Wang, Yao

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Yao Wang[a]

[a]Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague, Smetanovo nabrezi 6, 111 01 Prague 1, Czech Republic

Abstract:

SMEs are drivers of economic growth and job creation in developing countries. It is paramount to determine the factors that hinder their growth. This paper uses the Enterprise Survey from the World Bank which covers data from 119 developing countries to investigate the biggest obstacles SMEs are confronting and the determinants that influence the obstacles as perceived by enterprise managers. The results show that SMEs perceive access to finance as the most significant obstacle which hinders their growth. The key determinants among firms' characteristics are size, age and growth rate of firms as well as the ownership of the firm. The latter – the role of the state in financing SME - is particularly intriguing. External reasons for the financing dilemma are also examined. It is shown that the main barriers to external financing are high costs of borrowing and a lack of consultant support.

Keywords: SMEs; Obstacles to Growth; Financing Dilemma; Developing Countries, firm characteristics, internal and external barriers.

Abstract

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1. Introduction

Small and medium sized enterprises potentially constitute the most dynamic firms in emerging economies (Pissarides, 1999). The empirical evidence from around the globe shows that the ubiquity of SMEs has grabbed the world's attention. The original idea formed at the end of the 19th century that large firms are the greatest support for the economy has been challenged since the 1950s. Nowadays, the significant role SMEs play in the economy cannot be underestimated. For example, Ayyagari *et al.* (2011) investigated the role SMEs play in creating jobs and showed that SMEs with less than 250 employees were the engine of growth in many countries. Beck *et al.* (2005) added that SMEs constituted over 60% of total employment in manufacturing in most developing countries. Chen (2003) summarized the data from Chinese NBS (National Bureau of Statistics) that SMEs occupied 99.4% of all enterprises in China and they contributed to 59% of GDP and 60% of total sales. All these figures reflect the importance of SMEs both in developed and developing economies. However, their importance notwithstanding, SMEs are confronted with significant obstacles which impede their development. This paper aims at sorting out the biggest obstacles SMEs face in developing countries and determining the factors affecting the obstacles for firms to grow. Only in this way can we offer effective recommendations to policy-makers in those countries in their quest for a faster and healthier growth of their economies.

A considerable number of scholars have investigated the obstacles that affect the development of SMEs within specific areas. However, very little

research has been directed towards developing economies as a group. By researching developing countries as a group, we believe that some common problems that they all face can be revealed. In this paper, the Enterprise Survey of the World Bank, which contains 119 developing countries, will be used to test the biggest obstacles to the growth of SMEs in developing countries. Firstly, the five most significant obstacles will be taken from the 18 obstacles which are described in the survey. Then a hypothesis will be made on the basis of work done by other researchers. Econometric models will then be set up to examine the relationship between the obstacles and the chosen factors. Moreover, a specific variable "sme" will be generated to emphasize the significance of the problems SMEs face compared to larger firms. A further investigation will be carried out to identify the determinants of the main obstacles to growth and also the intensity of the barriers.

In the following section, a review of recent literature is presented in order to provide a brief summary of the relevant work that has been carried out so far. Section 3 provides a brief description of our approach and hypotheses and a description of the dataset used in our analysis. As we shall see, the data is unique in its coverage and richness. In addition, the section includes a description of our methodology used in choosing the variables for our model. Section 4 introduces the model. Section 5 presents the results of our tests with a relevant discussion. Final section concludes our presentation with a brief summary of the results and a brief discussion of the approach adopted in this study.

2. Literature review

The literature dealing with barriers to growth of SMEs is relatively rich. Levy's (1993) research on the leather industry in Sri Lanka and the construction and furniture industry in Tanzania is one of the interesting examples of papers from the 1990s. Levy has identified three major constraints - access to finance, access to non-financial inputs, and high cost. His results showed that financial constraints were the main obstacles for firms to grow. Moreover, a high tax constraint was also identified as a important obstacle for the smallest firms. Since then, the research has focused on specific sectors to give more detailed and specific information about the difficulties SMEs face in the chosen industries. However, due to a lack of updated data and the expense of conducting the required surveys, the results cannot be used more broadly. Pissarides (1999) investigated whether a lack of funds is the main obstacle to SMEs growth using survey data from the EBRD (European Bank for Reconstruction and Development). He pointed out that lack of financing became an obstacle to SMEs growth in transitional economies due to poorly developed capital markets and where credit was accorded according to historical working practice. In other words, state banks were more likely to lend to state or larger enterprises. Later on, Pissarides *et al.* (2003) used a survey data from 437 CEOs of SMEs in Russia and Bulgaria to detect the biggest obstacles to SMEs growth. Variables were chosen by ranking the highest rated constraints. The top four constraints were defined as: "suppliers are not ready to deliver", "access to land", "finance problems" and "other production constraints". Their results showed that the constraint on external finance was most serious, while other

factors such as licensing did not appear to be as significant a problem as expected. More generally, Gree and Thurnik (2003) divided the obstacles into two groups: external and internal. Of the 30 obstacles chosen, finance turned out to be the most important. Other significant factors are "management skills" "location" "technology" "corruption" "regulations"; which are similar to what was listed in the World Bank Enterprise Survey of emerging economies.

An important element of the debate is the relationship between characteristics of firms and barriers to their growth. A particularly interesting part of the debate concerns the role of different types of ownership of firms as factors of growth. For example, Richter and Schaffer (1994) found that private firms developed faster than state-owned firms, the latter typically focussing their objectives on employment expansion and less on efficient utilisation of resources. However, comparisons of small public and private firms remain rather rare and the debate is typically linked to the performance of large public enterprises. Numerous scholars from China, such as Yin (2012) and Ji (2011), have drawn the conclusion that state-owned firms are "too big to fail" and thus face much fewer obstacles, not only in finance, but also in sales and have greater growth compared with smaller businesses. In brief, types of ownership need to be taken into account in the analysis of business environment in which SME operate. Furthermore, Beck (2007) summarized the empirical evidence on SMEs' financing constraints and showed that SMEs are more likely than large enterprises to be constrained by finance and other institutional obstacles. Using the World Bank Enterprise Survey 2006-2009, Chavis *et al.* (2010) found that 31 percent of

examined firms regarded access to finance as the major constraint Moreover, 40 percent were young firms with less than 3 years' experience in the industry. Further analysis addressed the relationship between the firm's age and its access to finance. The empirical results showed that younger firms were more reliant on informal financing rather than bank financing. Bank finance gradually increased with age, while informal finance gradually decreased with age. Young firms were found to be twice as likely as older firms to use personal assets as the collateral, which is consistent with the results from a study of US firms. However, young firms in countries with stronger legislation and better credit information have a smaller reliance on informal financial resources.

A wealth of relevant literature attaches importance to high growth firms[1]. Results from some studies suggest the importance of finance to high growth firms but the evidence is not clear-cut. For example, Brush et al. (2009) stratified the growth paths into rapid, incremental and episodic and then investigated the impact of access to finance, market conditions and management on the growth of firms. The results show that Rapid growth firms were cash hungry machines while incremental growth firms have to find the right employees. And advanced management skills play an important role during episodic growth of firms, while marketing strategy is a way to turn a business around when firms reach a plateau. Mason and Brown (2013) investigated the policy effect on high growth firms and how to promote high growth firms through policy approaches. Lee (2013) developed the study of Brush et al. (2009) and investigated the obstacles that were

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[1] As Henrekson and Johansson (2010) shows, high growth firms occupy only a small proportion of the total number of firms but create the majority of the jobs.

holding back high growth of small firms in the UK. Using the Small Business Survey in the UK, firms were divided into high growth firms and potential high growth firms. He analysed the effects of six key barriers to high growth and potential high growth firms. The selected variables were "recruitment" "government", "premises" market conditions" "management" and "finance". The results showed that actual high growth firms were no longer constrained by market conditions but they were significantly affected by the other five barriers. On the other hand, potential high growth firms were less likely to perceive "government" as a significant problem. Similarly, "recruitment" which was expected to be important by the author, appears to have been less significant. The author explains that the difference between expectations and the results may have been due to the matching process of potential high growth firms and also to the diversity of the interviewees' experiences.

What emerges from the literature is that SMEs face a range of different barriers. A common finding in most of the studies is that SMEs face a financing problem – a problem of access to funding. But the studies also show that there is a considerable range of barriers depending on conditions of specific markets. Another important finding is that obstacles to growth of SMEs are determined by a variety of factors and, once again, the specific conditions may vary from country to country. The determinants can be grouped as "internal" or "external". Internal factors typically include a variety of firm characteristics. External factors usually refer to barriers related to access to credit. Both of these issues – barriers and their determinants - will

be addressed in the following section together with an explanation how we propose to deal with them in this study.

3. Data and Methodology

3.1 Aim, Approach and Hypotheses

Many of the findings noted in the previous section are specific to countries in which the research was carried out (such as UK SMEs in Lee 2013), and cannot be generalized to other regions. Our aim will be to see whether some of the key findings can be generalized for developing countries as a group.

Our approach will be to analyse the role of barriers to growth by using a survey based on interviews with firm managers and other officers. Their answers to questions provide rich data on their *perceptions* of barriers to growth, which is an approach commonly used in the literature. [2]

The constraints as identified in the literature vary a great deal, and our task had to be narrowed down. For practical reasons, our analysis will be concentrated on five key barriers. The five obstacles will be identified in Section 3.3 below. Repeated in most of the literature is that "finance" is one of the biggest obstacles. As we shall see later in the text, "finance" was also identified as one of the major obstacles to SMEs in the World Bank Survey which we shall use in this study. Even though we shall identify and target five major barriers and provide commentaries, our main attention will be focussed on "finance" as the main obstacle. This partly reflects the

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[2] Please see also discussion in the following section.

importance of "finance" in the World Bank survey as well as the result of our reading of most traits of the literature.

An attempt will also be made to identify the major determinants of the barriers. We shall start by selecting a range of factors identified in the literature and the description of the selection is also provided in Section 3.3 below.

Drawing on the main findings from the empirical literature, the following hypotheses can be made with regard to finance as the major barrier:

H1: SMEs are more likely to perceive access to finance as the most significant obstacle to their growth;

H2: High growth firms are more likely to perceive access to finance as a significant barrier than firms with a slower growth rate;

H3: The probability of perceiving access to finance as a significant barrier to SMEs' growth has a negative correlation with the size of the enterprise. Moreover, the bigger the firm, the less severe the perception that finance is the binding constraint;

H4: The probability of perceiving access to finance as a significant obstacle to SMEs has a negative correlation with age of the enterprise. Moreover, the younger the firm, the more severe is likely to be the perception that the financial barrier will be an issue;

H5: Privately-owned enterprises are be more likely than state-owned enterprises to perceive access to finance as a significant obstacle to their growth;

H6: As the top manager's working experience increases, the probability of perceiving access to finance as a significant obstacle decreases.

3.2 Data

Our study draws on cross-country data. This choice was determined by the task at hand – our attempt to study the obstacles to growth of SMEs in developing countries as a group. The use of cross-section data in this case has its limitations. Perhaps the most serious limitation is the heterogeneity of individual country conditions which could lead to "identification" problems in regression analysis. This limitation typically means that studies of SMEs performance are carried out with the help of time series or panel data. Such an approach would clearly be impossible in our case – the task would be far too complex and expensive. In using cross-section data we assume, therefore, that heterogeneity of countries is minimal or with differences not generating biases in our estimations.

Our analysis will draw on data obtained from a survey. The survey focusses on perceptions and views of managers of SMEs of barriers to growth, and it is legitimate to ask whether those perceptions are the true reflections of real barriers to growth. By using the survey it is assumed that there is a close relationship between the perception of barriers and real barriers. The assumption has been discussed and questioned in the literature, for example, by Doern (2009). But we believe that, together with many other researchers in the field, that such an analysis of barriers is revealing and

useful. The main conclusions of the study are consistent with the theory as well as with findings from many individual country studies.

The data used in this paper comes from the Enterprise Survey (ES) which is an ongoing project from the World Bank. The main objective of the survey is to assist the World Bank in pursuing one of its strategic goals to build a climate for investment, job creation and sustainable growth. To be more specific, the survey aims at providing investment indicators and also the constraint to the growth of the private sector to achieve the final target of enhancing the employment and the economic growth. Moreover, the changes of the survey can be tracked since it is using a panel firm-level data.

The survey is a firm-level survey conducted through 130,000 firms in 135 countries, of which 119 are conducted through standard methodology. This clearly makes it very interesting for country comparisons. Most countries chosen are developing countries, 41 Sub-Saharan African countries, 29 from Eastern Europe and Central Asia, 31 are from Latin America and the Caribbean, 12 are in East Asia and Pacific, 4 are in South Asia, and only two in the Middle East and North Africa. Thus the ES is a suitable dataset to investigate the economic environment and policies in developing countries.

The data is collected from face-to-face interviews with managing directors, accountant, human resource managers and other relevant firm staff by private contractors on behalf of the World Bank. Since 2002, over 73,000 interviewees have joined the survey. The survey covers 64 different kinds of sectors and contains response from 2006 to 2014. In order to test the

consistency check for the survey, there is a pilot questionnaire for each country which contains 20~25 interviews. If the regional differences are considerable, then an attempt is made to pilot the survey in all the major regions in that country.

3.3 Variables

In this section we shall describe the selection of variables used in this paper and their features. The dependent variable is the obstacles firms are facing in their business. As the key barriers we have selected five most important obstacles which were identified in the World Bank survey. The choice was represented by the answers to the following survey question: "Which of the above obstacles is the biggest obstacle to the current operation of the firm?" The independent variables were chosen from the literature review. All the chosen variables are listed in Table 1.

Chart 1 The Main Barriers to Growth as Perceived by SMEs (In percent of the total number of firms)

Percentage of total number of firms
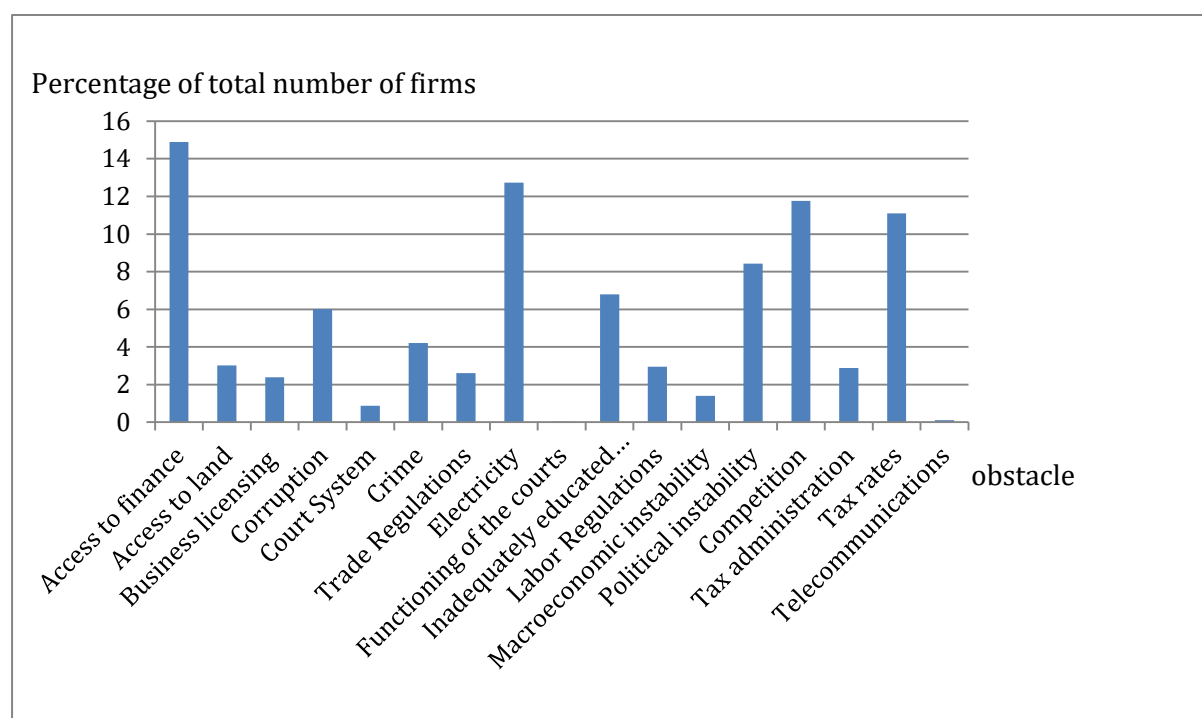
The survey generated useful series of variables for investigating the perceived obstacles of the firm growth in developing countries. The answer of the respondents from 119 developing countries for the period of 2006-2014 is shown in Chart 1. As shown by the chart, the five most severe problems were: Access to finance, Electricity, Political instability, Competition and Tax rate. These five variables are chosen as the dependent variables in the regression.[3] If the surveyed companies chose any of the listed obstacles as the most significant obstacles then the variable is set as "1", otherwise "0".

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[3] Please see also Table 3 further below and the accompanying discussion.

Table 1 Description of Variables (Barriers to Growth of SMEs)

Dependent (D) and Independent (I) Variables	Description
Finance (D)	Dummy variable: Access to finance is a major obstacles-1; is not a major obstacles-0
Tax (D)	Dummy variable: Tax rate is a major obstacle -1; is not a major obstacles-0
Competition (D)	Dummy variable: Competition is a major obstacles-1; is not a major obstacles-0
Electricity (D)	Dummy variable: Electricity is a major obstacles-1; is not a major obstacles-0
Political (D)	Dummy variable: Political is a major obstacles-1; is not a major obstacles-0
High growth firms (hgf) (I)	Dummy variable: Firms with high growth rate enterprises number of employee bigger than $1.2^3=1.728$ times as much as 3 years ago-1 number of employee less than 1.728 times as much as 3 years ago-0
sme (I)	Dummy variable: small and medium sized-1; large and very large-0
Ownership (I)	Have state ownership-0; Totally private-owned-1
Age (I)	Age of the firm
Experience	Top manager's years of working experience in the sector

in order to proceed we need to address other methodological issues related to definitions of concepts and characteristics of firms. First of all, as independent variables were selected for this paper "high growth firms", "employees", "sme", "age", "ownership" and "experience". The choice was arbitrary but largely reflects again our reading of the most frequently

discussed firm characteristics as determinants of SMEs' performance. Turning now to "growth of SMEs", Ayyagari *et al.* (2014) used the number of employees to measure the size-growth of SMEs and investigated the relationship between the size of the firm and the number of jobs it created. Organization for Economic Co-operation and Development (OECD) has provided the definition of high growth firms as those which achieved a 20% employment growth within 3 years. This definition has been widely adopted in the literature. For example, Lee (2013) used the change in growth of the number of employees as the definition in his study. In this paper, the variable "high growth firms" will also be defined by the number of employees. A comparison of the full-time employees over 3 years periods will give a clear indication of whether a firm is expanding. "High growth firms" will be a dummy variable; when a firm is expanding and it reaches a 20% growth rate then it can be defined as a high growth. enterprise. When the firm is growing fast it will be set as"1", if it is not then it will be set as "0".

The variable "employees" comes from the survey question - "At the end of fiscal year, how many permanent, full-time employees did this establishment employ?" An investigation made into the relationship of this variable can give us an idea of whether a firm's size will influence the obstacles it faces. As Lee's (2009) research showed, the bigger the firm the less financial obstacles it will face and the more management obstacles it will have.

Since the research scope of this paper is SMEs, the variable "sme" is used to define whether the observations are SMEs. SMEs are defined as firms with less than 100 employees. If the firm is a SME then it will be defined as 1, if it is not, then 0.

The variable "ownership" is a dummy variable. It comes from the survey question - "What percent of this firm is owned by government?" The answer is the percentage of state ownership. A firm is defined as state-owned if the state has a share in the ownership – irrespective of the level. In such a case, the dummy variable for "ownership" is set as "0". When the firm is totally private (i.e. the answer to the above question is " 0 percent of the firm is owned by the government"), the variable for "ownership" is set as "1". Hypothesis 5 can thus be tested: whether state owned enterprises will have any privilege in financing or in affecting other operations of the business (Yin, 2012).

The variable "age" comes from the survey question - "What was the established year of the enterprise?" We then use 2014 as the year of the survey and subtract it from the year of the establishment of the firm in order to get the age of the enterprises. This variable can address the question of whether young firms are experiencing more obstacles than older firms (Chavis *et al.*, 2010).

Following Brush *et al.* (2009), the variable "experience" is used to describe how many years the top manager has been working in the industry. The question under investigation is "whether company with experienced managers will be less likely to perceive access to finance as a significant obstacle than those with less experienced management. (Hypothesis 6).

4. The Model

As noted above, the dependent variable in our analysis will be the firm's perception of the biggest obstacles to its current operations and it is a dummy variable. When the firm perceive a certain obstacle to be the obstacle to growth, then it is set as "1", otherwise "0". The independent variables is the characteristics of the firms which consist of both continuous and dummy variables. The estimation model of a specific obstacle can be constructed as

$$Y_i = \beta_0 + \beta_1 hgf + \beta_2 sme + \beta_3 age + \beta_4 employees + \beta_5 ownership + \beta_6 experience + \varepsilon \tag{1}$$

where Y is the outcome variable which represents whether firm i perceives a specific obstacle to be the biggest obstacle to its current operation. The independent variables were described in Table 1 above.

Our model will be estimated with the probit technique. Since our outcome variables are discrete, the probit model is suitable for binary numbers. Furthermore, since the outcome variable is ranked from 1 to 5, an ordered probit model is put into use to investigate the relationship between the severe level of the obstacles and the firm characteristics. The "severity" (the level) of the constraint is obtained from answers to the question - how severe the firm perceived a specific kind of obstacles to be the major constraint of its current operation. The answers were graded on a five point

scale: no obstacle at all, minor obstacle, moderate obstacle, severe obstacle and very severe obstacle[4].

5. Results

This section presents the results of the regression analysis.. Using different outcome variable in our regressions equations, we shall first identify the most important barriers to growth of SMEs. We shall then discuss the relationship between different firm characteristics and the probability of perceiving a given obstacle to play a significant role. Finally, we shall present the results of our estimation of the relationship between the level of the financing constraint and the selected determinants.

Table 2 Marginal Effect of Probit Regression

	(1)	(2)	(3)	(4)	(5)
VARIABLES	finance	tax	competition	electricity	political
sme	0.231***	0.0151	0.129***	0.00633	-0.125***
	(0.0151)	(0.0161)	(0.0157)	(0.0175)	(0.0175)
hgf	0.0664***	-0.0238	-0.0405**	-0.0476**	-0.0335
	(0.0181)	(0.0206)	(0.0199)	(0.0214)	(0.0236)
age	-6.47e-05**	6.68e-06	-1.29e-05	3.91e-05	4.24e-05
	(2.56e-05)	(2.64e-05)	(2.67e-05)	(2.80e-05)	(3.05e-05)
ownership	0.0103*	0.00776	-0.00472	0.00193	-0.000657
	(0.00546)	(0.00499)	(0.00574)	(0.00754)	(0.00725)
experience	-0.000158	-7.96e-06	-6.20e-05	-0.00280***	-3.03e-05
	(0.000208)	(5.97e-05)	(9.91e-05)	(0.000607)	(0.000111)
Constant	-0.849***	-2.203***	-2.308***	-1.280***	-0.956***
	(0.134)	(0.168)	(0.215)	(0.364)	(0.185)
Observations	85,018	86,376	86,835	86,752	84,071
Fixed effects	YES	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

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[4] This "order" variable is used in the literature as a proxy for the credit constraint. when it comes to studying the obstacle "access to finance" (Kuntchev et al. 2014).

In order to figure out the barriers facing by SMEs compared to big firms, the data used for Table 2 includes big firms. The estimates of the marginal effect (Table 2) reflect the extent to which SMEs are more likely to perceive finance, tax, competition, electricity and political factors as a significant constraint that impedes their growth. To be more specific, and most interestingly, SMEs are 23.1 percentage points more likely to perceive access to finance as the biggest obstacles to their growth than large firms. This confirms our Hypothesis 1. Moreover, the results also show that SMEs also have higher probability of perceiving competition as a significant obstacle than large firms. It also shows that SMEs worried less about political issues compare with large firms. Estimates of neither "tax" nor "electricity" turned out to be significant. Dummy variables for country and industry were added to control the heterogeneity.

The focus will now be put on SMEs in the following analysis. Therefore, the data concerning large firms is eliminated from the dataset and 16322 big firms were deleted.

Table 3 Summary of the obstacles for SMEs

	#1Most		#2 Most		#3Most		Sum	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Non-response	3,712	5.21	905	5.25	1,394	8.12	6,011	6%
Access to finance	11,096	15.57	1,680	9.75	1,496	8.71	14,272	13.51%
Access to land	2,271	3.19	538	3.12	472	2.75	3,281	3.10%
Business licensing and Permits	1,681	2.36	505	2.93	595	3.47	2,781	2.63%
Corruption	4,385	6.15	1,265	7.34	1,230	7.16	6,880	6.51%
Court System	588	0.83	225	1.31	224	1.3	1,037	0.98%
Crime, theft and disorder	3,019	4.24	1,142	6.63	1,088	6.34	5,249	4.97%
Customs and Trade Regulations	1,724	2.42	448	2.6	435	2.53	2,607	2.47%
Electricity	9,469	13.29	1,288	7.47	1,003	5.84	11,760	11.13%
Functioning of the courts	9	0.01	18	0.1	30	0.17	57	0%
Inadequately educated workforce	4,344	6.09	910	5.28	1,084	6.31	6,338	6.00%
Labor Regulations	1,798	2.52	666	3.86	710	4.14	3,174	3.00%
Macroeconomic instability	999	1.4	1,200	6.96	1,198	6.98	3,397	3.21%
Political instability	5,798	8.14	1,084	6.29	1,056	6.15	7,938	7.51%
Practices of competitors	8,543	11.99	1,649	9.57	1,741	10.14	11,933	11.29%
Tax administration	1,983	2.78	832	4.83	847	4.93	3,662	3.47%
Tax rates	7,925	11.12	2,056	11.93	1,754	10.22	11,735	11.10%
Telecommunications	81	0.11	68	0.39	71	0.41	220	0.21%
Transportation	1,847	2.59	755	4.38	741	4.32	3,343	3%
Total	71,272	100	17,234	100	17,169		105,675	100%

Table 3 is a summary of the selected obstacles. The table has merged the top 3 obstacles from the survey. It can be clearly seen that access to finance has occupied the highest frequency of all the obstacles namely 14722 and it accounted for 13.51% of the total observations. This number exceeds the second most important obstacle "competition" with 2339. This provides a further support for our selection of dependent variables and the emphasis on testing our Hypothesis 1.

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Table 4 Marginal Effect of Probit Regression (SMEs)

VARIABLES	(1) finance	(2) tax	(3) Competition	(4) Electricity	(5) political
High growth firms	0.0845***	-0.0252	-0.0183	-0.0608***	-0.0306
	(0.0197)	(0.0229)	(0.0218)	(0.0232)	(0.0262)
Employees	-0.00364***	0.000539	-0.00140***	-0.000293	0.00107***
	(0.000312)	(0.000335)	(0.000324)	(0.000366)	(0.000380)
Age	-5.44e-05*	-1.79e-05	-9.17e-06	3.16e-05	3.39e-05
	(2.87e-05)	(3.13e-05)	(3.04e-05)	(3.18e-05)	(3.54e-05)
Ownership	0.0124**	0.00508	-0.00844	-0.0109	0.00137
	(0.00630)	(0.00564)	(0.00646)	(0.00829)	(0.00844)
Experience	-0.000130	3.73e-06	-7.71e-05	-0.00279***	-4.68e-05
	(0.000169)	(6.31e-05)	(0.000118)	(0.000679)	(0.000138)
Constant	-0.560***	-2.197***	-2.097***	-1.194***	-1.165***
	(0.143)	(0.183)	(0.220)	(0.371)	(0.206)
Observations	68,795	70,158	70,575	70,578	67,778
Fixed effects	YES	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4 shows the new marginal effects of the selected independent variables for the five major obstacles as perceived by SMEs after the elimination of data on large firms. As noted above, "high growth firms" are represented by firms which achieved at least 20% growth every year times or about 72 percent over the three year period. The table clearly shows that when the firm in point is a high growth firm, then it will have a greater chance of perceiving access to finance to be an important obstacle than those firms which are not growing at a fast rate. This may be due to the fact that high growth firms are "cash hungry" machines as noted by Brush *et al.* (2009). Their rapid growth results in great demand for money, since funds are a necessity for business expansion. The same conclusion has been reached by Brush *et al.* (2009) and it supports our Hypothesis 2. Moreover,

the high growth firms appear to be less worried about tax, electricity, political stability as well as competitors from informal sector.

The variable "employees" is used to define the number of employees of the enterprises at the time of completing the survey. This variable can be used to define the size of the enterprises. As shown in Table 4, when the size of the enterprises as measured by the number of employees is getting larger, the probability that the firm perceives access to finance as the greatest obstacle decreases. Shen *et al.* (2009) have indicated that small firms have to face more financing constraints and access to bank credit, at least based on the evidence from China. Moreover, for larger SMEs, the probability of perceiving informal competition decreases. On the other hand, larger SMEs will worry more about the political stability than smaller ones.

Our tests concerning the role of age of SMEs in determining access to finance tend to confirm our Hypothesis 4 as well as the main findings in the literature but the relationship tends to be weak. As Kuntchev *et al*. (2014) note, the interaction effect of firm size and age is significant and negatively correlated with credit constraints of firms. Lee (2013), too, chooses age as a control variable in his research and explains the importance of age on the grounds that older firms may have a credit history and established relationships with banks – in contrast to younger firms..

The variable "ownership" is another important variable of our interest. As our estimates presented in Table 4 show, firms which have public ownership perceive less financial problems than those privately owned firms. This may due to the fact that state-owned enterprises have the government's bail-out

explicit or implicit guarantee which increases their creditworthiness. The effect of other determinants turns out to be insignificant.

The coefficient of the variable "experience" is significant only when it comes to "electricity" even though the signs of other estimated coefficients are correct. This suggests that as the working experience of top managers is increasing, the probability of the firm to perceive electricity as a significant obstacle is decreasing. However, it is very difficult to interpret this result in economic terms considering that managers of SMEs have no influence over supply of electricity, or why should experience be linked to "electricity" at all. The poor results associated with age as the determinant of other important barriers to grow are also insignificant and surprising.

We shall now turn to the factors that influence the level of the relationship.

Table 5 Determinants of Financial Constraints: Results of Ordered Probit Regression

INDEPENDENT VARIABLES	(1) Finance (level)
High growth firms	0.0944***
	(0.0139)
employees	-0.00223***
	(0.000209)
age	-3.15e-05
	(1.98e-05)
ownership	0.00692*
	(0.00410)
experience	-6.63e-06
	(4.92e-05)
Observations	67,351
Country dummies	YES
Industry dummies	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5 shows the results of the ordered probit regression exploring the relationship between the level of the financing barrier and the selected variables. The dependent variable "level" comes from the survey question "How severe is access to finance as an obstacle to the current operation of the firm?" As the table shows, a significant negative correlation has been revealed between the level of financing constraint and the firms' size which implies that smaller firms experience more severe financing problems than larger firms.

Similarly, high growth firms will perceive financing problems to be more severe than those without high growth rate. Nevertheless, the result shows "ownership" is also negatively correlated with the level of the financing problem which is consistent with the finding of Yin (2012). Our findings imply that private firms will perceive access to finance as a more severe obstacle than firms with state ownership.

After determining the internal characteristics of firms that influence the importance of perceived financial constraints for SMEs, we shall now consider external factors which can act as constraints on operations of SMEs. We shall do so by examining the role of conditions applied to bank loans.

Table 6 Reasons for not applying for a loan

Main reason for not applying for new loans or new lines of credit	Freq.	Percent
Don't know	619	1.17
Refuse to answer	34	0.06
No response	7	0.01
Still in process	749	1.42
Skip	3	0.01
No need for a loan	28,742	54.53
Application procedures for loans are complex	5,064	9.61
Interest rates are not favourable	7,562	14.35
Collateral requirements are too high	3,666	6.95
Size of loan or maturity are insufficient	976	1.85
It is necessary to make informal payments	1,617	3.07
Did not think it would be approved	3,290	6.24
Other	384	0.73
Total	52,713	100

As the figures in Table 6 show, 54.53 percent of SMEs did not need a loan. This indicates that internal funds were the main source of financing for SMEs.[5] Among the SMEs which need external financing, it is evident that the financing difficulties usually result from the following reasons: 1 high interest rate; 2 complex application procedures; 3 high collateral requirements; 4. perception of SMEs that the application would not be approved; 5. informal payments. Those reasons can also be categorized into two groups: high expenses with loan processing and lack of consultant support. High interest rates, informal payments as well as the time demanding procedures all lead to high expenses related to obtaining funds from a bank. High requirements for collateral and lack of confidence imply a lack of credit guarantees institutions. The consequences are similar to the observations made by Beck and Demirguc-Kunt (2006) who concluded that

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[5] As noted by Jiang et al (2014), Gert Wehinger (2014) and Abdulsaleh and Worthington(2013),internal financing is still a dominant form of financing for SMEs and prioritised compared to external financing.

asymmetric information between borrowers and lenders plus the high transaction costs are the two leading constraints that exacerbate the financing available for SMEs.

6. Conclusion

SMEs are drivers of economic growth and job creation. Moreover, SMEs are effective tools for poverty alleviation. As a result, the development of SMEs is vital to developing countries, and it is, therefore, paramount to determine the factors hindering their growth. This paper is an attempt to identify the main obstacles of growth and their determinants as perceived by SMEs. The five most significant obstacles perceived by SMEs managers were identified as - "access to finance", "tax rate", "competition", "electricity" and "political factors". Among those five obstacles, "access to finance" appears to be the biggest barrier, followed by "competition".

The picture emerging from the evaluation of factors determining the managers' perceptions of those obstacles is mixed. Among the selected variables, "experience" has been shown to be insignificant with one single exception while "high growth enterprises", "age", "employees" and "ownership" were all significantly correlated with access to finance. Nevertheless, the effect of "age" turned out to be relatively small. The results suggest, *inter alia,* that high growth firms perceive finance as the biggest obstacle to growth. This in turn, confirms widely held beliefs that high growth firms have greater demand for funds than those of slower growing firms. SMEs with state ownership appear to have fewer financing problems than private SMEs. This, too, confirms the findings from the literature which

have shown that firms with state participation had a better access to bank financing due to implicit or explicit guarantees from the governments and due to other government interventions.

We have also made an attempt to evaluate the level of the financing problem. Perhaps the most interesting finding is that size and age were negatively correlated with a "severe" level of the financing constraint. This implies that, with increasing size and age, the bigger and older SMEs respectively will be less likely to perceive access to finance as a severe problem. This is a plausible conclusion which also provides more light on the finding noted above that age does not seem to be a strong driver of the financing problem .

Following the analysis of the internal factors affecting the access to finance of SMEs, we have also looked the role of the external factors. Those factors can be grouped under the heading of "terms of financing". The role of external factors can be ascribed to imperfections of the financial system due to factors such as asymmetric information between banks and SMEs, financial market fragmentation and a lack of specialized banking or high transaction costs. Our result show that more than half of the SMEs did not need a loan which indicates that most of the SMEs preferred internal financing. For SMEs in need of external financing, the most serious constrains were high interest rates, complex application procedures and high collateral requirements.

It would be reasonable to ask to what extent is a perception of barriers to growth by managers of SMEs the true reflection of real barriers. As we have

noted above, the assumption concerning the identity between perception of barriers and real barriers is a common challenge in studies of this kind. While the analysis of real constraints on growth was not the subject of this paper we believe, together with many other researchers in the field, that an analysis of perceived barriers is revealing and useful, especially with the regard to the effects of firm characteristics. The main conclusions of the study are consistent with the theory as well as with findings from many individual country studies.

Nevertheless, as is the case with studies of similar kind, we have faced limitations of data and methodology. Our aggregate approach of looking at all developing countries as a group may be intellectually interesting but, at the same time, our analysis may not be sensitive enough to country differences even though appropriate provisions have been made in our econometric analysis. Similar concerns could be raised about the absence in the analysis of a treatment of sectoral and regional differences. It would be, therefore, legitimate to ask whether the use cross-country data in our analysis was optimal. Unfortunately, given the complexity of the task at hand, the use of panel data or time-series data had to be abandoned on practical and cost grounds. Nevertheless, we are encouraged that the main findings of this study are consistent what is already known from the literature. They should provide additional evidence in the debate about enhancing the performance of SMEs in developing countries.

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Annex 1 - World Bank Economic Survey - Summary Information

The World Bank survey is divided into two parts: the core questionnaire and the screener questionnaire. The core questionnaire is applied to all industries in all countries. The screener questionnaire is used to screen out the establishments that cannot meet the sampling requirement or will cause bias of the dataset. Two modules are created on the basis of the core instrument: the manufacturing module and the services module. The core instruments are implemented on two groups. One covers the business characteristics and the other covers the investment climate.

Table Annex 1. The summary of the survey sections

Section A Control Information	Basic information of the firm's properties like size, country, region, and etc.
Section B General Information	General Information including firm's legal status, ownership, year of registration, etc.
Section C Infrastructure Conditions	Covers firm's transportation methods, conditions of electrical and water connections, internet access, etc.
Section D Sales and Supplies	Covers firm's main products, annual total sales, raw materials, etc.
Section E Competition	Covers the firm's exposure to the market, number of competitors in the market, the price adjustment, etc.

Section F Compacity	Includes information about the firm's operations, hours per week, working capacity of the workers and machines, etc.
Section G Land Information	Covers issues of ownership of land, permission of using land, expense on security, etc.
Section I Crime issue	Includes information about security expenses, effects of crime on the business, etc.
Section J Business and Government relations	Covers issue related firm's licenses, tax rates and obstacles concerning the government, etc.
Section K Finance issue	Covers issues related to firm's sources of finance, loans availabilities, finance difficulties, etc.
Section L Labor Information	Covers firm's number of employees, education level, training of employees, etc.
Section N Productivity	Includes firm's total costs, total sales, net book value and all the indicators needed for calculating profitability.

The end of every section contains a question whether the obstacle in point is "No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle" to the current operations of the establishment.

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