# Access to Finance and Investment Climate in Egypt

**Somaya Ahmed Aly Abdel-Mowla**
**Associate Professor of Economics**
**Faculty of Commerce and Business Administration, Helwan University-Egypt.**
**somaya204@yahoo.com**

## 1. Introduction

Firm growth should be at the heart of the development process, especially in developing countries. Egypt is no exception. Improving investment climate should top the agenda of policy makers.

Access to and cost of finance is considered two important factors that affect the investment climate. On one hand, access to finance is a necessary condition for firms' operation and growth. On the other hand, cost of finance is an important determinant of firms' investment decisions.

This calls for attention to analyzing financing patterns, identifying financial constraints and evaluating the effect of these constraints on investment climate, especially in developing countries.

In Egypt, Gross capital formation as a percentage of Gross Domestic Product lags behind other developing countries. Gross capital formation in Egypt was 22% of GDP in 2008 compared with 27% in low income countries, 30% in middle income countries, 37% in lower middle income countries; the group to which Egypt belongs and 25% in MENA countries (WB 2010). In addition, it decreased to 18% of GDP in 2009[1]. There is a need to encourage more investments through supporting a better investment climate. Access to and cost of finance is one of the main factors affecting investment climate.

**The main objectives of this study are to:**

- Evaluate the impact of access to finance and cost of financing on investment climate in Egypt, and how much access to finance and cost of financing are considered constraints on running and expanding business.

- Study the variation in the burden of financial constraints among different types of firms in Egypt.

- Analyzing sources of finance for different types of firms and evaluating the importance of informal sources of finance to different types of firms.

The paper is organized as follows: **Section 1** is the introduction; **Section 2** provides a literature review of the effect of access to and cost of finance on investment climate; **Sections 3** describes the data and the methodology used; **Section 4** identifies finance constraints and estimates the severity of these constraints as obstacles to firms' growth and operation in Egypt; **Section 5** analyzes firm financing patterns in Egypt; **Section 6** compares the burden and severity of finance constraints across different firms in Egypt; **Section 7** compares financing patterns across different firms in Egypt; **Section 8** concludes.

(1) World Bank, <http://data.worldbank.org>.

## 2. Finance and Investment Climate - Literature Review

Financing issues have attracted significant attention in the literature of the features of the investment climate.

Doing Business annual reports that investigate regulations that enhance business activity, and those that constrain it evaluate business environment through a number of quantitative indicators affecting 10 stages of a business's life; one of these main stages is getting credit.

Two of the main obstacles to firms' growth and operation investigated in Investment Climate Surveys are access to finance and cost of financing.

Access to finance is found to be the most important single factor in creating an enterprise, keeping it going and maintaining jobs. Companies need capital to be able to grow and expand. Access to finance and cost of finance are of the main variables on which firms' investment decisions depend. Greater access to finance leads to greater opportunities to invest[2].

However, the World Business Environment Survey that was carried between the end of 1998 and the middle of 2000 asked respondents to rate how problematic were a set of general constraints for the growth and operation of their firms. Using a simple average for the overall world sample, the second leading general constraint for the global sample is financing. It has been found that financing constraints are significantly and negatively associated with both sales growth and investment growth[3]. According to World Bank Enterprise Survey data for the 89 economies, 15.7% of managers consider access to finance the most serious constraint. Firms fail to reach efficient size for lack of financing, and economic growth is held back[4].

Results from the World Bank's Investment Climate Surveys show that access to and cost of finance has found to be one of the five main investment climate constraints[5]. According to doing business reports which focus mainly on evaluating investment climate in more than 180 countries, firms consistently rate access to

(2) «Decent Work and the Informal Economy,» International Labor Conference 90th Session 2002, Geneva (2002); Independent Evaluation Group, «Doing Business: An Independent Evaluation Taking the Measure of the World Bank- IFC Doing Business Indicators,» World Bank (2008), and *World Development Report 2005: A Better Investment Climate For Every One* (Washington, DC: World Bank, 2005).

(3) Geeta Batra, Daniel Kaufmann and Andrew H. W. Stone, «The Firms Speak: What the World Business Environment Survey Tells Us about Constraints on Private Sector Development,» MPRA Paper; no. 8213, The, Munich Personal RePEc Archive (2003).

(4) *Doing Business 2010: Reforming Through Difficult Times* (Washington, DC: World Bank, 2009); *Doing Business 2009* (Washington, DC: World Bank, 2008), and *Doing Business 2008* (Washington, DC: World Bank, 2007), < http://www.doingbusiness.org/reports/global-reports/doing-business-2011 > .

(5) Warrick Smith and Mary Hallward-Driemeier, «Understanding the Investment Climate,» *Finance and Development*, vol. 42, no. 1 (2005).

credit as among the greatest barriers to their operation and growth[6].

There are a number of recent studies that assess the effect of different dimensions of the business environment; including access to finance on firms' performance and growth. Using the World Business Environment Survey (WBES) in investigating the effect of different obstacles in the business environment on firm growth, firms report many obstacles to their growth, not all of them are equally constraining. It has been found that among obstacles to firms' growth only finance, crime and political instability emerge as the binding constraints with a direct impact on firm growth. Financing obstacles have the largest direct effect on firm growth, they have been found to be the most robust obstacles. Preliminary results from the second World Bank Investment Climate Assessment show that access to finance has been found to be a major obstacle to firms' growth and operation; 44% of firms rated it major or severe obstacle[7]. Another study[8] that used firm level data on 70,000 enterprises in 107 countries, has found important effects of access to finance. Poor access to finance is found to be one of the factors that shift the size distribution of firms downward and reduce employment growth in all firms. Overall, the results confirm that around the world, better access to finance is associated with higher firm growth for all firms. Other recent studies that used the World Business Environment Survey provide evidence on the importance of access to finance and cost of financing on firm growth[9]. Other studies using other sources rather than WBES provide evidence on the importance of access to finance and cost of financing on investment decisions[10].

The most binding financing obstacle has found to be cost of borrowing; it has been found that it directly affects firm growth. This cost itself is found to be affected by imperfections in the financial markets[11].

(6) *Doing Business 2010: Reforming Through Difficult Times*; *Doing Business 2009*, and *Doing Business 2008*.

(7) Nebil Kellow, «Investment Climate and Competitveness: Improving Access to Finance,» Findings from the World Bank 2006, Investment Climate Assessment (ICA) (29 June 2007), <http://info.worldbank.org/etools/docs/library/241081/15Nebil%20finance.pdf>.

(8) Reyes Aterido, Mary Hallward-Driemeier, and Carmen Pagés, «Investment Climate and Employment Growth: The Impact of Access to Finance, Corruption and Regulations Across Firms,» World Bank, Inter-American Development Bank, Working Paper; no. 626 (October 2007).

(9) Batra, Kaufmann and Stone, «The Firms Speak: What the World Business Environment Survey Tells Us about Constraints on Private Sector Development».

(10) Shaun K. Roache, «Domestic Investment and the Cost of Capital in the Caribbean,» International Monetary Fund, Working Paper; no. WP/06/152 (June 2006); Juan Fernandez De Guevara and Joaquin Maudos, «Regional Financial Development and Bank Competition: Effects on Economic Growth,» MPRA Paper; no. 15255, The - Munich Personal RePEc Archive (2007), and Sandra Poncet, Walter Steingress and Hylke Vandenbussche, «Financial Constraints in China: Firm-level Evidence,» *China Economic Review* (March 2009).

(11) Meghana Ayyagari, Asli Demirgüç-Kunt and Vojislav Maksimovic, «How Important Are Financing Constraints?: The Role of Finance in the Business Environment,» *World Bank Economic Review*, vol. 22, no. 3 (August 2005), pp. 483-516.

The effect of financing obstacles on firm growth is much more important in developing countries. On one hand, informal finance has a long tradition in these countries. The literature has recognized the existence and important role played by informal financial systems in developing economies. Recent evidence shows that formal financing rather than informal financing are positively associated with firm growth and reinvestment[12]. On the other hand, the majority of firms in developing countries are small and medium sized firms and many of these firms work in the informal sector. Informal activities account for more than half of economic activity in many developing countries. In these activities, hundreds of millions of poor people earn their livings as micro-entrepreneurs[13]. Recent literature shows that while both access to and cost of financing, are found to have a significant effect on firm's growth for all sizes, this effect is found to be more important for micro and small firms while larger firms are affected by financing obstacles to a significantly lesser extent. Access to finance constrains smaller firms more than their larger counterparts. Thus, smaller firms are found to benefit most from improved access to finance[14]. With less access to formal finance, firms tend to stay small and create fewer jobs and firms in the informal sector tend to stay in the informal sector. Financial development is one of the main factors to which the empirical literature relates the size of the informal sector. It has been found that financing obstacles increase the incidence of informality, especially for smaller firms[15]. Micro-entrepreneurs in the informal economy rate the need for finance as one of their top priorities. The issue is not about whether credit is available, but on what terms and whether these terms are within the reach of micro-entrepreneurs and potential entrepreneurs. Finance can be a powerful tool to initiate and reinforce self-organization among those in the informal economy[16]. According to the World Business Environment Survey, for developing regions as a group, including Africa; Latin America and the Caribbean, LAC; MENA; South Asia; and East Asia, financing is one of the leading three constraints to firms' growth and operation[17].

(12) «Decent Work and the Informal Economy;» Meghana Ayyagari, Asli Demirgüç-Kunt and Vojislav Maksimovic, «Formal Versus Informal Finance: Evidence from China,» World Bank, Policy Research Working Paper; no. 4465 (January 2008).

(13) *World Development Report 2005: A Better Investment Climate For Every One*.

(14) Ibid.; Aterido, Hallward-Driemeier, and Pagés, «Investment Climate and Employment Growth: The Impact of Access to Finance, Corruption and Regulations Across Firms;» Ayyagari, Demirgüç-Kunt and Maksimovic, Ibid., and Geeta Batra, Daniel Kaufmann and Andrew H. W. Stone, «Voices of the Firms From the World Business Environment Surveys,» Investment Climate Around the World Summary, < http://ww w.gcgf.org/ifcext/economics.nsf/AttachmentsByTitle/IC-WBESGlobalPresentation/ $FILE/wbesfinal.pdf >.

(15) *Doing Business 2009*, and Era Dabla-Norris, Mark Gradsten and Gabriela Inchauste, «What Causes Firms to Hide Output?: The Determinants of Informality,» International Monetary Fund, Working Paper; no.WP/05/160 (August 2005).

(16) «Decent Work and the Informal Economy».

(17) Batra, Kaufmann and Stone, «Voices of the Firms From the World Business Environment Surveys».

Different literature shows that relaxing financing constraint is likely to be the most effective routes to promote firm growth[18]. Using a detailed plant level dataset from 40 developing countries, Seker (2009)[19] shows that increased access to finance can cause firms to adopt better technologies, especially when they are credit constrained. The estimation results show that access to external finance for investments is positively related to growth and product innovation. Demirguc-Kunt et al. (1998)[20] provide evidence on the importance of the financial system and legal enforcement in relaxing firm's external financing constraints and facilitating their growth. Rajan et al. (1998)[21] show that industries that are dependent on external finance grow faster in countries with better developed financial systems. On the macroeconomic level, it has been found that countries with better access to finance and lower interest rate which is a main determinant of cost of financing tend to have higher capital to output ratios and thus achieve a greater level of GDP in addition to reducing poverty[22].

## 3. Data and Methodology

The study uses data from the Productivity and Investment Climate - Private Enterprise Survey 2008. This survey provides data on different types of firms of different sizes, working in Egypt in the manufacturing and the service sectors.

This survey is a detailed firm level survey data on 2030 firms in Egypt. Of these firms, 1530 firms are in the formal sector, while 500 firms are in the informal sector. Firms in the formal sector constitute of 1156 firms working in the manufacturing sector and 374 firms working in the service sector.

This survey is one of investment climate surveys, which were launched in 2001, covering more than 53 developing countries. They collect assessments of constraints facing firms, including finance, corruption, regulation, taxation, infrastructure, and labour. They also collect objective quantitative data, which allow investment climate indicators to be linked with firm performance. These surveys use standardized survey instruments and a uniform sampling methodology to benchmark the investment climate of countries across the world and to analyze firm performance.

(18) Ayyagari, Demirgüç-Kunt and Maksimovic, «Formal Versus Informal Finance: Evidence from China».

(19) Murat Seker, «Foreign Exposure of Firms and Growth in Developing Countries,» Enterprise Analysis Unit, World Bank (May 2009).

(20) Asli Demirgüç-Kunt and Vojislav Maksimovic, «Law, Finance, and Firm Growth,» *Journal of Finance*, vol. 53, no. 6 (December 1998), pp. 2107-2137.

(21) Raghuram G. Rajan and Luigi Zingales, «Financial Dependence and Growth,» *American Economic Review*, vol. 88 (1998), pp. 559-587.

(22) Jeremy Greenwood, Juan M. Sanchez and Cheng Wang, «Quantifying the Impact of Financial Development on Economic Development,» Federal Reserve Bank of St. Louis, Working Paper; 2010-023A (August 2010), and *World Development Report 2005: A Better Investment Climate For Every One*.

The survey allows us to identify firms on the basis of their registration status, legal status, ownership, location, size, and availability and quality of human resources.

In addition, it also reports relatively rich information on the different obstacles firms face (i.e., financial, legal, taxes, infrastructure, economic instability, corruption).

The survey has a large number of questions on firm financing patterns and on access to finance and cost of finance as obstacles to firms' growth and operation. In the survey, firm managers were asked to rate the extent to which different obstacles constrained the operation of their business. The ratings were quantified from 0 to 4, with 0 denoting no obstacle and 4 a very severe obstacle. These obstacles include access to finance and cost of financing.

In addition to these general constraints, firms were also asked more detailed questions to understand the nature of these constraints. Concerning the financing constraint, it is further disaggregated by asking firms to rate how great an obstacle the following issues pose: collateral requirements of banks/financial institutions, bank paperwork/bureaucracy, high interest rates, need for special connections, complications with tax administration, and being against dealing with interest. Firms were asked also about sources of financing the firm's working capital and new investments.

In this study, using data from the Productivity and Investment Climate - Private Enterprise Survey 2008, different variables and indices are constructed. The first group of variables and indices are constructed for the identification of firms that suffer from finance constraints and to estimate the severity of these constraints. The second group of variables constructed is the utilization rates of different sources of finance. These rates are used to analyze firm finance patters in Egypt. The third group of variables is constructed to identify main firms' characteristics such as firm ownership, size, location and quality of human resources.

A composite two indices are constructed to measure severity of obstacles, including finance obstacles. They are calculated as a weighted average of the degree of severity. The first index is used to estimate the severity of «lack of access to finance» and «cost of financing» as obstacles to enterprise growth and operation in Egypt and to compare it to the severity of other 20 obstacles (i.e., tax rates, tax administration, macroeconomic instability, infrastructure, corruption). The second index is used to estimate the severity of obstacles hindering registration of informal firms, including finance constraints.

A comparative descriptive approach is used to analyze the difference in the burden and severity of the two finance constraints; access to finance and cost of finance among different types of firms.

The survey collected information on different characteristics of firms. Firms are classified according to characteristics that are generally believed to indicate the presence of constraints (i.e., size, location, firm ownership, asset ownership, availability and quality of human resources).

## 4. Access to and Cost of Finance and Obstacles to Investment in Egypt

In the following, the data provided through the Investment Climate Survey 2008 are used to evaluate how much access to and cost of finance is considered a constraint on investment in Egypt.

The following measures are constructed to evaluate the burden of access to finance and cost of finance as constraints on investment:

- **Access to finance constraint** is the share of firms that rank «access to finance» as a major or very severe constraint.

- **Cost of finance constraint** is the share of firms that rank «cost to finance» as a major or very severe constraint.

- **Finance Constraint 1** rates the extent to which different finance obstacles constrain the operation of firms. The ratings are quantified from 0 to 2, with 0 denoting no finance constraint, 1 denoting the firm considers either access to finance constraints or cost of finance a major or very severe constraint, 2 denoting that both access to and cost of finance constraints are considered major or very severe constraints.

- **Finance Constraint 2** is the share of firms that rank a finance constraint (access to or cost of finance or both) as a major or very severe constraint.

- **Biggest obstacle** is the share of firms that consider finance constraints one of the biggest three obstacles to their growth and operation.

- **The severity of finance constraints**: The severity rate is calculated as a weighted average of the degree of severity; as follows[23]:

The severity rate of a constraint

= (percentage of respondents by no obstacle × 0 + percentage of respondents by minor obstacle to operation and growth × 1 + percentage of respondents by moderate obstacle × 2 + percentage of respondents by major obstacle × 3 + percentage of respondents by very severe obstacle × > 4) ÷ 4.

(23) For more details about this formula: «Private Sector Development in Egypt: The Status and The Challenges,» World Bank Report Prepared for the Conference «Private Sector Development in Egypt: Investing in the Future» (Cairo) (9-10 October 1994).

It ranges from 0 «indicating that all firms consider this constraint no obstacle» to 100 «indicating that all firms consider this constraint a very severe obstacle».

**a. Finance Constraints**

Firms that consider finance problems as major or severe constraints to growth and operation are slightly less than one-half of total firms. More than one third of these firms (36%) suffer severe problems with either access to or cost of finance, the rest suffer severe problems with both access to and cost of finance. Finance constraints are considered one of the biggest three obstacles by 13.7% of firms (table 1).

**Table 1**
**Finance Constraints in Egypt**

| Constraints | | Firms % |
|---|---|---|
| Access to finance constraint | | 32.1 |
| Cost of finance constraint | | 43.6 |
| Finance Constraint 1 | 0 | 54.1 |
| | 1 | 16.5 |
| | 2 | 29.4 |
| Finance Constraint 2 | | 45.9 |
| One of the biggest 3 obstacles | | 13.7 |

**Source**: Author's calculations.

Cost of finance appears to be more problematic than access to finance. While almost one third of firms consider access to finance a major or very severe constraint, cost of finance is considered a major or very severe constraint by almost one-half of firms. Access to finance and cost of finance are considered of the biggest three obstacles to operation and growth of 7.3% and 9.5% of all firms respectively.

Comparing finance constraints with other obstacles to growth and operation of firms in Egypt (table 2), finance constraints are found to be one of the most ten major obstacles to firms' growth and operation in Egypt. The major ten obstacles to operation and growth of firms ranked in order of significance are; macroeconomic uncertainty, regulatory policy uncertainty, tax rates, corruption, illegal competition from the informal sector/smuggling and dumping, skills and education of available workers, cost of financing, price of land, tax administration, and access to financing.

According to the percentage of firms considering these constraints a major or

very severe obstacles, cost of finance ranks seventh while access to finance ranks tenth in the list of the major obstacles to firms' growth and operation in Egypt. This list includes twenty two obstacles. They rank seventh and twelfth respectively according to the percentage of firms that report these constraints among the biggest three obstacles to growth and operation.

**Table 2**
**Finance Constraints and**
**Major Obstacles to Growth and Operation of Firms in Egypt**

| Obstacles | Constraint* % | One of the three biggest obstacles** % | Obstacles | Constraint* % | One of the three biggest obstacles** % |
|---|---|---|---|---|---|
| Telecommunications | 6.7 | 2.1 | Skills and education of available workers | 44.5 | 25.7 |
| Electricity | 14.5 | 7 | Business licensing and operating permits | 14.6 | 5.8 |
| Transportation | 14.3 | 5.5 | Access to financing | 32.1 | 7.3 |
| Water | 8 | 3.5 | Cost of financing | 43.6 | 9.5 |
| Access to land | 30.9 | 6.7 | Macroeconomic uncertainty | 78.2 | 62.8 |
| Price of land | 40.1 | 7.4 | Corruption | 46 | 19.6 |
| Regulatory policy uncertainty | 50.9 | 23.5 | Illegal competition from the informal sector/ smuggling and dumping | 45.2 | 37.6 |
| Tax rates | 48.6 | 25.9 | Illegal competition from the formal sector | 31.6 | 8.4 |
| Tax administration | 32.5 | 7.8 | Legal system/ conflict resolution | 6.9 | 3.4 |
| Customs and trade regulations | 22.1 | 4.8 | Theft, disorder and crimes | 5.1 | 1.7 |
| Labor regulations | 27.3 | 9.4 | Other obstacles | 7 | 5 |

* Percentage of firms that rank this obstacle as a major or very severe constraint,

** Percentage of firms that consider this obstacle one of the three biggest obstacles to operation and growth.

**Source**: Author's calculations.

Disaggregating main financing constraints on firms in Egypt (table 3); it is found that cost of finance is the most influential constraint. High interest rates top the list of financing constraints followed by the desire not to deal in interest. The third most important constraint is the difficult application procedures for loans.

Collateral requirements are also a very influential constraint. The major problems with access to finance are related to collateral requirements. In 86.3% of the cases a firm got a loan, collateral was required. The value of the collateral is on average 87.8% of the value of the loan[24].

**Table 3**
**Main Financing Constraints**

| Constraints | The severity rate* | Rank | Constraints | The severity rate* | Rank |
|---|---|---|---|---|---|
| Application Procedures for bank loans are too burdensome | 19.3 | 3 | Did not think that it would be approved | 2.3 | 7 |
| Collateral requirements of bank loans are too strict | 16.2 | 4 | It could create complications with tax administration | 1.1 | 8 |
| Interest rates are too high | 29.7 | 1 | Did not want to deal in interest rates | 22.8 | 2 |
| It is necessary to have contacts or give informal payments to get the loans (Corruption in the allocation of bank credit) | 3.3 | 6 | other | 5.3 | 5 |

* The weighted average of the percentage of firms that consider this constraint as one of the principal three reasons for not applying for a loan; it is estimated as follows: (percentage of firms that report this constraint as the principal reason for not applying for a loan × 3 + percentage of firms that report this constraint as the second main reason for not applying for a loan × 2 + percentage of firms that report this constraint as the third important reason for not applying for a loan × 1) ÷ 6.

### b. Severity of Finance Constraints

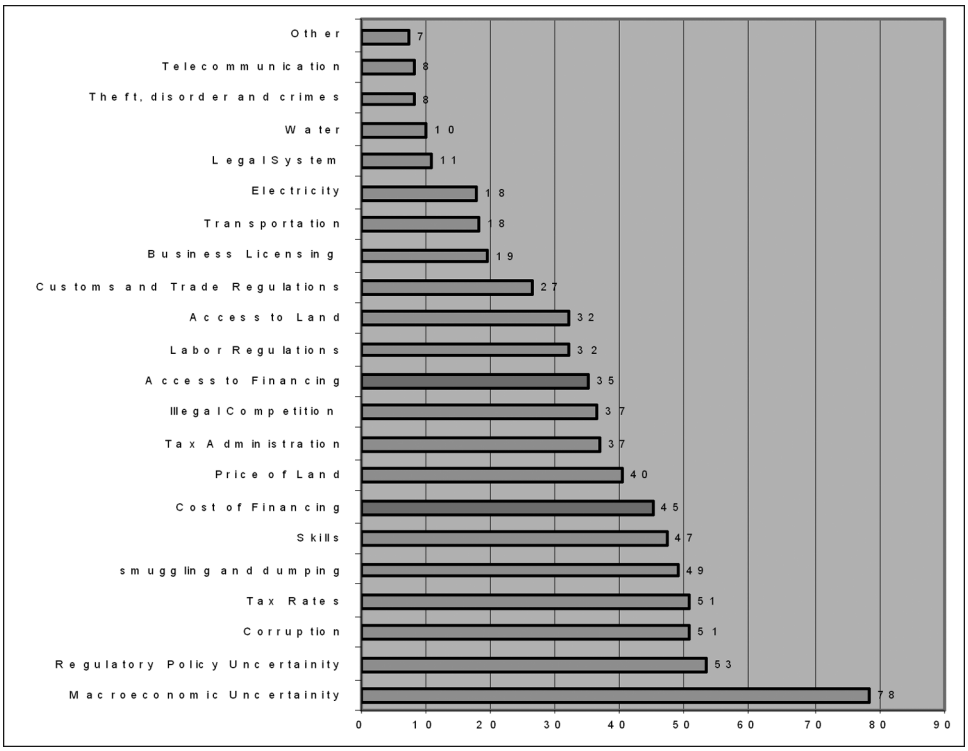
The severity rate is constructed, as previously mentioned, as a weighted average of the degree of severity. Comparing the severity rates of different obstacles (figure 1); it is found that the severity of cost of financing as a major constraint to operation and growth of firms in Egypt is higher than the severity of access to finance.

Again, cost of finance appears to be a more influential obstacle to firms' growth in Egypt than access to finance. Cost of and access to finance rank seventh and eleventh in the list of most severe obstacles to firms' growth and operation in Egypt. Their rank is almost the same since 2004; cost of and access to finance ranked eighth and tenth respectively in 2004[25].

(24) Author's calculations from the Productivity and Investment Climate Survey 2008.

(25) Author's calculations from the Productivity and Investment Climate Survey 2004.

**Figure 1**
**Obstacles to Operation and Growth of Firms**
**Ranked in Order of Severity**




**Source**: Author's calculations.

## 5. Firm Financing Patterns in Egypt

Analyzing firm financing patterns in Egypt and other developing and developed countries shows that (table 4):

- Investment financing depends almost solely on internal sources of financing; mainly on retained earnings. Egypt has the highest amount of internal financing/retained earnings compared to all the other developing and developed countries. The dependence on internal financing in MENA countries is largest than in other regions; however it is still obviously smaller than that in Egypt. Egypt looks unique in the large dependence on retained earnings compared to all other countries.

- Bank financing plays an obviously tiny role in financing new investments in Egypt. Egyptian firms source only 3.2% of their funds from banks and the remain-

ing 96.8% from self fund raising channels; mainly retained earnings. Comparing the contribution of the banking system in Egypt in financing new investments to its contribution in other developing and developed countries shows huge gap that raises concerns about the efficiency of the banking system in Egypt and its role in encouraging investment. This contribution is even far smaller compared to the averages for African and low income countries; the contribution of banking financing is less than 0.2 times its contribution in African and low income countries. The firms that report their loan application was rejected report three mutually exclusive reasons for why their application was rejected: lack of collateral, perceived lack of feasibility of project and incompleteness of application. Results show that lack of collateral is the main constraint for access to bank loans; 95.6% of these firms reported lack of collateral as the reason for why their application were rejected, compared to only 1.8% and 2.6% of these firms reported perceived lack of feasibility of project and incompleteness of application respectively.

- The role of government financing is also very tiny.

**Table 4**
**Firm Financing Patterns in Egypt**
**Compared with Other Countries%***

| A. Individual Financing Patterns | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Retained earnings** | **Domestic commercial banks** | **Foreign commercial banks** | **Operations finance**** | **Investment funds***** | **Loans from family and friends** | **Equity** | **Informal sources** | **Other** |
| Egypt | 88.6 | 2.8 | 0.3 | 2.7 | 0.3 | 1.7 | 2 | 0.4 | 1.2 |
| Africa | 66.02 | 18.14 | 1.05 | 6.15 | 0.98 | 1.88 | 1.36 | 0.48 | 3.95 |
| East Asia and Pacific× | 31.19 | 30.77 | 1.10 | 3.3 | 1.37 | 7.08 | 21.38 | 1.23 | 2.57 |
| East Europe | 68.53 | 11.38 | 1.48 | 7.87 | 1.01 | 2.94 | 4.2 | 0.71 | 1.88 |
| Latin America | 53.96 | 19.36 | 1.86 | 10.79 | 3.63 | 2.89 | 3.13 | 0.76 | 3.62 |
| MENA | 74.52 | 12.37 | 0.69 | 5.25 | 0.28 | 2.46 | 1.7 | 0.15 | 2.57 |
| South Asia | 58.63 | 21.95 | 0.86 | 4.76 | 1 | 4.59 | 3.23 | 0.68 | 4.29 |
| Low income | 59.22 | 16.32 | 1.1 | 3.23 | 1.3 | 5.47 | 10.43 | 0.94 | 1.99 |
| Middle income | 59.26 | 16.12 | 1.4 | 7.29 | 1.43 | 3.26 | 4.89 | 0.82 | 5.53 |
| High income OECD | 58.22 | 19.74 | 1.04 | 12.81 | 0.62 | 1.09 | 5.29 | 0.10 | 1.09 |

**to be continued**

**continued**

| B. Aggregate Financing Patterns 1**** | | | | | | |
|---|---|---|---|---|---|---|
| | Internal | Bank financing | Informal | Operations finance | Equity | Investment funds |
| Egypt | 91.5 | 3.1 | 0.4 | 2.7 | 2 | 0.3 |
| **C. Aggregate Financing Patterns 2-Allen et al. (2005)'s Categorization**** | | | | | | |
| | **Bank financing** | | | Self fund raising | | |
| Egypt | 3.2 | | | 96.8 | | |

Allen Franklin, Jun Qian and Meijun Qian, «Law, Finance, and Economic Growth in China,» *Journal of Financial Economics*, no. 77 (2005), pp. 57-116.

* Proportion of new investments financed by different sources, in the formal sector only, due to the unavailability of data on the contribution of each of the sources of financing for firms' new investments in the informal sector. Informal firms were asked only to specify main sources of money for buying new fixed assets.

** Operations finance consists of financing from leasing, trade credit and credit cards.

***Investment funds include special development financing and other state services (public financing).

×Excluding China.

****Internal financing = retained earnings + loans from family and friends + other sources. Bank financing = domestic commercial banks + foreign commercial banks.

**Source**: Egypt: Author's Calculations, Other countries: Meghana Ayyagari, Asli Demirgüç-Kunt and Vojislav Maksimovic, «How Important Are Financing Constraints?: The Role of Finance in the Business Environment,» *World Bank Economic Review*, vol. 22, no. 3 (August 2005).

- The role of informal financing is small. However, it is four times higher than the use of informal sources in high income countries. In addition, informal sources of finance (informal and other sources) are used by around two fifths of informal firms (37.9%) to finance purchasing new fixed assets[26]. In spite of the fact that the contribution of these sources in financing new investments can not be estimated using data available, it may be concluded that informal sources play an obviously important role in financing new investments in the informal sector in Egypt; they play a complementary role to the formal financial system only in this sector.

We may conclude that in Egypt, private firms' use of formal financing channels is comparable to its use in other developing countries. However, results in (table 4) suggest that Egyptian firms are an anomaly in their use of self fund raising especially retained earnings compared to other developing countries.

These finance patters are the result of access to and cost of finance constraints. Lack of access to formal finance institutions in addition to high costs of finance make Egyptian firms far less dependent on bank financing and far more on self fund raising; mainly on retained earnings. This in turn contracts expanding po-

(26) Author's calculations from the Productivity and Investment Climate Survey 2008.

tentials of these firms. Only two fifths of firms in Egypt intend to expand capacity over the next two years. Comparing financing patterns of firms that intend to expand capacity to those of other firms, the results (table 5) show that those that intend to expand their capacity are in fact more likely to depend on bank financing rather than on retained earnings. In spite of the fact that the contribution of banks in financing new investments is very small in all firms, it is significantly higher among firms that intend to expand capacity than among other firms.

**Table 5**
**Expanding Capacity and Financing Patterns**

| | % of firms | Sources of financing % | | % of all firms depend mainly on*** | |
|---|---|---|---|---|---|
| | | Retained earnings* | Bank financing** | Retained earnings**** | Bank financing***** |
| Expanding Capacity | 41.2% | 84.7 | 4.1 | 84.4 | 4.31 |
| Otherwise | 58.8% | 91.3 | 2.6 | 92.1 | 3.33 |

* Difference is significant at 0.01,

** Difference is significant at 0.1,

*** «Depends mainly» denotes that the firm finance at least 50% of its new investments using this source.

**** Pearson $Chi^2$ is significant at 0.01 level.

***** Pearson $Chi^2$ is significant at 0.05 level.

**Source**: Author's calculations.

## 6. Financing Constraints across Firms in Egypt

Table (1) in the appendix compares the burden and severity of finance constraints on investment among different types of firms. The survey allows a breakdown of firms by different characteristics; region, size, formality, economic sector, legal status, firm ownership, exporting, asset ownership and human resources.

Firms in Upper Egypt are more likely than firms in urban governorates and those in Lower Egypt to rank access to finance or cost of finance as a major or very severe obstacle to operation and growth. The severity of these two constraints is highest in Upper Egypt; higher than average severity rate of these two obstacles in Egypt. It is worth mentioning that the regional gap in the burden of access to finance constraints is greater than the gap in cost of finance. This may be explained by differences in the regional development of the financial system; Upper Egypt governorates are the least developed; especially rural areas. Egypt is no exception; access to finance is often found to be more of a constraint in rural areas[27].

(27) *World Development Report 2005: A Better Investment Climate For Every One.*

In Upper Egypt, the majority of population lives in rural areas (69%) and incidence of poverty is highest (36.9% compared with 6.9% and 14.2% in urban and Lower Egypt Governorates)[28]. Financial institutions are less likely to establish branches in Upper Egypt governorates.

The survey allows a breakdown of firms by size as measured by the number of employees. Small firms employ less than 50 employees, medium sized firms employ between 50 and 99 employees, while large firms employ more than 100 employees[29]. Table (1) in the appendix shows that the larger the size of the firm is, the less likely for it to face finance constraints and the less the severity of both access to finance and cost of finance constraints as obstacles to its operation and growth. Small firms cannot afford to meet collateral requirements. They have shorter credit histories. In addition, they are less likely to keep accurate and reliable records. Thus, their applications for loans are more likely to be refused than large firms. Obtaining access to finance is therefore more difficult for smaller firms.

Comparing informal firms to formal ones, informal firms are more likely to face finance constraints. The burden and severity of the cost of financing as an obstacle to operation and growth are significantly higher among informal firms. They are usually small firms with very limited budgets. However, there is no significant difference in the burden and severity of access to finance between formal and informal firms. Obtaining access to finance is very difficult for informal firms as for a large part of formal firms; such as small firms[30]. Working in the formal sector seems to be a necessary condition but not sufficient to obtain access to finance.

There is no significant difference in the burden and severity of finance constraints between firms in the manufacturing sector and those in the services sector. Burden and severity of constraints are more related to firm characteristics other than the economic sector the firm belongs to. There is also no significant difference between firms working in different manufacturing sectors. However, in the services sector both commercial firms and those working in tourism services are more likely to face finance constraints. The severity of cost of finance constraint is highest among construction firms (table6).

(28) *World Development Indicators 2010* (Washington, DC: World Bank, 2010).

(29) «According to official statistics in Egypt, small firms are firms employing less than 50 workers; medium firms are firms employing 50-99 workers ARE-Ministry of Foreign Trade and Industry MOFTI 2005 (ARE-Ministry of Foreign Trade and Industry (MOFTI)) (2005),» *Quarterly Economic Digest* (Cairo), vol. 11, no. 1 (January-March 2005), and ARE-Ministry of Finance MOF 2005.

(30) Small firms constitute 60.9% of formal firms in the sample.

**Table 6**
**Finance Constraints in the Services Sector**

| Services Sectors | Finance constraint %* | Severity of cost of finance constraint** |
|---|---|---|
| Commercial | 50 | 1.5 |
| Construction and building | 38.5 | 2.2 |
| Tourism Services and transport | 63.9 | 2.1 |
| Tourist restaurants | 36.1 | 1.3 |
| All | 45.1 | 1.7 |

* Pearson Chi2 is significant at 0.01 level.

** Differences are statistically significant ($p < 0.05$).

**Source**: Author's calculations.

The burden and severity of access to and cost of finance as obstacles to operation and growth among individual ownership, partnership, limited partnership and to a lesser extent limited liability companies are higher than the average burden and severity of these constraints among all firms, on the contrary to stock partnership and stock companies which suffer far less from these two constraints. This reflects variations in firm size; the majority of individual ownership, partnership, limited partnership and limited liability companies are small firms (88.1%, 82%, 58.9% and 55.6% of these firms respectively), while large firms constitute 44% and 66% of stock partnership and stock companies respectively[31].

Foreign firms are far less constrained in access to financing than domestic private firms. On contrary to domestic private firms, government-owned firms suffer far less from these constraints. Private domestic firms are the most constrained by the cost and access to finance. The severity of access to and cost of finance as obstacles to operation and growth among private domestic firms are 2.4 and 2.8 times higher than among government-owned firms and 2 and 2.5 times higher than among private foreign firms. It is worth mentioning that private domestic firms constitute the vast majority of firms working in Egypt; 94.6% all firms and 93% of firms in the formal sector[32].

Comparing exporters with non-exporters; it is found that exporters are less constrained by access to and cost of finance; the severity of both access to finance and cost of finance obstacles are lowest among exporters. Firm size differ significantly between exporting and non-exporting firms, while 67.8% of exporting firms are large firms, large firms constitute only 17.5% of non-exporting firms[33]. In addition, the government subsidizes exporting firms. Export subsidies reached 4 billion Egyptian pounds in the public budget 2010/2011.

(31) Author's calculations from the Productivity and Investment Climate Survey 2008.

(32) Ibid.

(33) Ibid.

The survey provides valuable information on assets ownership. In this study, four dummy variables are constructed using this information about assets ownership; «Land» is a dummy variable that equals one if the firm owns the majority of its land, «Buildings» is a dummy variable that equals one if the firm owns the majority of its buildings, «Accounts» is a dummy variable that equals one if the firm has a checking or a saving account and «Asset» is a dummy variable that equals one if the firm owns the majority of its land or buildings or has a checking or a saving account.

The burden and severity of finance constraints are found to be significantly higher among firms that do not have any assets than among those firms that have assets (table 1 in the appendix). Firms that have assets are more able to meet collateral requirements and thus to have access to finance more easily. The majority of firms (86%) that have got loans from financial institutions were required to provide collateral. Three types of assets are used as collateral (table 7); firm assets, personal assets and other assets. Firm assets are the most common assets that are used to secure a loan, while personal assets are less frequently used. However, there are significant differences in types of collateral provided between firms that own assets such as land, buildings or have checking or saving accounts and those that do not own the majority of their land, buildings or do not have accounts. The second group of firms is less likely to use firm assets to secure a loan from a financial institution than the first group (35% versus 87%). This group of firms is three times more likely to use personal assets than the first group. This implies that owners of second group of firms are at higher risk of losing their own properties. Thus, the second group of firms is more likely to rate both access to finance and cost of finance among the greatest and most severe barriers to their operation and growth.

**Table 7**
**Collateral Requirements and Assets Ownership**

| **Collateral Required** | | | **86.3%** |
|---|---|---|---|
| **Types of Collateral*** | **Firm assets** | 79.7% | |
| | Personal assets | | 18.23% |
| | Other assets | | 18.18% |
| Ownership of assets and type of collateral** | Assets | Firm assets | 87.2% |
| | | Personal assets | 14.2% |
| | No assets | Firm assets | 34.6% |
| | | Personal assets | 42.3% |

* More than one type of assets may be presented as collateral, thus sum of percentages of firms presenting different types of collateral does not equal 100. Firms' assets include land, buildings, immovable plant, immoveable machinery, moveable machinery and other tangible assets.

** Pearson Chi2 is significant at 0.01 level.

**Source**: Author's calculations.

The survey provides information on the educational levels of the firm manager and workers. Two variables are constructed to evaluate the firm's human resources (table 1 in the appendix). The first is «the manager educational level», it is equal to one if the firm manger has a secondary education or above and zero otherwise. The second variable is «the human resources index»; it is a composite index constructed to measure the quality of the firm's human resources, depending on both the educational level of the manager and the educational level of the majority of workers.

The burden and severity of access to and cost of finance are lower among firms whose managers have secondary or university education and also among those firms with higher human resources index. The severity of both access to and cost of finance as obstacles to growth and operation among firms with the lowest value of the human resources index is 1.6 and 1.5 times higher than among firms with the highest value of the human resources index.

Better human resources make it more easily to know about financial opportunities available, deal with financial institutions, complete loan applications successfully and conduct feasibility studies.

## 7. Financing Patterns across Firms in Egypt

Analyzing aggregate financing patterns of different types of firms, table 2 in the appendix shows how financing patterns vary significantly across different types of firms working in the formal sector in Egypt.

Firms that suffer more severe finance constraints are more likely to depend on self fund raising, especially on retained earnings and to finance only a small percentage of their new investments using bank financing. They are also more likely to resort to informal financing in spite of the fact that informal financing still constitutes a very small percentage of formal firms' funds in Egypt.

Firms in urban governorates have the highest bank financing utilization rate. However, the utilization rate of firms in Upper Egypt governorates is also high; higher than the average utilization rate of bank financing among all firms in spite of the fact that the severity of finance constraints is highest in Upper Egypt as previously mentioned. These figures hide large significant differences among governorates. While differences among urban governorates in utilizing bank financing, self fund raising and retained earnings are not statistically significant, there are significant differences among Upper Egypt governorates. In 1/3 of these governorates, the bank financing utilization rate is zero, in another two governorates; the utilization rate is lower than the average utilization rate in Egypt. It is worth mentioning that there are also similar significant differences among Lower Egypt governorates (table 3 in the appendix). This reflects differences in the regional development of the financial system in Egypt.

Large firms source a percentage of their funds from banks that is 3.6 times higher than small and medium sized firms. On the contrary, dependence on self fund raising especially on retained earnings is higher among smaller firms. Large and medium sized firms do not utilize informal sources for financing new investments; these sources are used only by small firms.

As there is no significant difference in the burden and severity of finance constraints between firms in the manufacturing sector and those in the services sector, there is no significant difference in utilizing most of financing sources between these two economic sectors. However, there is significant difference in dependence on self fund raising, especially on retained earnings. It is slightly higher among firms in the services sector. Small firms are more represented in the services sector than in the manufacturing sector; they constitute 83.4% of firms in the services sector comparing to 53.5% of firms in the manufacturing sector.

**Table 8**
**Firm Financing Patterns in the Services Sector %**

| Firms | A. Bank financing versus self fund raising | | B-Formal versus informal financing* | | | C. Dependence on retained earnings* |
|---|---|---|---|---|---|---|
| | Bank financing | Self fund raising | Formal | Informal | Other* | |
| Commercial | 0 | 100 | 90.9 | 0 | 9.1 | 90.9 |
| Construction and Building | 1.4 | 98.6 | 100 | 0 | 0 | 94.5 |
| Tourism Services | 5.5 | 95.5 | 98 | 1.6 | 0.3 | 91.4 |
| Tourism Restaurants | 0.3 | 99.7 | 97.9 | 0 | 2.1 | 90.1 |
| Other | 0 | 100 | 100 | 0 | 0 | 100 |
| All | 2 | 98 | 98.1 | 0.5 | 1.4 | 91.2 |

* Other sources of financing may be formal or informal. All differences are significant at 0.05.

* Differences are not significant at 0.1.

**Source**: Author's calculations.

There is also no significant difference in utilizing financing sources among firms working in different manufacturing sectors. However, in the services sector; while there is no significant difference among different firms in utilizing formal and informal sources and in using retained earnings which is the main financing source. However, comparing bank financing and self fund raising; it is found that there are significant differences; commercial, construction firms and tourism restaurants depend mainly or completely on self fund raising while firms working in tourism services utilize bank financing to finance a percentage of their new invest-

ments that is almost three times higher than the average percentage in the services sector (table 8).

Bank financing utilization rate among individual ownership and partnership firms is significantly lower than the average utilization rate. The burden and severity of access to and cost of finance as obstacles to operation and growth of these firms are higher than the average burden and severity among all firms. These firms are more likely to depend on self fund raising and to use informal sources of finance.

Bank financing utilization rate is lowest among private domestic firms, while dependence on self fund raising is highest among these firms. Only these firms are likely to use informal sources of finance. The severity rates of finance constraints are highest among these firms. On contrary to private domestic firms, private foreign firms and government-owned firms which suffer least from finance constraints have the highest bank financing utilization rates. Dependence on retained earnings is lowest among government-owned firms; retained earnings source only 69.4% of government-owned firms' new investments compared to 88.6% of new investments of all firms.

Bank financing utilization rate is significantly higher among exporting firms that suffer less from financial constraints than among non-exporting firms. It is almost three times higher than among non-exporting firms that depend more on self fund raising, especially on retained earnings. There is no significant difference between the two groups in using formal and informal sources of finance. Using informal resources is more related to other firm characteristics; mainly the firm size.

Firms that own majority of its land, buildings or have accounts are more likely to utilize bank financing to finance their new investments. Bank financing utilization rate among these firms is almost five times higher than among other firms. Asset ownership is a necessary condition for providing collateral requirements.

Informal sources utilization rate among firms whose managers are less educated are 14 times higher than that among firms whose managers are higher educated.

Focusing on the informal sector (table 9), it is very difficult for informal enterprises to obtain credit from banks since they have no collateral to offer as a guarantee. In addition, they are not legally registered and do no keep accurate and reliable records. As a result, they depend heavily on personal savings and when these savings are not enough they are obliged to utilize informal sources of finance. Only a tiny percentage of informal firms utilizes bank financing with a much greater reliance on personal savings and informal sources. These firms receive no support form business associations. Only 5.6% of these firms belong to business associations.

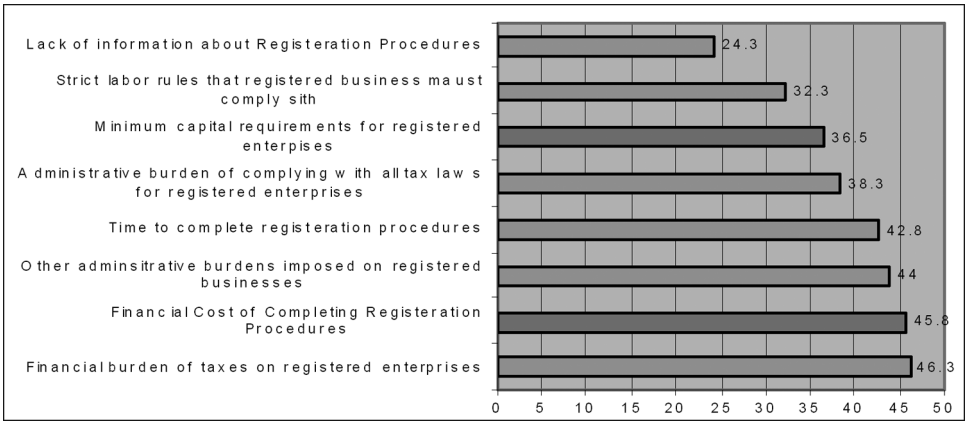
**Table 9**
**Informal Firms' Financing Sources in Egypt*%**

| Sources of Financing | Used as the only method% (A) | Used with other sources% (B) | % of firms using this source (C = A + B) |
|---|---|---|---|
| Personal savings | 43.2 | 29.4 | 72.6 |
| Loan from domestic commercial banks | 1.1 | 2.1 | 3.2 |
| Loan from non-domestic commercial banks and non banking financial institutions (small loans) | 1.05 | 1.05 | 2.1 |
| Association of business | 0 | 0 | 0 |
| Investment funds | 0 | 1.05 | 1.05 |
| Family/friends | 1.05 | 12.63 | 13.68 |
| Informal sources (Informal + other) | 23.2 | 14.7 | 37.9 |

* Sources of financing new asset purchases; data on the contribution of each of the sources of financing for informal firms' new investments are unavailable. Informal firms were asked only to specify main sources of money for buying new fixed assets.

**Source**: Author's calculations.

**Figure 2**
**Obstacles to Registering Informal Firms**
**Ranked in Order of Severity**




**Source**:Author's calculations.

Constrained access to finance negatively affects not only informal firms' expand opportunities but also the possibility of transforming these firms into formal firms. Using data on the main obstacles hindering registration of these firms; the severity rate of each obstacle is estimated. Ranking these obstacles in order of severity (figure 2); it is found that the second most severe obstacle is the financial cost of completing registration procedures and the sixth most severe obstacle is minimum

capital requirements for registered enterprises. Thus, we may conclude that financial constraints have an influential negative effect on the possibility of transforming informal firms to formal ones.

## 8. Conclusions

Improving investment climate should top the agenda of policy makers so as to spur investment growth. Access to finance and cost of finance are considered two important factors that affect investment climate. The aim of this paper is to evaluate the impact of access to finance and cost of finance on investment climate in Egypt, and how much access to finance and cost of financing are considered constraints on running and expanding business. The study uses data from the Productivity and Investment Climate 2008.

Finance problems are major or severe constraints to growth and operation of around one-half of total firms in Egypt. Comparing finance constraints with other obstacles to growth and operation of firms, finance constraints are found to be one of the most ten major obstacles to firms' growth and operation in Egypt. Cost of finance is more problematic than access to finance. The severity rate of cost of finance as a major constraint to operation and growth of firms in Egypt is higher than the severity rate of access to finance constraints.

Analyzing firm financing patterns in Egypt and other developing and developed countries shows that investment financing in Egypt depends almost solely on internal sources of financing; mainly on retained earnings. Egypt has the highest amount of internal financing/retained earnings compared to all the other developing and developed countries. Egypt looks unique in the large dependence on retained earnings compared to all other countries. Bank financing plays an obviously tiny role in financing new investments in Egypt. Comparing the contribution of the banking system in financing firms' new investments in Egypt to its contribution in other developing and developed countries shows huge gap that raises concerns about the efficiency of the banking system in Egypt and its role in encouraging investment.

The utilization rate of informal sources of finance is low. However, it is four times higher than the use of these sources in high income countries. In addition, informal sources of finance are used by around two fifths of informal firms. Finance patters are the result of access to and cost of finance constraints. Lack of access to formal financial services in addition to high costs of finance make Egyptian firms, dependent far less on banking financing and far more on self fund raising. This in turn contracts expanding potentials of these firms. Only two fifths of firms in Egypt intend to expand capacity over the next two years. Firms that intend to expand their capacity are in fact more likely to depend on bank financing rather than on retained earnings.

Comparing the burden and severity of financial constraints on investment among different types of firms; it is found that the severity of finance constraints is

significantly higher among firms in Upper Egypt due to differences in the regional development of the financial system. It is also higher among smaller, informal, individual ownership, partnership, non-exporting and domestic private firms. It is higher among firms that do not own the majority of their land, buildings and do not have saving accounts than among those firms that own the majority of their land, or buildings or have saving accounts and among firms with lower human resources index than among firms with higher human resources index.

Analyzing aggregate financing patterns of different types of firms, shows that financing patterns vary significantly across different types of firms working in the formal sector in Egypt. Firms that suffer more severe finance constraints are more likely to depend on self fund raising, especially on retained earnings, and to finance only a small percentage of their new investments using bank financing. They are also more likely to resort to informal finance in spite of the fact that informal finance still constitutes a very small percentage of formal firms' funds in Egypt. On the other hand, informal firms find it very difficult to obtain credit from banks since they have no collateral to offer as a guarantee. As a result, they depend heavily on personal savings and when these savings are not enough they are obliged to utilize informal sources of finance. These firms receive no support form business associations. This in turn negatively affects their expand opportunities and the possibility of transforming into formal firms.

# Appendix

**Table 1**
**Financing Constraints in Egypt- Cross-Firm Comparison**

| Firms | Financing Constraints %* | | | | Severity of finance constraints** | |
|---|---|---|---|---|---|---|
| | **Access to finance** | **Cost of finance** | **Finance constraint** | One of Biggest 3 obstacles | Access to finance | Cost of finance |
| **1-The Regional Location of Firms** | | | | | | |
| Urban Gov | 33.3 | 39 | 42.8 | 11.6 | 36.5 | 42.5 |
| Lower Egypt | 20.5 | 35.1 | 35.8 | 9.2 | 25 | 37.5 |
| Upper Egypt*** | 39.1 | 54.3 | 56.3 | 18.9 | 41 | 52.5 |
| **2-The Size of the Firm** | | | | | | |
| Small | 37.7 | 48.5 | 51.1 | 13.3××× | 40 | 50 |
| Medium | 24.4 | 43.2 | 43.2 | 11.5××× | 27.5 | 40 |
| Large | 20.9 | 31.7 | 34.4 | 15.4××× | 25 | 35 |

**to be continued**

**continued**

| | | | | | | |
|---|---|---|---|---|---|---|
| **3- Formal versus Informal Firms** | | | | | | |
| Formal | 31$^{\times\times\times}$ | 41.7$^{\times\times}$ | 44.2$^{\times\times}$ | 12.4 | 35 | 42.5 |
| Informal | 36.2$^{\times\times\times}$ | 50.4$^{\times\times}$ | 52.4$^{\times\times}$ | 17.6 | 40$^{\bullet\bullet\bullet}$ | 52.5 |
| **4- Economic Sectors** | | | | | | |
| Manufacturing | 30.4$^{\times\times\times}$ | 42.3$^{\times\times\times}$ | 44$^{\times\times\times}$ | 12.9$^{\times\times\times}$ | 32.5 | 43 |
| Services | 33$^{\times\times\times}$ | 39.7$^{\times\times\times}$ | 45.1$^{\times\times\times}$ | 10.7$^{\times\times\times}$ | 37.5$^{\bullet\bullet\bullet}$ | 42.8$^{\bullet\bullet\bullet}$ |
| **5-Legal Status of the Firm** | | | | | | |
| Individual ownership | 42.4 | 51.9 | 53.7 | 12.8$^{\times\times\times}$ | 45 | 51.8 |
| Partnership | 37.2 | 50.6 | 52.3 | 10.8$^{\times\times\times}$ | 37.8 | 48.8 |
| Limited partnership | 34.2 | 44.2 | 47.1 | 13.48$^{\times\times\times}$ | 35 | 46 |
| Stock partnership | 18.2 | 9.1 | 18.2 | 6.25$^{\times\times\times}$ | 15 | 18.3 |
| Stock company | 17.5 | 30.9 | 33.3 | 13.76$^{\times\times\times}$ | 25 | 34.5 |
| Limited liability company | 33.3 | 35.7 | 42.9 | 7.41$^{\times\times\times}$ | 38.3 | 42.8 |
| **6-Firm Ownership** | | | | | | |
| Government | 13.8$^{\times\times}$ | 17.2 | 17.2 | 8.3$^{\times\times\times}$ | 15$^{\bullet\bullet}$ | 16.5$^{\bullet}$ |
| Private domestic | 33.3$^{\times\times}$ | 45.2 | 47.6 | 13.8$^{\times\times\times}$ | 36.3$^{\bullet\bullet}$ | 46.3$^{\bullet}$ |
| Private Arab | 20$^{\times\times}$ | 25 | 29.2 | 8.8$^{\times\times\times}$ | 29$^{\bullet\bullet}$ | 39.5$^{\bullet}$ |
| Private foreign | 13.3$^{\times\times}$ | 6.7 | 13.3 | 7.7$^{\times\times\times}$ | 18.3 | 18.3 |
| Other | 20$^{\times\times}$ | 50 | 50 | 30.8$^{\times\times\times}$ | 25$^{\bullet\bullet}$ | 50$^{\bullet}$ |
| **7-Exporting** | | | | | | |
| Non-Exporters | 34.4 | 45 | 47.1 | 11.8$^{\times\times\times}$ | 37 | 46 |
| Exporters | 21.5 | 32.9 | 36.3 | 13.8$^{\times\times\times}$ | 26.3 | 35.3 |
| **8-Asset ownership** | | | | | | |
| A-Land | | | | | | |
| Own land | 28.2 | 41.8$^{\times\times\times}$ | 43.4$^{\times\times}$ | 13.7$^{\times\times}$ | 32 | 43.3$^{\bullet}$ |
| Otherwise | 39.3 | 46.8$^{\times\times\times}$ | 50.5$^{\times\times}$ | 13.5$^{\times\times}$ | 40.8 | 48.3$^{\bullet}$ |
| B-Buildings | | | | | | |
| Own buildings | 28.1 | 41.7$^{\times}$ | 43.3$^{\times\times}$ | 13.3$^{\times\times\times}$ | 32 | 43.3$^{\bullet}$ |
| Otherwise | 40.1 | 47.1$^{\times}$ | 51.1$^{\times\times}$ | 14.2$^{\times\times\times}$ | 41.3 | 48.3$^{\bullet}$ |
| C. Accounts | | | | | | |
| Has account | 25.6 | 37.1 | 39.8 | 12.7$^{\times\times\times}$ | 44.5 | 39.3 |
| otherwise | 43.1 | 54.1 | 56.2 | 14.9$^{\times\times\times}$ | 29.5 | 54.5 |
| D. Assets**** | | | | | | |
| Assets | 28.6 | 39.9 | 42.4 | 12.9$^{\times}$ | 32 | 41.8 |
| No assets | 45.8 | 57.4 | 59.9 | 16.2$^{\times}$ | 47.5 | 56.9 |
| **9-Human resources** | | | | | | |
| A-The manager educational level | | | | | | |
| Less than secondary education | 41.4$^{\times\times}$ | 53.7$^{\times\times}$ | 55.1$^{\times\times}$ | 16.8$^{\times}$ | 43.2$^{\bullet\bullet}$ | 54.1$^{\bullet\bullet}$ |

**to be continued**

**continued**

| | | | | | | |
|---|---|---|---|---|---|---|
| Secondary education and above | 30.9$^{xx}$ | 42.2$^{xx}$ | 44.7$^{xx}$ | 13.1$^{x}$ | 34.1$^{••}$ | 43.8$^{••}$ |
| B. Human Resources Index***** | | | | | | |
| 0 | 48.1 | 58.8 | 59.7 | 20.5$^{xx}$ | 49.7 | 59.1 |
| 1 | 43.5 | 58.5 | 60.4 | 18.7$^{xx}$ | 45.9 | 58.5 |
| 2 | 35.3 | 45.2 | 48.8 | 13.4$^{xx}$ | 36.6 | 45.2 |
| 3 | 35.7 | 43.6 | 45.5 | 12.6$^{xx}$ | 36.4 | 46.7 |
| 4 | 26.4 | 36.4 | 41.2 | 12.1$^{xx}$ | 30.8 | 40.4 |
| Egypt | 32.1 | 43.6 | 45.9 | 13.7 | 35.1 | 45 |

* Pearson Chi2 is significant at 0.01 level.

** All differences are statistically significant ($p < 0.01$).

*** Firms in frontier governorates are included in upper Egypt governorates, as only very few firms in frontier governorates were surveyed.

**** Assets denotes owning any of the three types of assets.

***** the human resources index is constructed as follows = Educational level index of workers (0 = majority of workers 50% + less than primary, 1 = majority of workers 50% + less than secondary education, 2 = majority of workers 50% + secondary education and above) + Educational level index of the manager (0 = less than secondary education, 1 = secondary education, 2 = university education and above).

$^{xxx}$ Pearson Chi2 is not significant at 0.1.

$^{xx}$ Pearson Chi2 is significant at 0.05, $^{x}$Pearson Chi2 is significant at 0.1.

•••Difference is not statistically significant ($p > 0.1$).

••Difference is statistically significant ($p < 0.05$).

•Difference is statistically significant ($p < 0.1$).

**Source**: Author's calculations.

## Table 2
## Aggregate Financing Patterns in Egypt- Cross-Firm Comparison*%

| Firms | A. Bank financing versus self fund raising | | B-Formal versus informal financing | | | C. Dependence on retained earnings |
|---|---|---|---|---|---|---|
| | Bank financing | Self fund raising | Formal | Informal | Other*** | |
| **1-The Regional Location of Firms** | | | | | | |
| Urban Gov | 3.91$^{x}$ | 96.09$^{xx}$ | 98.8$^{xxx}$ | 0.5$^{xxx}$ | 0.7$^{xx}$ | 91.6 |
| Lower Egypt | 1.5$^{xx}$ | 98.5$^{xx}$ | 98.7$^{xxx}$ | 0.6$^{xxx}$ | 0.7$^{xx}$ | 89.8 |
| Upper Egypt | 3.89$^{xx}$ | 96.11$^{xx}$ | 97.6$^{xxx}$ | 0.1$^{xxx}$ | 2.3$^{xx}$ | 83.1 |
| **2-The Size of the Firm** | | | | | | |
| Small | 1.8 | 98.2 | 98.5$^{xxx}$ | 0.7$^{x}$ | 0.8$^{xxx}$ | 90.6 |
| Medium | 1.7 | 98.3 | 98.4$^{xxx}$ | 0$^{x}$ | 1.6$^{xxx}$ | 88.9 |
| Large | 6.4 | 93.6 | 98.2$^{xxx}$ | 0$^{x}$ | 1.8$^{xxx}$ | 84.7 |

**to be continued**

**continued**

| | | | | | | |
|---|---|---|---|---|---|---|
| **3- Economic Sectors** | | | | | | |
| Manufacturing | 3.6$^{xxx}$ | 96.4$^{x}$ | 98.5$^{xxx}$ | 0.4$^{xxx}$ | 1.1$^{xxx}$ | 87.8$^{xx}$ |
| Services | 2$^{xxx}$ | 98$^{x}$ | 98.1$^{xxx}$ | 0.5$^{xxx}$ | 1.4$^{xxx}$ | 91.2$^{xx}$ |
| **4-Legal Status of the Firm** | | | | | | |
| Individual ownership | 1.5 | 98.5 | 98.7 | 0.6 | 0.7 | 91.6 |
| Partnership | 1.6 | 98.4 | 99.4 | 0.6 | 0 | 88.3 |
| Limited partnership | 3.4 | 96.6 | 99.2 | 0 | 0.8 | 89.5 |
| Stock partnership | 2.5 | 97.5 | 100 | 0 | 0 | 96.3 |
| Stock company | 5.1 | 94.9 | 98.2 | 0.4 | 1.4 | 86.7 |
| Limited liability company | 9.4 | 90.6 | 100 | 0 | 0 | 80.1 |
| **5-Firm Ownership** | | | | | | |
| Government | 10.3 | 89.7$^{xx}$ | 79.7 | 0$^{x}$ | 20.3 | 69.4 |
| Private domestic | 2.8 | 97.2$^{xx}$ | 98.9 | 0.4$^{x}$ | 0.7 | 89.6 |
| Private Arab | 5.9 | 94.1$^{xx}$ | 97.1 | 0$^{x}$ | 2.9 | 78.2 |
| Private foreign | 10.6 | 89.4$^{xx}$ | 100 | 0$^{x}$ | 0 | 73.1 |
| Other | 0 | 100$^{xx}$ | 100 | 0$^{x}$ | 0 | 96.2 |
| **6-Exporting** | | | | | | |
| Non-Exporters | 2.2 | 97.8 | 98.6$^{xxx}$ | 0.5$^{xxx}$ | 0.9$^{x}$ | 90.3 |
| Exporters | 6 | 94 | 97.7$^{xxx}$ | 0.3$^{xxx}$ | 2$^{x}$ | 84.1 |
| **7-Asset ownership** | | | | | | |
| Assets | 3.4$^{xx}$ | 96.6$^{xx}$ | 98.4$^{xxx}$ | 0.4$^{xxx}$ | 1.2$^{xxx}$ | 88.1$^{xx}$ |
| No assets | 0.7$^{xx}$ | 99.3$^{xx}$ | 98.8$^{xxx}$ | 0.5$^{xxx}$ | 0.7$^{xxx}$ | 93.7$^{xx}$ |
| **8-Human resources-the manager educational level** | | | | | | |
| Less than secondary education | 2.1$^{xxx}$ | 97.9$^{xxx}$ | 96.1$^{xx}$ | 2.9 | 1$^{xxx}$ | 81.3 |
| Secondary education and above | 3.3$^{xxx}$ | 96.7$^{xxx}$ | 98.6$^{xx}$ | 0.2 | 1.2$^{xxx}$ | 89.2 |
| Egypt | 3.2 | 96.8 | 98.4 | 0.4 | 1.2 | 88.6 |

* Proportion of new investments financed by different sources, in the formal sector only, due to the unavailability of data on the contribution of each of the financing sources for firms' new investments in the informal sector.

*** Other sources may be formal or informal. All differences are significant at 0.01. $^{x}$ Differences are significant at 0.1, $^{xx}$ Differences are significant at 0.05, $^{xxx}$ Differences are not significant at 0.1.

**Source**: Author's calculations.

## Table 3
## Firm Financing Patterns in Egypt in Different Governorates%

| Governorates | A. Bank financing versus self fund raising | | B-Formal versus informal financing | | | C. Dependence on retained earnings |
|---|---|---|---|---|---|---|
| | Bank financing | Self fund raising | Formal | Informal | Other | |
| Cairo | 3.6 ××× | 96.4 ××× | 99.5 × | 0.4 ××× | 0.1×× | 91.2 ××× |
| Alexandria | 4.6 ××× | 95.4 ××× | 97.3 × | 0.5 ××× | 2.2×× | 92.2 ××× |
| Port Said | 0 ××× | 100 ××× | 100 × | 0 ××× | 0×× | 100 ××× |
| Suez | 16.7 ××× | 83.3 ××× | 100 × | 0 ××× | 0×× | 83.3 ××× |
| **Urban Gov.** | 3.91 | 96.09 | 98.8 | 0.5 | 0.7 | 91.6 |
| Damietta | 3.1 | 96.9 | 100×× | 0 ××× | 0 | 88.1 |
| Dakahliya | 1.5 | 98.5 | 97.6×× | 2.4 ××× | 0 | 90 |
| Sharkiya | 1 | 99 | 98.7×× | 1.34 ××× | 0 | 92 |
| Qualyubia | 1 | 99 | 100×× | 0 ××× | 0 | 89.9 |
| Kafr-El-Sheikh | 0 | 100 | 100×× | 0 ××× | 0 | 100 |
| Gharbiya | 0 | 100 | 100×× | 0 ××× | 0 | 86.6 |
| Menoufiya | 0 | 100 | 97.8×× | 0 ××× | 2.2 | 95.7 |
| Beheira | 18.2 | 81.8 | 88.2×× | 0 ××× | 11.8 | 67.1 |
| Ismailia | 3.6 | 96.4 | 100×× | 0 ××× | 0 | 89.3 |
| **Lower Egypt** | 1.5 | 98.5 | 98.7 | 0.6 | 0.7 | 89.8 |
| Giza | 4.3× | 95.7× | 98.9 ××× | 0×× | 1.1 ××× | 78×× |
| Bani-Suef | 0× | 100× | 97 ××× | 0×× | 3 ××× | 97×× |
| Fayoum | 2.2× | 97.8× | 97.8 ××× | 2.2×× | 0 ××× | 80.2×× |
| Minya | 13.3× | 86.7× | 100 ××× | 0×× | 0 ××× | 75.4×× |
| Assuit | 1.5× | 98.5× | 90.6 ××× | 0×× | 9.4 ××× | 87.6×× |
| Souhag | 4.5× | 95.5× | 97.6 ××× | 0×× | 2.4 ××× | 88.3×× |
| Qena | 10× | 90× | 100 ××× | 0×× | 0 ××× | 90×× |
| Aswan | 0× | 100× | 95.5 ××× | 0×× | 4.5 ××× | 95.5×× |
| Loxur | 0× | 100× | 93.8 ××× | 0×× | 6.3 ××× | 93.8×× |
| **Upper Egypt** | 3.89 | 96.11 | 97.6 | 0.1 | 2.3 | 83.1 |
| **Egypt** | 3.2 | 96.8 | 98.4 | 0.4 | 1.2 | 88.6 |

All differences are significant at 0.01.

× Differences are significant at 0.1.

×× Differences are significant at 0.05.

××× Differences are not significant at 0.1.