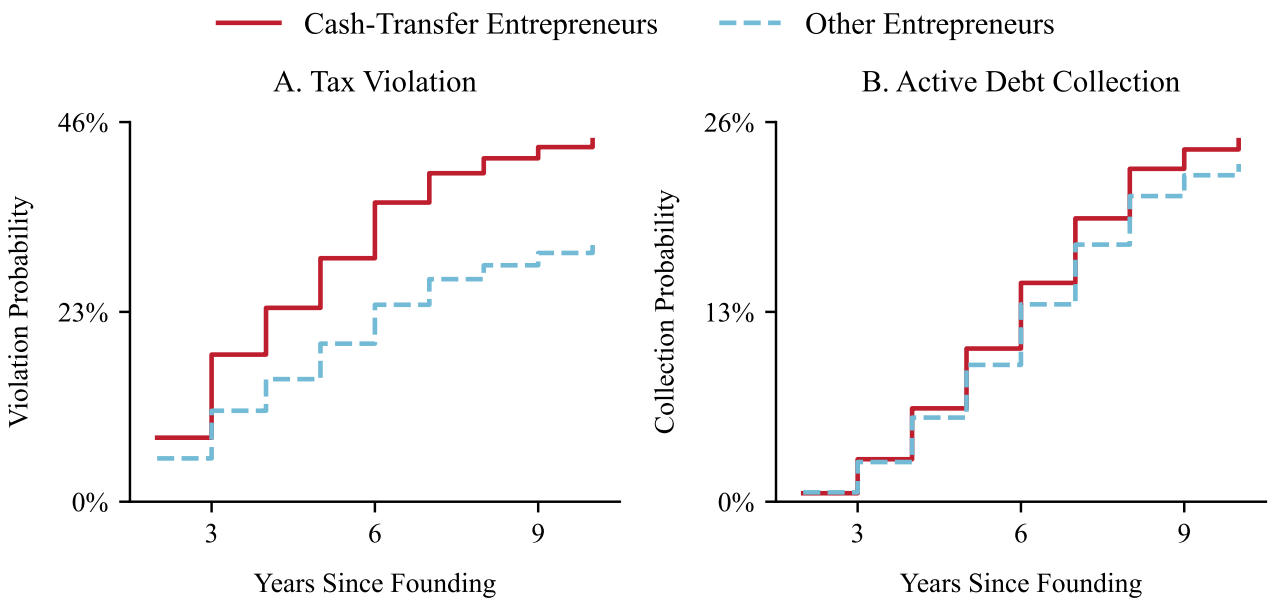
Our findings are robust to alternative model specifications employing Municipality × Equity × Year fixed effects and clustering standard errors at the 2-digit industry level (see Table IA6). The robustness specification confirms both the statistical significance and economic magnitudes of the employment 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

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.

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 disadvantages persist over longer time horizons. Results under Column (1) of Panel B 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 IA7). This alternative specification preserves the magnitude and statistical significance of both tax compliance and debt collection disadvantages.

7 Mechanisms Behind Performance Gaps

Having documented systematic performance differences between cash-transfer and other entrepreneurs, we next investigate potential mechanisms for these gaps. We focus on four dimensions: employment composition, local economic conditions, entrepreneur demographics, and industry sector.

7.1 Employment Composition

We begin by examining whether cash-transfer entrepreneurs differ in their hiring practices—specifically, whom they employ, what roles they hire for, and what employment terms they offer. Focusing on firms that created at least one job within their first five years, we estimate a linear specification similar to our main performance analysis (see Equation (2)) but present two versions for each outcome. The first specification includes only Industry × Equity × Year fixed effects, while the second adds entrepreneur fixed effects—the joint profile of individual characteristics (race, nationality, gender, education, age, occupation, salary type, salary category, and firm size experience) measured before firm founding.

This approach allows to assess whether hiring differences reflect the characteristics of cash-transfer entrepreneurs themselves or persist even when controlling for founder characteristics.

Table 8 presents the results. Panel A examines employee demographics. Results under Column (1) show that cash-transfer entrepreneurs are 15% more likely to hire racial minorities (+6.0 percentage points relative to a mean of 41.1%). Column (2) shows this pattern persists when controlling for entrepreneur characteristics, though the magnitude attenuates to 10% (+4.0 percentage points). Notably, Column (3) shows that cash-transfer entrepreneurs are 18% less likely to hire female employees (−10.9 percentage points relative to a mean of 60.2%), though Column (4) shows this pattern reverses when controlling for entrepreneur characteristics, with the gap narrowing to 11% (−6.7 percentage points). Column (5) reveals they also employ 9% more individuals with low educational attainment (+4.0 percentage points relative to a mean of 44.2%), though Column (6) shows this difference becomes statistically insignificant when controlling for entrepreneur characteristics.

PLACE TABLE 8 ABOUT HERE

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

Panel C examines employment terms and reveals important differences in job quality. Results under Column (13) show that cash-transfer entrepreneurs are 28% less likely to offer part-time positions (−2.8 percentage points relative to a mean of 9.8%), with Column (14) showing this pattern persists when controlling for entrepreneur characteristics (−2.4 percentage points). Column (15) shows they are also 3% less likely to offer low-wage positions (defined as below R$500; −2.9 percentage points relative

to a mean of 86.8%), with Column (16) showing this pattern remains when controlling for entrepreneur characteristics (−3.1 percentage points). Columns (17) and (18) reveal no significant difference in hourly salary rates in either specification, suggesting that cash-transfer entrepreneurs create value for disadvantaged workers by offering stable, full-time employment arrangements rather than through higher hourly wages, generating positive externalities through more secure employment opportunities.

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

7.2 Local Economic Conditions

A central feature of Brazil's Bolsa Família program is that all beneficiaries receive the same nominal transfer amount regardless of where they live. However, the real purchasing power of these transfers varies substantially across municipalities due to differences in local price levels. For instance, R$200 in São Paulo (São Paulo state) provides purchasing power approximately equivalent to R$300 in Aracajú (Sergipe state) when adjusted for regional price differences.[13] This variation allows to examine whether the relative performance of cash-transfer entrepreneurs depends on local economic prosperity.

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

[13] Diamond and Moretti (2024) document that spatial cost-of-living differences are particularly large for low-income households, with the spatial standard deviation of price indices for low-income groups being almost double that of high-income groups. Housing costs drive most of this variation, accounting for 95% of spatial price variation for low-income households.

the following specification:

$$\begin{aligned} Y_f = \alpha + \beta_1 \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_f\} + \beta_2 \cdot \text{GDP per Capita}_m \\ + \beta_3 \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_f\} \times \text{GDP per Capita}_m + \delta_i + \theta_s + \varepsilon_f \end{aligned} \tag{3}$$

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

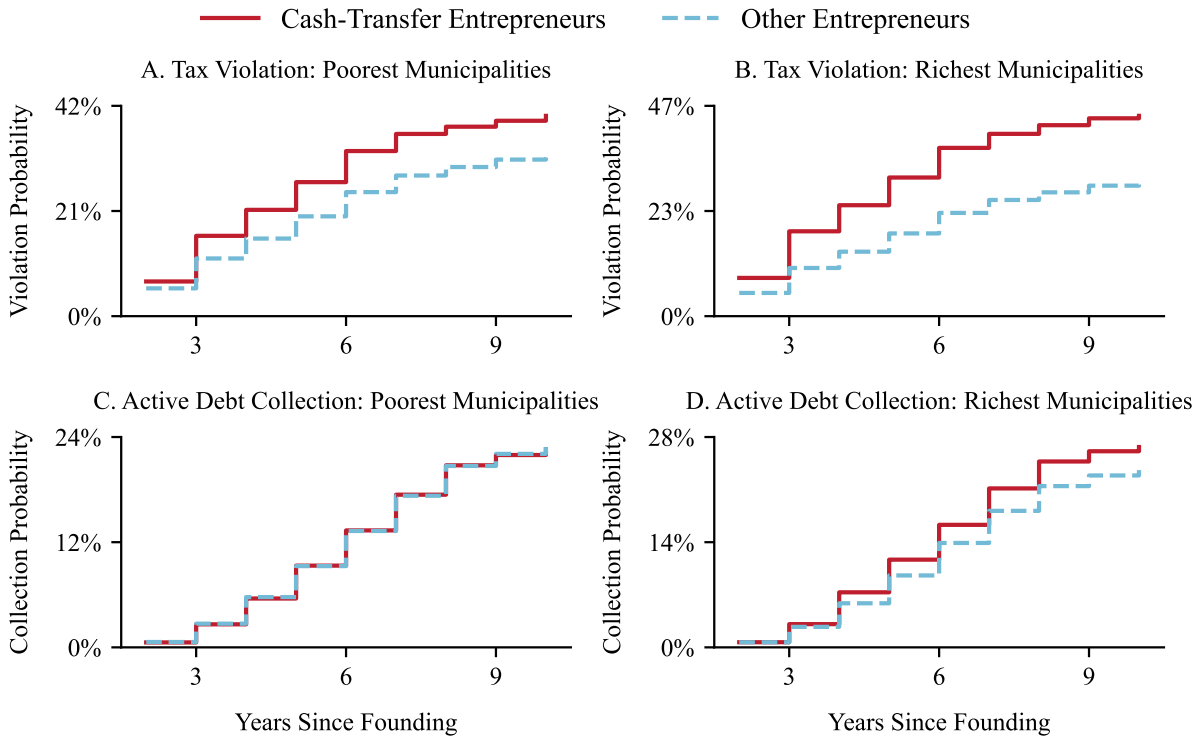
Figure 9 presents non-parametric evidence of how local economic conditions moderate cash transfer effects. Panels A and B compare tax violation rates in the poorest and richest municipalities, revealing that cash-transfer entrepreneurs in wealthier areas face substantially larger compliance gaps. Panels C and D show similar patterns for debt collection, with disadvantages being more pronounced in prosperous municipalities. These non-parametric estimates suggest that the challenges facing cash-transfer entrepreneurs vary systematically with local economic conditions.

Table 9 displays the interaction coefficients for six key outcomes. The results highlight important trade-offs in program design. Panel A examines business survival and growth outcomes. For business survival under Column (1), the negative interaction coefficient indicates that the survival gap widens by 18% for each standard deviation increase in municipal GDP per capita (−0.78 percentage points relative to the baseline gap of −4.4 percentage points). Similarly, for business growth under Column (2), the negative interaction coefficient shows that cash-transfer entrepreneurs' growth advantage narrows in more prosperous municipalities (−0.35 percentage points, reducing their baseline advantage of +0.90 percentage points by 39%).

PLACE TABLE 9 ABOUT HERE

Panel B examines employment creation and credit access. For employment creation under Column (3), the positive interaction coefficient reveals that the employment gap narrows by 18% for each standard deviation *increase* in municipal GDP per capita (+0.69 percentage points relative to the

Figure 9: 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.

baseline gap of −3.9 percentage points). Similarly, for credit access under Column (4), the positive interaction coefficient of 0.008 percentage points reveals a 19% reduction for each standard deviation in local GDP per capita. These findings suggest that deeper labor markets and stronger business ecosystems in prosperous areas facilitate employment growth for cash-transfer entrepreneurs.

Panel C examines tax compliance outcomes. For tax violations under Column (5), the positive interaction coefficient indicates that compliance gaps widen substantially for each standard deviation increase in municipal GDP per capita—the interaction effect more than offsets the baseline compliance advantage, reversing the gap entirely (+2.5 percentage points relative to the baseline gap of −2.2

percentage points). For active debt collection under Column (6), the positive interaction coefficient shows that debt collection gaps widen by 78% for each standard deviation increase in municipal GDP per capita. These patterns suggest that the greater purchasing power of cash transfers in poorer regions helps beneficiaries maintain their businesses and meet tax obligations.

Table IA8 provides additional evidence by comparing cash-transfer effects in the bottom and top GDP quartiles. Panel A shows that in the poorest municipalities (bottom quartile of per capita GDP), cash-transfer entrepreneurs exhibit 26% better tax compliance (-1.8 percentage points relative to the baseline gap of +6.7 percentage points) and 50% lower debt collection rates (-0.9 percentage points relative to the baseline gap of +1.7 percentage points) relative to more affluent areas. Panel B reveals the opposite pattern in the richest municipalities (top quartile of per capita GDP), where employment creation gaps narrow by 73% (+1.4 percentage points relative to the baseline gap of -1.9 percentage points) and credit access gaps are more than offset, reversing the disadvantage entirely.

These heterogeneous effects highlight an important trade-off: uniform nominal transfers provide greater real purchasing power in economically disadvantaged areas—helping entrepreneurs survive and remain compliant—but the deeper labor markets and stronger business ecosystems in prosperous regions enable cash-transfer entrepreneurs to close employment creation gaps and access formal credit.

7.3 Heterogeneity by Entrepreneur Demographics

Beyond local economic conditions, we examine how cash transfer effects vary with entrepreneur characteristics that may influence business management capabilities, access to resources, or risk tolerance. Following the same approach as in our GDP heterogeneity analysis, we estimate Equation (3) replacing municipal GDP with interactions between the cash-transfer entrepreneur indicator and key demographic variables: low education (up to 5th grade complete), young (under 25), female, racial minority status, blue-collar occupation background, prior employment at small firms, and variable salary experience.

Figure IA2 presents non-parametric evidence of demographic differences in entrepreneurial performance. Panels A and B show cumulative probabilities of tax violations for white and racial minority entrepreneurs respectively, revealing that among white entrepreneurs, cash-transfer recipients exhibit substantially higher tax violation rates across all time horizons. However, among racial minority

entrepreneurs, the gap between cash-transfer and other entrepreneurs is considerably smaller, with convergence occurring by year 7. Panels C and D show similar patterns for active debt collection, with disadvantages being more pronounced among white entrepreneurs than racial minorities. These estimates suggest that demographic characteristics may moderate the effects of cash transfer entrepreneurship.

Table IA9 presents the regression estimates with demographic interactions, focusing on five-year outcomes. The baseline coefficient represents the effect for the omitted category (high education, older, male, white, white-collar occupation, large firm experience, and fixed salary workers), while interaction terms show differential effects for other demographic groups. Results in Column (1) show that the baseline five-year survival disadvantage is 8.7% (−4.0 percentage points relative to a mean of 45.7%). This disadvantage is amplified among entrepreneurs with low education (additional −1.0 percentage points) and female entrepreneurs (additional −1.9 percentage points), but attenuated for young entrepreneurs (+2.5 percentage points) and racial minorities (+1.4 percentage points). Cash-transfer entrepreneurs who previously worked at small firms face severe survival challenges (additional −2.5 percentage points).

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

These patterns reveal important heterogeneity in who succeeds among cash-transfer entrepreneurs. Young entrepreneurs and racial minorities show relative resilience in survival and compliance outcomes, consistent with evidence that racial minority entrepreneurs rely more heavily on co-ethnic networks,

enclave demand, and own-group socialization channels (Kerr and Mandorff 2025; Yimfor et al. 2024; Fairlie et al. 2022; Borjas and Bronars 1989), which appear to buffer disadvantages faced by cash-transfer recipients.[14] In contrast, female entrepreneurs face compounded challenges to sustain business survival and tax compliance, aligning with findings that women entrepreneurs face disadvantaged networks and and peer learning opportunities (Kerr et al. 2018; Wallskog 2025).[15]

7.4 Heterogeneity by Industry

Finally, we examine whether performance gaps vary across industry sectors, reflecting differences in capital requirements, skill demands, and market dynamics. Using the same specification as Equation (3), we replace municipal GDP with interactions between the cash-transfer entrepreneur indicator and five major industry categories: construction, manufacturing, services (the baseline), trade, and transportation. Industry classifications follow Dix-Carneiro (2014) and are mapped based on four-digit CNAE codes.

Figure IA3 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. Panel C shows that the services sector experiences particularly large compliance gaps, with cash-transfer entrepreneurs reaching 47% violation rates by year 10 compared to 23% for other entrepreneurs. Notably, Panel E shows that in transportation, the compliance gap narrows considerably after year 7, with both groups converging toward similar violation rates. While the magnitude of compliance gaps varies across industries, the persistent disadvantages in all sectors suggest that the challenges facing cash-transfer entrepreneurs represent systematic difficulties in business management rather than industry-specific factors.

Table IA10 presents the regression estimates with industry interactions. The baseline coefficient represents service sector outcomes, while interaction terms capture differential effects in other industries. Results under Column (1) show that service sector cash-transfer entrepreneurs face 18.7% lower survival rates (-8.5 percentage points relative to a mean of 45.7%). However, these disadvan-

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

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

tages are partially offset in trade (+2.6 percentage points), transportation (+4.2 percentage points), and manufacturing sectors. Column (2) reveals similar patterns for business growth, with the services sector disadvantage of 13.3% (−0.9 percentage points relative to a mean of 6.7%) being offset in construction (+1.4 percentage points), manufacturing (+0.8 percentage points), and trade (+1.0 percentage points). These positive interaction terms suggest that cash-transfer entrepreneurs may be better able to scale their firms in sectors requiring physical products or tangible outputs rather than knowledge-intensive services.

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

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

8 Economic Mobility Through Entrepreneurship

The prior sections document that cash-transfer entrepreneurs systematically underperform. Beyond explaining these performance gaps, a critical question is whether entrepreneurship nonetheless gener-

ates value through human capital accumulation. If the entrepreneurial experience itself builds human capital—through managerial skills, business networks, or employment credentials—it may improve subsequent labor market outcomes despite business closure.

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

8.1 Pathways After Business Failure

We begin by examining the primary pathways available to entrepreneurs after business failure. Using data on all entrepreneurs whose firms closed in our sample, we estimate whether cash-transfer entrepreneurs differ in their likelihood of transitioning to employment versus starting new ventures within 12 months before or after business closure (a 24-month window around closure).

Table 10 presents the results. Column (1) shows that cash-transfer and other entrepreneurs are equally likely to transition to wage employment (16.9% for both groups) when they close their businesses, with no statistically significant difference. Column (2) reveals that cash-transfer entrepreneurs are 9% less likely to start new firms (−0.3% relative to a mean of 3.5%), reflecting either beneficial learning about comparative advantage or discouragement from attempting better-designed ventures.

PLACE TABLE 10 ABOUT HERE

8.2 Within-Individual Employment Trajectories

Having established that cash-transfer entrepreneurs predominantly return to employment after business failure, we now examine how employment outcomes change for cash-transfer entrepreneurs around their entrepreneurial spell. Our analysis focuses on individuals who transition to formal employment that begins within 12 months before or after business closure (a 24-month window around closure).

Using panel-level data with two observations per individual (representing pre-entrepreneurship and post-entrepreneurship employment), we estimate:

$$Y_{p,t} = \alpha + \beta \cdot \mathbb{1}\{\text{Post-Entrepreneurship}_{p,t}\} + \delta_p + \theta_s + \varepsilon_{p,t} \tag{4}$$

where $Y_{p,t}$ represents employment outcomes for individual p in period t (pre or post entrepreneurship), $\mathbb{1}\{\text{Post-Entrepreneurship}_{p,t}\}$ indicates the post-entrepreneurship period, δ_p denotes individual fixed effects capturing pure within-person changes, and θ_s captures Industry × Equity × Year fixed effects. As in the other tests, standard errors are clustered at the municipality level to account for potential correlation in outcomes within local economic environments.

Table 11 presents the results for cash-transfer entrepreneurs. Panel A examines occupation and employer characteristics. Results under Column (1) show that cash-transfer entrepreneurs are 2.9% less likely to return to white-collar positions after their entrepreneurial experience (−0.99 percentage points relative to a pre-entrepreneurship mean of 33.8%). Column (2) reveals they are 17.3% less likely to return to managerial positions (−0.33 percentage points relative to a pre-entrepreneurship mean of 1.9%). Column (3) shows no significant change in employment at small firms.

PLACE TABLE 11 ABOUT HERE

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

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

8.3 Differential Employment Transitions

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

$$\begin{aligned} Y_{p,t} = \alpha + \beta_1 \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_p\} + \beta_2 \cdot \mathbb{1}\{\text{Post}_{p,t}\} \\ +\beta_3 \cdot \mathbb{1}\{\text{Cash-Transfer Entrepreneur}_p\} \times \mathbb{1}\{\text{Post}_{p,t}\} + \delta_p + \theta_s + \varepsilon_{p,t} \end{aligned} \tag{5}$$

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

Table 12 presents the results. Panel A examines occupation and employer characteristics. Results under Column (1) show that the interaction term for white-collar employment is statistically insignificant, indicating that cash-transfer entrepreneurs experience similar occupational transitions as other entrepreneurs. Column (2) shows no differential effect for managerial positions, with neither the interaction term nor the post-entrepreneurship coefficient reaching statistical significance. Column (3) shows that cash-transfer entrepreneurs are 3.5% *less likely* to return to small firms (−1.1 percentage points relative to a mean of 31.6%) compared to other entrepreneurs, indicating they are more likely to secure employment at larger firms after their entrepreneurial spell.

PLACE TABLE 12 ABOUT HERE

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

hourly, or task-based payment (0.9 percentage points, or 1.0% of the baseline rate). This difference is economically negligible given that over 92% of both groups secure stable payment schedules.

These results are robust to controlling for detailed entrepreneur characteristics. Table IA11 replaces individual fixed effects with entrepreneur fixed effects—the joint profile of race, nationality, gender, education, age, and pre-entrepreneurship employment characteristics (occupation, salary type, salary category, and firm size). The key findings remain unchanged: cash-transfer entrepreneurs experience salary declines that are 61% smaller (+R$76.98 differential from a R$125.52 baseline decline) and hourly wage declines that are 68% smaller, and are less likely to return to small firms.

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

Two mechanisms could explain this pattern. First, ongoing income support from cash transfers may enable more selective job search. Like unemployment insurance, cash transfers can reduce immediate financial pressure, potentially allowing beneficiaries to extend search duration while seeking better job matches (Marinescu and Skandalis 2021).[16] Second, entrepreneurial experience may provide valuable human capital through skills, networks, or credible labor market signals (Manso 2016; Braunerhjelm and Lappi 2023).[17] However, we find evidence inconsistent with the safety net mechanism: cash-transfer entrepreneurs transition to employment *earlier* than others (median of six months before business closure, versus four months; means of −4.1 versus −3.5 months), contradicting predictions that benefits enable extended search. The combination of faster reemployment and substantially smaller wage losses suggests that entrepreneurial experience itself generates valuable human capital that mitigates employment penalties for cash-transfer beneficiaries, even when ventures fail.

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

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

9 Concluding Remarks

This paper examines how social transfer programs affect entrepreneurship among low-income populations. Our analysis of Brazil's Bolsa Família program yields several findings. First, cash transfers stimulate entrepreneurial entry—municipalities with higher program exposure experience significant increases in sole proprietorship formation. Second, relative to observationally equivalent entrepreneurs, cash-transfer participants systematically underperform. They exhibit lower survival rates, reduced employment creation and credit access, and higher tax violations and debt collection proceedings. Third, these disadvantages stem partly from employment practices: cash-transfer entrepreneurs hire workers in lower-skilled occupations while offering stable full-time positions with higher wages, generating positive externalities for racial minorities but constraining performance optimization. Fourth, entrepreneurial experiences appear to produce human capital effects. Cash-transfer entrepreneurs returning to wage employment after business failure experience absolute declines in occupational attainment and earnings, yet these losses are substantially smaller than those of other, non-beneficiary failed entrepreneurs.

Our findings reveal that cash transfer programs facilitate entrepreneurship that generates meaningful social benefits despite systematic business underperformance. These programs create employment opportunities for underrepresented workers and produce human capital that protects participants from severe employment losses following business failure. However, the businesses themselves remain persistently disadvantaged and contribute little to economic growth. These results suggest that cash transfer programs succeed at their core poverty alleviation mission—providing income security and expanding economic opportunities for vulnerable populations—but the entrepreneurship they enable operates within fundamental constraints that prevent the transformational business outcomes.

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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 ≤ 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 ≥ 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 Cash-Transfer minus Non-Cash-Transfer entrepreneurs. Data are from CNPJ, RAIS, MDS, and BNDES.

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* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Firm outcomes are tracked until the end of 2024. Data are from CNPJ, RAIS, and MDS. *t*-statistics shown in parentheses based on standard errors are clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 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* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Firm outcomes are tracked until the end of 2024, except employment creation, which is tracked until the end of 2020 per data availability. Data are from CNPJ, RAIS, MDS, and BNDES. *t*-statistics shown in parentheses based on standard errors are clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 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* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Tax compliance outcomes are tracked until the end of 2024. Data are from CNPJ, RAIS, MDS (Ministério do Desenvolvimento Social), and federal tax debt registry (PGFN) datasets. *t*-statistics shown in parentheses based on standard errors are clustered at the municipality level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 8: Who Do Cash-Transfer Entrepreneurs Hire?

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

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

Table 9: Heterogeneity by Municipal Prosperity: Municipal GDP per Capita

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

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

Table 10: Post-Failure Transitions: Employment versus Re-Entry into Entrepreneurship

Dependent Variable:	$\mathbb{1}\{\text{Get Employment}\}$ (1)	$\mathbb{1}\{\text{Start New Firm}\}$ (2)
$\mathbb{1}\{\text{Cash-Transfer Entrepreneur}\}$	0.002	-0.003^{***}
	(1.43)	(-4.29)
Mean Dependent Variable	0.169	0.035
Observations	1,517,742	1,517,742
Adjusted R^2	0.10	0.00
Entrepreneur FE (all characteristics jointly)	✓	✓
Industry × Equity × Year FE	✓	✓
Clustered SE (Municipality)	✓	✓

This table presents estimates of the effect of cash transfers on post-failure transitions of entrepreneurs. The sample includes all entrepreneurs whose firms closed (registration status indicating closure) between 2014–2021, tracked through 2024. The unit of observation is the individual entrepreneur. Both dependent variables measure transitions within a 12-month window around firm closure (from 12 months before closure to 12 months after closure). $\mathbb{1}\{\text{Get Employment}\}$ is an indicator equal to one if the entrepreneur transitioned to wage employment within this window. $\mathbb{1}\{\text{Start New Firm}\}$ is an indicator equal to one if the entrepreneur founded a new firm with a different CNPJ within this window. $\mathbb{1}\{\text{Cash-Transfer Entrepreneur}\}$ is an indicator for individuals enrolled in Bolsa Família at the time of entrepreneurship or recent program graduates (within 12 months of program exit before firm founding). *Entrepreneur fixed effects* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Industry × Equity × Year fixed effects are the joint profile of 2-digit industry classification based on CNAE, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014–2019 by individuals with formal employment experience within 12 months of starting the firm. Data are from CNPJ (firm registrations), RAIS (employment records), and MDS (Ministério do Desenvolvimento Social). *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: Employment Trajectories of Cash-Transfer Entrepreneurs: Pre- versus Post-Entrepreneurship

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

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

Table 12: Differential Employment Transitions: Cash-Transfer versus Other Entrepreneurs

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

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

Internet Appendix to

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

Murillo Campello

University of Florida & NBER

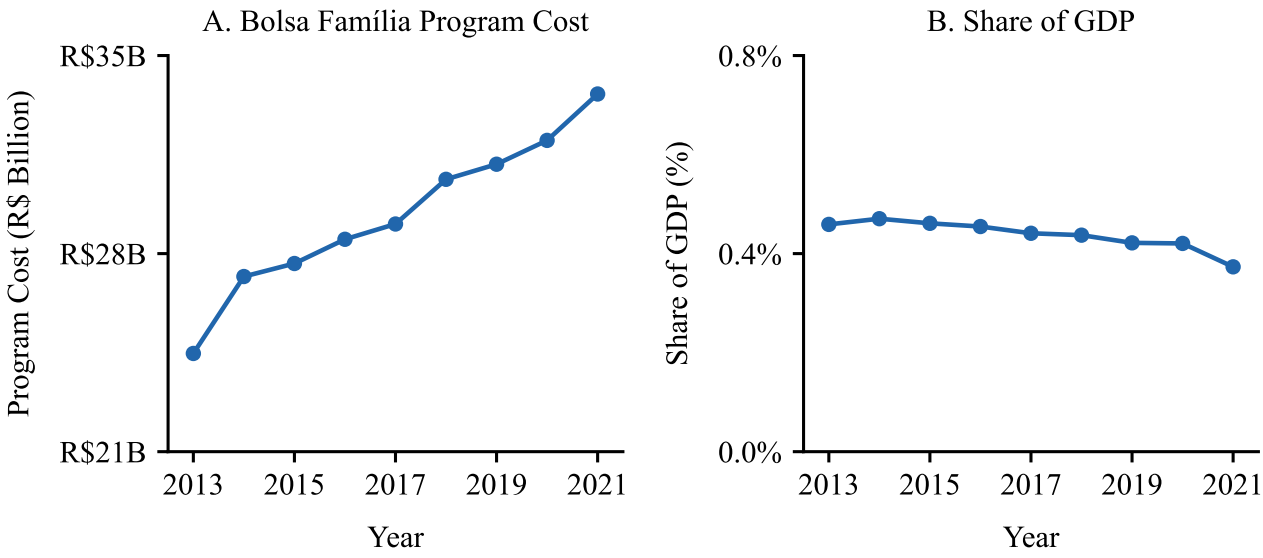
Guilherme Junqueira

University of Florida

Spyridon Lagaras

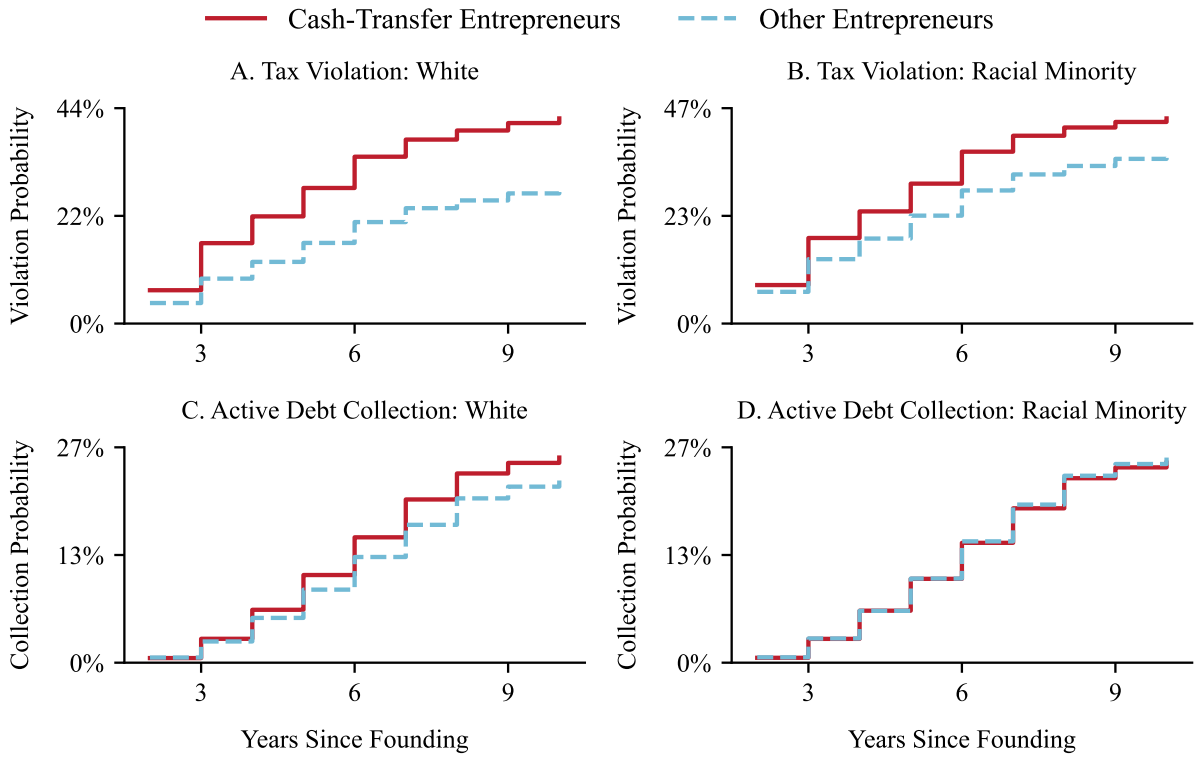
University of Illinois at Urbana Champaign

Figure IA1: Fiscal Impact of Bolsa Familia



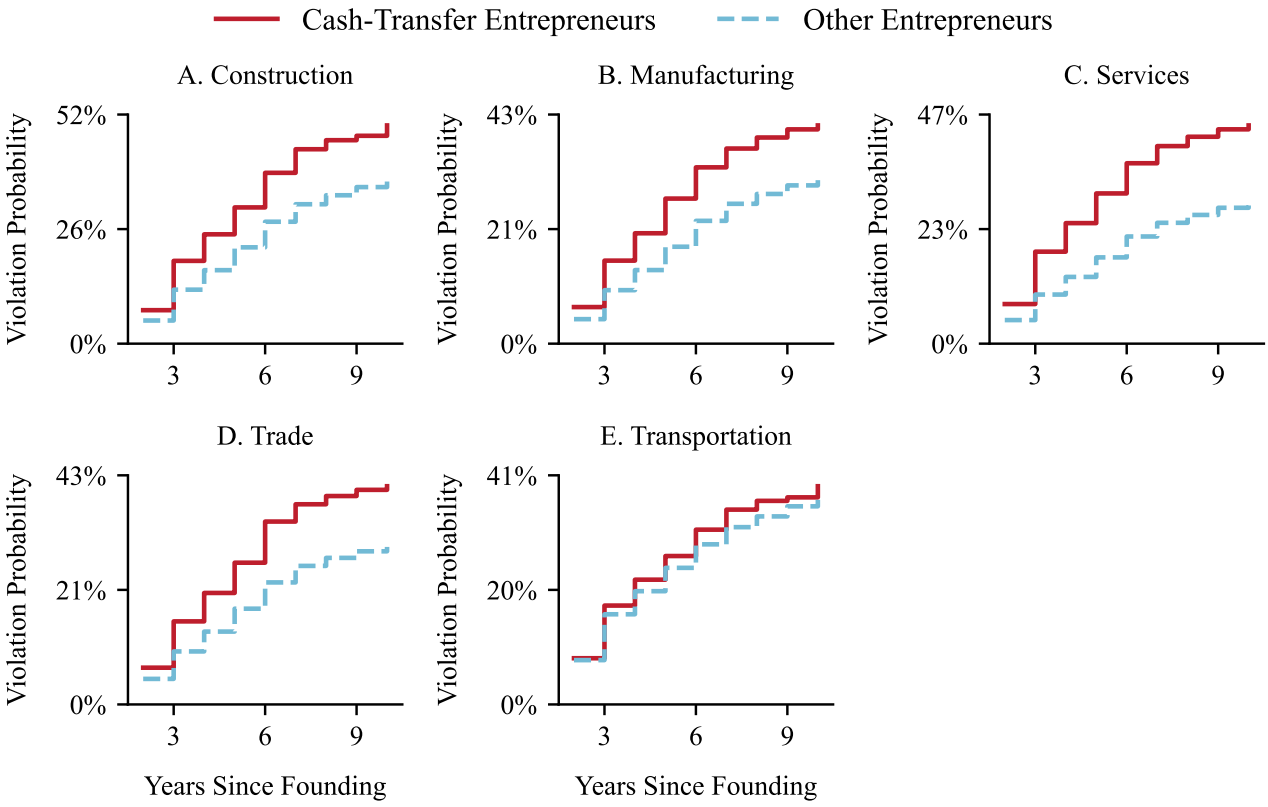
This figure shows the fiscal impact of Brazil's Bolsa Família program from 2013 to 2021. Panel A plots the total annual program cost in billions of Brazilian Reais. Panel B shows program cost as a percentage of the Brazilian GDP in nominal terms. GDP data are from the Brazilian Ministry of Finance and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

Figure IA2: Non-Parametric Estimates by Entrepreneur's Race — Tax Compliance and Debt Collection



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

Figure IA3: Non-Parametric Estimates by Industry Sector — Tax Violation



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

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

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

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

Table IA2: Timeline of Bolsa Família Benefit Payment Amounts

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

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

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

	Cash-Transfer Entrepreneurs				Non-Cash-Transfer Entrepreneurs				Mean Diff.	
	Mean	Median	SD	N (Th.)	Mean	Median	SD	N (Th.)	Diff.	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Armed Forces/Police/Firefighters										
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. Data are from CNPJ, RAIS, and MDS.

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

	Cash-Transfer Entrepreneurs				Non-Cash-Transfer Entrepreneurs				Mean Diff.	
	Mean	Median	SD	N (Th.)	Mean	Median	SD	N (Th.)	Diff.	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Age Categories at Business Founding										
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. 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 $\geq 50\%$. Sample sizes (N) are reported in thousands. P-values from t-tests comparing means between groups. Differences calculated as Cash-Transfer minus Non-Cash-Transfer entrepreneurs. Data are from CNPJ, RAIS, and MDS.

Table IA5: Impact of Cash Transfers on Business Survival & Growth — Robustness

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* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Municipality × Equity × Year fixed effects are the joint profile of municipality, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Firm outcomes are tracked until the end of 2024. Data are from CNPJ, RAIS, and MDS. *t*-statistics shown in parentheses based on standard errors are clustered at the 2-digit CNAE industry level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA6: Impact of Cash Transfers on Employment & Credit Access — Robustness

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* are the joint profile of individual characteristics measured immediately before firm founding: race (Indigenous, White, Black, Yellow/Asian, Brown/Mixed), nationality (Brazilian vs. foreign), gender (male/female), education level (11 categories from illiterate to completed doctorate), and age at founding (under 25, 25–34, 35–45, 46–59, 60+), occupation (CBO 2002 subgroup codes), salary type (monthly, biweekly, weekly, daily, hourly, task-based), salary category in constant 2024 R$ (≤R$500; R$500–1,000; R$1,000–2,000; R$2,000–3,000; >R$3,000), and an indicator for whether the individual was previously employed in a small (SIMPLES-registered) firm. Municipality × Equity × Year fixed effects are the joint profile of municipality, initial equity category in constant 2024 R$ (≤R$1k; R$1k–5k; R$5k–10k; R$10k–25k; >R$25k), and founding year. The sample is at the firm level and includes sole proprietorship firms founded between 2014 and 2021 by individuals with formal employment experience within 12 months of starting the firm. Firm outcomes are tracked until the end of 2024, except employment creation, which is tracked until the end of 2020 per data availability. Data are from CNPJ, RAIS, Bolsa Família, and BNDES datasets. *t*-statistics shown in parentheses based on standard errors are clustered at the 2-digit industry level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table IA7: Impact of Cash Transfers on Entrepreneurial Tax Compliance — Robustness

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

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

Table IA8: Heterogeneity by Municipal Prosperity: Rich versus Poor Areas

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

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

Table IA9: 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 IA10: 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 IA11: Differential Employment Transitions: with Entrepreneur Controls — Robustness

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

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