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Access to Credit and Employment Growth for MSMEs: Evidence from Latin America and the Caribbean

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Abstract

Firms in developing countries–particularly micro, small, and medium-sized enterprises (MSMEs)– often face growth constraints due to limited access to credit. This paper examines the relationship between credit access and firm-level employment using data from 21,696 MSMEs across 30 Latin American and Caribbean countries, drawn from the World Bank Enterprise Surveys. Consistent with prior evidence, we find that an additional US$1 million in credit is associated with the creation of roughly 4 permanent jobs per year. We document five additional results: (i) smaller firms exhibit higher employment growth in relative terms due to credit, but lower growth in absolute (nominal) terms; (ii) the effect is stronger among faster-growing firms; (iii) credit used for fixed-asset investment is associated with larger employment gains than credit used for working capital; (iv) more recent loans exhibit larger effects, which dissipate as loans age; and (v) low levels of banking sector competition weaken the impact of credit on employment.

JEL Codes: E24, E44, J23, G20.

Keywords: Access to credit, employment, firms, MSMEs, Latin America and the Caribbean

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1. Introduction

Micro, small, and medium-sized enterprises (MSMEs) play a fundamental role in the economic structure of Latin American and Caribbean (LAC) countries, representing 99% of all firms in the region and employing two-thirds of the labor force (Dini & Stumpo, 2018). Moreover, they are key drivers of job creation. However, the ability of MSMEs to create jobs is often hampered by their limited access to adequate finance (Gertler & Gilchrist, 1994; Beck et al., 2005; Banerjee & Duflo, 2014; Crespi et al., 2014). According to Figal Garone et al. (2020), 75% of firms in LAC consider access to finance a constraint on their operations, with 12% identifying it as their most significant obstacle.

These limitations are particularly severe in low and middle-income economies where credit constraints are significantly more pronounced than in advanced economies (Ayyagari et al., 2011). In developing countries, firms often face several macro-level barriers to access adequate financing, such as volatile capital flows, limited macro-prudential policies, institutional weaknesses, and inefficient banking systems. Micro-level obstacles, including asymmetric information,[5] economies of scale, and lack of collateral are also binding constraints (Ibarraran et al., 2010). In addition, high levels of bank concentration, limited supply of appropriate financial products and services, and widespread informality in the economy exacerbate these challenges. Together, these factors contribute to a significant misallocation of resources and restrict firms' access to finance, ultimately hindering firm growth and reducing productivity (Aghion et al., 2007).[6]

Access to adequate financing options is essential to support investments, working capital, trade, and innovation activities, key drivers of productivity, growth, and employment. Without access to adequate financing, firms become more vulnerable to economic shocks, may struggle to purchase inventory, and face difficulties making timely payments to suppliers and employees. They might also encounter barriers to capital investment and technology adoption (Levine, 2005). Therefore, a well-developed financial system is crucial for fostering innovation, economic growth, job creation and productivity gains at both the macro and microeconomics levels.

In this context, a natural question arises regarding the relationship between access to credit and firm performance, particularly in terms of employment outcomes. Specifically, if one additional dollar of credit is injected into an MSME in LAC, what magnitude of change in job creation should we expect? Equally important is assessing how this effect varies depending on the characteristics of the firm, the loan, and the broader banking sector.

This paper examines the relationship between credit and employment among MSMEs in LAC. Our analysis is based on data from 21,696 firms across 30 LAC countries, drawn from

[5] Financial institutions (FIs) often struggle to differentiate between borrowers with profitable or unprofitable projects. Moreover, since smaller firms are generally riskier than larger ones, FIs tend to offer less credit than they would under conditions of perfect information. This issue is further exacerbated by the prevalence of informality.

[6] For evidence at the macro level see Honohan (2003), King & Levine (1993), Levine (1997) and Jayaratne & Strahan (1996). For evidence at the micro level see Demirgüç-Kunt and Maksimovic (1998) and Rajan & Zingales (1998).

the World Bank Enterprise Surveys (WBES), a cross-sectional, firm-level dataset that is representative of the private sector in these economies and covers a wide range of business characteristics. The database provides information on whether firms have access to credit and, if so, the amount obtained. In addition, it enables us to explore the relationship between credit and employment by analyzing variations in firm size, growth distribution, characteristics, use of the credit received (e.g., for working capital or fixed asset investment), and banking sector competition.

To estimate the effects, we employ Ordinary Least Squares (OLS) combined with Entropy Balancing techniques, incorporating a comprehensive set of control variables. These include firm sales and productivity at baseline, age, export status, foreign ownership, state ownership (partial or full), the presence of public or private shareholders, and high-dimensional fixed effects at the country-sector-year level. Additionally, we use several alternative strategies to assess the robustness of our results, including winsorizing the dependent variable, estimating a Heckman two-step model, and applying propensity score methods.

Our findings suggest that access to credit has a positive impact on employment. Specifically, we estimate that an additional US$1 million in credit is associated with the creation of 4 permanent jobs per year. These results are consistent with previous evidence (Brown & Earle, 2013; Arraiz et al., 2014; Chodorow-Reich, 2014; Brown & Earle, 2015; Centre for Economics and Business Research, 2016; Bentolila et al., 2017; Amamou et al., 2020; IFC, 2021). When analyzing the heterogeneity of these effects, five findings emerge. First, smaller firms exhibit higher employment growth in relative terms due to credit, but lower growth in absolute (nominal) terms. Second, the impact is higher among the fastest-growing firms. Third, credit used for investment in fixed assets has a stronger effect than credit used for working capital. Fourth, more recent loans exhibit, on average, a larger effect on employment, and this effect tends to dissipate for older loans. Finally, low levels of banking sector competition weaken the impact of credit on employment.

This paper contributes to the existing literature in three ways. First, to the best of our knowledge, it provides the first estimate of the job creation multiplier associated with financing MSMEs in LAC. Second, it analyzes the heterogeneity of credit effects across firm, loan, and banking sector characteristics. Third, it leverages a large dataset of MSMEs from 30 countries in LAC, applies an empirical strategy that controls for firm-level characteristics and multidimensional country-sector-year fixed effects, and tests the robustness of the results across multiple specifications.

The structure of the paper is as follows. Section 2 reviews the relevant literature on the relationship between credit and employment and describes the dataset used in the analysis. Section 3 describes the empirical strategy utilized. Section 4 presents the main results. Section 5 concludes.

2. Background

2.1 Credit and Employment: Previous Evidence

Theoretical literature has robustly established the links between credit and labor markets. Particularly, employment entails a fixed-cost component that requires financing to cover the initial expenses related to training and recruitment.[7] Consequently, credit market conditions are expected to exert significant influence on firm employment decisions. Nevertheless, empirically identifying a causal relationship between credit and employment continues to pose substantial challenges, primarily due to issues such as omitted variable bias and reverse causality.

The growing availability of firm-level credit datasets has facilitated significant advancements in research by enabling scholars to control for both observable and unobservable factors across countries, years, and industries. As a result, a limited number of experimental and quasi-experimental studies—particularly those involving government-backed credit guarantee programs for small and medium-sized enterprises (SMEs)—have been developed, suggesting a positive relationship between access to credit and employment. For example, Arraiz et al. (2014) find that obtaining a credit guarantee has a positive effect on employment and output among Colombian SMEs. Similarly, Chandler (2012) reports that participation in the Canada Small Business Financing Program leads to increased employment. Comparable findings are reported by Rigging & Haines (2001) for Canadian firms, Boocock & Shariff (2005) for Malaysian firms, Kang & Heshmati (2008) for Korean SMEs, and Zecchini & Ventura (2009) for Italian SMEs.

Several studies combine propensity score matching with difference-in-differences regressions to estimate the effects of various measures of credit access on employment. For example, Amamou et al. (2020) find that European firms receiving credit from the European Investment Bank (EIB), through intermediary institutions increased their employment, balance sheet size, investment, and innovation capacity. Using a similar methodological approach and a comprehensive database of all the registered firms in Argentina, Giuliodori et al. (2020) show that SMEs receiving medium- and long-term guarantees also saw employment gains. In the same vein, Eslava et al. (2012) find that Colombian manufacturing firms that received credit from Bancoldex –the country's second-tier development bank– increased employment by 11%. More recently, Ayyagari et al. (2021) find that improved access to finance, proxied by the introduction of credit bureaus, led to higher employment growth among firms in developing countries. Similar findings are reported by IFC (2021), using data from the WBES.

At the aggregate level, the evidence indicates a positive relationship between credit access and employment. The magnitude of this effect, however, varies depending on factors such as loan type (guaranteed vs. non-guaranteed), the nature of the financial institution (public vs. private), firm size, and country income level. Bruhn et al. (2025) conduct a meta-analysis of 24 studies on the impact of formal loans on SME performance, concluding that they increase employment by about 12%. This effect is consistent across guaranteed and non-

[7] See Oi (1962, 1983), Hamermesh (1989), and Benmelech,E. et al., (2011).

guaranteed loans, developing and high-income countries, and firms of different sizes. Nevertheless, loans provided by public financial institutions exhibit a stronger impact on employment than those from private lenders.

A substantial body of literature highlights heterogeneous effects depending on firm size. Several studies indicate that enhancing access to finance for SMEs exerts a stronger and more positive impact on both growth and employment generation compared to larger firms.[8] For instance, following the 2008 financial crisis, the effects of lender health on employment were found to be statistically significant only for SMEs (Chodorow-Reich 2014).[9] Similarly, the employment effects of grant programs have been shown to be particularly pronounced for small firms, as the grant amount must represent a substantial share of firm profits to be effective (Srhoj et al. 2019). Additionally, financial development tends to have weaker effects for larger firms (Guiso et al., 2002; Beck et al., 2004). These size-related differences have also been observed in the LAC region where financing programs targeting MSMEs have primarily impacted employment in small firms (Butler et al., 2017).

In this regard, this study contributes to the literature on the employment effects of credit along three dimensions. First, whereas previous research has largely focused on individual countries or high-income regions, this paper provides the first estimate of the employment-creation multiplier associated with MSME financing across LAC. Second, it documents the heterogeneity of credit effects by distinguishing outcomes according to firm characteristics, types of financing, and credit market conditions. Third, it leverages a firm-level dataset covering 30 countries in the region, employs an empirical strategy that controls for firm-specific characteristics and multidimensional country-sector-year fixed effects, and subjects the findings to extensive robustness checks.

2.2 Data and Preliminary Statistics

The WBES is a cross-sectional, firm-level survey designed to capture a representative sample of the private sector in each economy using a common questionnaire and a uniform sampling methodology. The sampling frame is built from national business registries and includes firms in the manufacturing and services sectors, with at least five employees and a minimum of 1% of private ownership. The standard WBES questionnaire covers a wide range of topics related to business characteristics, such as access to finance, employment, and performance indicators. Although the survey is a cross-section, it includes retrospective questions referring both to the fiscal year of the survey and to the firm's situation three years prior (baseline). This feature allows for the construction of the key variable of interest in this study: employment growth.

[8] See also Ayyagari et al. (2021), Demirhan & Aldan (2021), IFC (2021), Cao & Leung (2020) and Nigrini & Schoombee (2002).

[9] On the other hand, Bentolila et al. (2017) find that both large and small firms reduced employment as a result of being clients of weaker banks. However, the authors point out that, in Spain, firms "are more reliant on bank credit than their counterparts in most advanced economies" and "funding through financial markets is rarely used". This suggests that the advantages of credit access typically enjoyed by larger firms may be less pronounced in Spain compared to other countries.

The analysis is based on a sample of 35,529 observations from MSMEs across 30 LAC countries,[10] drawn from four WBES waves: 2006, 2009-2010, 2016-2017-2018 and 2023-2024-2025. From this original dataset, observations with missing values or evident data entry errors in the variables of interest (e.g., negative or extreme values in sales, employment, wages, and firm age variables) are excluded. Furthermore, all nominal variables originally reported in local currency are converted into U.S. dollars using the corresponding country-year official exchange rate provided by the World Bank, ensuring cross-country comparability.

Since the analysis focuses on MSMEs, IFC (2021) criteria are applied to filter outliers based on credit amount and firm size: firms with loan amounts exceeding US$2 million and/or more than 250 employees are excluded. As result, a final sample of 21,696 observations is obtained, which will be used for the subsequent analysis (see Annex A for details). Note that results are robust to variations in the criteria used to restrict the sample to MSMEs.

The WBES database offers the advantage of providing granular, firm-level data for the LAC region. However, it also has certain limitations that may affect the results and conclusions derived from the analysis. First, since the sampling frame depends on national business registries, their quality and completeness vary significantly across countries. Second, because the survey is conducted primarily with formal, registered firms with five or more employees, it largely lacks representation of microenterprises (with 1 to 4 employees) and the vast informal sector. Consequently, the study's findings could be more representative of formal SMEs. Third, although firm size classification is standardized across all countries in the sample, national tax regimes and incentives for "bunching" around size cutoffs might distort cross-country comparisons.

For a preliminary comparative analysis, we divide the sample into firms with access to credit (11,079 firms) and those without (10,617 firms). Table 1 shows that, on average, firms with access to credit are 1.5 times larger in terms of employment, pay 17% higher wages, generate 1.5 times more in sales, and are 43% more likely to export. They are also slightly more likely to receive funding from public or private shareholders. Figure 1 illustrates the density of annual employment change across the two groups. Firms with access to credit exhibit more frequent and larger positive changes in employment, while those without credit access are highly concentrated around zero.

Next, we examine whether these differences extend to firms' long-run growth dynamics. Figure 2 replicates the analysis by Hsieh & Klenow (2014) on long-term firm growth and yields three key insights. First, the growth trajectories observed are consistent with those reported for Mexico in the original study. Specifically, while in the United States the average 40-year-old firm employs more than seven times as many workers as the newly established firm, MSMEs in LAC show significantly slower growth, roughly doubling in size over the same period.

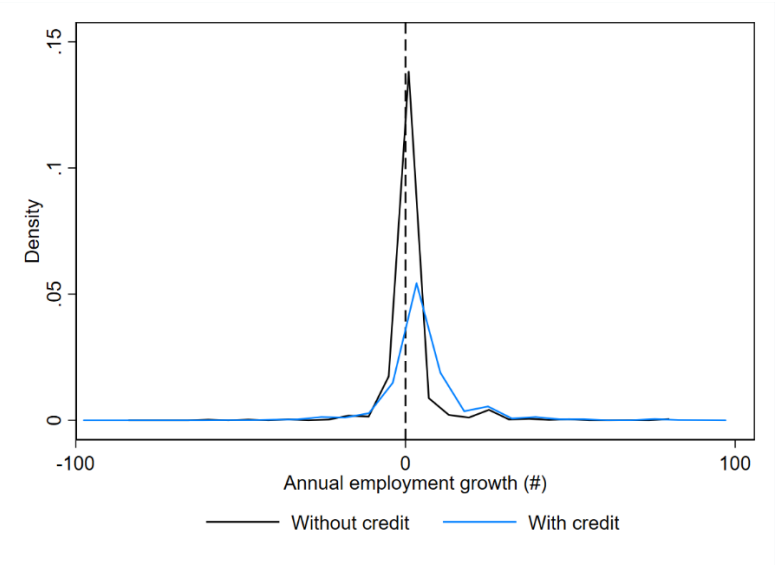
[10] The definition of MSMEs is based on the number of employees in the firm. Firms with fewer than 10 employees are classified as micro, those with more than 10 but fewer than 50 as small, and those with more than 50 but fewer than 250 as medium-sized.

Table 1. Firm-level Descriptive Statistics

Variables	All firms (N=21,696)		With access to credit (N=11,079)		Without access to credit (N=10,617)	
	Mean	SD	Mean	SD	Mean	SD
Financing						
Access to credit (= 1 if yes)	0.51	0.50	1	0	0	0
Credit (US$'000)	111.7	260.3	218.7	330.6	0	0
Employment and wages						
Number of employees (#)	45	58	54	63	35	50
Annual employment growth (#)	2.4	12	3.3	13.4	1.4	10.2
Average annual wage (US$)	7,477	8,436	8,037	8,581	6,894	8,241
Firm age						
Age (years)	23	17	24	17	23	17
Sales						
Annual sales (US$'000)	3,259	9,394	3,921	9,025	2,565	9,718
Export status (= 1 if yes)	0.17	0.38	0.20	0.40	0.14	0.35
Shareholding						
Foreign capital (= 1 if yes)	0.10	0.31	0.09	0.29	0.12	0.32
Government capital (=1 if yes)	0.02	0.14	0.02	0.14	0.02	0.13
Public/private shareholders (=1 if yes)	0.61	0.49	0.67	0.47	0.55	0.50
Size						
Micro (=1 if yes)	0.26	0.44	0.18	0.39	0.35	0.48
Small (=1 if yes)	0.48	0.50	0.50	0.50	0.47	0.50
Medium (= 1 if yes)	0.25	0.43	0.32	0.46	0.19	0.39
Sector						
Food	0.14	0.34	0.14	0.34	0.14	0.34
Textiles	0.14	0.35	0.14	0.35	0.14	0.34
Petrol, Chemicals, Plastics & Minerals	0.12	0.32	0.13	0.33	0.11	0.32
Machinery & Equipment	0.05	0.22	0.05	0.21	0.06	0.23
Other Manufacturing	0.13	0.33	0.14	0.34	0.12	0.33
Wholesale and retail trade	0.21	0.41	0.21	0.41	0.21	0.41
Other services	0.22	0.41	0.20	0.40	0.23	0.42

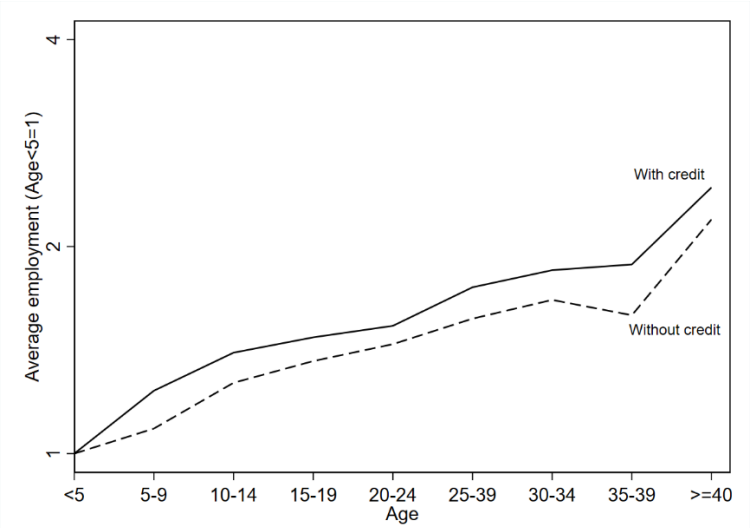
Notes: Authors' calculation based on WBES.

Figure 1. Annual Employment Growth Density



Notes: Authors' elaboration based on WBES.

Figure 2. Firm Age and Employment



Notes: Authors' elaboration based on WBES. Employment in the youngest group (age < 5 years) is normalized to 1 in each country.

Second, firms with access to credit have higher long-term growth compared to those without. Finally, this growth differential persists across all firm ages. According to the authors, this divergence in firm dynamics suggests lower investments in process efficiency, quality, and in accessing markets at home and abroad.

These descriptive statistics reveal potential selection patterns. Firms with and without credit differ along observable characteristics, underscoring the need for econometric strategies that account for these differences. However, the heterogeneity across firms also suggests the presence of unobservable factors that may bias the estimates. Consequently,

despite our efforts to identify the relationship between credit and employment, the results should be interpreted as suggestive rather than strictly causal.

3. Empirical Strategy

3.1 Main Methodology

The higher employment growth observed in Table 1 and Figures 1 and 2 among firms with access to credit cannot be directly attributed to credit access. Estimating the impact of credit on employment requires addressing the multiple sources of endogeneity that may affect the analysis, particularly selection bias, omitted variables bias, and reverse causality. As a first step, we employ the following Ordinary Least Squares (OLS) model for firm-level estimation:

$$Employment\ growth_{i,j,s,t} = \alpha C_{i,j,s,t} + \beta X_{i,j,s,t} + \pi_{j,s,t} + \varepsilon_{i,j,s,t} \quad (1)^{11}$$

where *i* identifies firms, *j* countries, *s* sectors/industries, and *t* years. *Employment growth* is defined as the average annual change in employment from the baseline year to the current year *t*. $C_{i,j,s,t}$ represents the last amount of credit received by firm *i*. $X_{i,j,s,t}$ is a matrix of firm-level control variables, including age, sales and productivity at baseline, export status, foreign ownership, state ownership (partial or full), and the presence of public or private shareholders. The term $\pi_{g,j,t}$ fully absorbs any time-invariant heterogeneity at the country-sector-year level (i.e., high-dimensional country-sector-year fixed effects). Finally, $\varepsilon_{i,j,s,t}$ is the error term, which is assumed to be uncorrelated with $C_{i,j,s,t}$. All regressions are estimated using standard errors clustered at the country-sector-year level.

To enhance our main estimation strategy, we combine the OLS specification with Entropy Balancing (EB). Introduced by Hainmueller (2012), EB is a multivariate reweighting method that assigns weights to control units (i.e., firms without credit access) so that their covariate distribution matches that of the treated group (i.e., firm with credit access) on selected moments, typically the means of pre-treatment characteristics.[12] This approach enables the construction of a synthetic control group, ensuring that firms without access to credit are more comparable to those that do have access, thereby reducing potential selection bias.[13]

In contrast to Propensity Score Matching (PSM) techniques commonly used in the literature, the EB method ensures exact balance on the specified moments (e.g., means) between the treatment and control groups. This approach achieves a high degree of covariate balance by design while keeping the weights as close as possible to the original unit weights, thereby minimizing information loss. Moreover, it avoids the specification bias inherent in the logit/probit models typically employed to estimate the Propensity Score. Entropy Balancing also reweights the entire control group, preserving information and reducing the variance of the estimator, whereas PSM discards units that do not find an adequate match.

[11] We follow a similar approach to IFC (2021) and Ayyagari et al. (2021).
[12] We use the STATA package *ebalance*, introduced by Hainmueller & Xu (2013). For implementation issues, see Hainmueller (2012). For recent applications, see Figal Garone et al. (2015) and Azevedo et al. (2021).
[13] Heckman et al. (1997) and Heckman et al. (1998) describe these sources of biases.

Nonetheless, despite these differences, PSM techniques are still employed as part of the robustness analysis.

As shown in Annex B, the differences between the two groups of firms disappear once the observations are reweighted using the EB weights. This indicates that the groups of firms are well balanced in terms of observable baseline (pre-treatment) characteristics, making them more comparable for analysis.[14]

3.2 Robustness Checks

The EB approach addresses one dimension of the endogeneity problem: sample selection. However, other sources of endogeneity may still affect the estimates, and selection bias may persist even after applying EB methods. Thus, while we may not fully eliminate endogeneity concerns, we estimate several alternative specifications commonly used in cross-sectional analysis to enhance the robustness of our findings. In all cases, Equation (1) serves as the baseline model.

First, we estimate the model both with and without EB but apply winsorization to the dependent variable. Winsorization is a common method for addressing the influence of outliers in a distribution: by limiting the effect of extreme observations, the estimates gain robustness and remain statistically efficient under repeated sampling. In our analysis, annual employment growth is winsorized at the top and bottom 1%.

Second, we apply the Heckman correction as an additional procedure to show that the estimates continue to suggest an effect of credit on employment by identifying and correcting for the selection bias inherent in non-random samples. As its name implies, the Heckman two-step model consists of two stages. In the first stage, the selection process is modeled by estimating the probability that observations are included in the sample (in our case, the probability of obtaining credit). In the second stage, the main relationship of interest is estimated while incorporating a correction term derived from the predicted probabilities as an additional covariate. This approach helps isolate the selection mechanism from the outcome equation and yields estimates that are less biased.

Finally, we employ PSM techniques to further mitigate sample-selection bias. Similar to the EB approach, PSM aims to ensure comparability between the treatment and non-experimental comparison groups with respect to pre-treatment covariates. Specifically, PSM estimates the probability (the propensity score) that a unit receives the treatment based on its observable characteristics and then compares treated and untreated units with similar scores. This comparison can be implemented using different matching algorithms. In our analysis, we rely on Nearest Neighbor matching, Kernel matching with Inverse Probability Weight (IPW),[15] and a combined approach incorporating both methods.

[14] It is worth mentioning that we do not balance other potential outcomes or "bad controls" that may be correlated with both employment growth and credit.

[15] The weights are defined as $w_i = \frac{p(x_i)}{1-p(x_i)}$ for firms without access to credit, and $w_i = 1$ for firms with access, where $p(x_i)$ is the estimated propensity score based on pre-treatment characteristics.

Annex C summarizes the various estimation strategies implemented. In addition to the statistical techniques discussed above, we also report simple averages and a meta-analysis weighted average of the point estimates derived from these methods.[16]

4. Results

4.1 Overall Effect

Using the Equation (1) as the baseline model and estimating across the various specifications previously described, we estimate the effect of our main credit variable – measured as the amount of credit in U.S. dollars – on employment. Table 2 presents the main results obtained. The estimated coefficient of interest, α, is positive and statistically significant, suggesting that credit has a positive effect on firms' employment growth. The results are remarkably consistent across specifications.

On average, for MSMEs in the LAC region, an additional US$1 million in credit is associated with the creation of 4 permanent jobs per year, as shown in Figure 3. This estimate is in line with previous efforts to calculate a jobs multiplier. Brown & Earle (2013) found that each million dollars in loans generated 5.4 jobs in the United States, while Brown & Earle (2015) estimated between 3 and 4 jobs per million. The Centre for Economics and Business Research (2016) reported a similar multiplier for the United Kingdom. Finally, the IFC (2021) estimated that loans to SMEs in developing economies resulted in the creation of 8.15 jobs per million dollars.

Relative to the average size of a control firm after applying EB, the creation of 4 permanent jobs per year corresponds to an annual employment increase of 8%. This estimate is slightly lower than the meta-analysis by Bruhn et al. (2025), which find that access to formal loans increases employment in SMEs by roughly 12%.

We also estimate the effect of access to credit, measured as a binary variable, on employment. Annex D presents the estimates from Equation 1 for each of our specifications, where the independent variable is a dummy equal to one for firms with access to credit and zero otherwise. The estimated coefficients are consistent with our previous findings: positive, statistically significant, and similar across specifications. In the following subsections, we analyze effect heterogeneity depending on firm characteristics, type of credit, and credit market conditions.

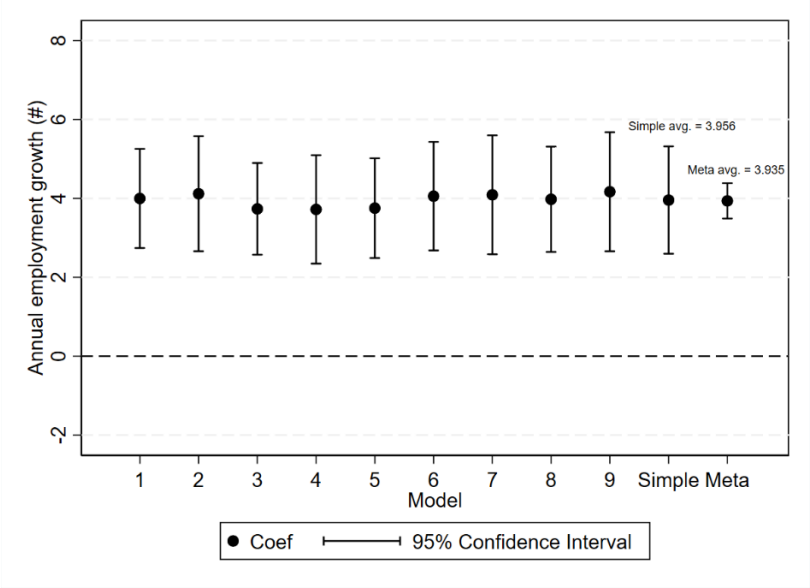
[16] This specification uses the STATA command *meta summarize*.

Table 2. Main Results: Effect of Credit on Annual Employment Growth

	[1] No weights	[2] Entropy balancing (EB)	[3] Winsorized top and bottom 1p; unweighted	[4] Winsorized top and bottom 1p; EB	[5] Heckman; unweighted	[6] Heckman; EB	[7] Kernel PSM; Inverse-probability-weight (IPW)	[8] PSM Nearest Neighbor	[9] PSM Nearest Neighbor; IPW
Credit (US$ million)	**3.996*** (0.641)**	**4.117*** (0.744)**	**3.733*** (0.593)**	**3.719*** (0.701)**	**3.751*** (0.645)**	**4.055*** (0.702)**	**4.089*** (0.769)**	**3.976*** (0.681)**	**4.167*** (0.770)**
ln (age at baseline)	-1.022*** (0.126)	-0.838*** (0.198)	-1.007*** (0.121)	-0.873*** (0.166)	-1.155*** (0.130)	-0.901*** (0.192)	-0.809*** (0.218)	-1.248*** (0.148)	-0.857*** (0.260)
Exporter =1	0.770** (0.305)	0.549 (0.403)	0.627** (0.279)	0.366 (0.390)	1.179*** (0.367)	0.778 (0.479)	0.565 (0.439)	0.417 (0.368)	0.385 (0.490)
Foreign owned = 1	-0.094 (0.396)	-0.346 (0.601)	0.095 (0.374)	-0.236 (0.566)	-2.176** (1.082)	-1.425 (1.530)	-0.468 (0.646)	-0.295 (0.547)	-0.389 (0.715)
Government owned = 1	-0.249 (0.819)	-0.526 (0.992)	-0.539 (0.633)	-0.728 (0.848)	1.267 (1.132)	0.202 (1.428)	-0.622 (1.051)	-0.369 (1.059)	-0.800 (1.219)
Shareholding = 1	0.097 (0.192)	-0.239 (0.366)	0.155 (0.174)	-0.169 (0.353)	0.295 (0.206)	-0.139 (0.315)	-0.324 (0.423)	-0.020 (0.229)	-0.278 (0.407)
ln (sales at baseline)	1.120*** (0.217)	1.098*** (0.260)	1.145*** (0.214)	1.210*** (0.257)	2.207*** (0.502)	1.665** (0.792)	1.116*** (0.276)	1.286*** (0.227)	1.123*** (0.282)
ln (labor prod. at baseline)	-0.167 (0.267)	0.282 (0.293)	-0.312 (0.257)	0.015 (0.286)	-0.553** (0.236)	0.074 (0.387)	0.331 (0.306)	-0.097 (0.299)	0.420 (0.341)
Constant	-8.710*** (1.200)	-13.922*** (2.202)	-7.561*** (1.006)	-12.427*** (2.025)	-24.814*** (7.230)	-22.226** (10.669)	-14.767*** (2.472)	-11.046*** (1.529)	-15.799*** (2.587)
Observations/Firms	21,696	21,696	21,696	21,696	21,621	21,621	21,686	16,082	16,082

*Notes: (1) Estimates of OLS model. (2) Regressions include fixed effects at country-2-digit sector-year level. (3) The set of control variables includes log of age at baseline, export status, whether the firm has foreign capital, is partially or totally owned by the state, or has public or private shareholders, firm's annual sales and labor productivity at baseline. (4) Clustered robust standard errors at country-2-digit sector-year in parentheses. (5) ***, **, * statistically significant at 1%, 5%, and 10%.*

Figure 3. Effect of Credit on Annual Employment Growth



Notes: Authors' elaboration based on WBES.

4.2 Heterogeneity by Firm Size and Growth Performance

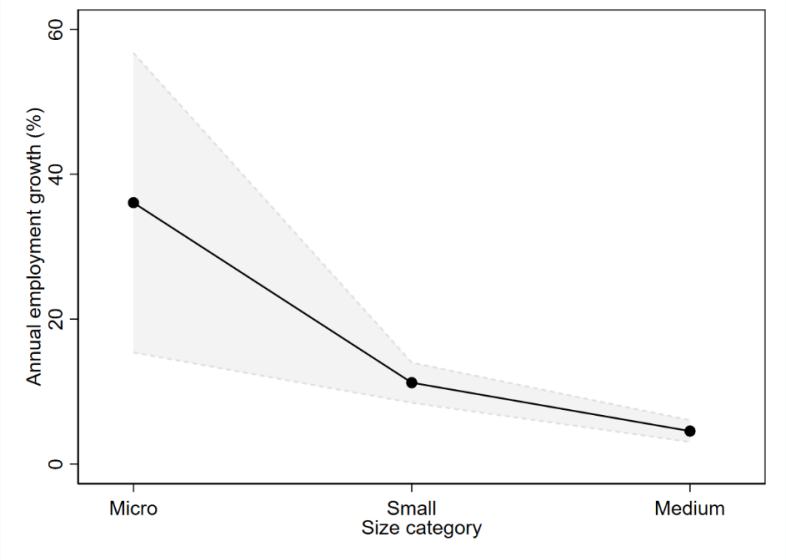
The effect of credit on job creation may not be uniform across firms. We analyze a key finding commonly highlighted in the literature: smaller firms, in relative terms, generate more jobs from access to finance than larger firms.

We examine differences in job creation among MSMEs, given that our sample is restricted to this segment. We estimate Equation 1 including interactions between the amount of credit and firm size but use the annual employment growth rate as the dependent variable – rather than the level change used previously – in order to capture employment dynamics relative to each firm's initial size.

As shown in Figure 4, the relative job-creation effect is substantially larger for microenterprises than for SMEs.[17] This finding is consistent with prior evidence indicating that the marginal gains on employment growth from easing financial frictions are greater for firms facing tighter financial constraints. To the extent that initial firm size serves as a proxy for the severity of these constraints – where smaller firms are typically more financially constrained –, micro and small firms benefit more from a reduction in financial frictions in terms of employment growth than larger firms (Ayyagari et al., 2016; Dao and Liu, 2017).

[17] See Annex E for the regression output.

Figure 4. Relative Effect of Credit on Annual Employment Growth by Firm Size



Notes: Authors' elaboration based on WBES.

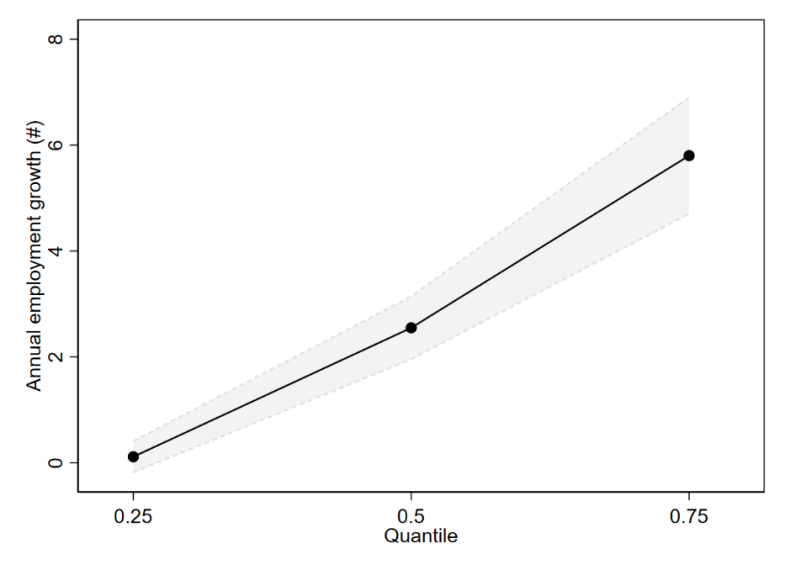
A second result emphasized in the literature is that aggregate job creation from access to credit is often driven by a relatively small subset of high-performing firms exhibiting greater dynamism in employment. To examine this pattern, we estimate Equation 1 using a quantile regression on annual employment changes. This technique allows us to analyze the relationship between credit and employment at different points of the conditional distribution of employment growth, rather than focusing solely on the mean as in OLS. In doing so, we can assess how the effect of credit varies according to the degree of dynamism in firms' employment trajectories.

As illustrated in Figure 5, job creation among firms in the 75th percentile of the distribution is more than twice as high as that of the median – specifically, 2.7 times higher.[18] This disparity is consistent with the 2.2-fold difference reported by IFC (2021) for developing countries overall, suggesting that high-performing firms play an even more prominent role in driving job creation in LAC.

In terms of the average size of firms in the control group after applying EB, the results indicate that more dynamic firms (those in the 75th percentile) experience an employment increase of 11.6%, whereas less dynamic firms (those in the 25th percentile) show an estimated effect of only 2.2%.

[18] See Annex F for the regression output.

Figure 5. Effect of Credit on Annual Employment Growth by Quantiles



Notes: Authors' elaboration based on WBES.

4.3 Heterogeneity by Credit Use and Loan Age

Another variation in the relationship between credit and employment at the firm level may stem from differences in the use of credit, whether it is used for working capital or fixed assets. Working capital refers to the difference between a firm's short-term assets (such as accounts receivable, cash and inventory) and its short-term liabilities (such as accounts payable). It serves as a measure of a firm's liquidity and short-term financial health. In contrast, fixed assets include property, machinery, or equipment that a firm owns and uses in its operations to generate income.

Credit used to finance working capital is typically associated with maintaining day-to-day operations and is generally short-term in nature. On the other hand, credit used for investing in fixed assets –also known as capital expenditures (CAPEX)– is usually linked to business expansion and long-term growth and thus tends to involve long-term financing.

Although the WBES does not directly ask firms about their specific use of credit, it is possible to construct proxy measures for credit allocated to working capital and to fixed assets.[19] Table 3 analyzes the effects of each credit type on employment.[20] The results are very consistent and indicate that increases in both types of credit have a positive impact on

[19] Specifically, we derive the share of working capital and fixed assets financed externally using the questionnaire variables K3 and K5, which report the percentage composition of the different funding sources for each spending category. We then apply these shares to the corresponding total expenditure amounts—reported in variables N2 and N5, respectively—to approximate the values financed through external sources. The sum of these components provides an estimate of total external financing. Finally, we allocate the relative share of each funding category to the total credit amount (measured in millions of U.S. dollars) to obtain our measures of credit allocated to working capital and to fixed asset.

[20] Annex G reports robustness checks based on alternative econometric specifications.

employment. However, the effect of credit used for fixed assets is, on average, nearly twice (1.9 times) as large as that of credit used for working capital.[21]

Working capital financing is generally used to support firms' short-term operational needs. In contrast, CAPEX financing is typically associated with longer-terms investments aimed at expanding firms' productive capacity or enabling scale-ups. Such investments often involve the construction and/or operation of new facilities, the introduction of additional production lines, the broadening of service portfolios, or entry into previously untapped markets. These activities tend to increase labor demand, frequently requiring multiple hiring rounds across managerial, technical, and operational roles. From this perspective, our findings align with the hypothesis that employment growth associated with increased financing –particularly CAPEX related financing– is driven by complementarities between labor and capital. In other words, as firms invest in new capital assets, they simultaneously require additional human resources to operate, manage, and maintain those assets, thereby amplifying their employment response-related.

Table 3. Effect of Type of Credit on Annual Employment Growth

	[1] No weights	[2] Entropy balancing (EB)
Credit for fixed assets (US$ million)	6.411***	6.746***
	(1.653)	(1.693)
Credit for working capital (US$ million)	3.498***	3.614***
	(0.935)	(1.013)
Observations/Firms	10,652	10,652

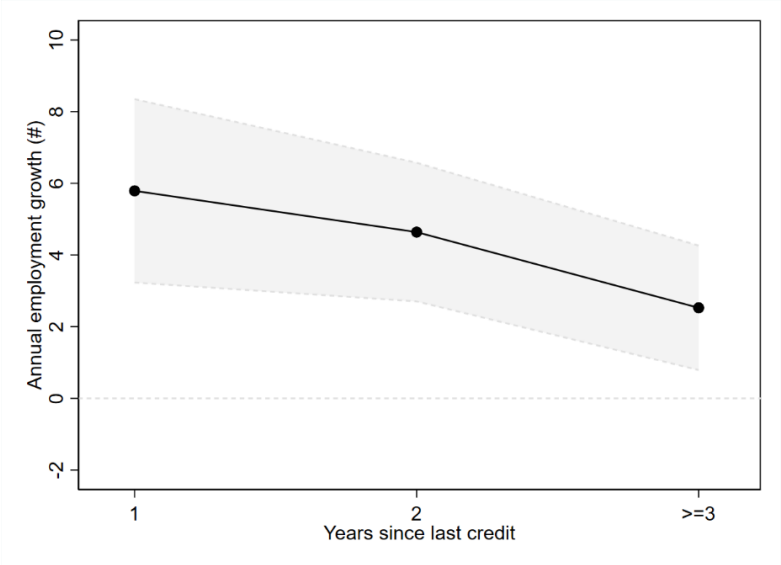
*Notes: (1) Estimates of OLS model. (2) Regressions include fixed effects at country-2-digit sector-year level. (3) The set of control variables includes log of age at baseline, export status, whether the firm has foreign capital, is partially or totally owned by the state, or has public or private shareholders, firm's annual sales and labor productivity at baseline. (4) Clustered robust standard errors at country-2-digit sector-year in parentheses. (5) ***, **, * statistically significant at 1%, 5%, and 10%.*

[21] Note that the average of these effects is somewhat higher than the main results presented in Table 2. This discrepancy may be due to the fact that not all firms responded to the questions regarding sources of financing, particularly for fixed assets. Consequently, these regressions are based on a smaller sample of firms.

Additionally, we examine whether the employment effects of credit vary with the number of years since the last loan was received, understood as the duration of exposure to the treatment. A priori, one would not expect the effect of credit on employment to materialize immediately, but rather over the medium term. However, micro and small enterprises face more binding financial constraints and allocate a larger share of their current expenditure to labor costs. Consequently, the relaxation of these constraints may lead to a more rapid adjustment in their labor demand.

Figure 6 presents the average effect of credit on employment as a function of loan age, together with the corresponding confidence intervals. These effects are obtained by estimating the main specification with an interaction between the loan amount received and its vintage. According to our estimates, more recent loans (one year old) exhibit, on average, a larger effect on employment, and this effect tends to dissipate for loans older than three years. The difference in coefficients is statistically significant at the 5% level.[22] Nevertheless, these results should be interpreted with caution, given the potential endogeneity in the relationship under examination: firms reporting more recent loans may be precisely those with greater access to finance and higher employment dynamism.

Figure 6. Effect of Credit on Annual Employment Growth by Time Since Last Credit



Notes: Authors' elaboration based on WBES

[22] See Annex H for the regression outputs and tests of equality of coefficients.

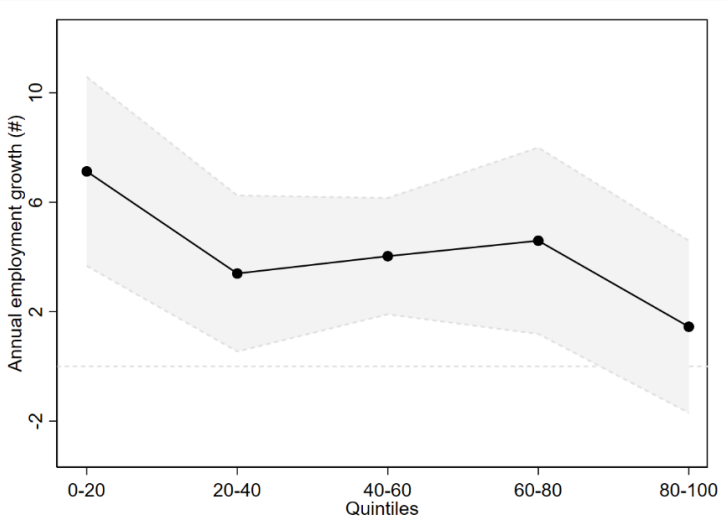
4.4 Heterogeneity by banking sector competition

Market credit conditions may also shape the relationship between credit and employment. In particular, we examine the heterogeneity of effects according to the degree of banking concentration in each country. To do so, we use the *5-bank asset concentration* indicator from the World Bank's Global Financial Development Database, which measures the share of total commercial banking assets held by the five largest banks.[23]

Figure 7 presents the results from estimating Equation 1 with an interaction between the amount of credit received and the quintile of banking concentration. Credit has a stronger effect on employment for firms located in countries with low banking concentration (first quintile, or 20th percentile) compared to those in highly concentrated markets (fifth quintile, or 100th percentile), with the difference being statistically significant at the 5% level.[24]

This result is consistent with theories that emphasize the negative effect of bank market power on access to credit, particularly in developing countries. Higher banking concentration tends to increase financial frictions and reduces the likelihood of obtaining financing, with these effects diminishing as firm size increases (Maksimovic et al., 2003). Consistent with this view, Chen et al. (2024) show that greater concentration restricts the supply of credit, which in turn is associated with lower employment levels, reduced wages, and declines in self-employment and entrepreneurial activity.

Figure 7. Effect of Credit on Annual Employment Growth by Bank Concentration Quintiles



Notes: Authors' elaboration based on WBES.

[23] For each country, we use the value for the survey year or, when unavailable, the closest available observation. Countries lacking information are excluded from the analysis.
[24] See Annex I for the regression output and tests of equality of coefficients.

5. Concluding Remarks

Previous evidence has highlighted the importance of well-functioning and developed financial systems in expanding access to credit for firms. This is particularly relevant for the LAC region, where MSMEs –despite employing the majority of the workforce– face more severe credit constraints due to persistent market failures. In this paper, we assess the effect of credit on employment, using data from 21,696 firms from 30 LAC countries drawn from the WBES.

Our results suggest that access to credit has a positive effect on firm-level employment. Specifically, we find that US$1 million in credit is associated with the creation of 4 permanent jobs per year. Moreover, our findings provide complementary evidence on the conditions under which these effects are amplified. The positive effect of credit on employment is stronger among smaller and faster-growing firms, when credit is used for investments in fixed assets rather than working capital, and in more competitive credit-market environments.

It is important to note that, given the cross-sectional nature of the data and the inherent heterogeneity between firms that obtain credit (the treatment group) and those that do not (the control group), we have made a concerted effort to employ multiple empirical strategies to mitigate endogeneity concerns in the relationship under study. Nonetheless, unobserved heterogeneity may remain, and other potential sources of endogeneity may not be entirely ruled out. Therefore, the results should be interpreted as suggestive rather than strictly causal.

The findings of this study underscore the critical role that access to credit plays in fostering the growth trajectory and employment-generation capacity of MSMEs. Beyond showing that credit can stimulate job creation, the results highlight the importance of understanding *which* firms obtain financing, *how* those resources are allocated within the firm, and *under what* banking sector conditions credit is supplied. These nuances are particularly relevant for development finance institutions engaged in private sector development, financial intermediaries responsible for channeling funds to firms, and policymakers designing strategies to promote inclusive and sustainable economic growth. Recognizing these distinctions is essential not only for expanding the volume of employment, but also promoting the creation of *productive*, higher-quality jobs that enhance firm competitiveness and contribute to long-term development outcomes.

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Annex A - WBES Sample by Country and Wave

Country	Wave				Total
	2006	2009-2010	2016-2017-2018	2023-2024-2025	
Antigua and Barbuda		99			99
Argentina	615	632	594		1,841
Bahamas		89			89
Barbados		95		105	200
Belize		130			130
Bolivia	328	121	162		611
Brazil		1,020			1,020
Chile	557	614			1,171
Colombia	628	653	662	656	2,599
Costa Rica		279		136	415
Dominica		120			120
Dominican Republic		205	127		332
Ecuador	364	226	287	268	1,145
El Salvador	412	204	396	380	1,392
Grenada		106			106
Guatemala	376	278	198		852
Guyana		100			100
Honduras	287	159	170		616
Jamaica		179		104	283
Mexico	892	932		563	2,392
Nicaragua	299	189	240		728
Panama	269	123			392
Paraguay	249	215	163	204	831
Peru	439	594	556	734	2,323
Saint Kitts and Nevis		94			94
Saint Lucia		109			109
St. Vincent and the Grenadines		113			113
Suriname		148	144		292
Trinidad and Tobago		199		53	252
Uruguay	292	309	179	269	1,049
Total	6,007	8,339	3,878	3,472	**21,696**

Annex B – Mean Differences

Variables	[1] All firms (N=21,696)		[2] With access (N=11,079)		[3] Without access (N=10,617)		[4] Without access EB (N=10,617)		[5] Difference [2] – [3]	[6] Difference [2] – [4]
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	Mean
Firm age										
ln (Age at baseline)	3.33	0.96	3.39	0.92	3.27	1.00	3.39	0.97	0.12***	0.00
Sales and productivity										
ln (Annual sales at baseline)	14.04	1.86	14.53	1.65	13.54	1.93	14.53	1.89	0.99***	0.00
ln (Labor productivity at baseline)	10.98	1.36	11.23	1.23	10.73	1.44	11.23	1.36	0.50***	0.00
Export status (= 1 if yes)	0.17	0.38	0.20	0.40	0.14	0.35	0.20	0.40	0.06***	0.00
Shareholding										
Foreign capital (= 1 if yes)	0.10	0.31	0.09	0.29	0.12	0.32	0.09	0.29	-0.02***	0.00
Government capital (=1 if yes)	0.02	0.14	0.02	0.14	0.02	0.13	0.02	0.14	0.00	0.00
Public/private shareholders (=1 if yes)	0.61	0.49	0.67	0.47	0.55	0.50	0.67	0.47	0.12***	0.00
Sector										
Food	0.14	0.34	0.14	0.34	0.14	0.34	0.14	0.34	0.00	0.00
Textiles	0.14	0.35	0.14	0.35	0.14	0.34	0.14	0.35	0.00	0.00
Petrol, Chemicals, Plastics & Minerals	0.12	0.32	0.13	0.33	0.11	0.32	0.13	0.33	0.01***	0.00
Machinery & Equipment	0.05	0.22	0.05	0.21	0.06	0.23	0.05	0.21	-0.01***	0.00
Other Manufacturing	0.13	0.33	0.14	0.34	0.12	0.33	0.14	0.34	0.01***	0.00
Wholesale and retail trade	0.21	0.41	0.21	0.41	0.21	0.41	0.21	0.41	0.00	0.00
Other services	0.22	0.41	0.20	0.40	0.23	0.42	0.20	0.40	-0.03***	0.00

Notes: Authors' calculation based on WBES.

Annex C. Statistical Specifications

Specification	Description
[1]	Baseline OLS model
[2]	Entropy Balancing (EB)
[3]	Winsorized dependent variable
[4]	Winsorized dependent variable + EB
[5]	Heckman two-step model
[6]	Heckman two-step model + EB
[7]	Propensity Score Matching (PSM), Kernel inverse probability weighting (IPW)
[8]	Propensity Score Matching (PSM), Nearest Neighbor
[9]	Propensity Score Matching (PSM), Nearest Neighbor + IPW
[10]	Simple average of estimates from specifications [1]–[9]
[11]	Meta-analysis weighted average of estimates from specifications [1]–[9]

Annex D. Effect of Access to Credit on Annual Employment Growth

	[1] No weights	[2] Entropy balancing (EB)	[3] Winsorized top and bottom 1p; unweighted	[4] Winsorized top and bottom 1p; EB	[5] Kernel PSM; Inverse-probability-weight (IPW)	[6] PSM Nearest Neighbor	[7] PSM Nearest Neighbor; IPW
Access to credit = 1	1.181***	1.615***	1.126***	1.449***	1.637***	1.516***	1.958***
	(0.171)	(0.257)	(0.166)	(0.249)	(0.268)	(0.192)	(0.301)
ln (age at baseline)	-1.007***	-0.821***	-0.992***	-0.857***	-0.792***	-1.230***	-0.842***
	(0.126)	(0.198)	(0.120)	(0.165)	(0.218)	(0.147)	(0.260)
Exporter =1	0.882***	0.659	0.723***	0.458	0.668	0.542	0.512
	(0.305)	(0.400)	(0.277)	(0.387)	(0.436)	(0.367)	(0.485)
Foreign owned = 1	0.073	-0.215	0.259	-0.114	-0.345	-0.075	-0.291
	(0.400)	(0.603)	(0.378)	(0.568)	(0.650)	(0.549)	(0.715)
Government owned = 1	-0.315	-0.583	-0.602	-0.777	-0.652	-0.454	-0.788
	(0.820)	(0.994)	(0.637)	(0.854)	(1.053)	(1.056)	(1.219)
Shareholding = 1	0.101	-0.179	0.165	-0.109	-0.266	0.021	-0.191
	(0.190)	(0.367)	(0.171)	(0.354)	(0.424)	(0.226)	(0.404)
ln (sales at baseline)	1.309***	1.314***	1.316***	1.403***	1.338***	1.565***	1.451***
	(0.222)	(0.250)	(0.221)	(0.249)	(0.263)	(0.233)	(0.269)
ln (labor productivity at baseline)	-0.287	0.162	-0.420	-0.090	0.209	-0.248	0.256
	(0.270)	(0.294)	(0.262)	(0.287)	(0.306)	(0.304)	(0.342)
Constant	-10.279***	-16.215***	-9.022	-14.499***	-17.123***	-13.962***	-19.549***
	(1.190)	(2.087)	(0.970)	(1.876)	(2.332)	(1.529)	(2.466)
Observations/Firms	21,696	21,696	21,696	21,696	21,686	16,082	16,082

*Notes: (1) Estimates of OLS model. (2) Regressions include fixed effects at country-2-digit sector-year level. (3) The set of control variables includes log of age at baseline, export status, whether the firm has foreign capital, is partially or totally owned by the state, or has public or private shareholders, firm's annual sales and labor productivity at baseline. (4) Clustered robust standard errors at country-2-digit sector-year in parentheses. (5) ***, **, * statistically significant at 1%, 5%, and 10%.*

Annex E. Heterogeneity by Firm Size – Employment Growth in %

	[1] Entropy balancing (EB) – with size interactions
Credit (US$ million) * Micro = 1	36.072***
	(10.548)
Credit (US$ million) * Small = 1	11.227***
	(1.417)
Credit (US$ million) * Medium = 1	4.539 ***
	(0.764)
Micro = 1	-7.849***
	(1.769)
Small = 1	-10.769***
	(1.048)
$\beta_{micro}\ vs.\beta_{small}$	24.845**
	(10.488)
$\beta_{micro}\ vs.\beta_{medium}$	31.533***
	(10.650)
Observations/Firms	21,696

*Notes: (1) Estimates of OLS model. (2) Regressions include fixed effects at country-year level. (3) The set of control variables includes log of age at baseline, export status, whether the firm has foreign capital, is partially or totally owned by the state, or has public or private shareholders, firm's annual sales and labor productivity at baseline. (4) Clustered robust standard errors at country-year in parentheses. (5) ***, **, * statistically significant at 1%, 5%, and 10%.*

Annex F – Heterogeneity by Firm Growth Rate (quantile regression)

	[1] Quantile 0.25	[2] Quantile 0.5	[3] Quantile 0.75
Credit (US$ million)	1.115***	2.550***	5.802***
	(0.150)	(0.303)	(0.560)
ln (age at baseline)	-0.127***	-0.292***	-0.612***
	(0.021)	(0.029)	(0.052)
Exporter =1	0.126	0.286***	0.854***
	(0.076)	(0.078)	(0.178)
Foreign owned = 1	-0.001	0.117	0.305*
	(0.087)	(0.095)	(0.183)
Government owned = 1	-0.077	0.057	-0.045
	(0.190)	(0.160)	(0.348)
Shareholding = 1	0.158***	0.133***	0.130
	(0.045)	(0.044)	(0.079)
ln (sales at baseline)	-0.696***	0.187***	1.699***
	(0.083)	(0.053)	(0.086)
ln (labor productivity at baseline)	0.981***	0.047	-1.389
	(0.099)	(0.060)	(0.095)
Constant	-1.676***	-2.087***	-4.532***
	(0.305)	(0.279)	(0.527)
Observations/Firms	21,696	21,696	21,696

*Notes: (1) Estimates of OLS model. (2) Regressions include fixed effects at country-2-digit sector-year level. (3) The set of control variables includes log of age at baseline, export status, whether the firm has foreign capital, is partially or totally owned by the state, or has public or private shareholders, firm's annual sales and labor productivity at baseline. (4) Clustered robust standard errors at country-2-digit sector-year in parentheses. (5) ***, **, * statistically significant at 1%, 5%, and 10%.*

Annex G. Effect of Type of Credit on Annual Employment Growth

	[1] Winsorized top and bottom 1p; unweighted	[2] Winsorized top and bottom 1p; EB	[3] Heckman; unweighted	[4] Heckman; EB	[5] Kernel PSM; Inverse-probability-weight (IPW)	[6] PSM Nearest Neighbor	[7] PSM Nearest Neighbor; IPW
Credit for fixed assets (US$ million)	6.291***	6.512***	6.275***	6.705***	6.721***	6.603***	6.963***
	(1.511)	(1.558)	(1.709)	(1.718)	(1.698)	(1.693)	(1.737)
Credit for working capital (US$ million)	3.132***	3.158***	3.202***	3.495***	3.619***	3.596***	3.682***
	(0.815)	(0.913)	(1.050)	(1.121)	(1.038)	(1.014)	(1.082)
Observations/Firms	10,652	10,652	10,636	10,636	10,645	8,681	8,681

*Notes: (1) Estimates of OLS model. (2) Regressions include fixed effects at country-2-digit sector-year level. (3) The set of control variables includes log of age at baseline, export status, whether the firm has foreign capital, is partially or totally owned by the state, or has public or private shareholders, firm's annual sales and labor productivity at baseline. (4) Clustered robust standard errors at country-2-digit sector-year in parentheses. (5) ***, **, * statistically significant at 1%, 5%, and 10%.*

Annex H. Heterogeneity by Time Since Last Credit

	[1] Entropy balancing (EB) – with credit age interactions
Credit (US$ million) * 1 year	5.790***
	(1.306)
Credit (US$ million) * 2 years	4.639***
	(0.987)
Credit (US$ million) * >= 3 years	2.526***
	(0.886)
$\beta_{2y}\ vs.\ \beta_{1y}$	-1.151
	(1.392)
$\beta_{3>=y}\ vs.\ \beta_{1y}$	-3.265**
	(1.415)
Observations/Firms	21,696

*Notes: (1) Estimates of OLS model. (2) Regressions include fixed effects at country-year level. (3) The set of control variables includes log of age at baseline, export status, whether the firm has foreign capital, is partially or totally owned by the state, or has public or private shareholders, firm's annual sales and labor productivity at baseline. (4) Clustered robust standard errors at country-year in parentheses. (5) ***, **, * statistically significant at 1%, 5%, and 10%.*

Annex I. Heterogeneity by Bank Concentration (quintile decomposition)

	[1] Entropy balancing (EB) – with competition interactions
Credit (US$ million) * Quintile 1	7.128***
	(1.763)
Credit (US$ million) * Quintile 2	3.396**
	(1.455)
Credit (US$ million) * Quintile 3	4.029***
	(1.085)
Credit (US$ million) * Quintile 4	4.594***
	(1.738)
Credit (US$ million) * Quintile 5	1.449
	(1.606)
$\beta_{P40}\ vs.\ \beta_{P20}$	-3.733
	(2.291)
$\beta_{P60}\ vs.\ \beta_{P20}$	-3.099
	(2.050)
$\beta_{P80}\ vs.\ \beta_{P20}$	-2.535
	(2.406)
$\beta_{P100}\ vs.\ \beta_{P20}$	-5.679**
	(2.377)
Observations/Firms	21,154

*Notes: (1) Estimates of OLS model. (2) Regressions include fixed effects at country-year level. (3) The set of control variables includes log of age at baseline, export status, whether the firm has foreign capital, is partially or totally owned by the state, or has public or private shareholders, firm's annual sales and labor productivity at baseline. (4) Clustered robust standard errors at country-year in parentheses. (5) ***, **, * statistically significant at 1%, 5%, and 10%.*