



# Discussion paper

## **BANK FINANCING FOR SMEs: EVIDENCE ACROSS COUNTRIES AND BANK-OWNERSHIP TYPES**

By Thorsten Beck, Asli Demirgüç-Kunt,  
María Soledad Martínez Pería

September 2009

European Banking Center Discussion  
Paper No. 2009–20

This is also a  
CentER Discussion Paper No. 2009–71

**ISSN 0924-7815**



**Bank Financing for SMEs:  
Evidence Across Countries and Bank-Ownership Types**

Thorsten Beck (CentER, Department of Economics, Tilburg University and CEPR)

Asli Demirgüç-Kunt (World Bank)

María Soledad Martínez Pería (World Bank) \*

**Abstract**

Using data for 91 large banks from 45 countries, this paper finds few differences in the extent, type, and pricing of SME loans across foreign, private, and government-owned banks, even though different bank ownership types apply different lending technologies and have different organizational structures. Instead, we find significant differences across banks in developed and developing countries, driven by differences in the economic, institutional, and legal environment, as opposed to by differences in lending technologies and organizational structures. Finally, the link between lending technologies, organizational structures, and SME financing is not consistent with the conventional view that SME lending is based on “relationship lending”.

**Key Words:** Small and Medium Enterprises, Bank Ownership, Lending Technology, Access to Finance

**JEL Codes:** F23, G21, O16

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\* We would like to thank Diego Anzoategui, Subika Farazi, and Noemi Soledad Lopez for outstanding research assistance. We are also grateful to an anonymous referee, Ricardo Bebczuk and participants at the World Bank Small Business Finance conference in Washington for useful comments and suggestions. The views expressed in this paper are solely those of the authors and do not represent the opinions of The World Bank, its Executive Directors or the countries they represent.

## **I. Introduction**

The financing of small and medium-sized enterprises (SMEs) has been a subject of great interest both to policymakers and researchers because of the significance of SMEs in private sectors around the world and the perception that these firms are financially constrained. Data collected by Ayyagari, Beck, and Demirgüç-Kunt (2007) for 76 developed and developing countries indicate that, on average, SMEs account for close to 60 percent of manufacturing employment. More importantly, a number of studies using firm-level survey data have shown that SMEs not only perceive access to finance and the cost of credit to be greater obstacles than large firms, but these factors constrain SMEs (i.e., affect their performance) more than large firms (Schiffer and Weder, 2001; IADB, 2004; Beck, Demirgüç-Kunt, and Maksimovic, 2005; and Beck, Demirgüç-Kunt, Laeven, and Maksimovic, 2006).

Furthermore, in recent years a debate has emerged regarding the nature of bank financing for SMEs. Until recently, the conventional wisdom regarding SME finance was that small and domestic banks are more prone to finance SMEs because they are better suited to engage in “relationship lending”, a type of financing based primarily on “soft” information gathered by the loan officer through continuous, personalized, direct contacts with SMEs, their owners and managers, and the local community in which they operate (see Berger, Udell, and Udell, 1995; Keeton, 1995; Berger and Udell, 1996; and Strahan and Weston, 1996; Berger et al., 2001; Mian, 2006; and Sengupta, 2007). However, some recent studies (see Berger and Udell, 2006; Berger, Udell, and Udell, 2007; and de la Torre, Martinez Peria and Schmukler, 2008) have begun to dispute this conventional wisdom and proposed a new paradigm for bank SME finance, arguing that large and foreign banks, relative to other institutions, can have a comparative advantage at financing SMEs through arms-length lending technologies (e.g., asset-based

lending, factoring, leasing, fixed-asset lending, credit scoring, etc.) and centralized organizational structures instead of relationship lending.

This paper tries to inform this recent debate using newly gathered data for 91 large banks from 45 countries. Specifically, the literature discussed above proposing a new paradigm for bank SME finance suggests some hypotheses that have not been formally tested empirically, which our study tries to examine. First, these studies suggest that there should be few if any differences in the extent, type, and pricing of SME loans across bank ownership types. Second, these studies argue that there might be differences in the lending technologies and organizational structures that different bank types adopt. Third, however, because a variety of lending technologies and organizational structures might be suitable to finance SMEs, in practice, there should be no clear link between bank SME finance and the type of lending technologies and organizational structures that banks have in place, after controlling for bank and country type. In particular, it need not be the case that SME finance is based on relationship lending, which relies on the use of soft information and a decentralized organizational structure. Finally, our study also tries to examine differences in SME financing across countries.

Our paper focuses on large banks as opposed to other financial institutions because studies have shown that banks are the main source of external finance for SMEs across countries (see Beck, Demirguc-Kunt, and Maskimovic, 2008). Furthermore, we concentrate on large banks due to their systemic importance and their significance as potential SME financiers.<sup>1</sup> However, there are undoubtedly some selection biases that might arise from restricting our sample to large banks. First, we might be leaving out some domestic niche banks (for example cooperative

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<sup>1</sup> Large banks are also the ones with the most extensive branch networks and, hence, the ones most accessible to SMEs, at least in terms of location.

banks) that are especially focused on SME lending. Second, to the extent that large banks around the world are more likely to be similar to each other in terms of lending technologies and organizational structures, and given that most foreign banks in developing countries tend to be large, focusing only on large banks might downplay potential differences in lending technologies and organizational structures across bank ownership types.

Our results lend support to the recent literature advocating a new paradigm in SME finance. We find few differences in the extent, type, and pricing of SME loans across foreign, private, and government-owned banks, even though different bank ownership types apply different lending technologies and organizational structures. For example, foreign banks seem more likely to use hard information in loan assessments, grant a higher share of collateralized loans, and keep loan approval and risk management decisions centralized. Instead, we find significant differences across banks in developed and developing countries driven by differences in the economic, institutional, and legal environment, as opposed to differences in lending technologies and organizational structures. In particular, banks in developing countries provide a lower share of investment loans and charge higher fees and interest rates than those in developed countries. Finally, the link between lending technologies, organizational structures, and SME financing is not consistent with the view that SME lending is based on relationship lending, since we find that the use of hard information and credit scoring is positively linked to the share of SME lending to total lending and the SME loan approval rate, respectively.

This paper is closely linked to and builds on a number of previous International Finance Corporation (IFC) and World Bank initiatives to better understand banks' involvement with SMEs (see World Bank 2007a,b; De la Torre, Martinez Peria, and Schmukler, 2008; Stephanou and Rodriguez, 2008). However, there are some important differences between our paper and the

aforementioned studies. First, we cover many more countries than the other studies. In particular, we try to compare findings for multiple developed and developing countries. Second, our questionnaire and this study places greater emphasis on obtaining and analyzing quantitative data on the extent, type, and pricing of bank financing to SMEs than the other studies.

The rest of the paper is organized as follows. Section II describes the survey used to gather our data. Section III investigates the extent, type, and pricing of bank financing to SMEs across countries and across bank ownership types, while Section IV examines differences in some aspects of the lending technologies and organizational structures used to serve SMEs. Section V puts both issues together by looking into the link between lending technologies/organizational structures and the extent, type, and pricing of bank financing to SMEs. Section VI concludes.

## **II. The Survey**

To gather information on bank financing to SMEs around the world, we designed a survey with 56 questions on three areas: (1) documenting banks' perceptions regarding the SME segment, (2) understanding banks' business models (in particular, lending technologies and organizational structures) used to serve SME, and (3) quantifying the extent, type, and pricing of bank financing to SMEs.<sup>2</sup>

Using data from Bankscope, we identified the five largest commercial banks in terms of assets in close to 80 countries around the world and invited them to respond to our survey throughout 2007. Table 1 lists the countries that responded to our survey, shows the number of banks that participated from each country, along with the banks' combined market share. In

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<sup>2</sup> The working paper version of this paper (see Beck, Demirguc-Kunt, and Martinez Peria, 2008) provides more information regarding banks' perceptions of the SME segment, discusses the perceived drivers and obstacles to SME finance, and examines banks' views of government programs to support SME finance.

total, we obtained responses from 91 banks in 45 countries. On average, the banks that responded account for 32% of banking system loans in each country. The loan market share exceeds 30% for 24 countries. For 25 countries, we were able to get a response from the largest bank in the system. We obtained multiple bank responses for 30 countries: for 4 countries we got 4 banks to respond in each country, for 8 countries we received responses from 3 banks, and for 18 countries we obtained 2 bank responses. Only one bank responded in 15 countries.

Among the 45 countries in our sample, 38 are developing and the remaining 7 are developed. Our dataset covers 14 countries in Eastern Europe and Central Asia, 9 in Latin America and the Caribbean, 8 in Sub-Saharan Africa, 4 in South Asia, 2 in the Middle East and North Africa and 1 in East Asia. All 7 developed countries are in Western Europe.

As summarized in Table 2, our survey includes 11 banks operating in developed countries and 80 banks operating in developing countries. In terms of bank ownership types, our sample includes 17 government-owned banks (one operating in a developed economy and the remaining 16 in developing countries), 32 domestic private banks (6 in developed countries and 26 in developing countries) and 42 foreign-owned banks (4 in developed countries and 38 in developing countries).

Rather than giving banks a predetermined size classification of firms, the survey asked banks to provide their own definition of small and medium-sized firms. In particular, banks were asked to provide a range in terms of sales, assets, or employees. Most banks (85%) define SMEs in terms of annual sales. In particular, on average, banks define small firms as those with annual sales between 200,000 and 4 million U.S. dollars and medium-sized firms as those with sales

between 2 and 16 million dollars.<sup>3</sup> The average midpoint of the range for small firms is 2 million dollars and for medium-sized firms is 9 million dollars.

The definition of an SME is not very different across banks. Figures 1a and 1b plot the cumulative frequency of the midpoint for the range provided as definition for small and medium-sized firms, respectively. Close to 70 percent of banks define small and medium-sized firms as those with sales of less than 2.5 and 10 million dollars, respectively. Furthermore, the definition provided by banks is remarkably similar to the average annual sales reported by small and medium-sized firms in recent enterprise surveys conducted by The World Bank for the countries in our sample: 1.8 million dollars in the case of small firms (defined in the enterprise surveys as those with less than 20 employees) and 14.5 million dollars in the case of medium-sized firms (those with 20 to 99 employees). Since the enterprise survey samples are constructed to be representative of the universe of firms in each country, this suggests that banks are defining SMEs in a way that is consistent with the actual size distribution of firms. In other words, these statistics reduce the concern that banks' definition of SMEs refers to firms that are substantially larger than those operating in the countries in our sample.

### **III – The extent, type, and pricing of SME lending across countries and bank types**

In this section, we examine whether the extent, type, and pricing of SME lending varies across countries and by bank ownership type in a way consistent with a number of hypotheses put forward in the literature on SME finance. First, we examine whether there are marked differences in the extent and pricing of SME lending across bank ownership types. On the one hand, some country case studies suggest that foreign banks are less likely to engage in SME

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<sup>3</sup> Banks were asked to provide a range for their definition of small and medium-sized firms. The averages mentioned here refer to the lower and upper limits of the range provided by each bank.



lending because they tend to adopt arms-length lending technologies and have centralized and hierarchical organizational structures (e.g., see Mian, 2006; Gormley, 2007; Sengupta, 2007). On the other hand, recent analytical and empirical studies proposing a new paradigm for SME finance argue the opposite, while at the same time acknowledging differences in lending technologies and organizational structures between foreign and domestic banks (see Berger and Udell, 2006 and de la Torre, Martinez Peria and Schmukler, 2008).<sup>4</sup> When it comes to government-owned banks, while they are frequently charged with serving specific borrower groups, such as SMEs, studies have found that they often do not fulfill this task (See Berger et al., 2008 and Cole, 2009).

Second, we explore differences in the extent, type and pricing of SME finance across countries. The literature on private credit depth suggests that lending will be affected by the economic, institutional and legal environment in the country (see Djankov et al., 2007). Furthermore, studies using firm-level data show that these factors disproportionately affect SMEs' access to external financing and growth (see Beck et al., 2005, 2006, 2008). Here, we use supply-side data to shed further light on this question.

To examine the different hypotheses discussed above, we estimate the following regression model:

$$Y_{i,f} = \alpha_0 + \alpha_1 SE_{i,f} + \alpha_2 Foreign_i + \alpha_3 Private_i + \alpha_4 Dev_i + e_{i,f} \quad (1)$$

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<sup>4</sup> Firm-level evidence also shows that SME access to finance improves with greater foreign bank entry (see Clarke et al., 2006 and Giannetti and Ongena, 2009).

where  $i$  refers to the bank and  $f$  identifies whether the response given by each bank  $i$  pertains to small or medium-sized firms.<sup>5</sup>  $Y$  stands, alternatively, for the share of lending to SMEs (out of total lending), the percentage of loan applications approved, the share of SME loans devoted to investment, the fees charged on SME loans (as a percentage of the loan amount), and the interest rate charged on SME loans.  $SE$  identifies responses corresponding to small firm as opposed to medium-sized enterprise financing. *Foreign* is a dummy that takes the value of 1 if the bank is foreign-owned. *Private* takes the value of 1 if the bank is domestic and privately-owned. Finally, *Dev* is a dummy that equals 1 for banks that operate in developing countries. Because all these variables are percentages, we use a Tobit model to estimate equation (1).<sup>6</sup>

The results from estimating equation (1), shown in Table 3, indicate that controlling for country type (i.e., distinguishing between developed and developing countries), there are few significant differences in the extent, type, and pricing of SME lending across bank ownership types. Most notably, we find no evidence that foreign banks tend to lend less to SMEs than other banks. These results are in line with studies that discuss a new paradigm in SME lending where different bank types are able to serve SMEs using different lending technologies (see Berger and Udell, 2006; and de la Torre et al, 2008). Relative to government-owned banks, private banks approve a lower percentage of SME loan applications and foreign banks seem to charge higher fees. However, these differences are significant only at the 10 percent significance level. The results described in this paragraph remain unchanged if we focus exclusively on a sample of banks in developing countries, instead of controlling for a developing country dummy, as seen in

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<sup>5</sup> In other words, we stack bank responses so that we have at most two observations per bank: one corresponding to small firm financing and the other to medium-sized firm financing. We also test the robustness of our findings running separate regressions for small and medium enterprises.

<sup>6</sup> Results do not change in any significant way if we conduct ordinary least squares as opposed to Tobit estimations.

appendix Table A.1. Finally, we do not find any significant differences between small and medium enterprises, as the dummy for small enterprises never enters significantly.

Controlling for bank ownership types, Table 3 reveals statistically and economically significant differences in the type and pricing of SME finance across banks operating in developing versus developed countries. In particular, we find that the share of SME lending devoted to investments (i.e., long-run lending) is statistically and economically significantly lower (28 percentage points lower) among banks in developing countries. At the same time, banks in developing countries charge 0.7 percentage point higher fees and seven percentage points higher interest rates than those in developed countries. On the other hand, there are no statistically significant differences in the share of loans to SMEs or in the percentage of SME applications approved.

Table 4 shows how different features of the economic, legal, and institutional environment across countries affect the extent, type, and pricing of SME lending. Here we replace the developing country dummy with specific measures of the environment banks operate in. In particular, we examine the influence of variables that capture the cost of enforcing contracts (expressed as a percentage of the value of the claims), the cost of registering property (expressed as a percentage of the value of the property) that can be used as loan collateral, the availability of credit history information (expressed as an index between 0 and 6, with higher numbers meaning that credit history information is richer and more widely available in a country), and the degree of protection of property rights. The first three variables come from the World Bank Doing Business Indicators Database.<sup>7</sup> The measure of property rights is part of the Index of Economic Freedom reported by the Heritage Foundation. Property rights protection is

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<sup>7</sup> See <http://www.doingbusiness.org>.

an index between 0 and 100, with higher numbers indicating greater protection of property rights.

The results in Table 4 suggest that the differences between banks in developed and developing countries in terms of the extent, type and pricing of SME loans are driven by differences in the environment these banks operate in. It seems that the environment is especially important for the maturity and pricing of SME loans. Specifically, we find that in countries with a higher cost of registering collateral, banks grant a smaller share of loans to SME, devote a smaller share of those loans to investment purposes, and charge higher fees. Similarly, in countries with higher costs of enforcing contracts, banks approve a smaller share of SME loan applications and charge higher interest rates. In contrast, banks in countries with a better credit information environment approve a higher share of SME loans, devote a higher percentage of SME loans to investment purposes, and charge lower fees and interest rates. Similarly, in countries with better property rights, banks grant a higher percentage of SME loans for investment purposes, and charge lower fees and interest rates.<sup>8</sup>

In summary, Tables 3 and 4, show that it is mainly differences between banks in developing and developed countries that explain differences in the extent, type and pricing of SME lending, rather than differences in bank ownership type. Furthermore, consistent with previous studies, our results reveal that differences in SME financing between banks in developed and developing countries seem to be explained by differences in the economic, legal, and institutional environment banks operate in.

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<sup>8</sup> We do not present regression results with all variables together given the high correlation between different measures of legal, institutional and political development.

#### IV - Lending technologies and organizational structures across countries and banks

Do banks in different countries adopt different lending technologies and organizational structures to lend to SMEs? Controlling for country type, do we observe significant differences across government, private, and foreign-owned banks? Some studies suggest that foreign banks are more likely to use credit scoring models, base their loan decision making on hard information, require collateral when granting loans, and keep loan approval and risk management processes centralized (e.g., Berger et al., 2001, Mian, 2006). In order to answer these questions, we estimate equation (2):

$$Z_{i,f} = \alpha_0 + \alpha_1 SE_{i,f} + \alpha_2 Foreign_i + \alpha_3 Private_i + \alpha_4 Dev_i + e_{i,f} \quad (2)$$

where again  $i$  refers to the bank and  $f$  identifies whether the response given by each bank  $i$  pertains to small or medium-sized firms.  $Z$  captures some aspects of the lending technology and the organizational structures used in SME lending. In particular, we consider six separate dimensions: *Use of scoring* is a variable that takes the value of 0 if scoring is not used by the bank, 1 if the bank uses scoring only as an input in lending decisions, and 2 if loan approval is completely done by scoring. *Use of hard information* is a dummy that takes the value of 1 if the bank considers hard information (i.e., the financial assessment of the business, the existence of collateral or the availability of credit history information from a credit registry) as the main criterion to determine whether to grant a loan and 0 if it uses primarily soft information (such as owner characteristics, credit history with the bank, size of the loan, or purpose of the loan). *Share of SME loans secured* is the percentage of SME loans that is collateralized. *Decentralization of loan approval* is a variable that takes the value 0 if all lending decisions are made primarily at

the bank headquarters, 1 if decisions are made at headquarters and branches, 2 if decisions are made primarily at branches, and 3 if they are made only at branches. Similarly, *Decentralization of risk management* is a variable that takes the value 0 if all risk management decisions are made primarily at the bank headquarters, 1 if decisions are made at headquarters and branches, 2 if decisions are made primarily at branches, and 3 if they are made only at branches. As before, *SE* is a dummy that takes the value of 1 for responses corresponding to lending to small firms; *Foreign* takes the value of 1 if the bank is foreign owned; *Private* is 1 if the bank is domestic privately-owned; *Dev* is 1 if the bank operates in a developing country. Because the use of scoring and the extent of decentralization are discrete ordinal variables, we estimate those equations as ordered probits. In the case of the use of hard information, because the dependent variable is a discrete 0/1 variable, we run a probit model. Finally, we use a tobit model to estimate the share of secured loans made out to SMEs.

Table 5 shows that most of the differences across banks in lending technologies and organizational structures are explained by different ownership types, while there are few significant differences between banks in developing and developed countries. The only significant difference between small and medium-sized enterprises is that banks are more likely to use scoring for small than for medium-sized enterprise lending. We do not find any significant differences across countries or bank types in terms of the use of scoring as a lending technology. In terms of the type of information used for loan approval, the results in the second column of Table 5 show that foreign banks are more likely to use hard information relative to private domestic banks. While the coefficient on the developing country dummy is negative, it is not significant, so we cannot confirm that hard information is used significantly more in developed countries. The share of SME loans that is secured is higher among foreign than domestic banks

and among banks in developing relative to developed countries. Private domestic banks also have a lower share of secured SME lending than government-owned banks. As for the extent of decentralization in lending decisions and risk management, we find that decentralization is more common among government-owned banks and foreign banks tend to be least likely to decentralize loan decision making and risk management.

## **V – Linking SME finance with lending technologies and organizational structures**

To what extent do differences in lending technologies and organizational structures affect the amount, type, and pricing of SME loans? While traditionally the literature has claimed that SME lending is largely based on soft information and relationship lending, studies proposing a new paradigm argue that different lending technologies can be applied to SME finance (see Berger and Udell, 2006 and de la Torre et al., 2008). At the same time, some studies have shown that credit scoring can mitigate the need for relationship lending in SME finance (Frame et al., 2004 and Berger, et al., 2005). Finally, studies such as Stein (2002), Mian (2006), and Liberti and Mian (2009) have argued that more centralized and hierarchical organizational structures can have a negative impact on lending to opaque borrowers, such as SMEs.

In order to test the effect of SME lending technologies and organizational structures on the extent, type and pricing of SME lending, we estimate the model in equation (3), which combines those described in equations (1) and (2) above. Thus, we assess the marginal impact of lending technologies and organizational structures (captured by  $Z$ ) on the extent, type and pricing of SME finance (as measured by  $Y$ ), after controlling for bank ownership (*Foreign* and *Private*) and country types (*Dev*).

$$Y_{i,f} = \alpha_0 + \alpha_1 SE_{i,f} + \alpha_2 Foreign_i + \alpha_3 Private_i + \alpha_4 Dev_i + Z_{i,f} + e_{i,f} \quad (3)$$

The results in Table 6 suggest that the link between lending technologies, organizational structures, and SME financing is not consistent with the notion that SME financing is based on relationship lending, since we find that the use of hard information is positively associated with a higher percentage of SME loans (albeit at 10 percent significance level) and the use of credit scoring is positively correlated with the percentage of SME loans approved.<sup>9</sup> The share of loans that is secured does not seem to be related to any of the dependent variables. Finally, the extent of decentralization in loan approvals appears to be negatively associated with interest rates, but we find no significant association between SME finance and the degree of decentralization in risk management.

## VI- Conclusions

This paper used data from a survey of large banks around the world to study how SME financing by large banks differs across countries and bank ownership types and to investigate the link between lending technologies/organizational structures and SME finance. Our data yield a number of interesting findings. First, we find that, relative to banks in developed countries, banks in developing countries provide a lower share of investment loans and charge higher fees and interest rates. Second, differences across countries seem to be driven by differences in the economic, institutional, and legal environment. Third, even though we find differences in the lending technologies and organizational structures used across bank ownership types, we find few significant differences in the extent, type and pricing of SME. Finally, controlling for bank

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<sup>9</sup> If we exclude the bank ownership dummies, we find stronger evidence against the notion that SME financing is based on relationship lending, since the variable use of hard information becomes positive and significant at the 5 percent and the findings on credit scoring remain the same. These results are available upon request.



characteristics and bank ownership types, we find that the link between lending technologies, organizational structures, and SME lending is not consistent with the notion that SME finance is based on relationship lending, a type of financing rooted in the use of soft information and decentralized organizational structures. Overall, our findings are consistent with studies that propose a new paradigm for SME lending, where different bank types, applying different lending technologies and organizational structures can play an important role in financing SMEs (see Berger and Udell, 2006 and de la Torre et al., 2008).

While a large literature has used firm-level data to analyze differences in access to finance by firm size, this paper is a first step in better understanding SME financing from the supply side using cross-country data. Going forward, it would be interesting to expand the number of banks and countries surveyed in order to see if we can corroborate our findings in a larger sample, especially one that includes small as well as large banks.

## References

- Ayyagari, M., Beck, T., and Demirgüç-Kunt, A., 2007. Small and Medium Enterprises across the Globe. *Small Business Economics* 29, 415-434.
- Beck, T. and Demirgüç-Kunt, A., 2006. Small and Medium-Size Enterprises: Access to Finance as a Growth Constraint. *Journal of Banking and Finance* 30, 2931–2943.
- Beck, T., Demirgüç-Kunt, A., Laeven, L., and Maksimovic, V., 2006. The Determinants of Financing Obstacles. *Journal of International Money and Finance* 25, 932-952.
- Beck, T., Demirgüç-Kunt, A., and Maksimovic, V., 2005. Financial and Legal Constraints to Firm Growth: Does Firm Size Matter? *Journal of Finance* 60, 137-177.
- Beck, T., Demirgüç-Kunt, A., and Maksimovic, V., 2008. Financing Patterns around the World: Are Small Firms Different? *Journal of Financial Economics* 89, 467-87.
- Beck, T, Demirgüç-Kunt, A., and Martinez Peria, M.S., 2008. Bank Financing for SMEs Around the World: Drivers, Obstacles, Business Models, and Lending Practices. World Bank Policy Research Working Paper 4785.
- Berger, A.N., Frame, W.S. and Miller, N.H., 2005. Credit Scoring and the Availability, Price, and Risk of Small Business Credit, *Journal of Money, Credit, and Banking* 37, 191–222.
- Berger, A. N., Kayshap, A. K., and Scalise, J. M., 1995. The Transformation of the U.S. Banking Industry: What a Long Strange Trip It's Been. *Brookings Papers on Economic Activity* 2, 155-219.
- Berger, A., Klapper, L., Udell, G., 2001. The Ability of Banks to Lend to Informationally Opaque Small Businesses. *Journal of Banking Finance* 25, 2127-2167.
- Berger, A., Klapper, L., Martinez Peria, M.S., Zaidi, R., 2008. Bank Ownership Type and Banking Relationships, *Journal of Financial Intermediation* 17(1), 37-62.
- Berger, A. N., Rosen, R. J., and Udell G. F., 2007. Does Market Size Structure Affect Competition? The Case of Small Business Lending. *Journal of Banking and Finance* 31, 11-33.
- Berger, A. N. and Udell, G. F., 1996. Universal Banking and the Future of Small Business Lending. In: Saunders, A., Walter I., (Eds.), *Financial System Design: The Case for Universal Banking*. Irwin (Richard D), Burr Ridge, IL, 559-627.

- Berger, A. N. and Udell, G. F., 2006. A More Complete Conceptual Framework for SME Finance. *Journal of Banking and Finance* 30, 2945-2966.
- Clarke, G., Cull, R., and Martinez Peria, M.S., 2006. Foreign Bank Participation and Access to Credit Across Firms in Developing Countries. *Journal of Comparative Economics* 34, 774-795.
- Cole, S., 2009. Fixing Market Failures or Fixing Elections? Agricultural Credit in India. *American Economic Journal: Applied Economics* 1, 219-250.
- De la Torre, A., Martinez Peria, M.S. and Schmukler, S., 2008. Bank Involvement with SMEs: Beyond Relationship Lending. World Bank Policy Research Working Paper 4649.
- Djankov, S., McLiesh, C., and Shleifer, A., 2007. Private Credit in 129 Countries. *Journal of Financial Economics* 84, 299-329.
- Frame, W.S., Padhi, M. and Woosley, L., 2004. Credit Scoring and the Availability of Small Business Credit in Low- and Moderate Income Areas, *Financial Review* 39, 34–54.
- Giannetti, M. and Ongena, S., 2009. Financial Integration and Entrepreneurial Activity: Evidence from Foreign Bank Entry in Emerging Markets, *Review of Finance*, 13, 181-223.
- IADB, 2004. *Unlocking Credit: The Quest for Deep and Stable Lending*. The Johns Hopkins University Press.
- IFC, 2007. Benchmarking SME Banking Practices in OECD and Emerging Markets Mimeo.
- Keeton, W., 1995. Multi-Office Bank Lending to Small Businesses: Some New Evidence. Federal Reserve Bank of Kansas City *Economic Review* 80, 45-57.
- Liberti, J.M., and Mian, A., 2009. Estimating the Effect of Hierarchies on Information Use. *Review of Financial Studies*. Forthcoming.
- Mian, A., 2006. Distance Constraints: The Limits of Foreign Lending in Poor Economies. *Journal of Finance* 61(3), 1465-1505.
- Schiffer, M. and Weder, B., 2001. Firm Size and the Business Environment: Worldwide Survey Results. International Finance Corporation Discussion Paper 43.
- Sengupta, R., 2007. Foreign Entry and Bank Competition, *Journal of Financial Economics*, 84(2), 502-528.
- Stein, J., 2002. Information Production and Capital Allocation: Decentralized vs. Hierarchical Firms, *Journal of Finance* 57, 1891–1921.

- Stephanou, C. and Rodriguez, C., 2008. Bank Financing to Small- and Medium-Sized Enterprises (SMEs) in Colombia. World Bank Policy Research Working Paper 4481.
- Stiglitz, J., 2005. Finance for Development. In: Ayogu, M., Ross, D. (Eds.), *Development Dilemmas: The Methods and Political Ethics of Growth Policy*. Routledge, Taylor & Francis Inc. Great Britain.
- Strahan, P. E. and Weston, J., 1996. Small Business Lending and Bank Consolidation: Is There Cause for Concern? *Current Issues in Economics and Finance*, Federal Reserve Bank of New York, 2:1-6.
- World Bank, 2007a. Bank Financing to Small and Medium Enterprises: Survey Results from Argentina and Chile. Mimeo.
- World Bank, 2007b. Bank Lending to Small and Medium Enterprises: The Republic of Serbia. Mimeo.

**Table 1: Characteristics of survey respondents**

Table shows the countries in our sample, the number of banks that responded from each country (including whether the largest bank has participated in the survey), and the market share of respondents relative to total loans.

Country	No. of bank respondents	Has largest bank responded?	Market share covered
Albania	3	Yes	59%
Armenia	3	Yes	35%
Austria	1		1%
Belarus	1	Yes	48%
Belgium	1		10%
Bosnia	2	Yes	38%
Brazil	1		9%
Bulgaria	2	Yes	32%
Chile	1		19%
Colombia	3	Yes	48%
Costa Rica	2	Yes	31%
Croatia	2		22%
Ecuador	1	Yes	38%
El Salvador	1		26%
Ethiopia	1		16%
Finland	1	Yes	38%
Georgia	3		47%
Greece	2	Yes	33%
Honduras	2		29%
Hungary	2	Yes	35%
India	4	Yes	41%
Indonesia	2		20%
Jordan	1		6%
Kenya	2	Yes	27%
Lebanon	3	Yes	37%
Lithuania	3		48%
Malawi	2	Yes	65%
Malta	3	Yes	71%
Mexico	2	Yes	23%
Moldova	2		35%
Nepal	1		8%
Pakistan	1	Yes	14%
Poland	1		8%
Sierra Leone	2		21%
Slovakia	2	Yes	40%
Slovenia	4	Yes	61%
South Africa	2	Yes	11%
Sri Lanka	4	Yes	69%
Swaziland	1		35%
Sweden	1		27%
Switzerland	2	Yes	40%
Turkey	3	Yes	24%
Uruguay	2	Yes	46%
Zambia	2		28%
Zimbabwe	4		25%

**Table 2: Number of banks in the sample by country and bank ownership type**

Country\ Ownership type	Developed	Developing	Total
Foreign	4	38	32
Private domestic	6	26	42
Government	1	16	17
Total	11	80	91

**Table 3: The extent, type, and pricing of SME lending across countries and bank ownership types**

	Share of SME lending (%)	SME Loan approval (%)	Share of SME loans for investments (%)	Fee (% of SME loan amount)	Interest rate on SME loan (%)
Developing	0.802 [0.47]	3.2 [0.28]	-28.113 [4.11]***	0.712 [4.42]***	6.899 [8.80]***
Small firm lending	-2.227 [1.37]	-2.701 [0.56]	-1.983 [0.44]	0.149 [0.81]	1.026 [1.08]
Foreign bank	0.964 [0.42]	-8.009 [1.64]	-4.674 [0.73]	0.322 [1.84]*	-0.41 [0.38]
Private bank	-0.982 [0.41]	-10.217 [1.93]*	-7.897 [1.19]	0.396 [1.48]	1.635 [1.40]
Constant	8.707 [3.65]***	84.086 [7.31]***	76.737 [9.75]***	-0.029 [0.13]	3.688 [3.26]***
Observations	94	77	110	136	127
Pseudo R-squared	0.01	0	0.02	0.02	0.03
F-stat: Foreign=Private	1.1	0.16	0.43	0.09	3.33
P-value: Foreign=Private	0.3	0.69	0.52	0.76	0.07

Robust t-statistics are in brackets. \*, \*\*, \*\*\* denotes significance at 10, 5, and 1 percent significance levels, respectively.

**Table 4: The impact of the economic, institutional, and legal environment on the extent, type, and pricing of SME lending**

	Share of SME lending (%)				SME Loan approval (%)				Share of SME loans for invest. (%)			
Small firm lending	-1.833	-2.199	-1.713	-1.875	-0.296	-2.761	-0.067	0.129	-3.006	-2.914	-2.939	-3.028
	[1.13]	[1.35]	[1.02]	[1.09]	[0.06]	[0.59]	[0.01]	[0.03]	[0.64]	[0.65]	[0.61]	[0.61]
Foreign bank	1.384	0.878	1.651	1.616	-6.997	-8.349	-7.112	-6.813	-8.18	-2.275	-5.637	-6.29
	[0.57]	[0.38]	[0.68]	[0.66]	[1.43]	[1.70]*	[1.58]	[1.34]	[1.26]	[0.35]	[0.88]	[0.90]
Private bank	-1.638	-1.092	-0.385	-0.654	-10.429	-9.527	-12.268	-12.988	-2.472	-2.177	-4.628	-4.148
	[0.65]	[0.46]	[0.16]	[0.25]	[2.05]**	[2.03]**	[2.57]**	[2.53]**	[0.36]	[0.33]	[0.69]	[0.56]
Cost of property registration	-0.491				-0.506				-1.768			
	[2.68]***				[1.16]				[3.34]***			
Property Rights		-0.014				0.231				0.501		
		[0.38]				[1.64]				[4.41]***		
Credit info. index			-0.58				2.773				3.446	
			[1.53]				[2.51]**				[2.61]**	
Cost of contract enforcement				-0.001				-0.251				-0.042
				[0.03]				[3.67]***				[0.71]
Constant	11.09	10.122	10.594	8.754	89.95	76.801	79.045	96.968	60.417	27.557	39.399	51.711
	[4.75]***	[3.78]***	[4.42]***	[3.20]***	[17.86]***	[8.98]***	[16.32]***	[18.01]***	[9.39]***	[3.22]***	[5.51]***	[7.42]***
Observations	90	94	90	90	74	77	74	74	104	110	104	104
Pseudo R-squared	0.01	0.01	0.01	0	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0
F-stat: Foreign=Private	3.24	1.14	1.36	1.59	0.42	0.05	1.07	1.72	1.13	0	0.04	0.15
P-value: Foreign=Private	0.08	0.29	0.25	0.21	0.52	0.82	0.3	0.19	0.29	0.98	0.85	0.7

Robust t statistics in brackets. \*, \*\*, \*\*\* denotes significance at 10, 5, and 1 percent significance levels, respectively.



**Table 4: The impact of the economic, institutional, and legal environment on the extent, type, and pricing of SME lending (continued)**

	Fee (% of SME loan amount)				Interest rate on SME loan(%)			
Small firm lending	0.159	0.173	0.194	0.177	1.066	1.174	1.074	1.157
	[0.97]	[0.98]	[1.07]	[0.91]	[1.01]	[1.23]	[1.12]	[1.20]
Foreign bank	0.383	0.247	0.324	0.338	-0.443	-1.417	-0.548	-0.561
	[2.18]**	[1.33]	[1.76]*	[1.78]*	[0.36]	[1.40]	[0.48]	[0.52]
Private bank	0.186	0.294	0.354	0.325	0.825	0.491	1.236	0.457
	[0.78]	[1.17]	[1.39]	[1.18]	[0.66]	[0.45]	[0.99]	[0.38]
Cost of property registration	0.106				0.138			
	[5.73]***				[0.93]			
Property Rights		-0.016				-0.113		
		[3.79]***				[6.56]***		
Credit info. index			-0.193				-1.316	
			[4.08]***				[4.57]***	
Cost of contract enforcement				0.002				0.075
				[1.31]				[3.84]***
Constant	0.123	1.372	1.241	0.572	9.51	15.636	14.7	7.577
	[0.63]	[4.79]***	[5.37]***	[2.76]***	[6.99]***	[13.00]***	[10.42]***	[6.29]***
Observations	130	136	130	130	123	127	123	123
Pseudo R-squared	0.12	0.04	0.05	0.01	0	0.03	0.03	0.03
F-stat: Foreign=Private	0.93	0.04	0.02	0	1.01	2.74	2.62	0.8
P-value: Foreign=Private	0.34	0.84	0.9	0.96	0.32	0.1	0.11	0.37

Robust t statistics in brackets. \*, \*\*, \*\*\* denotes significance at 10, 5, and 1 percent significance levels, respectively.

**Table 5: Lending technologies and organizational structures across countries and bank ownership types**

	Use of scoring	Use of hard information	Share of SME loans secured (%)	Decentralization of loan approvals	Decentralization of risk management
Developing	-0.007 [0.03]	-0.248 [0.79]	27.4 [2.82]***	-0.459 [1.58]	-0.613 [1.80]*
Small firm lending	0.364 [2.00]**	-0.056 [0.27]	-2.291 [0.35]	0.248 [1.47]	0.206 [1.13]
Foreign bank	0.003 [0.01]	0.363 [1.25]	3.727 [0.45]	-1.205 [4.89]***	-0.981 [3.65]***
Private bank	0.105 [0.43]	-0.399 [1.36]	-17.033 [2.02]**	-0.838 [3.72]***	-0.229 [0.96]
Observations	167	164	137	173	168
Pseudo R-squared	0.01	0.05	0.02	0.08	0.08
Chi <sup>2</sup> test: Foreign =Private	0.26	10.79	7.18	3.55	13.81
P-value: Foreign =Private	0.61	0	0.01	0.06	0

Robust z statistics in brackets. \*, \*\*, \*\*\* denotes significance at 10, 5, and 1percent significance levels, respectively.

**Table 6: The impact of lending technologies and organizational structures on the extent, size and pricing of lending to SMEs**

	Share of SME lending (%)					SME loan approval (%)					Share of SME loans for investments (%)				
Developing	0.678	1.001	0.548	0.81	1.34	5.692	4.435	25.031	2.542	5.22	-27.768	-28.849	-26.084	-27.777	-27.375
	[0.39]	[0.57]	[0.22]	[0.46]	[0.89]	[0.48]	[0.40]	[1.01]	[0.19]	[0.47]	[3.84]***	[4.17]***	[2.93]***	[4.00]***	[3.61]***
Small firm lending	-1.949	-1.799	-1.701	-2.504	-1.748	-0.904	-4.709	-0.444	-3.058	-1.895	-0.224	-1.914	-2.116	-2.15	-2.886
	[1.18]	[1.02]	[0.92]	[1.51]	[1.05]	[0.18]	[1.01]	[0.09]	[0.68]	[0.42]	[0.05]	[0.41]	[0.43]	[0.47]	[0.61]
Foreign bank	1.312	1.164	1.645	1.774	0.649	-13.657	-8.648	-11.418	-7.08	-12.76	-8.459	-6.492	-2.783	-3.632	-2.095
	[0.54]	[0.49]	[0.66]	[0.82]	[0.25]	[2.52]**	[1.85]*	[1.90]*	[1.14]	[1.96]*	[1.41]	[1.01]	[0.42]	[0.51]	[0.30]
Private bank	-0.779	-1.047	-1.05	-0.445	-0.372	-12.202	-10.296	-8.981	-9.393	-13.745	-10.485	-7.837	-6.525	-7.607	-7.494
	[0.33]	[0.43]	[0.43]	[0.20]	[0.16]	[1.93]*	[2.02]**	[1.52]	[1.67]*	[2.36]**	[1.69]*	[1.19]	[0.99]	[1.08]	[1.12]
Use of hard information	2.915					7.412					5.208				
	[1.69]*					[1.04]					[1.03]				
Use of scoring		-1.396					7.266					3.043			
		[1.08]					[2.02]**					[0.79]			
Share of SME loans secured (%)			0.005					0.171					-0.027		
			[0.17]					[1.16]					[0.31]		
Dec. of loan approvals				0.968					1.291					0.434	
				[0.90]					[0.30]					[0.12]	
Dec. of risk management					-1.531					-6.224					3.241
					[1.28]					[1.24]					[0.92]
Constant	6.918	9.201	8.238	7.547	8.688	79.135	79.93	47.509	83.079	89.226	75.678	75.593	75.474	75.903	73.644
	[2.57]**	[4.13]***	[2.78]***	[3.42]***	[3.20]***	[5.41]***	[6.97]***	[1.99]*	[7.85]***	[9.12]***	[9.63]***	[9.36]***	[7.49]***	[7.26]***	[6.76]***
Observations	89	86	80	94	93	71	74	65	77	77	103	102	99	108	107
Pseudo R-sq	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0	0.01	0.02	0.02	0.01	0.02	0.02
F-stat: Foreign=Private	1.12	1.26	1.53	1.36	0.25	0.04	0.08	0.15	0.17	0.03	0.15	0.07	0.49	0.62	1.02
P-value	0.29	0.26	0.22	0.25	0.62	0.84	0.77	0.7	0.69	0.86	0.7	0.79	0.48	0.43	0.32

Robust z statistics in brackets. \*, \*\*, \*\*\* denotes significance at 10, 5, and 1 percent significance levels, respectively.

**Table 6: The impact of lending technologies and organizational setup on the extent, size and pricing of lending to SMEs (continued)**

	Fee (% of loan amount)					Interest rate (% of loan amount)				
Developing	0.658	0.669	0.486	0.689	0.851	6.798	6.778	7.351	6.472	7.212
	[4.01]***	[4.03]***	[2.01]**	[3.94]***	[4.52]***	[8.52]***	[8.44]***	[6.64]***	[8.02]***	[7.83]***
Small firm lending	0.116	0.2	0.138	0.172	0.131	0.879	1.572	0.988	1.329	1.173
	[0.63]	[1.05]	[0.67]	[0.88]	[0.69]	[0.90]	[1.65]	[0.91]	[1.40]	[1.19]
Foreign bank	0.371	0.272	0.333	0.264	0.439	-0.898	-0.944	-1.009	-1.82	-0.609
	[2.06]**	[1.58]	[1.69]*	[1.34]	[2.36]**	[0.76]	[0.89]	[0.79]	[1.60]	[0.50]
Private bank	0.379	0.34	0.461	0.329	0.422	1.84	1.563	1.548	0.445	1.715
	[1.36]	[1.24]	[1.69]*	[1.15]	[1.56]	[1.46]	[1.35]	[1.26]	[0.36]	[1.36]
Use of hard information	0.045					1.6				
	[0.20]					[1.71]*				
Use of scoring		-0.244					-1.059			
		[1.77]*					[1.45]			
Share of SME loans			0.0008					0.026		
secured (%)			[1.35]					[1.12]		
Dec. of loan approvals				-0.102					-1.798	
				[0.75]					[2.88]***	
Dec. of risk management					0.166					-0.733
					[1.37]					[1.05]
Constant	-0.057	0.153	-0.457	0.132	-0.29	2.842	4.247	1.7	6.459	3.808
	[0.20]	[0.62]	[1.03]	[0.43]	[1.01]	[2.01]**	[3.67]***	[0.93]	[4.55]***	[2.60]**
Observations	128	128	119	134	133	121	120	107	125	122
Pseudo R-sq	0.02	0.03	0.02	0.02	0.02	0.03	0.04	0.03	0.04	0.03
F-stat: Foreign=Private	0	0.07	0.21	0.07	0.01	5.08	4.89	3.24	4.25	3.88
P-value	0.98	0.79	0.65	0.79	0.94	0.03	0.03	0.07	0.04	0.05

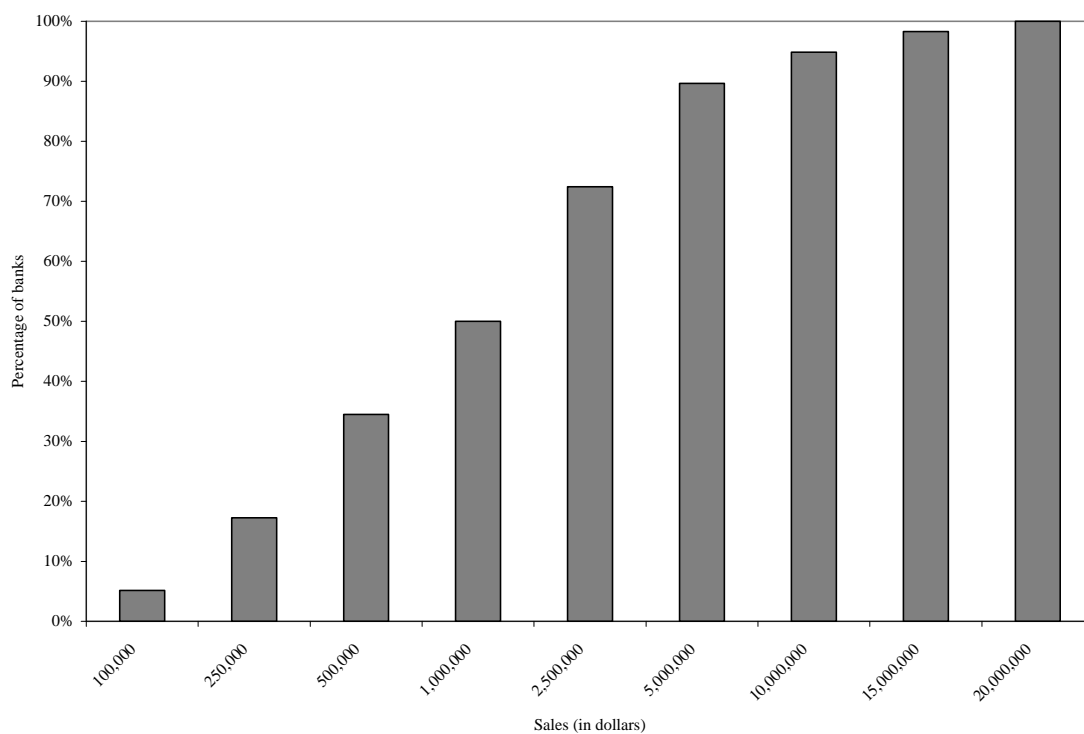
Robust z statistics in brackets. \*, \*\*, \*\*\* denotes significance at 10, 5, and 1 percent significance levels, respectively.

**Table A1. The extent, type, and pricing of SME lending across bank ownership types in developing countries.**

	Share of SME lending (%)	SME Loan approval (%)	Share of SME loans for investments (%)	Fee (% of SME loan amount)	Interest rate on SME loan (%)
Small firm lending	-1.723 [0.94]	-1.391 [0.29]	-2.699 [0.56]	0.151 [0.74]	1.106 [1.03]
Foreign bank	1.629 [0.67]	-5.922 [1.24]	-6.091 [0.86]	0.356 [1.85]*	-0.272 [0.23]
Private bank	0.155 [0.06]	-12.158 [2.28]**	-8.602 [1.18]	0.41 [1.37]	2.052 [1.56]
Constant	8.635 [4.18]***	86.559 [20.91]***	49.919 [8.00]***	0.656 [3.29]***	10.342 [10.17]***
Observations	82	69	97	122	111
Pseudo R-sq	0.00	0.01	0.00	0.01	0.01
F-stat: Foreign=Private	0.49	1.34	0.22	0.04	3.26
P-value	0.48	0.25	0.64	0.85	0.07

Robust t-statistics are in brackets. \*, \*\*, \*\*\* denotes significance at 10, 5, and 1 percent significance levels, respectively.

**Figure 1a**  
**Banks' definition of small enterprises**  
 (% of banks that define small enterprises as firms with sales less than amount on horizontal axis)



**Figure 1b**  
**Banks' definition of medium-sized enterprises**  
 (% of banks that define medium-sized enterprises as firms with sales less than amount on horizontal axis)

