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WHAT DETERMINES THE ACCESS TO FINANCE OF SMES? EVIDENCE FROM THE EGYPTIAN CASE

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Abstract

Financial services seem to be underutilized by small and medium enterprises (SMEs); only 50 percent deal with banks and benefit from an improved access to finance. In addition, these firms still face several constraints in terms of access to finance. Using an extensive census that has been recently conducted by the Egyptian Banking Institute, we try to examine the determinants of access to finance for SMEs in Egypt as well as the determinants of having banking problems. The main findings of this paper show that legal form, economic activity, labor, capital, and sales turnover have a significant effect on having banking facilities. In addition, we find that the smaller the firm, the higher the probability of having banking problems. We also run a battery of sensitivity analysis tests and still find that the results remain robust.

JEL Classifications: D2, G21, P42.

Keywords: SMEs, Access to Finance, Egypt.

ملخص

يبدو أن الخدمات المالية لم تستغل استغلالا كاملا من قبل المؤسسات الصغيرة والمتوسطة؛ فقد تتعامل نسبة 50 في المائة من المؤسسات الصغيرة والمتوسطة فقط مع البنوك وتستفيد من تحسين فرص الحصول على تمويل. وبالإضافة إلى ذلك، فإن هذه الشركات لا تزال تواجه العديد من القيود في شروط الحصول على التمويل. باستخدام التعداد واسع النطاق الذي أجري مؤخرا من قبل المعهد المصرفي المصري، نحاول دراسة محددات الحصول على التمويل للشركات الصغيرة والمتوسطة في مصر، فضلا عن المحددات من وجود المشاكل المصرفية. النتائج الرئيسية لهذه الورقة تشير الى أن الشكل القانوني والنشاط الاقتصادي والعمالة ورأس المال، وحجم المبيعات هى عوامل يكون لها تأثير كبير على وجود تسهيلات مصرفية. وبالإضافة إلى ذلك، نجد أنه كلما صغرت الشركة، كلما ارتفع احتمال وجود مشاكل مصرفية. نقوم أيضا بتشغيل مجموعة من الاختبارات وتحليل الحساسية والتى تصل بدورها الى تأكيد نفس النتائج بقوة.

1. Introduction

Small and medium sized enterprises (SMEs) have usually been perceived as the dynamic force for sustained economic growth and job creation in developing countries. From a social viewpoint, SMEs secure livelihood for a large and ever expanding segment of the population. In Egypt, there are around 2.5 million SMEs representing 75% of the total employed workforce and 99% of non-agricultural private sector establishments. Despite their importance, they are still facing several problems, and in particular access to finance, which is a typical challenge in developing countries. In fact, 70% of non-OECD countries report a financing gap for SMEs, compared to 30% for OECD countries. Therefore, reducing this financing gap in low-income countries should raise the incentive to create SMEs and consequently improve economic growth and increase job creation. In addition, improving SMEs' access to finance is significantly important in promoting entrepreneurship and innovation.

In Egypt, despite banking reforms that have been launched in 2004, the ability of SMEs to more access suitable and sufficient means of finance has always been considered a major obstacle facing many SMEs (Egyptian Banking Institute, 2010). In addition, financial services seem to be underutilized by SMEs, where only 50 percent deal with banks and benefit from an improved access to finance. It is worth mentioning that from a supply point of view, the majority of banks are becoming more risk averse towards SMEs, especially due to a wide spread notion that financing SMEs is risky and that serving them requires high transaction costs which makes them less profitable than larger companies.

For this reason, and in order to be able to extend the financial services provided to this segment and increase the benefits of the banking reform, establishing a database for SMEs to serve bankers as well as policy makers seems to be an important priority. Hence, the Central Bank of Egypt (CBE) launched in December 2008 an initiative, as an integral part of the Second Phase of the Banking Sector Reform Program (2008-2011), to enhance SMEs access to finance and banking services. In this respect, and due to the importance of the availability of timely and accurate information, the CBE and the Egyptian Banking Institute (EBI) commissioned the Central Agency for Public Mobilization and Statistics (CAPMAS) to conduct a nation-wide census on SMEs, fully focusing on value added formal economic activities on a full census basis. The Center of Surveys and Statistical Applications (CSSA) at the Faculty of Economics and Political Science, Cairo University undertook the project's on-site quality control. This survey includes quantitative and qualitative characteristics of each company or unit. This includes identifying the number of employees, legal status, economic activity, level of exports, sales turnover, invested capital and the problems facing each company in dealing with banks, etc.

Numerous studies have discussed that SMEs are financially more constrained than larger firms in both developed and developing countries. For example, Calomiris and Hubbard (1990) noted that when the company is smaller, the restrictions on credit are greater. Furthermore, according to Beck et al. (2006), small firms consistently report more financing obstacles than medium and large enterprises. Smaller, younger and domestic—as opposed to foreign-owned—enterprises report more financing obstacles even after controlling for other firm characteristics. The probability that a small firm lists financing as a major obstacle (as opposed to moderate, minor or no obstacle) is 39% compared to 36% for medium-sized firms and 32% for large firms. Woordeckers and Steijvers (2006) conclude that the characteristics of firm are more likely to be more important determinants of collateral/commitment protection than loan and lender characteristics. Small firms mainly borrow funds through the informal financial market, while larger firms obtain funds from the formal market. In some cases, larger firms access credit through the formal market and then transfer the loan to smaller firms at a higher interest rate (Tang 1995). In addition, Malesky and Taussign (2008) conclude that Vietnamese enterprises were connected with formal institutions, but such a connection has been costly, inefficient and wasteful. In Egypt, Kabbani and Kalhoefer (2011) discussed the role of venture capital as a possible source of financing. They found that access to finance is still a significant bottleneck for Egyptian SMEs and that venture capital financing could help to close this financial gap. Yet,

examining the determinants of access to finance in Egypt had never been investigated empirically.

Using an extensive census that has been recently conducted by the EBI, we try to examine the determinants of the access to finance for SMEs in Egypt as well as the determinants of having banking problems. The main findings of this paper show that legal form, economic activity, labor, capital, and sales turnover have a significant effect on having banking facilities. In addition, the smaller the firm, the higher the probability of having banking problems. We run a battery of sensitivity analysis tests and still find that the results remain robust.

The rest of the paper is organized as follows. Section 2 presents some stylized facts regarding the banking sector reform in Egypt. Section 3 discusses the data and the questionnaire. Section 4 presents the characteristics of Egyptian SMEs using the collected firm-level data. Section 5 presents the econometric specifications and section 6 shows the empirical results. Finally, section 7 concludes and presents some policy implications.

2. Banking Reform in Egypt

In 2004, the CBE adopted a reform program with the aim of building a solid banking infrastructure and more efficient and sound banking sector. Although the global financial crisis led to many negative repercussions on several world economies, the Egyptian banking sector weathered the negative repercussions due to the successful reform program that was launched in 2004. Indeed, as mentioned by the World Bank (2010) "*the Egyptian financial sector is the most far reaching, substantive and comprehensive drive toward financial sector strengthening so far in Egypt - and indeed in any other country of the Middle East and North Africa region*".

This banking reform was implemented in two phases. The first phase had three main pillars: first, strengthening the legal, regulatory and supervisory framework; second, consolidating the banking sector and increasing private participation within banking assets and finally the financial, operational and institutional restructuring of public sector banks. Those reforms led to robust, solid and well capitalized banks (see table 1). As banks decreased from 61 to 39, assets increased by 88% to reach approximately LE1.1 billion in 2008 up from approximately LE0.57 billion in 2003, total deposits increased by 85% over the same period and capital adequacy ratio increased from 12.2% to 15.1%. In addition, the flow of new capital through mergers and acquisitions in the banking system reached LE24.24 billion in 2008.

In addition, as shown in table 2, this banking reform plan reduced the number of operating banks in Egypt from 61 banks to 39 while increasing the number of branches by 24% to reach 3443 branches (up from 2783). This was mainly due to the significant decrease in the number of private and foreign banks that ended their business.

The second phase of the banking sector reform program that started in 2009 aimed at deepening the Egyptian banking sector and enhancing its efficiency and competitiveness through enhancing access to financial services, continuing the strengthening of the regulatory and supervisory framework through the implementation of Basel II/III and enhancing the implementation of corporate governance rules and regulations. Those reforms increased the loans-deposits ratio to reach 54%, average loans-GDP ratio to 49.4% and average deposits-GDP ratio to 90%. Those figures are much higher than the world average in 2008 (World Bank, 2010).

Yet, despite this significant improvement at the macroeconomic level, there still remains a challenge related to the access to finance, especially for SMEs. Figure 1 shows that, in non-OECD countries, bank's primary target is large enterprises that represent only 1 percent of total firms. By contrast, micro-firms, though representing around 70 percent of total firms, get negligible credit or financial services from banks.

For this reason, and in order to be able to extend the financial services provided to this segment and increase the benefits of the banking reform, establishing a database for SMEs to serve bankers as well as policy makers seems to be an important priority. Hence, as

mentioned before, the CBE launched in December 2008 an initiative, as an integral part of the Second Phase of the Banking Sector Reform Program (2008-2011), to enhance SMEs access to finance and banking services. The next section provides more details on this census.

3. Data

The questionnaire includes four primary categories of questions. The first category covers some general information regarding the legal status of the firm (whether it is a partnership, a limited liability firm, branch of a foreign firm, sole proprietorship, etc.). In addition, since only formal firms are taken into account, the interviewee is asked the number and the date of his industrial and commercial registration. The second includes some information related to the firm's endowments, such as the number of workers (less than 20; from 20 to 34; from 35 to 50 and more than 50) and the value of the capital. The third categorizes firms according to the sales turnover which is the variable banks consider the most when giving loans. In addition, this category includes some questions showing whether the firm exports or not, the destination of exports (Arab countries, African countries, other) and the share of exports to total sales (less than 25%, from 25 to 50% and more than 50%). The fourth category investigates access to finance by asking the interviewee:

- whether she/he deals with banks or not,
- whether she/he benefits from some banking facilities or not,
- whether she/he faces problems with banks or not and if yes, she/he has to determine the type of the problems (high interests, commissions and administrative expenses; banks ask for a lot of collaterals; procedures are lengthy and complicated; banks ask for a lot of documents; others)

The census covers all SMEs operating in Egypt, identified here as every company or economic activity:

- that is formally registered (therefore we exclude informal firms which represent almost 20 percent of all SMEs in Egypt)
- that employs five employees or more.
- that has a significant economic value added (thus activities of limited economic value added have been excluded from the survey, in particular barber shops and kiosks).

In other words, three filters have been taken into account in order to include only registered firms with more than 5 employees that have a significant value-added. Based on these criteria, the census included around 36,492 firms.

It is also worth mentioning that for future questionnaires, some issues should be taken into account, especially whether the firm is a start-up or not. In this survey we have the date of registration but nothing guarantees that the firm is a start-up. In fact, the firm may have been working in the informal sector for some time but only registers several years later. Whether the firm is a start-up or not is an important determinant of access to finance. A number of studies have found a clear correlation between firm age and access to credit. Being in the business for a few years suggests that the firms are at least competitive on average. It can be argued that being an older firm means there is lower informational opacity, i.e. information required by the lenders to evaluate the enterprises is available, because these enterprises have already established a track record. On the contrary lenders find it difficult to assess lending proposals of new firms. If we look into empirical studies we find that Aryeetey et al. (1994) conducted a survey on 133 firms in Ghana in the early 1990s. They found out that only 10% of start-up firms in Ghana were able to obtain banking facilities, however, medium-sized and older firms obtained three times as much credit than start-ups. A similar survey by Levy (1993), on Sri-Lanka and Tanzania found that 80 percent of firms with 16 or more workers and with 6 or more years in operation are able to access bank loans easier compared to a success rate of 55% in the case of firms with 6-15 employees of similar age and less than 10% for firms with 5 or less employees, regardless of age. Therefore we can conclude that the combination of the size of the firm and its age makes all the difference and

that age matters when talking about a start-up. Apparently if the age of the company is zero to three/four years it does make a difference, however, if the age is above five/six years, it does not really have an impact where obtaining credit is the issue.

The survey needs to include a variable on the source of finance or initial capital for start-ups (own savings, inheritance, formal loan, informal loan, etc.). It would be interesting to see how each of these financing forms affects the firm's performance and whether these sources of finance have different determinants or not.

Finally, to examine the gender discrimination at the SME level, future surveys should include a variable on the gender of the owner. Liberal feminist theory (Fischer et al. 1993) suggests that SMEs run by women will exhibit poorer performances than those run by men because women are overtly discriminated against (by lenders, for example) and/or because of other systematic factors that deprive women of important resources (for example: family burden, business education and experience). In order to test this for Egypt, future surveys should take the gender of the owner into account.

4. Stylized Facts

From the SMEs' point of view, it is more difficult for SMEs to obtain financing from banks for several reasons: the government and international development communities are focusing more on micro businesses; banks often prefer to extend credit to large corporate clients and connected individuals that are considered less risky; however, they believe that banks are more trustworthy than other sources.

Yet, from the banks point of view, it is less risky to provide loans for larger businesses since they are more stable, less prone to risk, have available records, have structured information, are easier to access and are more profitable. By contrast, small businesses are less stable, more prone to risk, do not have available records, do not have the sufficient information for assessing a loan, are difficult to access and are less profitable. SMEs also have some other problems such as: lack of business documents (such as registration, license, and tax cards) and the reliability of financial statements; weakness of management and lack of business plans. Bearing these characteristics in minds, we found that only 47 percent of SMEs in Egypt deal with banks and only 22.4 percent have access to banking facilities as shown in figure 2.

It is worthwhile to examine the factors that determine access to finance. First, as mentioned above, there is a strong correlation between number of employees, capital and sales turnover. This is reflected on access to finance since the higher the capital (figure 3), the larger the firm (figure 4) and the more it sells (figures 5 and 6), the more a firm is likely to deal with banks and benefit from their financial services. This is why only 18.6 and 41.2 percent of small firms with a capital of less than LE250,000 and/or less than 20 employees respectively deal with banks and have access to banking facilities. Those figures are substantially higher for larger firms (59 and 84 percent of SMEs with a capital more than LE30 million and/ or more than 50 employees respectively deal with banks).

Numerous studies have confirmed that SMEs are financially more constrained than larger firms and are less likely to have access to formal finance. It appears that banks are not adequately providing SMEs with capital in developing countries as there is a large financing gap for SMEs in developing countries. For instance, the top five banks serving SMEs in non-OECD countries reach only 20% of formal micro enterprises and SMEs. In addition, in Sub-Saharan Africa, this number is even lower (5%). Nearly 25% of SMEs in emerging markets have acquired a loan but are financially constrained, and almost 60% do not have a loan overdraft, but need one (Dalberg 2011). From the bank standpoint, the higher costs, lack of skills and higher (perceived) risks of investment in SMEs translate into high interest rates and collateral requirements. Furthermore, posting collateral is complicated by the fact that most SMEs operate in environments with weak property rights and poor contract enforcement in which borrowers do not have legal titles to house or land, and therefore cannot use these as collateral. For this reason, some SMEs face some

problems with banks. As shown in figure 7, some 16 percent of SMEs have problems with banks, and this share increases with smaller firms (figure 8). Indeed, 16.4 percent of SMEs having a capital of less than LE250,000 have problems with banks. By contrast, this figure is slightly lower for larger firms. Only 9.9 percent of SMEs with a capital more than LE30 million have banking problems.

At the governorate level, most of the Egyptian SMEs are concentrated in three main governorates (Cairo, Sharkeya and Gharbeya). The same pattern can be observed for SMEs that deal with banks (see figure 9). Almost 16.9 percent of SMEs dealing with banks are located in Cairo, 11.5 percent in Sharkeya and 9.5 in Gharbeya. Similarly, SMEs who have banking facilities (see figure 10) are chiefly concentrated in the same governorates (22.6 percent in Cairo, 13.9 percent in Sharkeya and 8 percent in Gharbeya). Clearly, there is a great potential for developing new SMEs in other governorates through an easier and more equitable access to finance.

Concerning economic activities, most of the firms that benefit from dealing with banks (see figure 11) are concentrated in manufacturing (44.3 percent) and trade (43.8 percent). Yet taking a closer look at each sector separately (figure 12) shows that 86.8 percent of construction firms and 72 percent of food and beverage firms deal with banks. This figure is lower for SMEs working in the manufacturing and trade sectors since SMEs that deal with banks represent 40.7 and 50.9 percent respectively of firms operating in these two sectors. Those findings are not contradictory since there is a frequency effect as almost 90 percent of all SMEs are concentrated in just the manufacturing sector (51.1 percent) and the wholesale trade (40.5 percent).

In a nutshell, small firms face serious impediments in what concerns access to finance given that larger firms with a greater capital, more employees and higher sales turnover are more likely to benefit from banking facilities. Therefore, in order to resolve problems related to access to finance, some measures have been put into action such as encouraging competition among banks to provide full fledged diversified products with lowest charges due to the economies of scale effect; CBE's relaxation of the 10% banks' reserve requirements on SMEs lending; facilitation of technical assistance to banks and improving the communication between the two sides of the SMEs' lending market through discussing bottleneck issues and bridging the gap; overcoming the asymmetric information between borrowers and lenders—which is particularly acute in the opaque information market—for small business credit. For this reason, the following instruments have been implemented to improve access to finance by SMEs such as:

a. Fostering access to finance for SMEs through NILEX (see Appendix 1).

b. The establishment of the I-score (see Appendix 2) and

c. National census; qualifying the entrepreneurs; designing and launching a financial education and inclusion campaign.

5. Econometric Specification

In order to examine the determinants of access to banking facilities, we have estimated a logit model where the dependent variable is the probability of benefiting from banking facilities or not as follows:

$$Logit(Bank\ Fac)_i = \beta_0 + \beta_1 Age_i + \beta_2 Eco.\ Act_i + \beta_3 Legal_i + \beta_4 Capital_i + \beta_5 Labor_i + \beta_6 Sales_i + \beta_{7i} Geo.\ Loc._i + \varepsilon_i \quad (1)$$

where Age_i is the age of firm i which is calculated as the difference between the date of establishing the firm and 2011 (the date of the census), $Eco.\ Act_i$ is a categorical variable taking three values 1 for manufacturing, 2 for trade and 0 otherwise (reference category), $Legal_i$ captures the effect of the legal form on the probability of having access to banking facilities. It takes five values for being a Joint Stock enterprises (reference category); Joint Liability; Sole; Partnership in Commendam or any other legal. For factors of production, $Capital_i$ determines the total value of the firm's capital. It is also a categorical variable taking six values as follows: less than LE250,000 (reference category); LE250,000 to less than a LE1 million; LE1 million to less

than LE5 million; LE5 million to less than LE15 million; LE15 million LE to less than LE30 million; and LE30 million or more. $Labor_i$ captures the number of workers with four categories: less than 20 employees (reference category); 20-34; 35-50 and 51 or more. $Sales_i$ determines the value of the firm's sales with four categories: less than LE500,000; LE500,000 to less than LE1 million; LE1 million to less than LE20 million; and LE20 million to less than LE50 million. Finally, $Geo.\ Loc._i$ captures whether the firm is located in Cairo and Alexandria (reference category), Upper Egypt, Lower Egypt and Frontier. ε_i is the discrepancy term.

Two similar regressions are run to examine the determinants of dealing with banks (even if the firm does not have any banking facilities) and having banking problems. In the two cases, the dependent variables are binary variables taking the value of one if the firm deals with banks (and zero otherwise) and if it has any banking problems (and zero otherwise). The same set of independent variables is introduced in these regressions.

6. Empirical Results

Table 3 shows the number of cases that the model managed to classify correctly. The model correctly classified 4144 SMEs as having banking facilities, representing 50.7% of these enterprises, while it correctly classified 21988 SMEs as not having banking facilities, representing 77.6% of these enterprises. The overall percentage of correct classification is approximately 72%, which is considered highly reasonable.

As shown in table 4, each of the geographical location, legal form, economic activity, labor, capital, and sales turnover has a significant effect on having banking facilities, while the age of the firm does not. First, the odds of having banking facilities when the enterprise is located in lower Egypt is 1.27 times the odds of enterprises located in Greater Cairo or Alexandria. Surprisingly, when the enterprise is located in upper Egypt, the odds of having banking facilities will be two and half times that when located in Greater Cairo or Alexandria. Yet, this result may be explained by the fact that a lot of banks started giving more emphasis to extending facilities in Upper Egypt for four reasons. First, the government concentrated its efforts especially in the past five years on developing Upper Egypt. Second, donors and international organizations focused their efforts on developing small, medium and micro enterprises in this region. Finally, public sector banks as Banque du Caire, Bank Misr and National Bank of Egypt modified their branches to special windows to finance micro and small enterprises. It is worth mentioning that this was also a suggestion put forward by the new management of these banks as way of using their overabundant employees. By contrast, the odds of having banking facilities do not significantly differ whether the enterprise is located in a frontier governorate or in Greater Cairo and Alexandria. At the economic activity level, it is worth noting the trade sector matters significantly for having access to banking facilities since the odds of having banking facilities when the enterprise works in trade is 1.34 times the odds when it works in any other economic sector. As for enterprises working in the manufacturing sector, their odds of having banking facilities do not significantly differ from those working in any other economic sector. All legal forms compared to the joint stock enterprises reduce the probability of having access to banking facilities. That is why the odds of having banking facilities for the Joint Liability, Sole, or any other legal form considered in the study are almost around three quarters the odds of the Joint Stock enterprise. Finally, the odds of having banking facilities for the Partnership in Commendam enterprises do not significantly differ from that of the Joint Stock enterprises.

Factors of production seem to have a very significant impact on the probability of having access to banking facilities. First, the odds of having banking facilities are higher for enterprises with capital of LE250,000 or more than for enterprises with less than LE250,000 in capital. For example, the odds of having banking facilities for enterprises with capital ranging from LE250,000 to less than LE1 million are one and half times the odds of enterprises with capital of less than LE250,000. Also, the odds of having banking facilities for enterprises with capital LE30 million or more are approximately two and half times the odds of enterprises with capital below LE250,000. This is in line with the literature since, in order to reduce the anticipated risk and

moral hazard associated with lending, banks use collateral as one of their instruments. Therefore, the larger the capital, the more a firm is able to obtain a loan since it has enough collateral. For this reason, Berger and Udell (1994) found that smaller and younger firms are more likely to face higher cost of financing since they are required to offer more collateral than larger firms.

As this study focuses on small and medium sized firms, it does not seem logical to consider size as a determinant of access to finance. However, even among SMEs, there is still a large variation in size: there are small SMEs and large SMEs in terms of number of employees. Hence, it turns out that firm size could be an important determinant in this study. We found that the higher the labor, the higher the probability of access to finance. The odds of having banking facilities for enterprises with 20 employees or more are greater than those of enterprises with less than 20 employees. In addition, the odds of having banking facilities for enterprises with 20 to 34 employees and enterprises with 51 employees or more are almost the same when compared to the odds of enterprises with less than 20 employees (1.17 and 1.16 respectively). For enterprises with 35 to 50 employees, the odds of having banking facilities are 1.21 times the odds of enterprises with less than 20 employees. Previous studies have mentioned several reasons why small firms have less access to credit. Firstly, small firms are characterized by information opacity making them unable to provide financial information (Binks and Ennew 1996). The second reason is the high failure rate of smaller firms compared to larger ones. Using a sample of firms across a number of countries Schiffer and Weder (2001) found that there is a negative relationship between the size of a business and the risk it might pose for a lender. Finally, the odds of having banking facilities also increase with a higher sales turnover. As shown in table 4, when the sales turnover ranges from LE500,000 to less than LE1 million, the odds of having banking facilities are about two and half times the odds of enterprises with sales turnover of less than LE500,000. If the sales turnover ranges between LE1 million to less than LE20 million, the odds of having banking facilities are approximately three times those when sales turnover is less than LE500,00. Finally, a sales turnover of LE20 millions to LE50 million increases the odds of having banking facilities to five times those of enterprises with sales turnover under LE500,000.

Moving to the determinants of having banking problems, table 5 shows the number of cases that the model managed to classify correctly. The model correctly classified 2256 SMEs as having banking problems, representing 38.3% of these enterprises, while it correctly classified 23419 SMEs as not having banking problems, representing 76.5% of these enterprises. The overall percentage of correct classification is approximately 70%, which is considered highly reasonable.

As shown in table 6, each of the geographical location, legal form, age of firm, economic activity, and sales turnover has a significant effect on having banking problems, while capital and labor do not.

At the geographical location level, the odds of having banking problems when the enterprise is located in Lower or Upper Egypt are higher than the odds of having banking problems when the enterprise is located in Greater Cairo or Alexandria. However, if the enterprise is located in a frontier governorate, the odds of having banking problems are lower than when it is located in Greater Cairo or Alexandria. For Lower Egypt enterprises, the odds are one and half times the odds of Greater Cairo and Alexandria enterprises, and for Upper Egypt the odds are approximately three times those of Greater Cairo and Alexandria. If the enterprise is located in a frontier governorate, the odds of having banking problems is about one third the odds of enterprises located in Greater Cairo or Alexandria. As for economic activity, there appears to be no significant difference between the odds of having banking problems when the enterprise works in either trade or manufacturing and when it works in any other economic sector. Regarding the legal level, the odds of having banking problems for Partnership in Commendam, Joint Liability, Sole enterprise and other legal forms are 1.40, 1.50, 1.88 and 1.50 times the odds of the Joint Stock enterprise, respectively. As for the firm's performance, the higher the sales turnover, the lower the probability of having any banking problems. Finally, the higher the capital or labor endowments, the lower the likelihood of having any banking problems.

In the regression where we try to examine the determinants of having banking problems, a selection bias may be observed given the fact that having banking problems is observed for only those firms who have banking facilities. To control for this problem, we run a Heckman two-stage selection model. First, we examine the determinants of having banking facilities. Then, we analyze the factors that explain banking problems. As exclusion variables, we use four sets of variables: whether the firm is a start-up or not, the geographical location, the economic activity and the legal framework. The logic behind this is the probability that these variables are more likely to affect the probability of having any banking facility rather than explaining banking problems.

The selection model performs quite well (table 7) since all the variables have the expected sign and are highly significant. In addition, it is obvious that capital plays an important role in both having access to banking facilities and having banking problems. Exclusion variables in the first step are significant. Therefore, being located in Lower or Upper Egypt increases the probability of having banking facilities while frontier governorates decrease it. Being a joint liability firm, a sole proprietorship or any other legal form reduces the likelihood of having any banking facilities. Finally, it seems that whether the firm is a start-up or not does not affect the probability of taking advantage of banking facilities.

7. Conclusion and Policy Implications

Financial services seem to be under-utilized by SMEs as only 50 percent deal with banks and benefit from an improved access to finance. In addition, these firms still face several constraints in terms of access to finance. Using an extensive census that has been recently done by the EBI, we try to examine the determinants of access to finance of SMEs in Egypt as well as the determinants of having banking problems. The main findings of this paper show that legal form, economic activity, labor, capital, and sales turnover have a significant effect on having banking facilities. In addition, we find that the smaller the firm, the higher the probability of having banking problems. We run a battery of sensitivity analysis tests and find that these results remain robust.

From a policy implication standpoint, post 25th of January revolution, there is a need for strategic economic reforms to restore Egypt's economic vitality and promote investment especially for SMEs through:

- Improvements in the legislative infrastructure: the rules and regulations associated with bankruptcy and the creditor capacity to take fast possession of collateral in case of default. In addition, there is an urgent need to speed up the process of establishing collateral registries which should aim at building electronic registers and streamlining registration processes.
- Encouraging banks to build on their expertise in matchmaking their clients in different stages of the value chain (linkages).
- Updating financial methods for financial reporting (e.g., standardized templates).
- Changing the mindset.
- Enhancing entrepreneurship education.

The last point is crucial to improving SMEs' performance in Egypt. Indeed, the role of entrepreneurship has become increasingly apparent in economic and social development. Economically, entrepreneurship stimulates markets. The formation of new business leads to job creation and has a multiplying effect on the economy. Socially, entrepreneurship empowers citizens, generates innovation and changes mindsets. These changes have the potential to integrate developing countries into the global economy. Thus, entrepreneurship is described as a potential driver to support the economic growth, since it is important for productivity, innovation and employment. Accordingly, it has been a policy goal of many developed countries to develop a culture of entrepreneurial thinking. This can be done through providing an appropriate enabling environment via integrating entrepreneurship into

education systems, learning processes, technical assistance, legislation and integration among all stakeholders.

Access to finance for SMEs is extremely important in promoting entrepreneurship and innovation as well improving the state of the national economy. Accordingly, helping those who decide to start their small enterprise in acquiring necessary entrepreneurial and managerial competencies is essential in order to ensure their success. Being aware of the importance of entrepreneurship development, EBI's SME unit is currently providing several training packages for small and medium business owners who need to enhance their understanding of dealing with and satisfying the requirements of banks.

To bridge the gap between both sides, the SME unit conducts 'awareness-raising' events through which entrepreneurs are acquainted with banks' requirements and are offered a training program entitled "SME Guide for Dealing with Banks". The EBI also launched an initiative in the field of financial education, entrepreneurship and SMEs as it plays an important role in the economic development, facilitates access to finance for small and medium enterprises and generates the spirit of entrepreneurship and innovation.

The first wave of this initiative was at the Al-Ahram Canadian University A panel discussion had been held with university students to deepen the concept of financial literacy, entrepreneurship and the important role of small and medium enterprises in the coming era, through the opportunities and obstacles face these enterprises, and the possibility of bridging the gap between theoretical study and the labor market requirements. This was followed by a workshop about the most important steps that must be followed for the application of strategic planning and building business plans for SMEs taking into consideration the importance of creativity and innovation to suit the nature of the Egyptian environment, in addition to displaying a model of the successful experiences of leading Egyptian businessmen in addition to providing a business plan competition for the audience of students.

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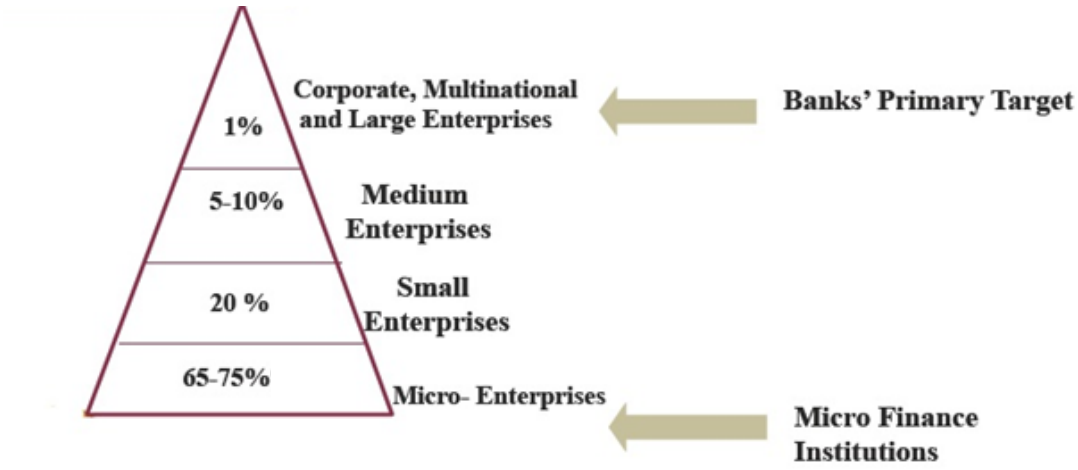
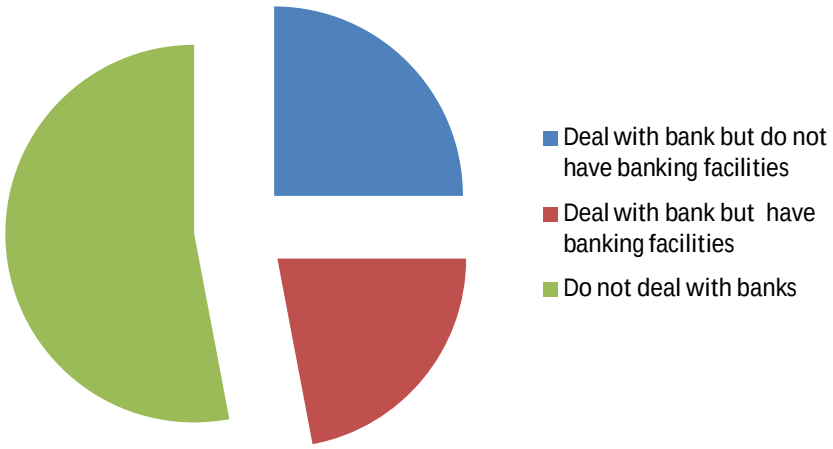
Figure 1: Business Landscape in Non-OECD Countries



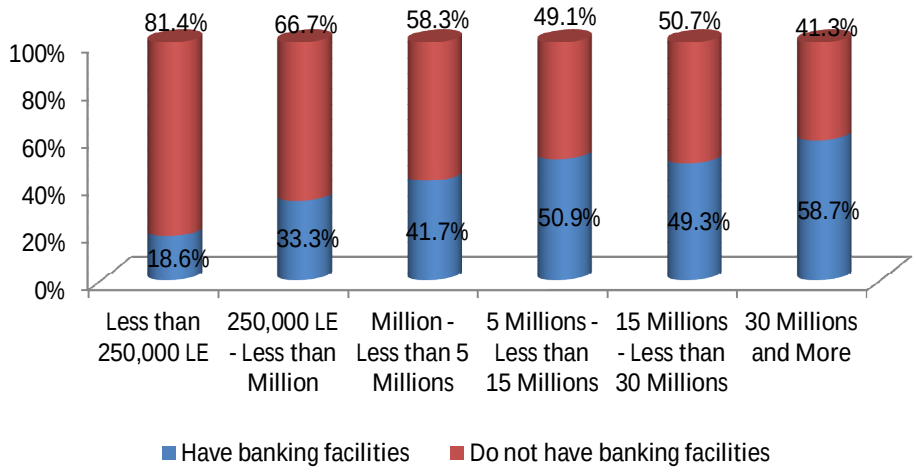
Source: OECD (2011).

Figure 2: Distribution of SMEs with Reference to Dealing with Banks



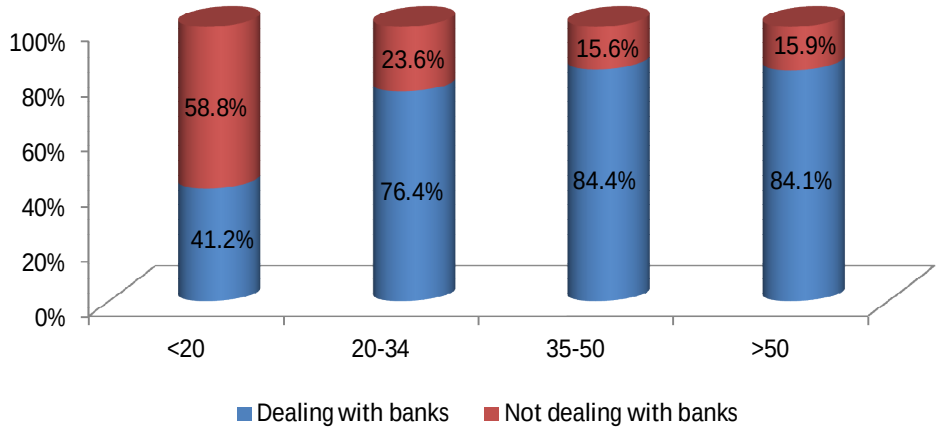
Source: Constructed by the authors using SMEs Census, 2010.

Figure 3: Distribution of SMEs by Banking Facilities and Capital



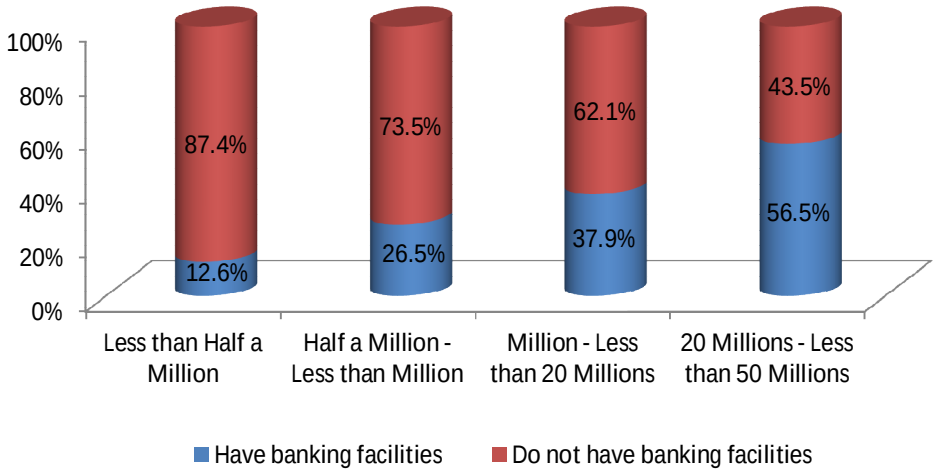
Source: Constructed by the authors using SMEs Census, 2010.

Figure 4: Distribution of SMEs by Dealing with Banks and Number of Employees



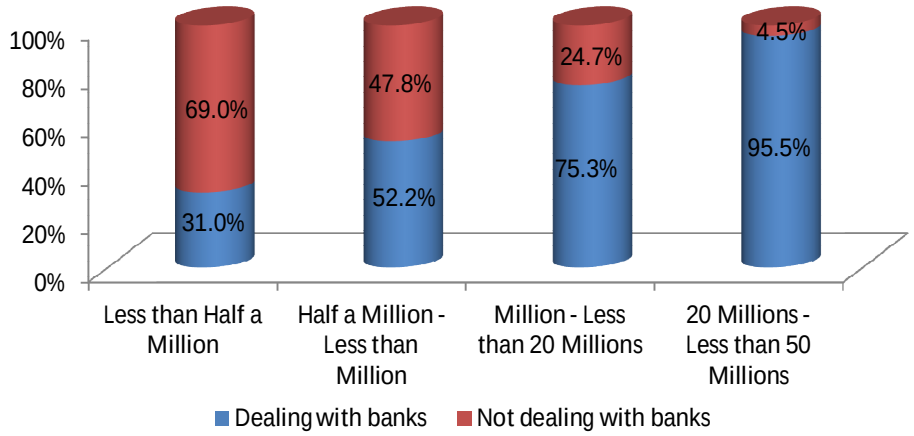
Source: Constructed by the authors using SMEs Census, 2010.

Figure 5: Distribution of SMEs by Banking Facilities and Sales Turnover



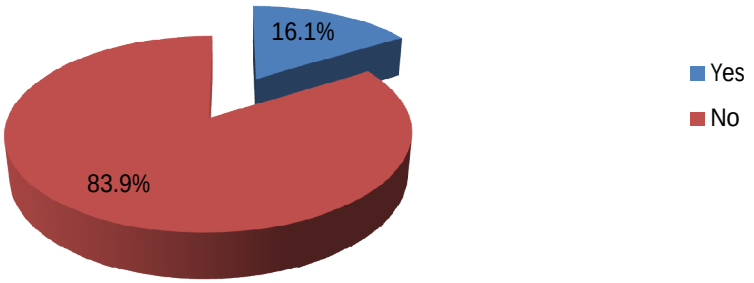
Source: Constructed by the authors using SMEs Census, 2010.

Figure 6: Distribution of SMEs by Dealing with Banks and Sales Turnover



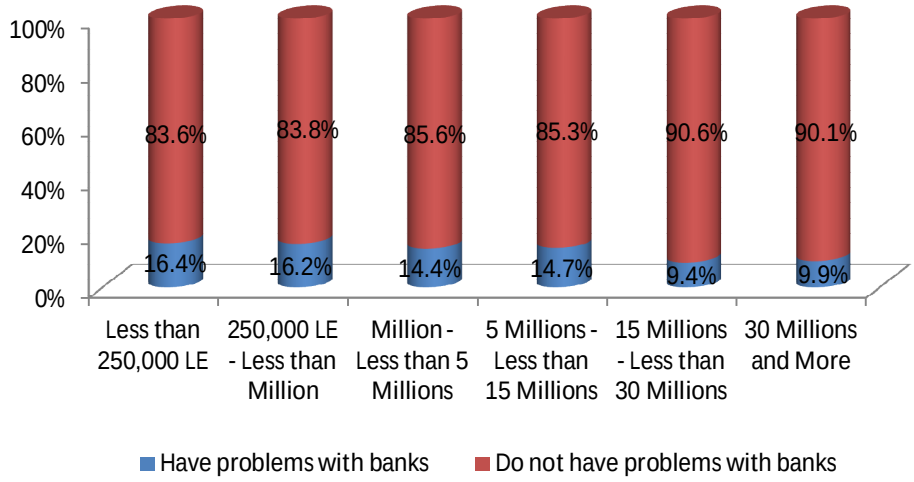
Source: Constructed by the authors using SMEs Census, 2010.

Figure 7: Distribution of SMEs According to Having Problems with Banks



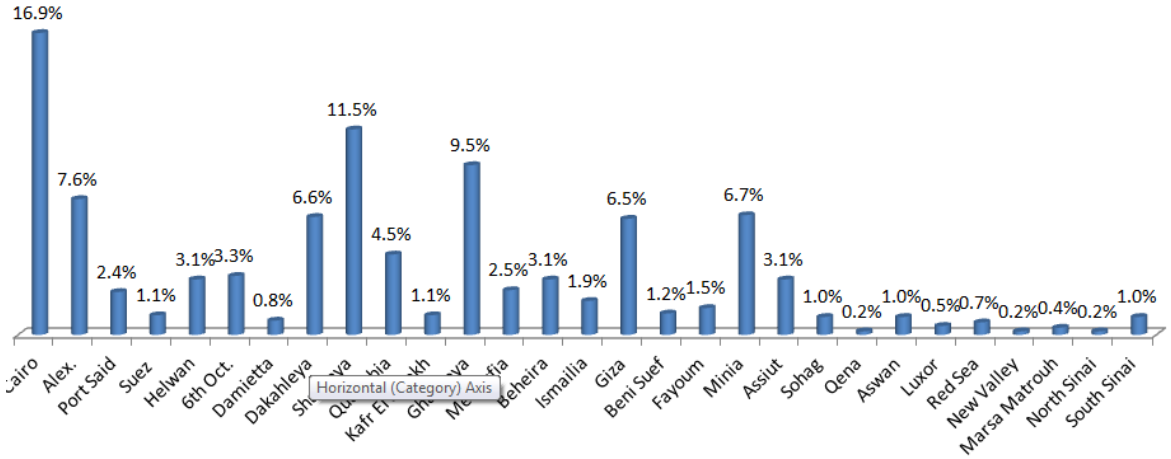
Source: Constructed by the authors using SMEs Census, 2010.

Figure 8: Distribution of SMEs by Problems with Banks and Capital



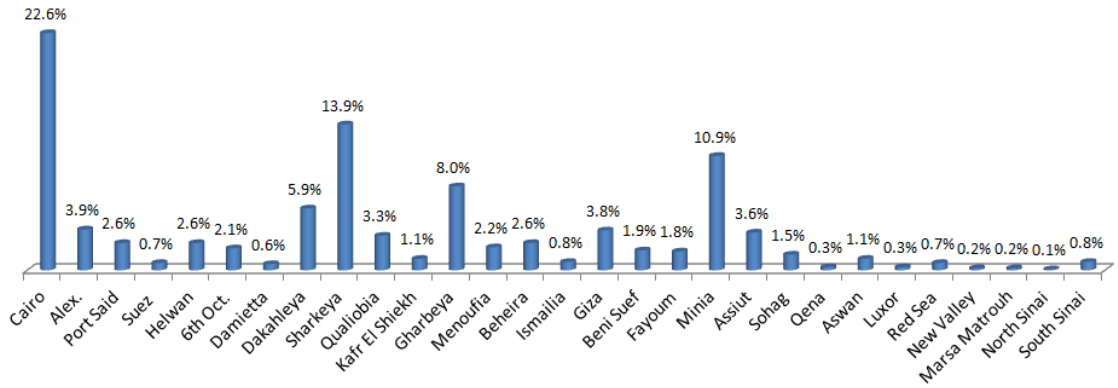
Source: Constructed by the authors using SMEs Census, 2010.

Figure 9: Distribution of SMEs Dealing with Banks by Governorates



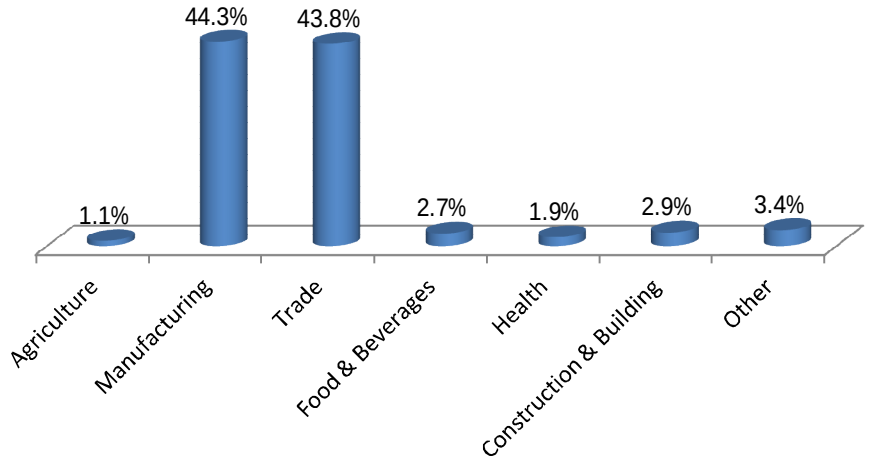
Source: Constructed by the authors using SMEs Census, 2010.

Figure 10: Distribution of SMEs Having Banking Facilities by Governorates



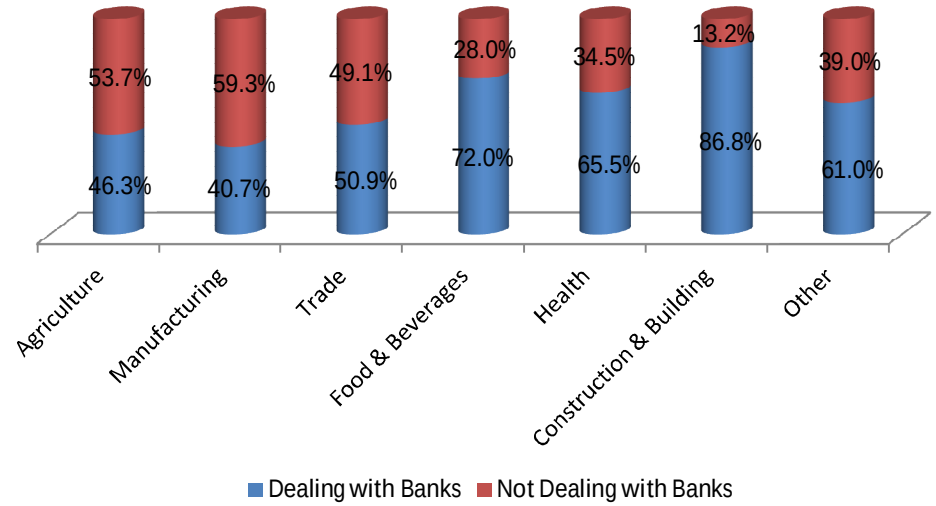
Source: Constructed by the authors using SMEs Census, 2010.

Figure 11: Percent distribution of SMEs Dealing with Banks by Economic Activity



Source: Constructed by the authors using SMEs Census, 2010.

Figure 12: Percent Distribution of SMEs by Dealing with Banks and Economic Activity



Source: Constructed by the authors using SMEs Census, 2010.

Table 1: Banking Aggregates Before and After the 2004 Reform

LE million (End of June)	2003	2008	% change
Total assets	577,938	1,083,311	87.70
Total deposits	403,144	747,199	+ 85.3
Loans & discounts	284,722	401,425	41.2
Capital & reserves	29,960	53,436	82.7
Capital adequacy ratio	12.2%	15.1%	2.9

Source: Central Bank of Egypt.

Table 2: Number of Banks and Banking Density

End of June	2004+	2005	2006	2007	2008	2009
Total number of banks operating in Egypt	**61**	**52*** **	**43*** **	**41*** **	**40*** **	**39*** **
Total number of branches	**2783**	**2841**	**2944**	**3056**	**3297**	**3443**
Banking density*	**24.9**	**24.8**	**24.5**	**24.2**	**22.9**	**22.3**
Number of public sector banks	7	7	7	6	6	5
Number of branches of public sector banks	2153	2185	2222	2074	2089	2088
Number of private sector banks	35	34	29	28	27	27
Number of branches of private sector banks	571	607	674	930	1145	1270
Number of private and joint venture banks	19	11	7	7	7	7
Number of branches of private and joint venture banks	59	49	48	52	63	85

Notes: *Population in thousand/banking unit. + Egyptian banks abroad are not included, also two banks established under private laws and are not registered with CBE: The Arab International Bank, and Nasser Social Bank. *** The decrease was because seven branches of foreign banks ended their business.

Table 3: Classification Table

Observed		Predicted: Having banking facilities		Percentage correct
		No	Yes	
Having banking facilities	No	21988	6330	77.6
	Yes	4030	4144	50.7
Overall percentage				71.6

Table 4: Determinants of Having Banking Facilities

	Coeff.	S.E.	Wald	Deg. Free.	Exp(B)
Non Start-Up Firm	-0.033	0.031	1.169	1	0.968
Legal Form***			76.87	4	
Partnership in Commendam	-0.018	0.061	0.084	1	0.982
Joint Liability	-0.242	0.061	15.776	1	.785***
Sole	-0.367	0.06	37.796	1	.693***
Other	-0.258	0.08	10.509	1	.773***
Economic Activity* **			247.341	2	
Manufacturing	-0.118	0.05	5.59	1	.889**
Trade	0.347	0.052	45.31	1	1.415***
Geographical Location* **			438.232	3	
Lower Egypt	0.118	0.032	13.822	1	1.125***
Upper Egypt	0.764	0.039	385.066	1	2.146***
Frontier	-0.083	0.106	0.613	1	0.921
Sales Turnover* **			427.966	2	
1 Million - < 20 Million	0.699	0.036	385.553	1	2.011***
20 Million - < 50 Million	1.092	0.089	151.785	1	2.980***
Capital* **			229.449	5	
250,000 - < Million	0.507	0.048	112.967	1	1.660***
1 Million - < 5 Million	0.631	0.059	116.316	1	1.880***
5 Million – 15 Million	0.833	0.083	99.838	1	2.301***
15 Million - < 30 Million	0.67	0.123	29.67	1	1.955***
30 Million or more	1.04	0.124	70.336	1	2.829***
Labor* **			28.972	3	
20 – 34	0.244	0.055	19.482	1	1.276***
35 – 50	0.259	0.079	10.754	1	1.296***
51 or more	0.216	0.061	12.494	1	1.241***
Constant* **	-1.614	0.076	451.343	1	.199***

Note: *** p<0.01, ** p<0.05, * p<0.1
Source: Authors' calculations.

Table 5: Classification Table*

Observed		Predicted: Having banking problems		Percentage correct
		No	Yes	
Having banking problems	No	23419	7183	76.5
	Yes	3634	2256	38.3
Overall percentage				70.4

Table 6: Banking Problems for SMEs Dealing with Banks

	Coeff.	S.E.	Wald	Deg. Free.	Exp(B)
Non Start-Up Firm	0.054	0.044	1.529	1	1.055
Legal Form***			63.185	4	
Partnership in Commendam	0.342	0.092	13.928	1	1.407***
Joint Liability	0.402	0.091	19.492	1	1.495***
Sole	0.632	0.089	50.433	1	1.880***
Other	0.411	0.119	12.011	1	1.508***
Economic Activity***			55.832	2	
Manufacturing	0.195	0.069	7.942	1	1.216***
Trade	-0.115	0.072	2.576	1	0.891
Geographical Location***			589.609	3	
Lower Egypt	0.214	0.045	22.443	1	1.239***
Upper Egypt	1.17	0.053	482.024	1	3.223***
Frontier	-1.635	0.277	34.942	1	.195***
Sales Turnover***			9.72	2	
1 Million - < 20 Million	-0.102	0.05	4.151	1	.903**
20 Million - < 50 Million	-0.395	0.141	7.897	1	.674***
Capital***			23.333	5	
250,000 - < Million	-0.269	0.067	15.948	1	.764***
1 Million - < 5 Million	-0.237	0.083	8.11	1	.789***
5 Million - < 15 Million	-0.072	0.119	0.367	1	0.931
15 Million - < 30 Million	-0.467	0.206	5.14	1	.627**
30 Million or more	-0.32	0.203	2.475	1	0.726
Labor			4.752	3	
20 – 34	-0.155	0.076	4.164	1	.856**
35 – 50	-0.081	0.108	0.561	1	0.922
51 or more	-0.11	0.089	1.513	1	0.896
Constant***	-1.887	0.11	293.859	1	.152***

Note: *** p<0.01, ** p<0.05, * p<0.1
Source: Authors' calculations.

Table 7: Heckman Selection Model

	Banking problems	Banking facilities
Start-up		0.00585
		(0.0164)
Economic Activity		
Manufacturing		-0.0369
		(0.0268)
Trade		0.170***
		(0.0281)
Legal Framework		
Partnership in Commendam		0.0280
		(0.0345)
Joint Liability		-0.0954***
		(0.0346)
Sole		-0.114***
		(0.0354)
Other		-0.112**
		(0.0442)
Sales		
1 Million - < 20 Millions	-0.468***	0.444***
	(0.0309)	(0.0214)
20 Millions - < 50 Millions	-0.760***	0.696***
	(0.0765)	(0.0548)
Labor		
20 – 34	-0.163***	0.151***
	(0.0472)	(0.0326)
35 – 50	-0.0544	0.154***
	(0.0658)	(0.0474)
51 or more	-0.139***	0.123***
	(0.0520)	(0.0367)
Capital		
250,000 - < Million	-0.345***	0.310***
	(0.0411)	(0.0284)
1 Million - < 5 Million	-0.435***	0.405***
	(0.0481)	(0.0353)
5 Million - < 15 Million	-0.417***	0.540***
	(0.0671)	(0.0509)
15 Million - < 30 Million	-0.605***	0.455***
	(0.106)	(0.0755)
30 Million or more	-0.750***	0.693***
	(0.101)	(0.0756)
Geographical Location		
Lower Egypt		0.112***
		(0.0170)
Upper Egypt		0.482***
		(0.0214)
Frontier		-0.119**
		(0.0581)
Constant	0.916***	-1.093***
	(0.0760)	(0.0415)
Observations	36492	36492

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Source: Authors' calculations.

Appendix 1: NILEX

NILEX is the Egyptian Exchange Market for growing medium and small companies, which offers an appropriate, secure, yet flexible regulatory framework, for both companies and investors, together with a streamlined admission process.

It supports the capital raising activities of small and mid cap developing companies. Its advantage is not only limited to providing finance, but companies can access long-term capital for the expansion of their businesses.

It supports promising sectors in the economy which suffer from finance obstacles and it also provides the opportunity for investors to diversify their portfolios by investing in high-growth companies.

NILEX Benefits can be summarized in the following:

- Unlimited long-term finance.
- Cheap financing cost.
- Relaxed rules and regulations.
- Dedicated funds to ensure liquidity.
- Full government support.
- Lower listing fees (0.5 per thousand of the capital).
- Local and foreign investors' interest.

For more information, please check: www.nilex.egyptse.com/ar/

Appendix 2: Egyptian Credit Bureau "I-Score"

The Egyptian Credit Bureau "I-Score" maintains a database of credit information for SMEs and consumers. The first credit bureau in Egypt, which demonstrates how a private credit bureau can be set up in a relatively short time when all stakeholder interests are aligned and the project has backing of the authorities. The Credit Bureau has been established under the name of the Egyptian Credit Bureau "*Estealam*". The first general assembly meeting was held on September 5th, 2005. Twenty-five banks in addition to the Social Fund for Development contributed in the company, with an issued capital of LE30 million distributed on seven million and five hundred thousand shares, at a value of four pounds per share (all shares in cash). The founders and subscribers paid the 25% of the nominal value of the shares on subscription and completed the paid up capital in February 2007. The purpose of the company is to provide information services and credit classification.

The Bureau works in the following areas:

- Gathering all information on customers, whether associated with credit companies and financial institutions, retailers and credit provided by banks or other views from all available sources of information.
- Creating certified official records of that information with the company as well as analyzing the data and classifying it.
- Creating indicators of credit quality for debtors whether individuals or institutions, making it possible for them to form a sound credit history.
- Providing financial advice and practical solutions and all of the specialized counseling to individuals or institutions who want to improve the level of credit ratings, or those who want to improve their financial instruments or who want to build a credit history on a sound basis (with the exception of legal advice).
- Selling information services and products to all beneficiaries in Egypt in a manner that does not conflict with the provisions of secret bank accounts.
- Carrying out the work of the agency in the field of information and credit classification of enterprises or companies linked to their work with the company subject to the provisions of laws, regulations and decisions applicable licensing condition for the exercise of such activities.

Impact of I-Score:

- I-Score led the process of creating the borrower data bank with Unique ID (GT 5.7 Million).
- Significant increase in number of credit facilities/loans database size (GT 14.3 Million).
- Catalyst for banks/lenders to improve their data quality, revision of internal lending policies/procedures leading to new avenues to grow credit / improved profitability and advanced skill sets.
- Contribution to increased awareness among lenders on data quality in acquisition and management.
- Catalyst for active credit growth with prudence and confidence by providing a unified and robust borrower database across the lending community

For more information, please check **www.i-score.com.eg**