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# Access to finance employment growth and firm performance of South Asia firms<sup>1</sup>

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## Abstract

Using firm-level data on 11,000 companies across seven countries in South Asia, this paper explores the effects of access to finance on employment growth and performance at the firm level. The paper focuses on how the impact of financing obstacles varies across firm sizes. The results show that higher obstacles in access to finance reduces employment growth and performance for firms of all sizes, especially micro and small firms. We find significant differences between firms with less than 10 employees and small firm, which suggests that significant reforms are needed to drive micro firm growth to small and medium enterprises.

**Key word:** Access to finance obstacles; employment growth; Total factor of productivity.

**JEL classification:**J21; J41; M51

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## 1. Introduction

The degree of financial market developments on the firm growth and performance plays an important role in economic growth. Studies show that increasing access to finance supports firms increase scale and improve operational efficiency (xxx). One question is whether obstacles in access to finance have the same effect on firms of different sizes? This paper uses firm-level data from more than 11,000 companies in 7 developing countries in South Asia to assess the causal impact of financing obstacles on employment growth and firm performance, focusing on differences in size.

Recent studies evaluate the impact of inadequate access to finance on sales and employment growth. Overall, these studies indicate that financing obstacles has a direct impact on firm growth. However, limited access to finance also affects decisions on the use of resources, thereby affecting firm performance (see beck2005). This paper examines the importance of access to finance in general and of several aspects of financing to the growth and performance of firms.

Previous studies emphasised that the impact of access to finance are uneven across firms of different sizes (XXX). Imperfect information may create higher fixed costs such as the cost of processing information in credit markets for smaller firms (aterido 2007,2011). Prioritize the development of micro, small and medium enterprises through preferential policies applied by many countries and achieved many promising results (xxx). However, addressing potential limitations in access to finance on the operation of micro, small and medium firms also significantly contribute to their development (aterido, xxx).

This paper contributes to the current literature in many respects. This paper looks at employment growth rather than sales growth, and more importantly, we assess the impact of financing obstacles on both performance and R&D investment decisions. Second, Beck, Demirgüç-Kunt and Maksimovic (2005) use subjective corporate feedback as a measure of the business environment at the corporate level, we use a combination of both subjective and objective measures. of access to finance. We also recognize that restrictive measures may also be endogenous and thus control for this capacity throughout the paper.

This paper analyzes the impact of financing obstacles on employment growth, resource efficiency and innovation. We focus on financing obstacles because there is consensus that access to finance is essential to achieving business goals such as growth and performance. Without adequate access to finance, the company's ability to operate and its growth potential

is at risk (Adomako, Danso and Ofori Damoah (2016), Chauvet and Jacolin (2017)). This paper examines whether there is a difference between the financial accessibility of firms of different sizes and whether it has different effects on the performance growth of firms of different sizes. or not.

We use the latest business survey data from the World Bank's (ES) Enterprise Survey from 7 countries in South Asia - home to the highest poverty rates in the world (xxx). The benefit of using ES data is that it includes measures of financial accessibility in many ways both objectively and subjectively at the company level.

#### Endogenous discussion

Estimating the impact of constraints on growth and performance can be endogeneic because of the non-random assignment of constraints. It is possible that unobserved firm characteristics may cause some firms to grow faster and be more efficient than others, and this unobservable component may not be distributed randomly. However, there are different financing obstacles between firms. Our strategy to solve the problem is to apply instrumental variables (IV) to cut the correlation between the error term and the independent variables. To apply the two-stage least squares IV estimate (2SLS), we need to find the instrumental variables that are firstly uncorrelated with the error term and secondly, partially and fully correlated with the predictive variables. We follow Ayyagari and Demirguç-Kunt (2008) to use the average value of obstacles in each industry in each country as the instrumental variable. The initial F-statistic is large in all models (results not reported), indicating that the industry-country average of constraints is a good tool. According to the company's report, identifying obstacles with average obstacles for each industry group in each country separates the exogenous portion of endogenous constraints, which can be used to predict employment growth and fixed employment rate. In addition, when constraints are measured at the aggregate country-industry level, causality is likely to stem from average constraints for individual firms, not vice versa.

To solve the latent endogeneity, this paper takes two steps. We first tracked Aterido 2007 using regional averages of subjective assessments of financial access rather than individual firm responses. This represents the broader environment in which the company operates. Second, we incorporate both objective and subjective measures of the business environment. Therefore,

instead of just using the extent to which companies complain financially, we also use information about actual access to trade credit or bank loans. Also, we use iv... (certified)

Differential effects between firms of different sizes can come from two sources. First, there may be differences in the basic objective conditions faced by the business. The article shows that micro and small enterprises have less access to formal finance than larger enterprises. Second, similar conditions can have differential or nonlinear effects on employment growth to scale. Therefore, it is possible that the same level of access to external finance would be more beneficial to smaller businesses. The paper shows that there is a heterogeneous effect of financial access on firm growth and performance by firm size.

Taken together, the impact of access to finance on firm growth and performance varies significantly by firm size. The article focuses on access to finance - the most important issue for businesses in developing countries (citation). The results show significant differences between the size categories of firms - both in terms of differences in the objective conditions faced by firms and non-linearities in the effects of these conditions. . Poor access to finance reduces the size distribution of firms. Lack of finance and insufficient or inefficient business

The results show that there is a significant difference in the marginal impact between microenterprises (less than 10 employees) and small businesses (11-50 employees) on financial access. These differences include average differences in the objective and subjective conditions faced by these firms in assessing the overall impact of the business environment. Excluding micro-enterprises or combining them with small businesses in one category would counteract the financial and regulatory environment that differentiates smaller businesses from larger firms, diluting message that smaller businesses will benefit from business climate reform (cited atatiredo2007).

This article is structured as follows. Section 2 reviews the relevant literature and hypothesizes. Section 3 describes the data. Section 4 summarizes the research methodology. Section 5 looks at reported financing obstacles and how the target variables of financial access vary by business type, emphasizing different models across different firm sizes. . Section 6 describes the impact of objective conditions on employment growth and business performance. Section 7 concludes.

## 2. Literature review

Starting from the study of La Porta et al. (1998) whereby the authors found that differences in the financial system can largely explain cross-country differences in financial policy and firm performance. Recent empirical evidence supports the view that the development of a country's financial system positively affects corporate growth and financing. Firm-level studies show that firms that use more external financing grow faster (xxx).

Transnational studies measure changes in business environment conditions through country-level variables such as regulatory transparency, loans subject to potential deficiencies due to There is a significant difference between what is recorded and what happens in reality. This is especially true in lower-income countries and those with less developed financial markets. (Hallward-Driemeier and Aterido, 2007; Kaufmann and Kraay, 2004). In addition, it is important to explore differences in the business environment within national boundaries by local regions and, in particular, across firm size and ownership. A number of recent studies use ES to study the influence of the business environment on firm growth at a global level. Using firm-level subjective data measures of the business environment, these studies demonstrate the importance of financial access (Batra, Kaufman and Stone, 2003; Ayyagari et al., 2006, aterido, ). Several other studies examine the relationship between business environment and business growth across one or a group of countries (Dollar, Hallward-Driemeier and Megistae, 2005, for India, Pakistan, Bangladesh and China; Fisman and Svensson, 2007, and Rienikka and Svensson, 2002, for Uganda; and Bigsten and Soderbom, 2006, review of the African literature).

One area of focus for this paper is whether there are significant differences in the impact across firm types, particularly by firm size. Studies show that smaller firms are more constrained from the business environment (Galindo and Micco, 2005; Clarke et al. (2001); Love and Mylenko (2003) and IDB (2004). Beck 2005 found that small firms benefited most from the institutional reform and development of finance. In this article, we follow Aterido 2011 to divide businesses into 5 groups instead of 3 in most other studies. We found a significant difference in the effect of limited financial access on growth and business performance between “micro” firms with fewer than 10 employees and small firms. (11-50 workers).

### 3. Data

This study uses the most recent data from the World Bank (ES) Enterprise Survey of 7 countries in South Asia.<sup>5</sup> The WBES survey aims to assess the impact of the business environment on business growth. The sample includes private sector registered firms with five or more employees in the sampled countries. The World Bank uses stratified random sampling to select firms in the sample. First, the population of companies in each country is divided into homogeneous groups based on company size, business sector, and geographic region within a country. A simple random sampling method was used to identify surveyed enterprises in each group. This technique ensures that each subgroup in the population receives a corresponding representation in the sample.

Table 1 reports the year the survey was conducted and the number of firms for each country in the sample. For each country, we also collect data on GDP per capita, GDP in US dollars, GDP per capita growth, and inflation rate. These macro variables are used in the analytical model to control for differences in the explanatory variable in different countries. In this article select the most recent survey in each country. The initial sample included 17,317 companies, but some did not answer all the questions we asked I used in the empirical analysis, so we excluded firms with missing values. The final sample size was 11,087 companies across 18 countries in South Asia. The common feature of countries in the region is low per capita income. GDP per capita is lowest at \$617 in Nepal and highest at around \$2700 in Sri Lanka.

<insert table 1 here>

We focus on employment growth, efficient use of resources and investment in research and development of enterprises. First, We use change in permanent employment as this is more likely to reflect the long-term determinants of performance (Aterido2011). Our measure of employment growth is the change in regular business employment for the year surveyed compared to the previous three years, divided by the simple average of the number of permanent employees for the same period. period.

(formula for calculating employment growth)

Second, we measure the efficiency of an enterprise's use of resources through Total factor productivity (TFP). TFP is a measure of productive efficiency in that it measures how much

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<sup>5</sup> Source: Enterprise Survey, World Bank, <http://www.enterprisurveys.org>

output can be produced from a certain amount of inputs. We use the World Bank estimate for the TFP variable (see the appendix for a summary of the estimation method). Finally, we measure innovation by measuring corporate investment in R&D. The variable Innovation takes on a value of 1 if the firm has made R&D investments in the survey year and 0 otherwise.

WBES collects business owners' opinions on a range of obstacles to determine business owners' perceptions of the obstacles their businesses face. For financing obstacles, business owners were asked to rate the impact of the obstacle on business operations and growth by answering a questionnaire.

*To what degree is access to finance, which includes availability and cost, interest rates, fees and collateral requirements, an obstacle to the current operations of this establishment”*

Accordingly, the company owner ranks the obstacles on a scale of 0 to 4, indicating no obstacle (0); small obstacles (1); moderate obstacles (2); large obstacles (3); and very serious obstacles (4).

One potential shortcoming of relying on business owner perceptions is that unsuccessful managers may blame business obstacles for their underperformance (Aterido et al. (2011), beck 2005). As mentioned earlier, the purpose of WBES is to assess the business environment, not its performance. Accordingly, questions about business performance were asked only at the end of the interview after completing the business environment section. This sequence reduces the ability of respondents to justify their unsuccessful performance when answering questions about the business environment. We agree that bias in self-reported data cannot be eliminated so that in this paper beyond a subjective measure of the impact of financing obstacles, we use in conjunction with more objective measures. These measures include (1) measures of accessibility to the overdraft facility. This variable will take the value of 1 if the enterprise uses an overdraft facility and 0 if it does not; (2) financial availability as measured by the percentage of sales by credit. This ratio is higher, reflecting enterprises with more stable capital sources; (3) the proportion of external capital to finance current assets and fixed assets.

The focus of the paper is to examine the effect of access to finance on firm growth and performance, controlling for company and country characteristics. We use indicators of company owner, industry, market structure, and company size. In this study, we divided enterprises into 5 groups by size. Micro companies with less than 10 employees; small companies with 11–50 employees; medium-sized companies have 51–200 employees, large companies are those employing 201-500 and very large companies employ more than 500



employees. We also include dummies that determine whether a company has foreign capital since foreign entities may be less susceptible to financing obstacles, as they have easier access to international financial system. The growth rate of businesses can also depend on the market structure in which they operate. Therefore, we also include dummy variables to capture whether the company is an exporting company. Firm size can be a very important factor in how business growth is constrained by various factors. Small businesses are likely to face more difficult obstacles in obtaining financing. Aterido 2011 points out that there can be differences in reported objective characteristics between expanding and shrinking businesses. Accordingly, we also control whether the company expands or shrinks in terms of labor size compared to 3 years ago through including expansion and contraction variables. The omitted group are companies that do not have a change in labor. Young firms may have higher labor growth rates than older firms. We therefore cover three age groups of young businesses 1-5 years old, mature 6-15 years old and older – more than 15 years old.

Table 2 briefly describes the variables used in the study. This sample contains a large proportion of small and micro enterprises (20.8% micro enterprises and 36.7% small enterprises) while only 11% are large and very large companies. Average labor growth during the period was 2.8% with most businesses having growth rates of -20 to 20%. The average TFP is 1,947, however there is considerable variation across firms. There are 29.1% enterprises having R&D investment activities

<insert table 2 here>

Table 3 presents the difference in labor growth and firm performance by size. Part A shows that larger firms have higher average labor growth. We also report the growth rate by quartile. More than 50 percent of small and micro enterprises have not experienced any growth in employment compared to the three years before the survey. 25% of enterprises with high growth rate (p75) have a growth rate of about 6% across all business sizes. Part B shows no significant difference in mean TFP by size, although smaller firms have higher volatility than large firms. Finally, larger firms invest more in R&D.

<insert table 3 here>

#### 4. method

To examine the differences in financial access faced by firms of different sizes, we regressed the objective measures on firm size at the time of the survey (period t). We also control for ownership, age of the business, experience of the business owner, whether the business is expanding or shrinking in employment compared to 3 years ago, industry, country and year of survey . These variables are all measured at year t .

$$\begin{aligned} Financing = & \beta_0 + \beta_1 small + \beta_2 medium + \beta_3 large + \beta_4 v.large + \beta_5 foreign + \beta_6 experience + \beta_7 mature + \beta_8 old \\ & + \beta_9 expanding + \beta_{10} contracting + (\beta_{11} - \beta_{25}) industry + (\beta_{26} - \beta_{32}) country\_year + \varepsilon \end{aligned} \quad (first)$$

Where financing is one of four measures.... The results of the regression equation.... Shown in the table...

Next we evaluate The relationship between financial access to employment growth, total factor of production, and investment in research and development. All regressions are estimated using firm-level data across 7 countries and fixed effects by industry, year, and country.

$$\begin{aligned} Y_{ijct} = & \beta_0 + \beta_1 small_{ijct-3} + \beta_2 medium_{ijct-3} + \beta_3 large_{ijct-3} + \beta_4 v.large_{ijct-3} + \beta_5 IF_{it} + \beta_5 small_{ijct-3} * IF_{it} \\ & + \beta_6 medium_{ijct-3} * IF_{it} + \beta_7 large_{ijct-3} * IF_{it} + \beta_8 v.large_{ijct-3} * IF_{it} + \beta_9 experience_{ijc} + \beta_{10} mature_{ijct} \\ & + \beta_8 old_{ijc} + \beta_9 expanding_{ijct} + \beta_{10} contracting_{ijct} + (\beta_{11} - \beta_{25}) Ind + (\beta_{26} - \beta_{32}) country\_year + \varepsilon_{ijct} \end{aligned}$$

Where yict is growth and TFP panel regression results

Probit more common than logit (wooldrige-introduc) for innovation

$$\begin{aligned} P(innovation_{ijct} = 1 | x) = & G(\beta_0 + \beta_1 small_{ijct-3} + \beta_2 medium_{ijct-3} + \beta_3 large_{ijct-3} + \beta_4 v.large_{ijct-3} + \beta_5 IF_{it} + \beta_5 small_{ijct-3} * IF_{it} \\ & + \beta_6 medium_{ijct-3} * IF_{it} + \beta_7 large_{ijct-3} * IF_{it} + \beta_8 v.large_{ijct-3} * IF_{it} + \beta_9 experience_{ijc} + \beta_{10} mature_{ijct} \\ & + \beta_8 old_{ijc} + \beta_9 expanding_{ijct} + \beta_{10} contracting_{ijct} + (\beta_{11} - \beta_{25}) Ind + (\beta_{26} - \beta_{32}) country\_year) \end{aligned}$$

Where G is standard cummulative distribution function, which is expressed as an integral

$$G(z) = \Phi(z) \equiv \int_{-\infty}^z \phi(v) dv,$$

$\phi(v)$  is the standard normal density.

$$\phi(v) = (2\pi)^{-1/2} \exp(-v^2 / 2).$$

Regressions were estimated with controls for country and company-specific variables. Company specific variables are company size and age, CEO experience, ownership, certified

financial statements, xxx. Larger companies with more stable sales, more collateral devices, more advantages in creating and using big data, less risk for investors and opportunities for growth and efficiency higher activity (Begenau, Farboodi and Veldkamp (2018); Hennessy and Whited (2007)). We classify the firm size based on the total number of long-term workers to classify companies into five groups: micro, xxx with the reference group being micro. We include small, medium, and large variables that take the value of one if the company is small, medium, and large respectively, and zero otherwise. Li and Dutta (2018); Zheng, Devaughn and Zellmer-Bruhn (2016) found that a company's performance and growth also depended on the expertise of its owners and executives. We measure CEO experience by the number of years of management experience in a similar business. Externally verified financial statements are a fundamental aspect of financial reporting. Audited financial statements are more reliable and informative, which significantly influences the decisions of investors and lenders. Audited companies pay significantly lower interest rates and have higher growth opportunities than firms without external auditors (Minnis (2011); Kim, Simunic, Stein and Yi (2011)). We include dummy variables as an indicator of the reliability of a company's financial statements. This variable will take on the value 1 if the financial statements have been audited by an independent auditing firm and 0 otherwise. Foreign-owned enterprises may have different growth rates than non-foreign-owned enterprises. Foreign companies may have better access to finance. We also control for other firm-level variables, including whether the firm is expanding or contracting, and firm age. These variables are widely used in the literature when considering the determinants of employment growth and firm performance. Table A1 in Appendix 1 provides detailed descriptions and sources of each variable.

To test the hypothesis that a reported constraint is related to firm employment growth and the fixed employment rate, we perform a t-test to determine if its corresponding coefficient is different. 0 is significant or not.

## **5. Results**

### *5.1 Variation in access to finance by firm*

The ranking of financing obstacles with their business operations and growth provides a useful starting point in identifying differences in financial access between businesses with different characteristics. . Table 4 reports the regressions of financial access for a set of individual characteristics of individual industry dummies and country dummies. This table uses several

variables in the same area of the business environment, i.e. multiple measures of financial accessibility.

Table 4 demonstrates that there are significant inter-firm differences in most variables in each of the four sectors of the investment climate. Again, the focus is on differences between firms of different sizes, as measured by employment levels at the time of the survey. Micro firms have particularly limited financial reporting, and in fact, controlling for corporate characteristics and country shape, large firms are likely to have over 30 overdraft facilities. % and the proportion of investments financed by formal bank loans is 14% higher (or more than 50% compared to small firms with retained earnings that finance more than 2/3 of the investment). Access to formal working capital also varies significantly, with the level of large firms being three times that of small firms and four times that of micro enterprises. =>

< Insert table 4 here >

## 5.2 Subjective business environment to employment growth of enterprises

Table 5 shows the impact of investment environment variables on employment growth. It includes these variables at a time to illustrate the certainty of results on different variables within the same subject area.

The impact of better access or lower financial costs on the growth of firms has been studied by several authors.<sup>24</sup> Beck, Demirgüç-Kunt and Maksimovic (2005) argue that access to finance should prioritize small businesses. In their work, they found that self-reported constraints on financial access and costs were associated with lower growth rates for small businesses (compared with small businesses). big business). The results presented here use firms' actual access to finance ranging from trade credit to formal financing of working capital and investments, on average. on site-area scale plots and exclude the company's own response to minimize possible endogenous problems. Table 4 shows that there is a difference in the amount of finance available, which may explain why smaller firms tend to complain about finance (Table 3). Here, we check that, Even with the same financing, the impact is different between different types of businesses. The results show that it is. Those are really the smallest (micro) companies that make the most profits. Larger companies also benefit, but the benefit is only half that of micro companies. Interestingly, this effect seems to apply to both simpler forms of financing — such as credit sales or overdraft facilities — as well as more complex banking instruments, such as external financing of investments. but the benefits are only half that of micro companies. Interestingly, this effect seems to apply to both simpler forms of financing

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Our results also show differences in the impact between exporters and non-exporters. Improved access to capital markets appears to favor the growth of non-exporters relative to the growth of firms catering to international markets. This suggests that either exporting firms are better connected to international capital markets and thus less dependent on domestic capital raising, or instead, exporting firms in other countries. developing countries are in sectors that are intrinsically less dependent on external capital.

## **6. Conclusion**

This paper has provided new evidence on the role of the investment climate in employment growth. The results reveal significant differences between the size categories of firms — both in terms of the objective conditions faced by firms and in terms of non-linearity in the impact.

of these conditions. Low access to finance, corruption, underdeveloped business regulations and infrastructure bottlenecks reduce the distribution of employment. Low access to finance and inefficient business regulations slow the growth of all businesses, especially micro and small businesses. Corruption and weak infrastructure create growth bottlenecks for medium and large enterprises. The results also reinforce the importance of discriminating the impact between the size categories of firms allowing micro firms (less than 10 employees) to differ from “small” firms.

Our results indicate that the extent to which financial and legal constraints and corruption constrain the growth of a firm are highly dependent on the size of a firm. We show that the smallest companies are consistently the most negatively affected by all obstacles.

Taking into account cross-country differences in financial and legal levels and corruption, we find that firms operating in less developed systems with higher levels of corruption are affected by all impediments to a greater extent than firms operating in less corrupt countries. We also find that gentle developments in the financial and legal systems and reduction of corruption will help loosen constraints on SMEs, which are most constrained.

This paper confirms previous results on the importance of access to finance for micro and small enterprises. It contributes to existing knowledge about finance in various aspects. It shows that the impact on employment growth of an external financial institution is highest for these firms. It also compared the impact of different forms of funding on employment growth and found that access to working capital had the highest impact. Companies may be more likely to employ more workers if they are able to pay regular wages even in the face of uncertain cash flows.

What are the aggregate results of these findings for the size, efficiency and dynamism of the business sector in developing countries? In terms of size, our estimates suggest that a weak investment climate depresses overall employment in the business sector. In Argentina and Mexico, for example, increasing the share of external funding for investments by 10 percentage points would increase overall employment by 5 percentage points. The same increase in working capital financing would increase employment by 8 percentage points. In Argentina, reducing corruption by 10 percentage points would increase overall employment in the business sector by 0.5 percentage points.<sup>26</sup>

Regarding the efficiency and dynamism of the business sector, we can only give a few tentative points. As pointed out by Tybout (2000), it is not necessary that small businesses are less efficient than large firms as long as they focus on producing goods and services with limited profits to scale. Even so, however, our findings could affect the dynamism and growth of the business sector. When the business environment is weak, businesses may be confined to industries with limited opportunities for innovation and growth. In addition, a larger share of firms may remain informal or semi-formal, reducing the capacity of

There are several policy implications in our results. Development organizations devote a large amount of their resources to SMEs because they believe that the development of the

SME sector is crucial to economic growth and poverty alleviation. and small businesses face greater difficulties. Although this paper does not address the issue of SME's impact on economic development, it does provide confirming evidence that indeed, SMEs face larger obstacles. financial, legal, and corruption issues compared with large firms, and the limited impact of growth rate constraints is inversely proportional to firm size.

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