

What Have We Learned from the Enterprise Surveys Regarding Access to Credit by SMEs?

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Abstract

Using a unique firm level data set—the Enterprise Surveys—this paper develops a new measure of credit-constrained status for firms using hard data instead of perceptions data. The paper classifies firms into four ordinal categories: Not Credit Constrained, Maybe Credit Constrained, Partially Credit Constrained, and Fully Credit Constrained to understand the characteristics of the firms that fall into each group. Comparable data from the Enterprise Surveys for 116 countries are used to look at the relationship between firm size and credit-constrained status. First, the analysis finds that small and medium enterprises are more likely to be credit constrained (either partially or fully) than large firms. Furthermore, small and medium enterprises finance their working capital and investments mainly

through trade credit and informal sources of finance. These two results hold to a large extent in all the regions of the developing world. Second, although size is a significant predictor of the probability of being credit constrained, firm age is not. Third, high-performing firms, as measured by labor productivity, are less likely to be credit constrained. This result applies to all firms but is not as strong for small firms as it is for large and medium firms. Finally, in countries with high private credit-to-gross domestic product ratios, firms are less likely to be credit constrained. Given the importance of access to credit for firm growth and efficiency, this paper confirms that throughout the developing world access to credit is inversely related to firm size but positively related to productivity and financial deepening in the country.

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1. Introduction

Small and Medium Size Enterprises (SME) are the most common employers across the world. In 48 out of 76 nations covered in Ayyagari, Beck and Demirgüç-Kunt (2007), SMEs employed more than 50% of the formal workforce. In addition, Ayyagari, Demirgüç-Kunt and Vojislav (2011) find that small firms and mature firms have the highest levels of total employment and small firms and young firms have the highest rates of job creation. SMEs are a fundamental part of a dynamic and healthy economy.

Consequently, it is important to understand the different factors that can help or hinder SME creation and development. Recent research around the developing world provides evidence that SMEs face greater financing obstacles than large firms (Beck, Demirgüç-Kunt & Maksimovic 2005; Beck & Demirgüç-Kunt 2006; and Beck, Demirgüç-Kunt, Laeven Maksimovic 2006). Ayyagari, Demirgüç-Kunt and Vojislav (2006) show that finance, crime, and political instability directly affect the rate of growth of firms, with finance being the most robust variable affecting firms' growth rate. Furthermore, Beck, Demirgüç-Kunt and Maksimovic (2008) find that small firms use less external finance, especially bank finance. This result, coupled with the evidence found by Kumar, Rajan and Zingales (1999) that financial constraints limit the average firm size, explains the paramount importance of investigating the usage of finance by SMEs.

With this motivation, this paper tries to answer the following questions using a unique data set covering 116 countries across the developing world (Enterprise Surveys): What type of credit do SMEs use to finance their working capital and their investments? Moreover, which SMEs are satisfied with the credit they have and which ones are credit-constrained? The paper illustrates how firm-level survey data collected by the World Bank under a standard

methodology can be used to answer these questions. Given the richness of the data, the paper also presents results using different definitions of SME as well as results for large firms which can be used as a benchmark for SMEs.

This paper provides an innovative way of measuring credit-constrained firms based both on their usage of and ability to obtain new credit. This is an important contribution to the literature since most papers analyzing SME's credit either look only at usage of credit, as opposed to access, or focus on self-reported obstacles based on perceptions instead of objective data based on the experience of the firm (e.g., whether access to finance is an obstacle for the firm or whether the firm has a bank loan or a line of credit).

We find that SMEs are more likely to be credit constrained than large firms. In fact, the probability of being credit constrained decreases with firm size. Firm age does not relate to the credit constrained status. Once we control for size, age of the firm has no explanatory power with regards to the probability of being credit constrained. When we use a measure based on the perception of access to credit as an obstacle, we find that both size and age are negatively related with the increasing degree of obstacle access to credit represents. Our measure of being credit constrained based on hard data has a very high explanatory power over the perception measure. That is, firms that are credit constrained in reality are more likely to report access to finance as an increasing obstacle. This is an important check since several of the papers written on access to finance using Enterprise Surveys data focus on the perception measure.

Regarding the sources of finance, the data show that SMEs rely more on trade credit and informal sources and less on equity and formal debt than large firms. This finding applies both to financing of investment and working capital although equity is not one of the explicitly provided options for financing working capital in the survey.

In addition to describing who is credit constrained and how firms finance themselves, we also analyze the link between access to credit and firm performance and the association between access to credit -at the firm level- and equivalent macro variables. First, we find that firms with higher performance, as measured by labor productivity, are less likely to be credit constrained, which we take as an indication of well-functioning financial markets. A closer examination of this result shows that this relationship is weaker for small firm than for medium and large firms. Second, we find that countries with a higher level of private credit-to-GDP ratios have on average lower percentages of firms that are credit constrained. These results are based on correlations and should not be interpreted as causal.

The structure of the paper is as follows. The next section describes the data set being used in detail, highlighting its richness and uniqueness. Section 3 explains the grouping of firms according to their level of being credit constrained. Section 4 presents both the descriptive results and the regression analysis on the determinants of being credit constrained. Finally, section 5 concludes the paper.

2. Data

As part of its strategic goal of building a climate for investment, job creation, and sustainable growth, the World Bank has promoted improving business environments as a key strategy for development, which has led to a systematic effort in collecting enterprise data across countries. The Enterprise Surveys (ES) are an ongoing World Bank project in collecting both objective data based on firms' experiences and enterprises' perception of the environment in which they operate. The studies are implemented using firm-level surveys and over the last 10 years have evolved into a mature product that since 2005 uses a standardized methodology of

implementation, sampling and quality control in most client-countries of the World Bank. The Enterprise Surveys currently cover over 130,000 firms in 125 countries, of which 116 have been surveyed following the standard methodology. This allows for better comparisons across countries and across time. Hundreds of academic research papers as well as policy documents produced by the World Bank Group and other organizations use these data. Of the 116 countries surveyed under the global methodology, 40 are in Sub-Saharan Africa, 29 are in Eastern Europe and Central Asia, 31 are in Latin America and the Caribbean, 10 are in East Asia and Pacific, 4 are in South Asia, and only two in the Middle East and North Africa (Table 1).¹ ES has included some high-income countries as comparators mostly as an exception since the mandate of the World Bank Group focuses on the developing world.

ES study a representative sample of the non-agricultural, formal, private economy with a strong emphasis on building panel data to make it possible to track changes in the business environment over time. In this paper, however, the panel dimension is not explored yet. The ES facilitate linking firm performance and other firm characteristics with the business environment while assessing the constraints to private sector growth and job creation faced in a particular country. The questionnaire covers the following topics:

1. Firm characteristics – covering variables such as firm age, firm legal status, gender of the owner.
2. Quality and availability of infrastructure and related services – covering variables such as number of power outages, the time to get an electricity connection or water connection.

¹ In MENA only Yemen and Iraq has been implemented using the global methodology up to now and therefore the results for this region should not be interpreted as representative of the whole region.

3. Sales and supplies – covering variables such as annual sales, ISIC code for the main product of the firm, percentage of sales exported, the process of exporting and importing.
4. Competition – covering variables such as number of competitors and use of foreign technology.
5. Capacity utilization –covering variables such as capacity utilization of staff and machinery.
6. Land and permits – covering variables such as time to obtain a construction permit.
7. Crime – covering variables such as the sales lost to theft and cost of security services.
8. Finance – covering variables, such as the percentage of investments financed through bank loans, percentage of working capital financed through trade credit, the type of collateral used to secure a bank loan.
9. Business-government relations – covering variables such as senior management time spend on dealing with regulations, the incidence of informal payments, the frequency of visits from tax inspectors.
10. Labor –covering variables such as the number of permanent and temporary employees, education level of workers.
11. Ranking of obstacles – covering the most important of 15 potential obstacles to conduct business.
12. Performance – covering obstacles such as cost of labor and cost of raw materials.

Indicators computed from these surveys are regularly posted and updated on the web site of the Enterprise Analysis Unit (www.enterprisesurveys.org) and the anonymous raw data are available to the researchers shortly after the completion of the surveys.

The ES are composed of representative random samples of firms. The universe of inference for the sample is composed of the manufacturing and service sectors, including retail

wholesale hospitality and IT. The sectors of construction, transport and communication are also included. Samples have broad within-country coverage typically centralized in the major centers of economic activity of a country. Data are collected across the world using the same core questionnaire and the same sampling methodology. Data are typically collected on a 3 to 4 year rotation in each major region of the developing world.

Agricultural, extractive industries and fully government-owned firms are excluded from the universe of inference, as well as firms with less than 5 employees. Formality is equated with registration. Registration is defined country by country and it is generally based on registration for tax purposes.

All samples are drawn following a stratified random selection. The standard strata for every economy are sector of activity, firm size, and geographical location. Under geographical location the stratification aims at having representativeness in the main economic centers of each country. Firm size is consistently stratified into: small (5-19 employees), medium (20 to 99), and large (100 and more). The degree of stratification by sector of activity is determined by the size of the economy, as follows:

1. Very small economies: 2 strata, manufacturing and services (including construction, transport and communications);
2. Small economies - 3 strata, where services are further stratified into retail and other services;
3. Medium and large economies - manufacturing is also subdivided into selected 2-digit industries chosen according to their contribution to value added, employment and number of establishments. The number of strata within manufacturing, or services, depends on the size of the economy.

To preserve the same universe of inference across all countries, residual strata are usually used such as rest of manufacturing and rest of services.

The primary sampling unit of every ES is the establishment. Sampling frames are evaluated at the onset of every project and if necessary, new frames are constructed. Special attention is placed on questionnaire translation, and in every country pretesting and pilot interviews are conducted prior to main field work to reduce measurement errors. Measurement error may be particularly concerning with some sensitive questions, in particular those regarding corruption and firm's accounting results. Experience and anecdotal evidence witnessed during pilot surveys suggest that some facts may be intentionally underreported due to fears of repercussions and/or due to the sensitive nature of the questions. Assuming such underreporting is common and systematic across respondents there could be potential discrepancies between the average response and the actual true mean of the sample. While, unfortunately, there is no ready solution of this particular issue, over time, the ES questionnaire has been adjusted to minimize this effect. Questions are simple and direct as opposed to indirect and wordy; respondents are specially assured of the confidentiality of their answers; enumerators are specially trained to circumvent difficult situations and a special code for "refuse to answer" was introduced to deal with very sensitive questions.

Another issue when dealing with survey data in the developing world is coverage bias emerging from outdated or incomplete firm listings. For the ES, as a general principle, the most updated and complete sampling frame for each economy is used. Additionally, systematic efforts are undertaken to purge ineligible elements from the frame prior to the selection of the sample. Unfortunately, some ineligible elements are practically impossible to identify mechanically due to incomplete or missing fields, outdated firm level information etc. Consequently, field work is

organized as a two stage procedure. In the first stage, telephone screening confirms eligibility and schedules the interview. In the second stage, a face to face interview with the top manager of each firm is conducted. When needed, follow-up questions and corrections are implemented, in person, by phone, email or web interface.

Finally, the ES team has created quality control procedures and programs intended to minimize coding and processing errors. Coding errors commonly occur due to the misinterpretation by the enumerator of the answers, especially with questions about numbers, or during the data entry stage. The ES implementation methodology includes comprehensive systems of checking the answers for logical consistency and completeness. Furthermore, outlier tests are implemented to capture potential typos. Several layers of extra verification, including independent double entry, callbacks, and multiple logical and consistency tests are common during the digitalization of the data.

3. Definition of Credit-Constrained Firms

Using the finance section of the Enterprise Surveys questionnaire, we construct four major groups that measure the extent firms were credit constrained during the fiscal year referenced in each survey. The first group called **Fully Credit Constrained (FCC)** includes the firms that meet all the following conditions simultaneously:

- A. Did not use external sources of finance for both working capital and investments during the previous fiscal year;
- B. Applied for a loan during the previous fiscal year;
- C. Do not have a loan outstanding at the time of the survey which was disbursed during the last fiscal year or later.

The intersection of A, B and C imply, in the context of the questionnaire, that these firms applied for a loan and were rejected and do not have any type of external finance.

In addition this first group also includes the firms that meet the following criteria:

- A. Did not use external sources of finance for both working capital and investments during the previous fiscal year.
- B. Did not apply for a loan during the previous fiscal year
- C. Do not have an outstanding loan at the time of the survey
- D. The reason for not applying for a loan was other than having enough capital for the firm's needs. Some characteristics of the potential loan's terms and conditions deterred these firms from applying. It is thus concluded that they were rationed out of the market.

In summary, fully credit constrained firms have no external loans because loan applications were rejected or the firm did not even bother to apply even though they needed additional capital.

The second group called **Partially Credit Constrained (PCC)** includes firms that meet the following conditions:

- A. Used external sources of finance for working capital and/or investments during the previous fiscal year and/or have a loan outstanding at the time of the survey, and either:
 - 1. Did not apply for a loan during the previous fiscal year and the reason for not applying for a loan was other than having enough capital for the firm's needs. Some of these reasons may indicate that firms may self-select out of the credit market due to prevailing terms and conditions, thus some degree of rationing is assumed or;

2. Applied for a loan but was rejected.

However, firms in this group manage to find some other forms of external finance and, consequentially, they are only partially credit constrained.

The third group called **Maybe Credit Constrained (MCC)** includes firms that:

- A. Used external sources of finance for working capital and/or investments during the previous fiscal year and/or have a loan outstanding at the time of the survey;
- B. Applied for a loan during the previous fiscal year

As firms in this group have had access to external finance and there is evidence of them having bank finance, they are classified under the possibility of maybe being credit constrained as it is impossible to ascertain whether they were partially rationed on the terms and conditions of their external finance.

Finally, the fourth group called **Non Credit Constrained (NCC)** includes the firms that fit into the following description:

- A. Did not apply for a loan during the previous fiscal year;
- B. The reason for not applying for a loan was having enough capital for the firm's needs.

This fourth group can be further divided according to usage of external finance, since this group includes both firms that use external finance and the ones that do not. The important characteristic of this group is that, independently of its current level of external finance, these firms are happy with their current financing structure for both working capital and investments.

It is important to note that for the Eastern Europe and Central Asia Region the question on the sources of financing for working capital was not asked in the last wave of available surveys. Therefore, the definitions of the four groups mentioned above were changed in the following ways for firms in this region. For the first group, FCC, the subgroup of firms rejected

from loans was fully identified by using an additional question included only in this region which directly inquired whether the firm was rejected on its loan application.² For the second subgroup within the FCC, those who did not apply due to the terms and conditions, an additional question on the use of credit when buying inputs and supplies was used to discriminate those with external finance used for working capital and those without it. While credit from suppliers is only one of the potential sources for working capital finance, evidence from other regions show that almost 70 percent of the firms that use external finance for working capital use this type of credit. The second group, PCC, was fully identified once firms with external finance for working capital were identified as explained above. Identifying the third and fourth groups, MCC and NCC, did not pose any problem in the ECA region as the questions needed were available in the survey instrument.

Figure 1 presents a diagram that explains the construction of our measure of credit constraint and Table 2 presents the data by country of the percentage of firms that fall into the four categories described above.

4. Results

4.1 Who Is Credit Constrained and Who Is Not?

Using the four definitions described above, we find that the firms for which there is no hard evidence of being credit constrained, that is that they are either NCC or MCC, are the

² In the global questionnaire, rejection to the loan application can only be inferred from comparing the question on the application with the realized fact that no external source of finance was used for financing investments or working capital. Since the ECA region did not include the question on working capital finance this inference cannot be done. Fortunately, the explicit question on the outcome of the application was included.

majority in 87 out of 116 countries (Table 2). This finding holds even if we focus just on SMEs as opposed to firms of all sizes. We use three definitions of SMEs: SME100 – firms with up to 100 employees, SME250 – firms with up to 250 employees and SME500 – firms with up to 500 employees. The distribution of credit constrained status does not change across the three different definitions as shown in Figure 3. Therefore, for the remainder of the analysis we will use the SME100 definition since this is the one traditionally used in Enterprise Surveys.

Aggregating the data at the regional level, we find that in Sub-Saharan Africa (AFR), East Asia and Pacific (EAP), and in South Asia (SAR), firms are more likely to be fully credit constrained than in other regions (Figure 2). In these three regions, 23-25 percent of firms are fully credit constrained, meaning that these firms sought credit and were unable of getting any form of external credit. For the two countries included in the Middle East and North Africa region, this percentage was even higher, 28%. In the EAP region firms tend to be at the two extremes of the credit constrained status. Firms are either not credit constrained at all (43%) or they are fully credit constrained (25%) with fewer firms in the two middle categories.

The distributions of credit constrained status in Latin America and the Caribbean (LAC) and Eastern Europe and Central Asia (ECA) are very similar. In those two regions around 42 percent of firms are not credit constrained and 9 to 10 percent are fully credit constrained. The total proportion of firms who are maybe and partially credit constrained is also similar in these two regions, at 48 percent.

Analyzing the size composition within credit constrained categories indicates that SMEs are more likely to be fully credit constrained than large firms (Figure 4). The proportion of SMEs that are fully credit constrained is always larger than the proportion of large firms except the Middle East and North Africa (MNA) (only the Republic of Yemen and Iraq are included in

this region). The difference in the proportion of firms that are fully credit constrained is more pronounced for small firms, indicating the smaller the firm, the more likely it is to be credit constrained. For example, 28.3 percent of small firms in AFR are fully credit constrained, compared to 10.5 percent of large firms.

Firms younger than 5 or 9 years are not more likely to be more credit constrained than older firms. There are no significant differences in the firms age distribution within the credit constrained categories and found no significant differences. This lack of significance maybe in part explained by the age cut off. Firms with up to 5 years of age may not face the same challenges as very young firms (of 1 or 2 years). However, the Enterprise Surveys have a limited number of observations for very young firms making it impractically to have an age cut off less than 5 years.

Figure 5 presents the distribution of credit constrained status by sectors and region. In both the ECA and LAC regions, the distributions of the credit constrained status within the 3 sectors (manufacturing, retail, and other services) are very similar. In EAP, manufacturing firms are more likely to be fully credit constrained than firms in the retail and other services sectors. In AFR, other services sector stands out as being the least credit constrained. In SAR, firms in the retail sector are more likely to be fully credit constrained.

To more formally test the association between firm characteristics and credit constrained status we consider an ordered logit model in which the dependent variable is the ordinal variable: 1=NCC, 2=MCC, 3=PCC, and 4=FCC. Thus, higher values of the dependent variable denote higher levels of credit constraint. Table 3 presents the results of the regression controlling for country and industry fixed effects. There is a negative significant relationship between firm size and credit constraint, i.e. the smaller the firm the higher the probability of being credit

constrained. Labor productivity is significant and negatively correlated with credit constraint, i.e. more productive firms are less likely to be credit constrained. While the cross-section nature of the data does not permit establishing whether this is the result of proper client selection by financial markets or greater financial access causing greater productivity the positive correlation is, at the very least, indicative of well-functioning financial markets.

We further explore this result by interacting labor productivity with three size categories, (small, medium and large) and find that medium and large firms with higher labor productivity are more likely to be less credit constrained when compared to small firms. However, the net effect of labor productivity is negative for both groups of firms, showing that the negative correlation between credit constrained and productivity holds for all sizes. Therefore, the data suggest that the negative association between being credit constrained with having high labor productivity, an indicator of well-functioning financial markets, is stronger to large and medium firms than to small firms. The negative relationship between labor productivity and credit constrained status holds for Sub-Saharan Africa, Eastern Europe and Central Asia, and South Asia. For East Asia and Pacific this relationship is only significant if the effect is allowed to vary by size.

Table 4 shows regression results from a logit regression, where PCC and FCC firms are classified as credit constrained firms, and NCC and MCC firms are classified as firms with no evidence of being credit constrained. Using this specification, the link between access to credit and labor productivity is significant in all regions: the likelihood of being credit constrained significantly decreases with higher labor productivity. Firm size is a significant determinant of credit constraint status and small and medium firms are much likely to be credit constrained than large firms.

Table 5 presents the results from an ordered logit regression of perception of access to credit as an obstacle. The regression is based on the direct opinion-based question on the degree of obstacle access to finance represents to the current operations of the firm using a five point scale: no obstacle, minor obstacle, moderate obstacle, severe obstacle and very severe obstacle. This type of variable has often being used in the literature as a proxy for being credit constrained. The results of the regression show that the perception of the obstacle is positively and highly significantly correlated to our objective measure of credit constraint. The perception also shows a negative significant correlation with size and with age: smaller firms and younger firms tend to find access to credit to be more of a constraint to their operations than larger and older firms.

4.2 Which Sources of External Finance Do Firms Use and to What Extent?

The data collected by Enterprise Surveys also provide information on the different types of external sources of financing used by firms as well as its relative intensity. The surveys provide information on sources of financing for both working capital and purchases of fixed assets.

The different sources of external finance for purchase of fixed assets are classified into four categories: equity finance and three options for debt finance: formal debt finance, including bank and non-banking financial institutions, trade finance, which includes credit from suppliers and/or customers, and the other category, which includes informal sources of credit such as moneylenders, friends and relatives, etc.³ It is worth clarifying that equity finance is phrased in

³ In the ECA region, the other category also includes non-banking financial institutions as the questionnaire used in this region group together these two categories.

the questionnaire in such a manner that it is not restricted to shareholding companies by mentioning explicitly contributions by current or new owners.

Table 6 shows the relative use of each of these sources for all firms who used some external finance to purchase fixed assets, i.e. excluding firms that did not use external finance at all. Comparing across regions, it is interesting that in all regions except South Asia, SME's use of equity plus formal debt is relatively smaller than for large firms. SME's consistently tend to rely more on trade credit and informal sources. This trend is particularly clear in Africa, the region with the largest relative use of informal credit to finance investments on fixed assets. It is also worth noting that the use of formal debt is relatively high in all regions but it tends to be lower for SME's than for large firms, except again in South Asia where small, medium and large firms' share of use of formal debt is quite similar.

Table 7 shows the distribution of the different sources of finance for working capital. The survey does not include equity as a source of finance for working capital as it was assumed that this form of finance is rarely used to fund regular operations of a firm. Also, the regions of Eastern Europe and Central Asia and the Middle East and Northern Africa are not presented as this question was not part of the survey in the former region and in the latter only two countries have been surveyed using the standard methodology. The results show that in the four regions formal credit is relatively less used by SMEs than by large firms and that the likelihood of using informal sources decreases with size.

4.3 Linking Firm Level Data with Macro Variables

We test our data by looking at the correlation between domestic credit provided to the private sector (% of GDP), a typical measure of financial deepening, and our credit constrained

measures aggregated at the country level. Figure 6 presents the main results. In countries with high ratios of private credit to GDP firms are less likely to be fully or partially credit constrained (FCC or PCC) and more likely to be non-credit constrained (NCC) or maybe credit constrained (MCC). These relationships are stronger in the two extremes of the ordinal variable (NCC and FCC) as shown by the larger slopes of the respective linear approximation.

5. Comparison of the Ordinal Metric of Credit-Constrained to Other Access-to-Finance Indicators

In the literature, access to finance can refer to the availability and use of different financial instruments. Some papers define access to finance based on only one condition: whether or not a firm has a loan (Banerjee and Duflo 2004), or the stock of liquid assets (Love 2003), external financing without loans (Klapper, Laeven, and Rajan 2006). Still other papers may use more than one financial instrument to describe access to finance: Honohan (2007) define access to finance using bank loan and deposit accounts.

These differences in the literature illustrate the advantages of Enterprise Surveys which contain information on a detailed list of a firm's participation with financial instruments and services. The credit constraint status of a firm is computed using information on the sources of external financing for working capital and investment, whether or not a firm applied for a loan, has a loan, and the reason they did not apply for a loan.

Table 8 displays results from logit regressions where the dependent variable varies in the use of financial instruments. The regressions are estimated to determine the relationship of these dependent variables to labor productivity and to determine how they compare to the ordinal metric constructed in this paper. The results of the ordinal metric, subsumed into a dummy

variable, are presented in the first two columns. The other columns present results for different definitions of access to credit that have been used in the literature. All these alternative definitions provide similar result. Firms that have higher labor productivity are more likely to have access to credit, and also to have a loan or line of credit, checking or savings account, or use external financing.

While the Enterprise Survey finance module is comprehensive with almost forty finance related variables, there is still potential to ask additional information to yield a clearer picture of a firm's financial inclusion. For example, for firms identified as being partially credit constrained, it is not clear if these firms received the level of credit that they originally requested. Another new variable that was recently added⁴ to the survey was whether or not a request for a loan or line of credit was rejected. These new information will help identify a firm's need of financial services separately from the general availability of financial services in a country.

6. Conclusion

The importance of access to credit for firms, in particular for SMEs, has being the focus of a vast literature. We add to that body of knowledge by creating a firm level measure of the credit constrained status based on hard data and describing what type of firms are more likely to be credit constrained and which ones are not. As commonly found in the literature, SMEs are more likely to be credit constrained than large firms. They are also more likely to use trade credit and informal sources of finance as funds for investment and working capital than large firms.

⁴ The Iraq 2011 survey was the first to include this variable.

Using our proposed measure of credit constrained status we find that age is not significant for defining the probability of being credit constrained.

Higher performing firms are less likely to be credit constrained. This result is stronger for large and medium firms than for small firms. Not surprisingly, we also find that in countries with higher levels of the private credit-to-GDP ratio, firms are less likely to be credit constrained.

The new measure of credit-constrained status at the firm level is a very rich measure that can be used in different types of analysis. This paper aims at presenting this new variable and opening the door for future research in this area.

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Figure 1 Correspondence between Credit-Constrained Groups and Questions in Enterprise Surveys

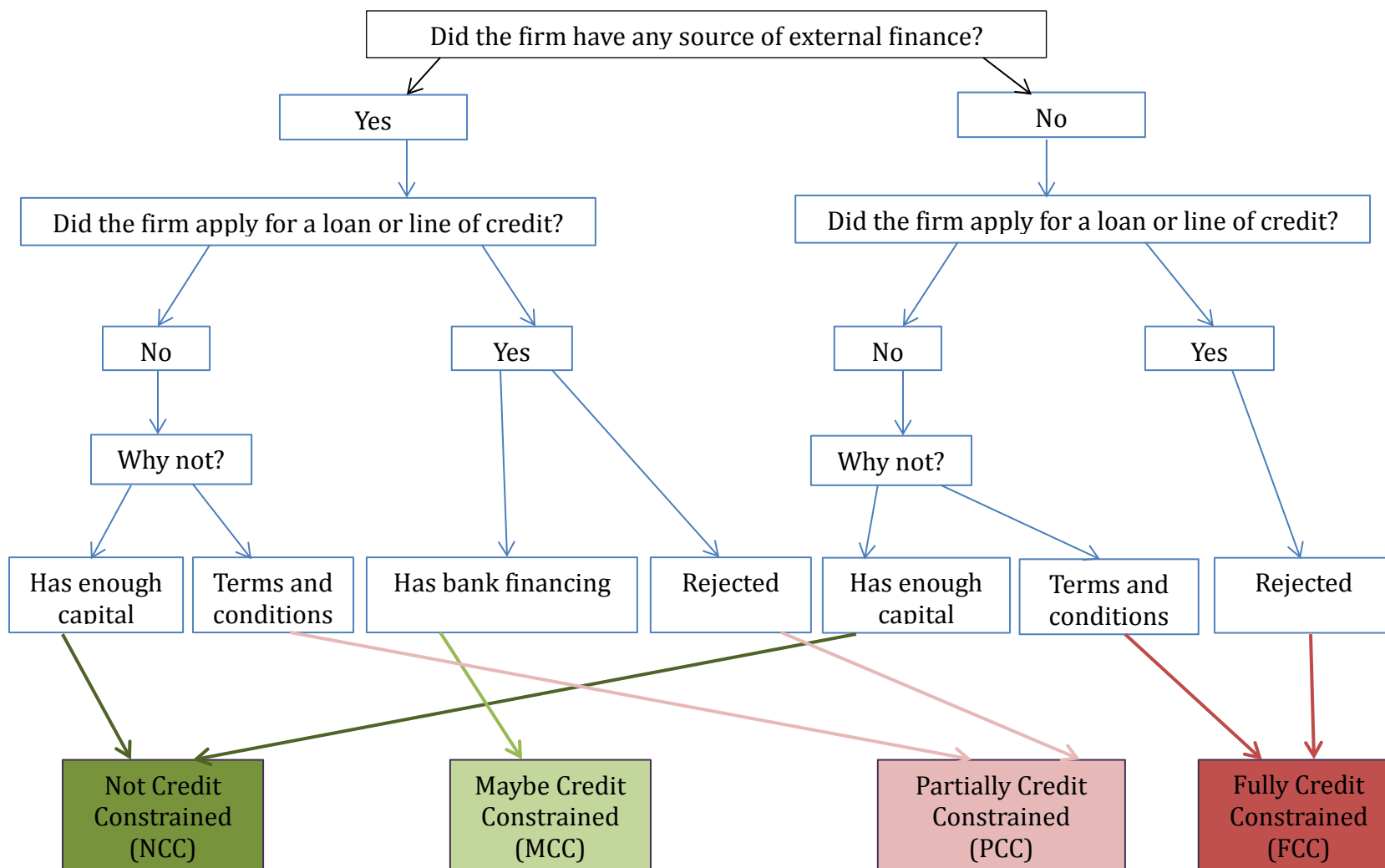
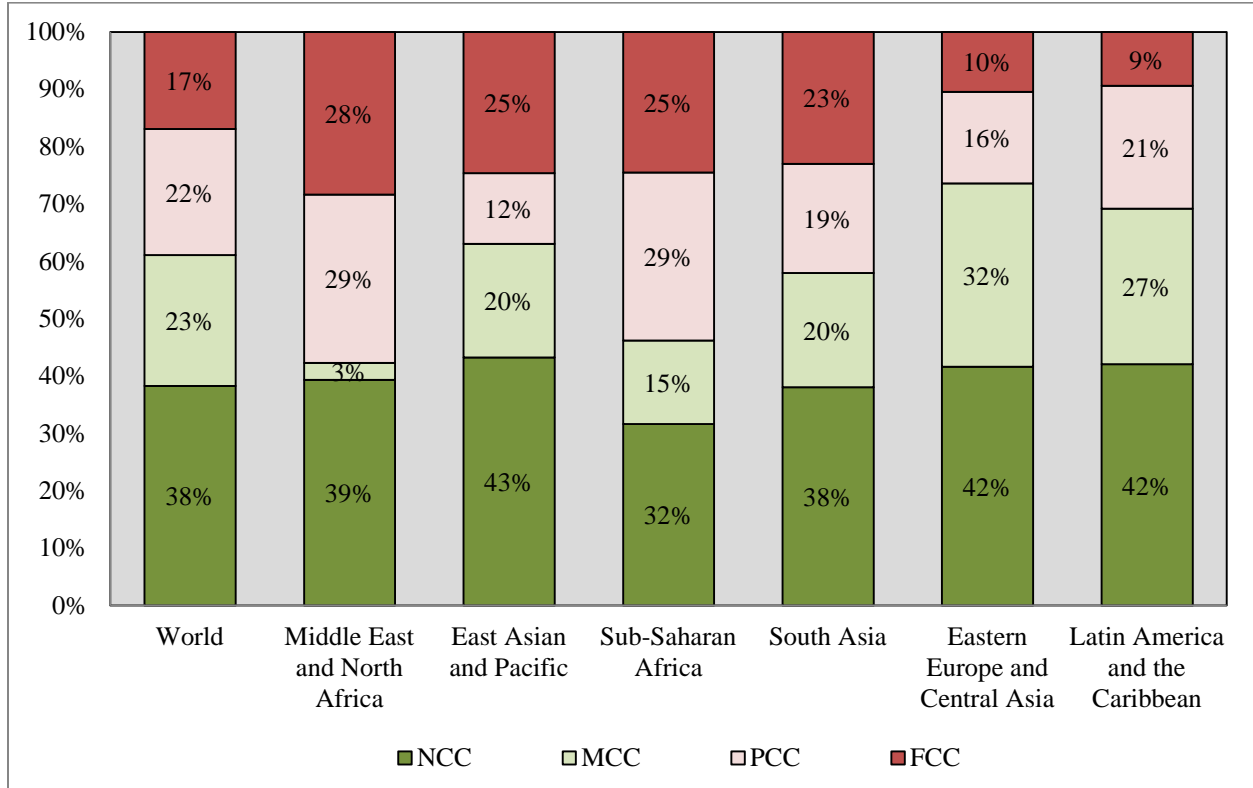


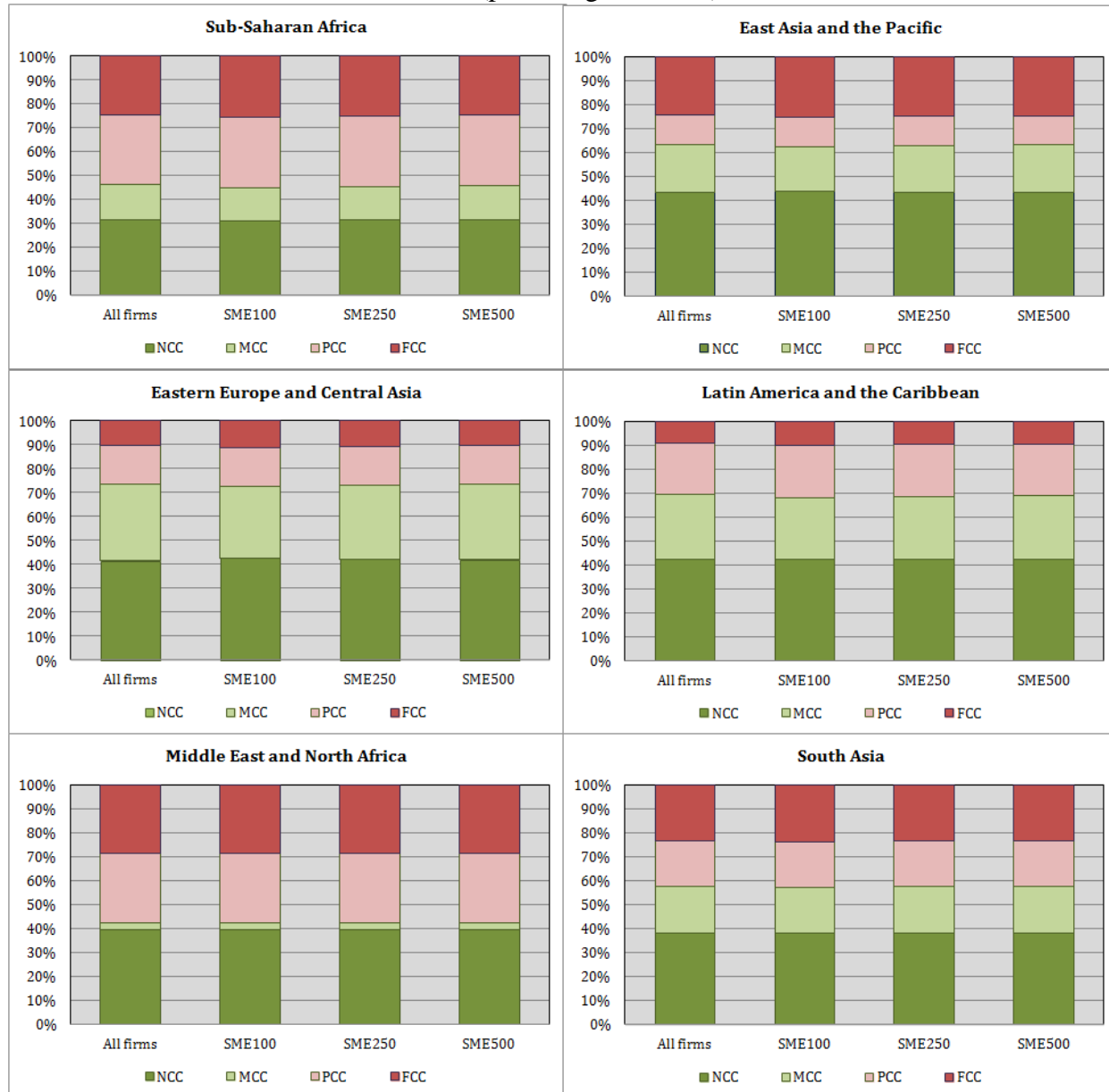
Figure 2. Credit Constraint Status, by Region (percentage of firms)



Source: Enterprise Surveys Database

Notes: NCC stands for non-credit constrained; MCC stands for maybe credit constrained; PCC stands for partially credit constrained; FCC stands for fully credit constrained. Countries are grouped per region according to the World Bank classification. In the Middle East and North Africa only the Republic of Yemen and Iraq are included. The vertical axis represents the percentage of firms.

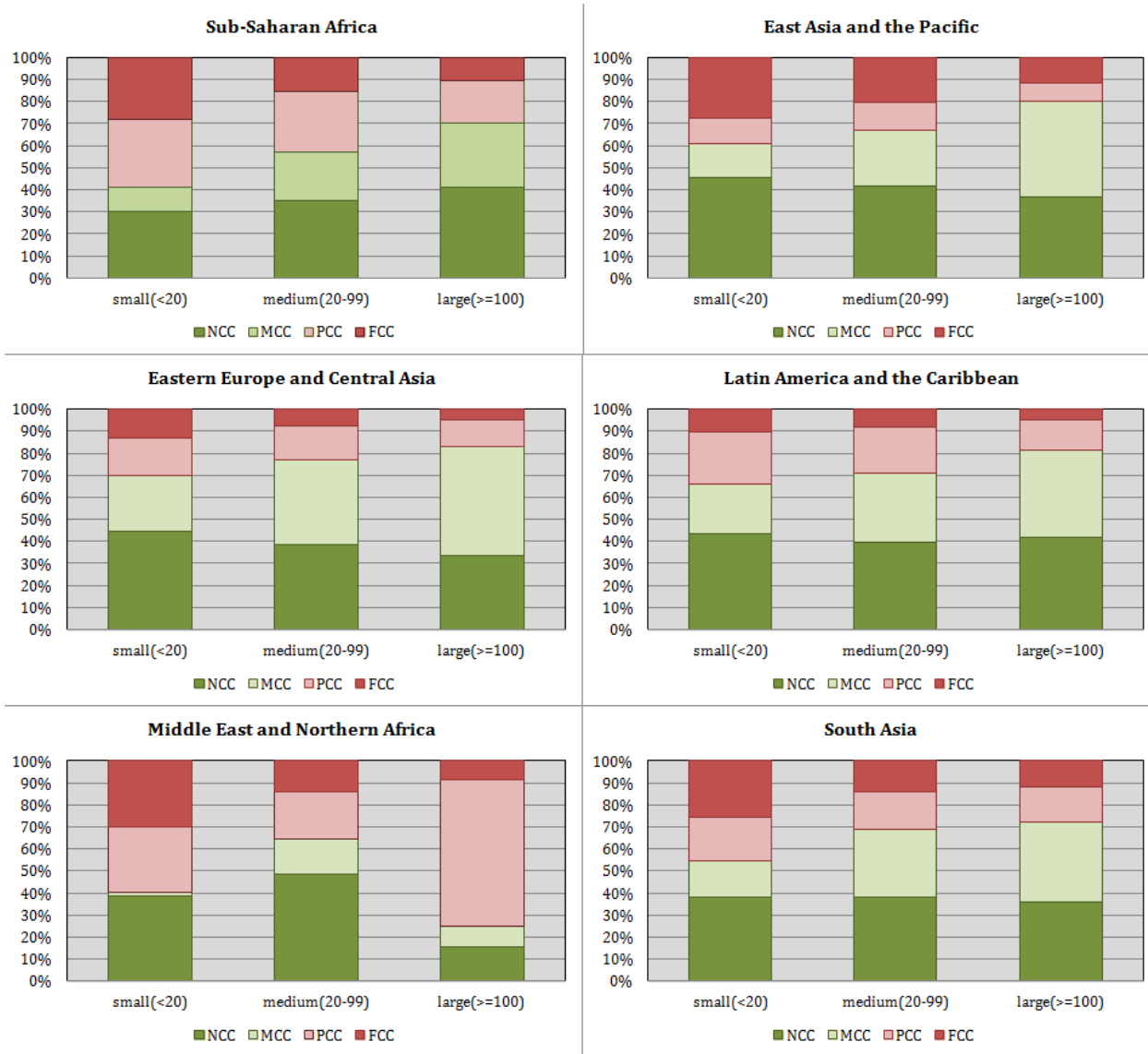
Figure 3. Percentage of Firms by Credit Constrained Status across the Developing World, by SMEs (percentage of firms)



Source: Enterprise Surveys Database

Notes: SME100 reference firms with fewer than 100 employees, SME250 reference firms with fewer than 250 employees, and SME500 references firms with fewer than 500 employees. NCC stands for non-redit constrained; MCC stands for maybe credit constrained; PCC stands for partially credit constrained; FCC stands for fully credit constrained. Countries are group per region according to the World Bank classification. In the Middle East and North Africa only the Republic of Yemen and Iraq are included due to lack of data.

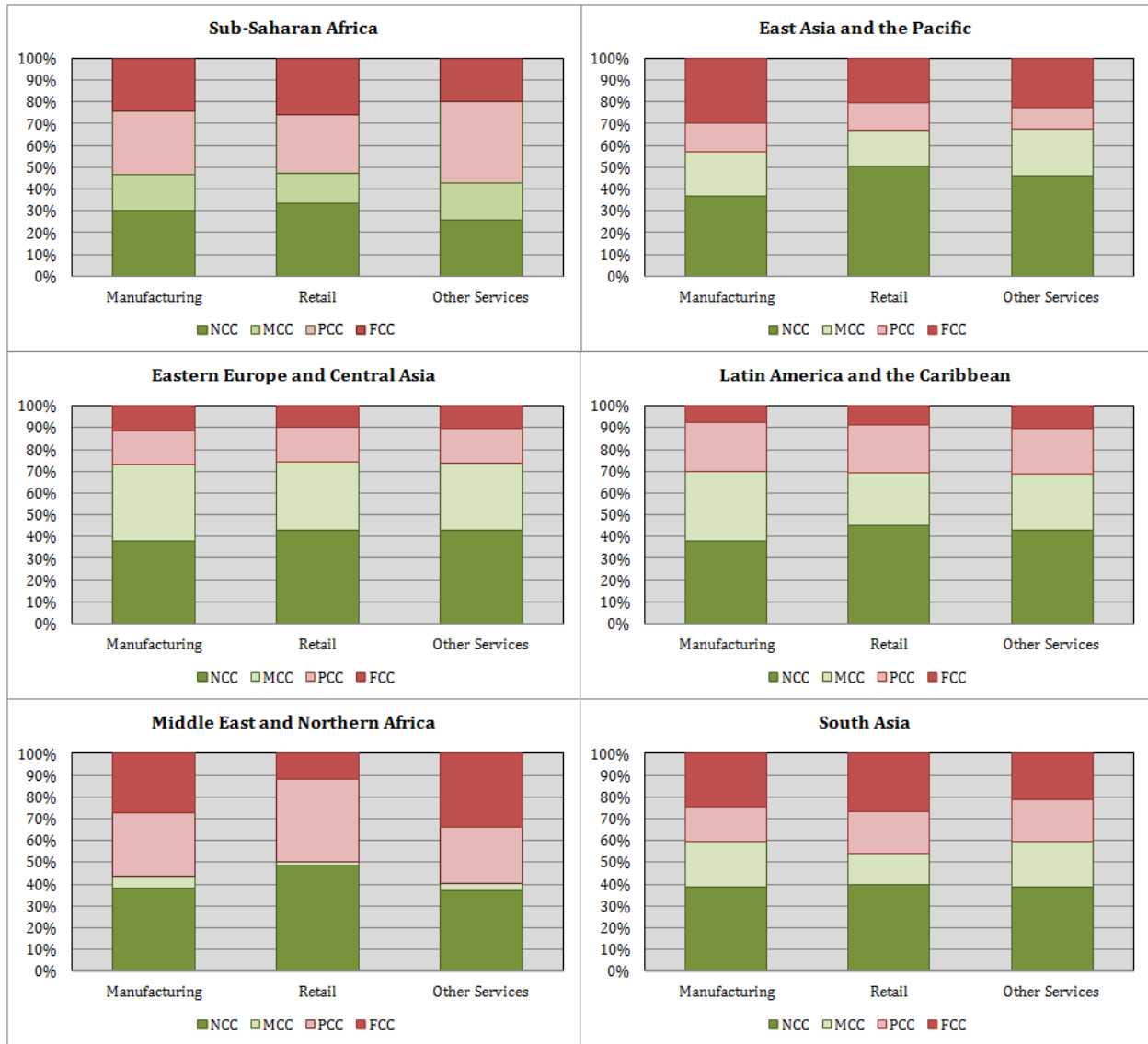
Figure 4. Credit Constrained Status across Firm Sizes (percentage of firms)



Source: Enterprise Surveys Database

Notes: NCC stands for non-credit constrained; MCC stands for maybe credit constrained; PCC stands for partially credit constrained; FCC stands for fully credit constrained. Countries are group per region according to the World Bank classification. In the Middle East and North Africa only the Republic of Yemen and Iraq are included due to lack of data. The size classification is as follows: small – 5 to 19 employees; medium – 20 to 99 employees; large – 100 and above employees.

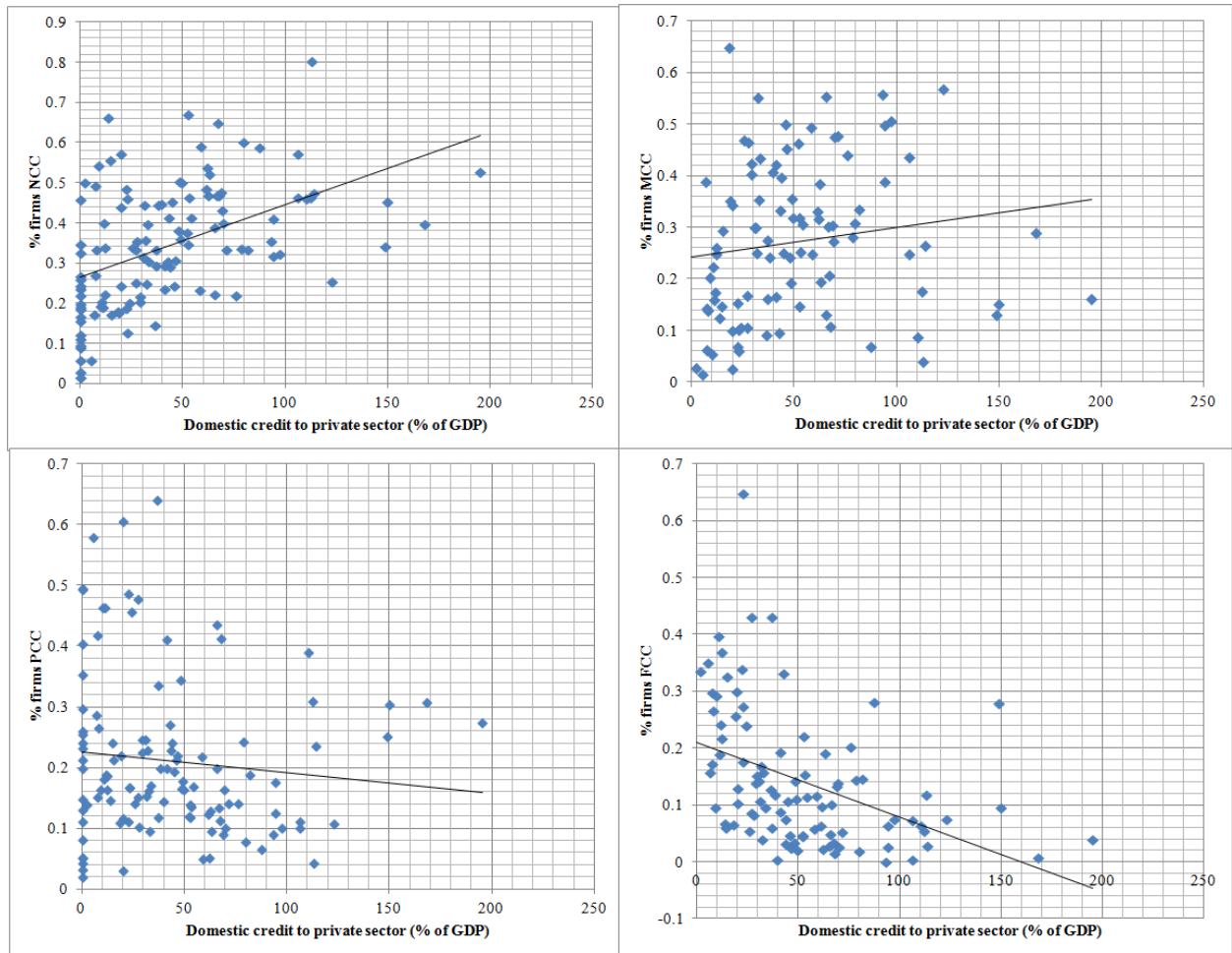
Figure 5. Credit Constrained Status across Sectors (percentage of firms)



Source: Enterprise Surveys Database

Notes: NCC stands for non-credit constrained; MCC stands for maybe credit constrained; PCC stands for partially credit constrained; FCC stands for fully credit constrained. Countries are group per region according to the World Bank classification. In the Middle East and North Africa only the Republic of Yemen and Iraq are included due to lack of data.

Figure 6. Link between Private Credit to GDP and Credit Constrained Status



Source: Enterprise Surveys Database and World Development Indicators Database.

Tables

Table 1. Sample Size Statistics

Region	N (countries)	N (firms)	Manu- facturing	Retail	Other Services	Small (<20)	Medium (20-99)	Large (>100)
AFR	40	14,434	7,232	4,878	2,324	8,943	3,943	1,548
EAP	10	4,952	3,315	687	950	2,129	1,701	1,122
ECA	29	11,983	5,522	2,828	3,633	4,589	4,295	3,099
LAC	31	14,657	8,832	2,321	3,504	5,583	5,418	3,656
MNA	2	1,233	726	128	379	888	286	59
SAR	4	1,762	717	365	680	978	560	224

Source: Enterprise Surveys database. AFR stands for Sub-Saharan Africa; EAP stands for East Asia and the Pacific, ECA stands for Eastern Europe and Central Asia; LAC stands for Latin America and the Caribbean; MNA stands for Middle East and North Africa; and SAR stands for South Asia.

Table 2. Credit Constraint Status - by Country (percentage of firms)

			NCC	MCC	PCC	FCC
AFR	Angola	2010	45.8	8.0	10.2	36.0
	Benin	2009	23.4	25.8	25.2	25.7
	Botswana	2010	56.6	18.8	15.5	9.1
	Burkina Faso	2009	14.8	28.3	22.2	34.7
	Burundi	2006	24.3	20.1	34.9	20.6
	Cameroon	2009	17.2	39.6	27.5	15.7
	Cape Verde	2009	30.8	23.6	30.2	15.5
	Central African Republic	2011	24.9	19.9	41.6	13.6
	Chad	2009	44.1	8.6	22.8	24.4
	Congo, Dem. Rep.	2010	11.0	8.7	17.8	62.5
	Congo, Rep.	2009	28.0	10.0	21.1	40.9
	Côte d'Ivoire	2009	15.0	2.3	13.7	69.0
	Eritrea	2009	84.8	2.4	4.6	8.2
	Gabon	2009	47.7	5.8	15.9	30.6
	Gambia, The	2006	33.7	10.3	47.3	8.7
	Ghana	2007	19.8	19.2	49.3	11.7
	Guinea	2006	12.2	2.9	59.6	25.2
	Guinea-Bissau	2006	6.0	1.4	58.1	34.5
	Kenya	2007	31.8	17.4	39.0	11.7
	Lesotho	2009	37.8	27.0	24.0	11.2
	Liberia	2009	37.8	5.8	24.0	32.3
	Madagascar	2009	41.2	19.7	16.6	22.6
	Malawi	2009	36.5	18.4	19.9	25.2
	Mali	2010	20.9	20.8	18.6	39.7
	Mauritania	2006	15.3	10.5	61.3	12.9
	Mauritius	2009	61.6	21.8	8.1	8.5
	Mozambique	2007	18.1	7.1	44.0	30.8
	Namibia	2006	69.7	9.5	15.7	5.1
	Niger	2009	22.1	23.3	25.0	29.6
	Nigeria	2007	25.7	1.9	58.7	13.7
	Rwanda	2006	28.5	23.1	29.4	19.0
	Senegal	2007	23.0	11.1	44.6	21.4
	Sierra Leone	2009	23.6	18.9	16.0	41.5
	South Africa	2007	49.9	14.9	30.2	5.1
Swaziland	2006	55.9	12.9	24.5	6.7	
Tanzania	2006	19.3	11.9	46.5	22.3	
Togo	2009	12.8	17.2	14.5	55.4	
Uganda	2006	29.0	13.2	38.5	19.3	
Zambia	2007	46.5	8.8	34.5	10.1	
Zimbabwe	2011	19.5	10.8	19.3	50.4	
EAP	Fiji	2009	67.9	18.4	10.0	3.7
	Indonesia	2009	24.7	11.0	12.8	51.5
	Lao PDR	2009	59.1	7.9	1.0	31.9
	Micronesia, Fed. Sts.	2009	38.4	15.6	10.9	35.0
	Philippines	2009	52.1	17.8	16.0	14.1
	Samoa	2009	30.9	45.5	21.0	2.5
	Timor-Leste	2009	49.8	1.9	1.2	47.1
	Tonga	2009	25.0	8.6	31.0	35.5
	Vanuatu	2009	59.0	24.1	5.3	11.7
	Vietnam	2009	25.7	46.9	14.4	13.0
ECA	Albania	2007	54.8	22.4	5.5	17.3

	Armenia	2009	46.7	33.6	11.8	8.0
	Azerbaijan	2009	47.8	10.1	13.9	28.2
	Belarus	2008	20.8	51.4	24.1	3.7
	Bosnia and Herzegovina	2009	27.2	46.3	17.1	9.5
	Bulgaria	2009	42.4	24.7	17.2	15.7
	Croatia	2007	38.6	42.0	13.8	5.6
	Czech Republic	2009	47.6	34.9	15.4	2.1
	Estonia	2009	48.0	38.0	12.4	1.6
	Georgia	2008	42.6	33.7	9.1	14.5
	Hungary	2009	60.5	26.1	10.7	2.7
	Kazakhstan	2009	44.3	23.3	16.6	15.9
	Kosovo	2009	71.3	10.2	14.8	3.7
	Kyrgyz Republic	2009	38.4	16.7	18.8	26.0
	Latvia	2009	48.8	27.5	18.3	5.4
	Lithuania	2009	42.7	40.6	14.8	1.9
	Macedonia, FYR	2009	39.0	30.9	26.8	3.2
	Moldova	2009	30.0	36.5	21.4	12.1
	Mongolia	2009	22.8	32.8	28.5	15.9
	Montenegro	2009	23.0	39.4	13.3	24.4
	Poland	2009	50.2	30.9	11.2	7.7
	Romania	2009	42.2	35.2	17.2	5.5
	Russian Federation	2009	41.8	35.8	15.7	6.7
	Serbia	2009	24.1	50.3	21.1	4.5
	Slovak Republic	2009	54.2	22.6	17.5	5.7
	Slovenia	2009	38.1	53.5	8.3	0.0
	Tajikistan	2008	41.9	25.9	16.6	15.6
	Turkey	2008	40.5	40.9	12.7	5.9
	Ukraine	2008	39.4	31.1	15.9	13.7
	Uzbekistan	2008	38.9	12.3	18.9	29.9
LAC	Antigua and Barbuda	2010	48.7	17.4	29.4	4.4
	Argentina	2010	17.2	28.3	34.0	20.4
	Bahamas, The	2010	49.3	10.0	34.7	5.9
	Barbados	2010	66.4	10.5	19.7	3.4
	Belize	2010	43.2	16.2	36.1	4.5
	Bolivia	2010	47.5	28.4	14.1	10.0
	Brazil	2009	30.0	52.5	10.2	7.3
	Chile	2010	32.1	56.9	8.6	2.3
	Colombia	2010	33.7	46.9	15.7	3.7
	Costa Rica	2010	45.6	18.2	13.0	23.2
	Dominica	2010	40.7	11.7	42.2	5.3
	Dominican Republic	2010	37.7	42.3	18.4	1.6
	Ecuador	2010	45.5	29.4	21.2	3.8
	El Salvador	2010	36.0	33.1	25.2	5.7
	Grenada	2010	45.4	27.3	24.6	2.7
	Guatemala	2010	37.3	29.2	15.6	17.8
	Guyana, Co-operative Republic of	2010	50.9	30.1	17.1	1.8
	Honduras	2010	38.4	22.3	16.9	22.4
	Jamaica	2010	34.1	21.0	42.4	2.4
	Mexico	2010	53.0	18.7	15.7	12.6
	Nicaragua	2010	54.9	14.5	6.8	23.8
	Panama	2010	57.1	7.9	3.5	31.5
	Paraguay	2010	32.0	51.4	10.0	6.6
	Peru	2010	23.3	53.3	12.2	11.1
	St. Kitts and Nevis	2010	38.8	28.6	31.6	1.0

	St. Lucia	2010	53.6	9.6	28.3	8.5
	St. Vincent and the Grenadines	2010	44.6	30.4	11.7	13.3
	Suriname	2010	40.8	18.1	39.2	1.8
	Trinidad and Tobago	2010	32.9	18.9	43.2	5.0
	Uruguay	2010	46.7	27.4	13.4	12.5
	Venezuela, RB	2010	45.9	30.2	9.0	14.9
MNA	Iraq	2011	36.9	2.1	38.1	22.9
	Yemen, Rep.	2010	41.7	3.9	20.6	33.8
SAR	Afghanistan	2008	50.0	2.5	14.0	33.5
	Bhutan	2009	27.8	30.8	27.3	14.0
	Nepal	2009	49.9	25.5	6.0	18.6
	Sri Lanka	2011	24.5	20.9	28.8	25.8

Source: Enterprise Surveys Database

Notes: NCC stands for non-credit constrained; MCC stands for maybe credit constrained; PCC stands for partially credit constrained; FCC stands for fully credit constrained. AFR stands for Sub-Saharan Africa; EAP stands for East Asia and the Pacific, ECA stands for Eastern Europe and Central Asia; LAC stands for Latin America and the Caribbean; MNA stands for Middle East and North Africa; and SAR stands for South Asia.

Table 3. Dependent Variable: Credit Constraint Status, Ordered Logit

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	World		Sub-Saharan Africa		East Asia and the Pacific		Eastern Europe and Central Asia		Latin America and the Caribbean		South Asia	
log(labor productivity)	-0.0929*** (0.0176)	-0.145*** (0.0229)	-0.123*** (0.0289)	-0.136*** (0.0360)	-0.0440 (0.0426)	-0.111** (0.0537)	-0.0585** (0.0275)	-0.124*** (0.0359)	-0.0583 (0.0374)	-0.110* (0.0574)	-0.243** (0.0962)	-0.344*** (0.116)
log(labor productivity) X Medium		0.125*** (0.0264)		0.0250 (0.0419)		0.172** (0.0818)		0.162*** (0.0410)		0.0899 (0.0732)		0.428*** (0.152)
log(labor productivity) X Large		0.157*** (0.0325)		0.0797 (0.0653)		0.168** (0.0826)		0.152*** (0.0464)		0.170** (0.0723)		0.190 (0.173)
Medium	-0.162*** (0.0479)	-1.446*** (0.279)	-0.500*** (0.115)	-0.747* (0.423)	-0.367* (0.200)	-2.037*** (0.779)	-0.0328 (0.0727)	-1.737*** (0.451)	-0.0548 (0.0857)	-0.993 (0.777)	-0.304 (0.248)	-4.171*** (1.335)
Large	-0.254*** (0.0594)	-1.878*** (0.349)	-0.884*** (0.166)	-1.692** (0.702)	-0.180 (0.250)	-1.831** (0.833)	-0.00270 (0.0845)	-1.583*** (0.510)	-0.210** (0.105)	-2.001*** (0.775)	-0.581** (0.278)	-2.280 (1.524)
log(age)	0.0169 (0.0312)	0.0164 (0.0312)	0.0488 (0.0737)	0.0459 (0.0737)	-0.143 (0.113)	-0.143 (0.113)	-0.0302 (0.0510)	-0.0197 (0.0509)	0.0618 (0.0526)	0.0584 (0.0526)	0.0640 (0.115)	0.100 (0.112)
Exporter	-0.000440 (0.000599)	-0.000501 (0.000598)	-7.40e-05 (0.00196)	-4.74e-05 (0.00196)	-0.00225 (0.00207)	-0.00191 (0.00205)	0.000464 (0.000843)	0.000302 (0.000846)	-0.00198* (0.00111)	-0.00202* (0.00111)	-0.00270 (0.00453)	-0.00312 (0.00498)
Female Manager	-0.000691 (0.000614)	-0.000691 (0.000612)	-0.000938 (0.00166)	-0.000918 (0.00167)	-0.00316** (0.00159)	-0.00342** (0.00158)	-0.00143 (0.000915)	-0.00162* (0.000914)	-1.72e-05 (0.00107)	8.62e-05 (0.00106)	0.00429 (0.00308)	0.00466 (0.00315)
Foreign Ownership	-0.00205** (0.000799)	-0.00220*** (0.000794)	-0.00205 (0.00144)	-0.00211 (0.00144)	-0.00688* (0.00378)	-0.00738** (0.00375)	-0.00211 (0.00138)	-0.00227* (0.00135)	-0.000801 (0.00138)	-0.000885 (0.00138)	-0.00697 (0.00527)	-0.00828 (0.00534)
cut1 Constant	-2.378*** (0.456)	-2.841*** (0.474)	-3.300*** (0.373)	-3.421*** (0.422)	-2.073*** (0.529)	-2.748*** (0.598)	-1.666*** (0.424)	-2.231*** (0.465)	-1.396** (0.641)	-1.997*** (0.772)	-2.903*** (0.846)	-3.707*** (0.994)
cut2 Constant	-1.186*** (0.455)	-1.647*** (0.472)	-2.354*** (0.368)	-2.474*** (0.417)	-0.841 (0.533)	-1.512** (0.601)	-0.203 (0.423)	-0.761* (0.462)	-0.224 (0.641)	-0.825 (0.772)	-1.862** (0.851)	-2.656*** (0.988)
cut3 Constant	0.100 (0.454)	-0.356 (0.471)	-1.266*** (0.367)	-1.386*** (0.415)	-0.119 (0.533)	-0.785 (0.598)	1.080** (0.422)	0.526 (0.460)	1.409** (0.639)	0.810 (0.770)	-0.966 (0.846)	-1.750* (0.981)
Observations	28,627	28,627	2,895	2,895	3,029	3,029	8,606	8,606	12,220	12,220	856	856

Source: Enterprise Surveys database.

Notes: NCC=1, MCC=2, PCC=3, FCC=4. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. A full set of country and stratification sectors dummy variables are included.

Table 4. Dependent Variable: Credit Constrained Dummy Variable, Logit

	(1)	(2)	(3)	(4)	(5)	(6)
	World	Sub-Saharan Africa	East Asia and the Pacific	Eastern Europe and Central Asia	Latin America and the Caribbean	South Asia
log(labor productivity)	-0.165*** (0.0188)	-0.142*** (0.0300)	-0.191*** (0.0539)	-0.225*** (0.0342)	-0.129*** (0.0397)	-0.354*** (0.102)
log(age)	-0.00491 (0.0367)	0.0780 (0.0849)	-0.160 (0.137)	-0.0336 (0.0604)	0.000847 (0.0605)	-0.00554 (0.137)
Exporter	-0.00194** (0.000907)	-0.000923 (0.00264)	-0.00473* (0.00274)	-0.000981 (0.00151)	-0.00308** (0.00135)	-0.00372 (0.00522)
Female Manager	-0.000900 (0.000716)	-0.00148 (0.00188)	-0.00694*** (0.00188)	-0.00113 (0.00114)	-9.60e-05 (0.00115)	0.00119 (0.00413)
Foreign Ownership	-4.25e-05 (0.000902)	-0.00215 (0.00152)	-0.00183 (0.00411)	0.00133 (0.00177)	0.00119 (0.00148)	-0.00218 (0.00686)
Small	0.950*** (0.0844)	1.258*** (0.192)	0.815*** (0.307)	0.849*** (0.136)	0.882*** (0.145)	1.686*** (0.348)
Medium	0.537*** (0.0832)	0.507*** (0.192)	0.174 (0.283)	0.463*** (0.131)	0.676*** (0.141)	0.974*** (0.355)
Constant	1.311*** (0.408)	0.994** (0.447)	1.471** (0.679)	1.113** (0.519)	0.385 (0.969)	1.759* (1.060)
Observations	28,627	2,895	3,029	8,606	12,220	856

Source: Enterprise Surveys Database

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. A full set of country and stratification sectors dummy variables are included.

Table 5. Dependent Variable: Access to Finance as a Constraint for Operations of the Firm

Ordinal), Ordered Logit

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	World	World	Sub-Saharan Africa	East Asia and the Pacific	Eastern Europe and Central Asia	Latin America and the Caribbean	South Asia
Credit Constraint Group	0.482*** (0.0168)	0.476*** (0.0227)	0.540*** (0.0477)	0.534*** (0.0840)	0.630*** (0.0442)	0.358*** (0.0356)	0.383*** (0.113)
log(size)		-0.0379** (0.0183)	-0.0442 (0.0442)	-0.0712 (0.0735)	0.00613 (0.0292)	-0.0782*** (0.0297)	-0.0329 (0.100)
log(age)		-0.106*** (0.0293)	-0.103 (0.0657)	0.0570 (0.121)	-0.0138 (0.0521)	-0.144*** (0.0463)	0.0146 (0.126)
Exporter		0.000187 (0.000680)	-0.00259 (0.00177)	-0.00366 (0.00228)	-0.000210 (0.000927)	0.00154 (0.00119)	-0.00973** (0.00446)
Female Manager		-0.000830 (0.000571)	-0.00131 (0.00147)	0.000634 (0.00191)	-0.000486 (0.000914)	-0.000877 (0.000898)	0.000253 (0.00294)
Foreign Ownership		-0.00333*** (0.000676)	-0.00501*** (0.00134)	0.000725 (0.00287)	-0.00271** (0.00115)	-0.00244** (0.00105)	0.00201 (0.00471)
cut1							
Constant	-1.411*** (0.158)	-2.103*** (0.302)	-2.771*** (0.400)	0.251 (0.450)	0.274 (0.451)	-0.795 (0.758)	-0.460 (0.642)
cut2							
Constant	-0.511*** (0.158)	-1.184*** (0.302)	-1.731*** (0.395)	1.321*** (0.447)	1.130** (0.452)	0.129 (0.758)	0.765 (0.634)
cut3							
Constant	0.543*** (0.159)	-0.0385 (0.302)	-0.658* (0.392)	2.618*** (0.434)	2.317*** (0.454)	1.303* (0.758)	2.078*** (0.653)
cut4							
Constant	1.917*** (0.159)	1.379*** (0.303)	0.955** (0.394)	4.759*** (0.426)	3.594*** (0.456)	2.634*** (0.761)	3.787*** (0.666)
Observations	41,346	30,509	3,821	3,239	7,653	13,800	894

Source: Enterprise Surveys Database

Notes: No obstacle=0, Minor obstacle=1, Moderate obstacle=2, Severe obstacle=3, Very severe obstacle=4. Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. A full set of country and stratification sectors dummy variables are included.

Table 6. Relative Sources of External Financing for the Purchase of Fixed Assets, by Size and Region

		equity external financing	formal external debt	semi-formal financing	informal financing
AFR	small(<20)	3.99	29.62	11.71	14.81
	medium(20-99)	3.77	34.19	12.71	7.59
	large(100 and over)	5.4	44.9	9.1	4.8
EAP	small(<20)	11.21	31.91	5.79	11.13
	medium(20-99)	10.18	36.40	5.54	9.19
	large(100 and over)	8.9	45.4	5.1	1.7
LAC	small(<20)	11.98	42.02	13.84	4.45
	medium(20-99)	8.85	42.37	14.93	3.84
	large(100 and over)	6.83	46.29	10.03	1.71
MNA	small(<20)	2.07	2.89	40.15	15.72
	medium(20-99)	4.89	52.04	11.83	2.04
	large(100 and over)	17.10	30.20	6.69	0.00
SAR	small(<20)	17.40	43.35	1.26	6.50
	medium(20-99)	14.26	46.66	1.82	4.81
	large(100 and over)	13.56	49.50	3.16	6.79

Source: Enterprise Surveys database

Table 7. Relative Sources of External Financing for Working Capital

		formal external	trade	other (informal)
AFR	small(<20)	37.64	44.51	17.85
	medium(20-99)	44.57	45.33	10.10
	large(100 and over)	55.95	39.44	4.62
EAP	small(<20)	61.11	21.09	17.80
	medium(20-99)	68.92	23.32	7.76
	large(100 and over)	74.15	23.10	2.75
LAC	small(<20)	42.27	49.00	8.73
	medium(20-99)	47.53	45.97	6.50
	large(100 and over)	52.45	43.80	3.75
MNA	small(<20)	9.88	60.71	29.41
	medium(20-99)	21.99	32.65	45.36
	large(100 and over)	20.31	76.70	3.00
SAR	small(<20)	64.44	17.83	17.73
	medium(20-99)	64.72	22.78	12.50
	large(100 and over)	74.87	21.59	3.54

Source: Enterprise Surveys database

Table 8. Comparison of Access to Finance Regressions, Logit

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Has Access to Finance		Has a Line of Credit or Loan		Has a Checking or Savings Account		Has External Finance	
log(labor productivity)	0.165*** (0.0188)	0.187*** (0.0231)	0.167*** (0.0188)	0.165*** (0.0230)	0.296*** (0.0303)	0.326*** (0.0355)	0.136*** (0.0210)	0.133*** (0.0261)
log(labor productivity) X Medium		-0.0649** (0.0296)		0.0220 (0.0309)		-0.0961** (0.0421)		0.0256 (0.0329)
log(labor productivity) X Large		-0.0616 (0.0432)		-0.0468 (0.0431)		-0.118* (0.0675)		-0.0513 (0.0413)
Medium	0.000900 (0.000716)	0.000905 (0.000716)	-0.00107 (0.000691)	-0.00107 (0.000692)	0.000574 (0.00118)	0.000613 (0.00118)	-0.00176** (0.000786)	-0.00177** (0.000786)
Large	4.25e-05 (0.000902)	0.000117 (0.000900)	-0.00441*** (0.000886)	-0.00441*** (0.000885)	9.16e-05 (0.00159)	0.000241 (0.00159)	-0.00197** (0.000971)	-0.00197** (0.000971)
log(age)	0.412*** (0.0587)	1.068*** (0.304)	0.711*** (0.0564)	0.483 (0.321)	0.743*** (0.0997)	1.662*** (0.410)	0.424*** (0.0658)	0.165 (0.336)
Exporter	0.950*** (0.0844)	1.569*** (0.451)	1.267*** (0.0829)	1.750*** (0.462)	1.223*** (0.144)	2.347*** (0.705)	0.734*** (0.0972)	1.259*** (0.438)
Female Manager	0.00491 (0.0367)	0.00616 (0.0367)	-0.000769 (0.0349)	-0.000439 (0.0349)	0.0833 (0.0642)	0.0855 (0.0645)	0.0176 (0.0395)	0.0175 (0.0395)
Foreign Ownership	0.00194** (0.000907)	0.00196** (0.000906)	0.00115 (0.000786)	0.00113 (0.000786)	0.00250 (0.00183)	0.00279 (0.00184)	0.00301*** (0.00107)	0.00298*** (0.00107)
Constant	-2.261*** (0.395)	-2.459*** (0.411)	-4.364*** (0.386)	-4.348*** (0.404)	-3.876*** (0.370)	-4.132*** (0.400)	-1.599*** (0.366)	-1.577*** (0.391)
Observations	28,627	28,627	29,527	29,527	28,556	28,556	29,551	29,551

Source: Enterprise Surveys Database

Notes: A firm has access to finance if they are of type NCC or MCC. Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. A full set of country and stratification sectors dummy variables are included.