Government Ownership of Bank, Access to Finance and Firm Exportability: Evidence from Manufacturing Enterprises of WBES

by

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ABSTRACT

Based on enterprise survey data, with firms surveyed during 2002 to 2006, this paper studies the causal impact of access to finance on firm exportability and how government ownership of banking sector shapes the finance–exportability link. Earlier studies measured a firm's access to finance from its cash flow–investment correlation; this paper departs from those studies in measuring access to finance by taking self-reported measure and the uses of bank finance, and finds that access to finance significantly influences a firm's exporting behaviour. Firms in countries with lower government ownership of banks find it difficult to access finance, which in turn affects their decision to export. The use of information technology, which can cut cost, is crucial for a firm's decision to enter an export market.

Keywords: Access to finance, export, government ownership of bank

1 INTRODUCTION

A well functioning financial system by directing funds to entrepreneurs with high return projects increases the return on investment and thus enables higher growth. The financial crisis of 2008–09 has not only put freeze on the credit (lower investment) to firms and economy as a whole but it also reinvigorated the debate on the ownership structure of the banking sector and its effect on financial intermediation (IMF, 2009). It has been argued that the crisis, which originated in developed countries, spread to developing countries through private (multinational) banks. The quick recovery of developing countries like Brazil, China, and India strengthened the argument that a government–owned banking system can prevent and manage a crisis better than a private and foreign-owned one. Theory predicts both positive and negative effect of government ownership of banks.[2]

Exporting firm requires high intangible investment (sunk cost) which makes the cost of entry into export market higher compared to that of domestic market (Das et al. 2007).[3] Given that, these entry costs must be paid up front; firm is expected to rely on external sources of finance. Hence, access to finance/financial constraint could explain heterogeneity in firm's decision to participate in the export market as well as their performance post entry. Few empirical studies deal with financial constraints and a firm's export behaviour; the results of those that do are contradictory. Although a few studies have examined how a firm's access to finance affects its exportability, no study to our knowledge has examined how the ownership structure of the banking sector influences the linkage between a firm's access to finance and its exportability. Further, previous studies rely on corporate finance literature to define 'financial constraint' (by measuring investment as a function of cash flow) and invites potential endogeneity issues (Poterba 1988; Alti 2003) and, thus, raises doubts about the validity of the result and also ignores the role of the formal financial sector. Thus, further research is warranted.

The present study attempts to fill this gap, first, by investigating the inter-linkages between access to finance and firm exportability and, secondly, the role of government ownership of banking sector in directing access to finance and firm exportability relationship. It is based on survey data from the World Bank Enterprise Survey 2002–06 (WBES) and Barth et al. (2006). Enterprises were surveyed between 2002 and 2006 depending upon the year of survey in the country. The study has also culled and merged data from the World Development Indicator (WDI), World Governance Indicator (2010) and Financial Structure Dataset (2010) This data set is suitable for the study because

[2]Positive and negative effect of government ownership of banks depends on whether "political" or "development" view is taken.

[3]Sunk cost involves the cost of gathering information about international market; product design; transport/distribution cost; exposure to exchange rate fluctuations and country risk factors.

- it includes sizable fraction of firms of small size unlike other cross country micro data which mainly includes large sized firms;
- contrasting other cross country micro data, it includes large number of countries from developing countries;
- it also provides list of information at firm level such as ownership structure, education level of managers as well as workers, age, location and on the firm's balance sheet;
- it enables us to measure financial constraints based on enterprise response rather than on balance sheet variables; and
- it disaggregates information on working capital and new investment by source of finance.

The estimation result shows that government ownership of the banking sector significantly affects a firm's access to finance, which strongly influences its decision to enter export markets. The result stands after changing the definitions of the firm export decision variable and financial constraint variable, and thus passes the robustness criterion. The findings endorse the role of information technology (IT) in achieving the firm's objective of going international.

The rest of the paper is organised as follows. Section 2 discusses the theoretical framework of the study. Section 3 reviews the literature. Section 4 describes the data. Section 5 specifies the econometric model. Finally, Section 6 concludes the paper.

2 THEORETICAL FRAMEWORK

2.1 Access to finance and firm export margin:

Traditional theoretical and empirical literature examined the heterogeneity in firms' entry into the international market based on the learning-by-doing hypothesis, but empirical evidence failed to explain why some highly productive firms do not enter the export market and why, simultaneously, some less productive firms operate there.

Melitz's (2003) theory postulated the role of firm heterogeneity and of the sunk cost of entry in a firm's decision to enter export markets. A body of literature that studies the investment behaviour of firms suggests that a firm's access to external finance is important in determining its decision to invest.[4] Linking these two strands, Chaney (2005) suggested that access to finance may explain part of the variation in the export market participation if the fixed cost of export is large.[5] Most

[4] Stiglitz & Weiss 1981; Fazzari et al. 1988; Evans & Jovanovic 1989; Bond & Meghir 1994; Hubbard 1998

[5] Sunk cost (in terms of the cost of gathering information about international markets; product design; transport/distribution cost; exposure to exchange rate fluctuations and country risk

of the fixed cost of beginning international operations is upfront payment.[6]Hence, exporter requires higher fixed capital compared to firms' operating in domestic market. Further, exporting firms incur additional variable costs on shipping, duties, and freight insurance. Given that cross-border shipping and delivery usually takes 30–90 days longer to complete than domestic orders,[7] exporters need more working capital than domestic producers. Possibly, this requirement links international trade to access to external finance.[8] To meet these financial requirements, a firm has to rely on external finance, which is costlier than internal finance. The operational size of the market for international trade finance demonstrates the reliance of firms on external finance. The cost of external finance is determined by level of countries' financial sector development. In a country with underdeveloped financial market, cost of external finance is higher. Even within the country (developing), with level of institutional quality[9] the cost of external finance varies for firm and there comes the role of government ownership of banks. Government owned banking sector acts as wedge between information asymmetry and cost of external finance.

The theoretical literature also identifies channels through which finance generates a positive effect. Financial intermediaries are considered effective both at picking entrepreneurs engaged in or likely to engage in productive projects and at the accumulation of human capital;[10] they monitor managers to maximise firm value.[11] A well-functioning financial market reduces asymmetry in information and provides incentives for undertaking high-return but risky projects.[12] Thus, there are two factors of access to external finance:(1) the level and extent of financial development in a country and (2) the institutional environment structure around firms, which leads to information asymmetry, credit rationing, and government subsidy. Further, a well-developed financial market stimulates a firm's ability to plan its entry into international markets.

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factors) raises the fixed cost of exporting against the domestic market (Das et al. 2007). Sunk cost includes the costs of search for new markets (potential markets); investment in capacity building and customisation of product for the new market; shipment, freight, and goods damaged in transportation; export clearance and duties; and risk cover of market friction on new and culturally different markets.

[6] Although there are several ways to enter foreign markets, and firms use these, exporting is the most preferred option (Dhanaraj & Beamish 2003). Moreover, it is the initial preferred route (Johanson & Vahlne 1977; Young et al. 1989). The study will hence use the terms 'exportability' and 'internationalisation' interchangeably throughout the text.

[7]Djankov et al. 2010.

[8] Financial friction exists in the real world and significantly affects the cost and availability of external finance for firms although, according to Modigliani and Miller (1958), heterogeneity in a firm's decision to export would be linked solely to their productivity and consequently to the factors affecting productivity.

[9] Institutional quality combines level of investors' protection, law and order, governance and business environment.

[10] Jacoby 1994.

[11]Stiglitz & Weiss 1983; Myers & Majluf 1984

[12]Aghion et al. 1999.

Ju and Wei (2011) illustrate that—depending upon the quality of financial institutions—both institutions and factor endowments contribute to the productivity differential among firms. If the quality of institutions is high, factor endowments alone determine equilibrium output and prices, and finance does not contribute anything to a firm's comparative advantage; but if the institutional quality is low, the changes in factor endowments (such as an infusion of capital) might not affect equilibrium outputs or prices at the margin, and financial institutions become a source of comparative advantage. Finance and the financial sector could play a direct role as entering an export market requires upfront investment (sunk cost), and thus firms that can access finance easily outperform firms that struggle.

2.2 Government ownership of Banks

Many development economists advocated states role in banking sector. As a result Governments by the 1970s, the state owned 40 percent of assets of the largest banks in industrial countries and 65 percent of assets of the largest banks in developing countries (Figure 1). Subsequent to Washington Consensus large number of banks was privatised and again posts 2008-09 financial crisis people have started advocating the active role to be played by government in banking sector to promote economic growth.

Market failures and development goals are two points used to justify the presence of government. The argue that unlike other market, financial markets in general, and the banking sector in particular will see improvement in working with government participation. According to their view, public sector presence will reduce the distortion created by private sector that leaves socially profitable investments underfinanced (Atkinson and Stiglitz, 1980, and Stiglitz, 1993, among others.). Further, citing scarcity of capital, the general distrust of the public, and endemic fraudulent practices among debtors as the reason for smaller financial sector, public participation in the banking sector is stresses to facilitate economic development (Stiglitz, 1994).

Critics argue that it is not necessarily true that bank is different from other businesses, and that the case for financial market imperfection is often overstated. Furthermore, they suggest that market failures can be better addressed through regulation and subsidies rather than through direct state ownership. This political view contends that politicians create and maintain state owned banks not to channel funds to socially efficient uses but rather as a political tool aimed at maximizing the politicians' personal objectives (La Porta et al, 2002). Specifically, state ownership of banks would be dictated by redistributive politics and by the politicians' interest in appropriating the rents that may be derived from the control of bank funds. Somewhere in between the benign assessment of the social and development views and the scepticism of the political view, the agency view highlights the trade-off between allocative efficiency and internal efficiency (namely, the ability of state-owned enterprises to carry out their mandate), asking

whether agency costs within government bureaucracies offset the social gains of public participation in the presence of market imperfections.

3 LITERATURE REVIEW

Several studies postulate that exports promote economic growth, which prompted researchers to investigate how a firm's exports affect its overall performance. Subsequent research in international trade scrutinised the factors responsible for a firm's decision to export. This section reviews the literature on how financial constraints determine a firm's decision to export.

With an augmented Heckscher–Ohlin model, Kletzer and Bardhan (1987) found that countries with a well-functioning financial system tend to export goods produced in industries that depend heavily on external finance. Later, financially developed countries with strong financial institutions were found to enjoy comparative advantage over less financially developed countries in sectors that depend on external finance.[13]The friction in the financial sector affects many activities that require interaction with it; a country's growth depends on how they are affected.[14]But the study could not establish how the financial sector augments export market performance.

The literature suggests that a firm's access to finance affects its productivity and investment capacity, and that this explains why firms perform differently in export markets. Entering a foreign market involves intangible investment (sunk cost) and finance. The empirical literature emphasises that finance constrains a firm's investment, and that a country's financial and institutional development determines the impact of such financial constraints (Bond et al. 2003).

Chaney (2005) approached the issue theoretically and built a model based on the new–new trade theory of Melitz (2003). Chaney argued that in the presence of financial imperfection, firms that can overcome financial constraints by increasing domestic sales or by accessing external finance can consider exports in addition to domestic operations. Now, high-productivity firms can easily access external finance for exports, and low-productivity firms will not consider it because they will lose money, so it is firms with medium level productivity that cannot export if they cannot access finance. A firm's need for external finance and ability to provide collateral depends on the sector they operate in (Ranjan & Zingalas 1998).Given this, more productive firms in a financially developed country will be likely to offer a higher return at lower risk, secure larger funding, and enter the export market. It follows that firms in sectors heavily dependent on external finance will have a lower productivity threshold for entering an export market in a financially developed economy than firms in a financially underdeveloped economy. Further, firms in a financially developed economy export more than firms in a financially

[13] See, for example, Beck (2002, 2003); Becker & Greenberg (2007); Svaleryd & Vlachos (2005); Hur et al. (2006).

[14] This may be inferred from the findings of the studies already mentioned and from the evidence in Chor & Manova 2012.

underdeveloped economy. Firms with credit constraints are less likely to export; if they do, they export far less than firms without credit constraints (Manova2012). Muuls (2008) incorporated liquidity constraints with the possibility of both internal and external financing into Melitz's (2003) model of international trade and studied the participation behaviour of firms. He found that financially constrained firms are unlikely to access export markets, and that markets are limited for those that do.

Li and Yu (2009) introduced two more sources of heterogeneous credit constraints into the models of Manova (2006) and Muuls (2008): (1) different borrowing capabilities stemming from project-specific risks and (2) foreign parents, as additional sources of capital reduces a firm's dependency on external finance. After incorporating the constraints and assuming all else to be equal, they found firms can enter export markets easily if

(1) their project is considered likely to succeed and consequently they have easier access to external finance from financial intermediaries; or

(2) they have sources of funds other than financial intermediaries.

Under the assumption of financial imperfection, firm borrowings are constrained. The entrepreneur's initial wealth guides a firm's investment decision, resulting in heterogeneity in firm productivity (Furusawa&Yanagawa2010). Thus, if we assume that a firm's exporting behaviour is manifested in its level of productivity, then a firm with higher initial wealth will leapfrog others in a financially constrained environment. Financial imperfection can also change the interplay between goods trade and capital mobility (making them complements rather than substitutes) in a financially underdeveloped country (Antràs & Caballero 2009). Forlani (2010) shows that cash stock determines the probability of a financially constrained firm's entry in the export market.

Some studies argue that exporting improves a firm's access to financial markets, in opposition to those that argue that access to finance leads to exporting. Operating in an export market improves a firm's access to finance by reducing either information asymmetry or exposure to demand-side shocks through diversification. The work of Campa and Shaver (2002) and Greenaway et al. (2007) suggest that exporting firms are better off financially. Further, Campa and Shaver (2002) suggest that exporting firms are more likely than non-exporting firms to have stable cash flow and capital investment. Using a panel of manufacturing firms in the UK, Greenaway et al. (2007) prove that exporting firms are financially healthier than non-exporting firms and, thus, refute the findings of earlier theoretical and empirical work.

Bellone et al. (2010) suggest that finance constrains firms from internationalising. Their finding supports the result of Chaney (2005) and rejects that of Greenaway et al. (2007). Using the Business Environment and Enterprise Performance Survey (BEEPS) dataset for 2005 and 2008–2009 for 28 countries in Eastern Europe and

Central Asia, Bernard et al. (2010) examined the link between a firm's access to finance and its decision to export and found that, possibly, internal factors matter decisively for firms in these countries. Manole and Spatareanu (2010) advocate easing credit constraints, as that facilitates export, and developing the financial sector boosts firms' access to finance and thereby promotes export. Moreover, results suggest that the liquidity constraints are less binding for exporters than for non-exporters.

Matthee and Krugell (2011) studied enterprise survey data for South Africa and demonstrated that firms export less if they report access to finance as an obstacle to exporting. Terada-Hagiwara (2011) reveals that non-incumbent, technologically advanced, and productive firms rely more on external finance for entering into export market. Stiebale (2011) after controlling for heterogeneity, finds no evidence that financial constrain binds firms' decision to export. The results are robust even after dividing the data into subgroups of firms which are more likely to face financial constraints and industries with more dependence e on financial factors. This bears out Bernard et al.'s (2010) study.

Based on cross-country panel data of firms, Berman and Héricourt's (2010) study suggests that firms' access to finance plays an important role in their decision to enter export markets. Yet, a firm's financial health neither increases its probability of remaining an exporter nor the intensity of exports. Additionally, the study suggests that financial constraints lowers firms' productivity and reduces the likelihood of their export market entry and increase in country's financial development will improve the chances of export market entry. Based on data on Chinese firms, Manova et al. (2010) confirmed that financial constraints lower a firm's extensive and intensive margin and its international sales. Thus, the result shows the strong significance of external finance for export market success in the case of firms operating in a financially vulnerable sector.

4 DATA DESCRIPTION (SOURCE, MEASUREMENT, AND SUMMARY STATISTICS)

The World Bank conducted the World Bank Enterprise Survey (WBES) to collect enterprise level data to support its strategic goals of improving the investment climate, enhancing enterprise efficiency, creating sufficient jobs in the economy, and promoting sustainable growth by improving institutions in different member countries between 2002 and 2006. The data is based on firms' experience and perception of the business environment of the country they operate in. The sample was based on a stratified random sampling procedure using the size of the economy (GDP), sector, and location as strata.[15] Sector stratification is based on the contribution of a particular sector in the GDP of the country.

Firms operating in sectors under government price regulation and prudential supervision such as banking, electric power, rail transport, water, and wastewater

[15] For the survey methodology, please see www.enterprisesurvey.org.

were not included in the sample. To allow proper representation of small and large firms, 10 percentage of the sample were strictly taken from small and large firm category respectively. Most of the firm level data set provides information related to listed firms; thus, it is not possible to understand the larger universe, which contains a mix of firms. Therefore, the WBES instruments the sampling design of the survey to guarantee the appropriate representation of small firms in survey data.

The original WBES collects the responses of 71,789firms in 106 countries (low- and middle-income countries make up 71 percent of firms surveyed).[16] The survey collects information from manufacturing, services, agroindustry, and other sectors, but we have eliminated firms not in the manufacturing sector as we need the extensive and intensive margin of export of manufacturing firms only. However, the manufacturing sector includes many industries.[17] There are 45,137 firms in our sample. The firm-level data is merged with the country-level data set to gauge the effect of country level variables. The Financial Structure Dataset (2008) by Ross Levin and the Worldwide Governance Indicators (2012) by Kaufmann, et al. (2010), are used to measure institutional development variables at the country level.[18]

4.1 Variable description

The survey questionnaire provides information on firm exports as a percentage of total sales both directly and indirectly. This information is used to construct different export decision variables. The measure of extensive export variable *ex_dir* takes the value 1 if the firm has positive direct export and 0 if it does not export.[19] We also measured the extensive margin using the sum of direct and indirect export of the firm (*Exporter*), which takes the value '1' if the firm has positive exports and '0' if it does not export. Third, the measure of firm exportability is *Exporting*, which takes the value 1 if the sum of direct and indirect export of the firm is more than 10 percent of sales share; otherwise, it takes the value '0'.

There is no clear-cut guideline for measuring access to finance, which the literature considers sensitive and trivial. A few studies define access to finance in terms of financial constraints by using accounting variables,[20]which ignores supply side barriers (the cost and availability of finance from the formal sector) and the subjective assessment of firms—indispensable in deciding a firm's access to finance or financial constraint. The use of *liquidity ratio* and *leverage ratio* captures only one dimension of a firm's access to financial markets (Bellone et al. 2010). A firm

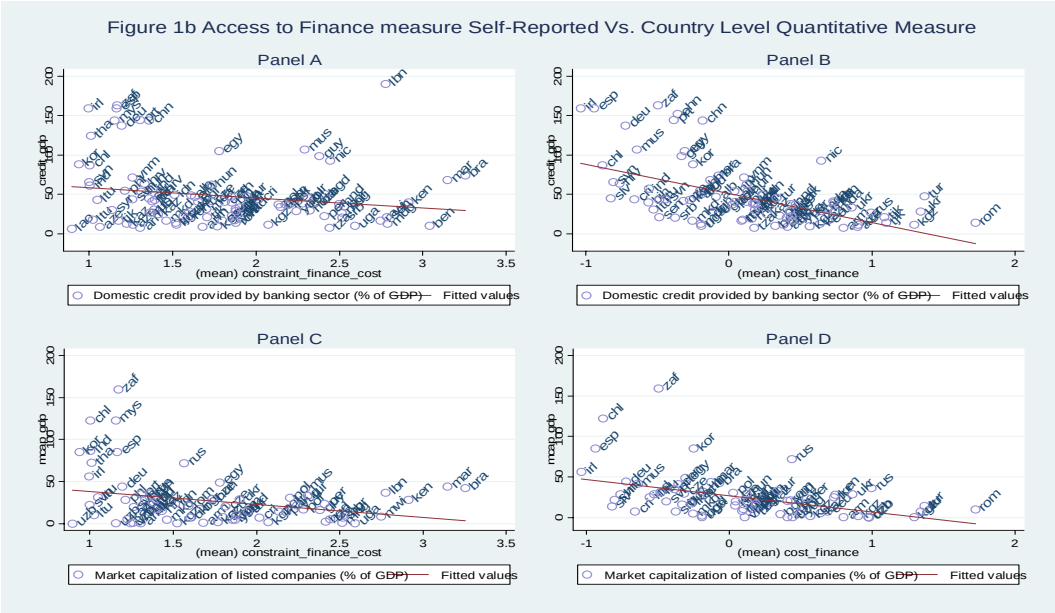
[16] Appendix Table 1 displays the countries surveyed, the number of firms covered in a particular country, and their income group.
[17] Appendix Table 2 presents the industry wise distribution of firms covered.
[18] For details on data sources and definitions of variables, see the appendix.
[19] The survey provides information on the percentage of the firm's sales coming from foreign markets (either direct or indirect exports). In this present study we defined firm to be exporter if the percentage of sale (either from direct exports and indirect exports) is more than 0.
[20]Fazzari et al. 1988; Kaplan and Zingales 1997 for discussion on financial constraint measurement issue

may be liquid but financially poor off or have strong fundamentals but be temporarily illiquid, and there may be endogeneity between *liquidity ratio* and *leverage ratio* (Bellone et al. 2010). Thus, there are no clear-cut theoretical priors on the relation between either *liquidity ratio*/*leverage ratio* and financial constraints. Bellone et al. (2010) suspects that firms could withhold cash if they feel they may not be able to access external funds. A firm's liquidity could indicate its financial health; lenders consider it in deciding to lend.

Thus, we have defined 'access to finance' from the viewpoint of external use, in meeting the requirement of investment and working capital, and also from the viewpoint of subjective measurement of financial constraint reported by a firm's manager in terms of cost (collateral requirement and interest rate). A firm is said to have access to finance (*Access Bank Finance*) if 50 percent or more of its working capital or new investment is financed by banks; otherwise, the variable takes value 0. The variable constraint in accessing finance (*Constraint Finance 'Collateral' and Constraint Finance 'cost'*) takes a value between 0 and 1. The value '0' indicates no constraint in accessing the external finance and '1'indicates constraint in accessing finance. The variable *Constraint Finance* accounts for the self-reported subjective assessment of firms' financial constraint. It could also measure the supply side hurdles. Further, *Constraint Finance Index* is constructed using principal component analysis (PCA) for subjective measurement of constraint in access to finance (collateral and cost).

Measuring access to finance by self-reported measures and survey data could be prone to measurement errors and biases (emanating from culture and perception) than by quantitative measures such as the ratio of credit from banking sector to GDP and of market capitalisation to GDP. The best way to validate self-reported and survey-based measures is to compare them and then compare them with country-level measures of financial development. Therefore, this study first compares access to finance measures and then uses the comparisons to validate the robustness of self-reported measures against quantitative measures based on

survey data (Figure 1).



The negative correlation (the negative slope of the line of fit in Figure 1) suggests that a firm's access to finance declines with an increase in self-reported financial constraints. This correlation between self-reported measures, measures constructed from survey data, and country-level measures advocates the unbiased, minimal error, and meaningful inheritance of the self-reported and survey data-based measures of access to finance. Firm-level indicators of access to finance provide sufficient variance in measuring the reach of the financial sector. Hence, using different elements of access to finance helps understand the link between access to finance and firms' extensive export margin in a vibrant environment.

4.2 Control Variable

The participation and performance of firms in export markets is linked with the characteristics of individual firms in addition to firms' access to finance and a country's financial development and legal and institutional quality.Age (*Lage*) is used to proxy a firm's knowledge and experience accumulated from its years of operation. Size (*Size*) of the firm is its stock of resources it has to cushion new investment and gestation in return. Previous research suggests that small, young firms can grow faster than big, old firms because their organisational structure is flexible, but are unlikely to enter the export market as few survive the scarcity of resources, constraint, competition, and entry barriers.

Previous studies advocate that foreign ownership (*Foreign Owned*) helps firms overcome constraints and thus positively affect their participation and performance in export markets. The legal structure (*Corporation*) of the firm is also assumed to reduce a firm's constraints and thus facilitate its entry into export market and improve its performance. Similarly, membership in a business organisation (*mem_ba*) stimulates a firm's decision and effort to operate and make profits in

international markets. The education of a firm's manager and workers could influence the extensive and intensive margin of export by adding adaptation and learning the new market demands. The manager's experience adds to the stock of adaptation and learning curve. Other control variables that capture firm level characteristics and their role in determining extensive and intensive export margin of firm are the education of the manager ($edu\_manager$), the education of the workforce (edu_wf_hs), and the experience of the manager ($exp\_manager$).

4.3 Summary statistics

Table 1 displays the summary statistics of exporting and non-exporting firms.

Table 1. Summary Statistics of Firm Characteristics

	Non-Exporter	**Exporter**	**Total**	**t-test**
Age	17.38 (15.62)	21.13 (20.02)	18.84 (17.55)	−3.746*** (−21.32)
Number of Establishment	1.859 (18.95)	2.880 (32.66)	2.299 (25.78)	−1.021** (−2.95)
Access to Finance Obstacle	0.177 (1.387)	0.0505 (1.350)	0.123 (1.373)	0.127*** (8.02)
Value of Collateral	132.9 (104.0)	124.2 (93.56)	128.7 (99.16)	8.733*** (5.48)
Cost of loan (Interest Rate)	14.05 (11.23)	17.42 (375.1)	15.62 (256.6)	−3.366 (−0.72)
Duration of loan	33.80 (36.18)	33.67 (37.90)	33.74 (36.99)	0.137 (0.20)
Capacity Utilisation	70.83 (22.79)	75.17 (21.67)	72.54 (22.45)	−4.344*** (−19.19)
Experience of manager (Years)	8.708 (9.707)	9.928 (9.991)	9.195 (9.839)	−1.220*** (−8.13)

Note summary statistics: mean coefficients; standard deviation in parentheses
Note t–test: t statistics in parentheses $^{*}p< 0.05$, $^{**}p< 0.01$, $^{***}p< 0.001$

In line with the literature on the determinants of a firm's exports, summary statistics of the sample data reveals that exporting firms are older and more numerous than non-exporting firms. Firms operating in the export market face more competition from domestic and foreign firms but lower competition from state-owned firms than non-exporting firms. Exporting firms pay lower collateral and a higher interest rate than non-exporting firms, and the duration of loans to them is marginally less, but the difference is statistically insignificant. Exporting firms are more productive than non-exporting firms, and their managers are more experienced.

5. Econometric Model Specification

The empirical model to evaluate the effect of access to finance on firm's export decision function for the firm i operating in the j industry coming from k^{th} country and surveyed in the year l is as follows:

(1)

$$\begin{aligned} Firm\ Export\ Decision_{i,j,k,l} = a + b_1 lage + b_2 corporation_{i,j,k,l} + b_3 audit_{i,j,k,l} + b_4 size\_medium_{i,j,k,l} + b_5 size\_large_{i,j,k,l} \\ + b_6 capacity\_utilization\_medium_{i,j,k,l} + b_7 capacity\_utilization\_high_{i,j,k,l} + \\ b_8 foreign\_owner_{i,j,k,l} + b_9 use\_internet_{i,j,k,l} + b_{10} mem\_ba_{i,j,k,l} + b_{11} education\_manager_{i,j,k,l} \\ + b_{12} experience\_manager_{i,j,k,l} + b_{13} edu\_work\_force_{i,j,k,l} + b_{14} FA_{i,j,k,l} + X_j + Y_k + Z_l + e_{i,j,k,l} \end{aligned}$$

where, access to finance indicators includes access to finance (bank), constraint finance (collateral), constraint finance (cost), constraint finance (collateral and cost) and constraint finance y/n (collateral and cost).The literature considers the most important determinants of firm exportability to be control variables such as firm's age, size, capacity utilisation, ownership (foreign owned), membership of business association, legal status (corporation), and audit, where, X_j, Y_k and Z_l represents industry, country and year of survey fixed effect.

Since all the indicators of a firm's export decision are categorical, with 0-1 values, the probit model estimation technique is used to model the role of financial variables in a firm's exportability. Initially, the dataset contains 45,137 firm observations for estimation. But, if the number of firm observation is less than 100, countries and industries are eliminated from the sample, and 43,495 firm observations are left in the data set. As there are more than 100 observations for each country and industry, the analysis based on the estimation would not suffer the problem of incidental parameters.

To test the second objective of the study (the effect of government ownership of banks), we split the sample into two: the first sample includes firms of countries above the median value of government ownership of banks and the second firms with countries below the median value of government ownership of banks. Alternatively, for robustness check, we have estimated regression introducing interaction of government ownership of banks with access to finance variables. The firm export decision function is as follows.

(2)

$$Firm\ Export\ Decision_{i,j,k,l} = \alpha + \beta_1 lage + \beta_2 corporation_{i,j,k,l} + \beta_3 audit_{i,j,k,l} + \beta_4 size\_medium_{i,j,k,l} + \beta_5 size\_large_{i,j,k,l} + \beta_6 capacity\_utilization\_medium_{i,j,k,l} + \beta_7 capacity\_utilization\_high_{i,j,k,l} + \beta_8 foreign\_owner_{i,j,k,l} + \beta_9 use\_internet_{i,j,k,l} + \beta_{10} mem\_ba_{i,j,k,l} \beta_{11} education\_manager_{i,j,k,l} + \beta_{12} experience\_manager_{i,j,k,l} + \beta_{13} edu\_work\_force_{i,j,k,l} + \beta_{14} FA_{i,j,k,l} + \beta_{15} government\ ownership\ of\ banks + \beta_{16} government\ ownership\ of\ banks * FA_{i,j,k,l} + \beta_{17} FA_{i,j,k,l} + X_j + Y_k + Z_l + e_{i,j,k,l}$$

5.1 Issue of endogeneity

Estimating Equation (1) using the probit technique would give a biased estimate of the main parameters if the estimation suffers from endogeneity. The literature argues that exporting firms are likelier than domestic firms to have financial constraints or problems accessing finance. To circumvent the problem of biased estimation, following Beck et al. (2006), we have estimated a firm's access to finance function, and put the predicted value of the estimation into the export decision function equation. Similarly, the government ownership of banks is estimated using Tobit regression with rule of law, disclosure index, regulatory quality, and banking crisis dummy as the control variables. Government ownership of bank estimation also includes country, industry, and year dummy with robust standard error.

At first, we intend to test if financial constraint affects a firm's decision to export. For this, we have estimated probit model with *Direct Export* as the dependent variable and deferent measures of financial constraint as the main explanatory variable and additional control variables. Table 2 shows the effect of access to finance (as measured by financial constraint in terms of cost and collateral) on the firm export decision function.

Table 2.*Access to Finance and Extensive Margin of Direct Export table*

Dependent Variable is Direct Export					
Log of Age	0.038	0.136***	0.054**	0.069**	0.066**
	(0.034)	(0.033)	(0.020)	(0.022)	(0.021)
Corporation	0.186***	0.210***	0.194***	0.199***	0.199***
	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)
Account Audited	0.279***	0.278***	0.279***	0.277***	0.280***
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Size Dummy (Medium)	0.500***	0.536***	0.488***	0.493***	0.459***
	(0.053)	(0.055)	(0.054)	(0.053)	(0.056)
Size Dummy (Large)	1.116***	1.300***	1.128***	1.157***	1.099***
	(0.073)	(0.080)	(0.059)	(0.060)	(0.060)
Foreign Ownership	0.628***	1.224***	0.725***	0.846***	0.833***
	(0.058)	(0.192)	(0.115)	(0.122)	(0.110)
Use of Internet	0.578***	0.584***	0.579***	0.580***	0.577***
	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)
Member of Business Association	0.333***	0.338***	0.334***	0.336***	0.335***
	(0.037)	(0.038)	(0.037)	(0.037)	(0.037)
Education Manager (High)	0.174***	0.174***	0.174***	0.173***	0.174***
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Education of Work Force (High)	0.002*	0.002*	0.002*	0.002*	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Access Bank Finance	0.452				
	(1.265)				
Constraint Finance (collateral)		−5.274**			
		(1.626)			
Constraint Finance (cost)			−1.247		
			(1.209)		
Constraint Finance (collateral and cost)				−2.293*	
				(1.125)	
Constraint Finance Y/N (collateral and cost)					2.024*
					(0.921)
Constant	−2.002***	−0.246	−1.579***	−1.421***	−3.683***
	(0.364)	(0.556)	(0.383)	(0.323)	(0.842)
Pseudo−R^2	0.262	0.263	0.262	0.262	0.262
Observation	8492	8492	8492	8492	8492
Wald−chi2	2185.834	2200.035	2182.014	2186.183	2179.687

Further, we have used the predicted value of financial constraints to eliminate the endogeneity problem between a firm's decision to export and its financial constraint, which is estimated following Beak et al. (2006) and used as the explanatory variable in the firm's export decision function equation. All the estimations include country, industry, and year fixed effect. The country fixed effect captures country-specific shocks on firm exportability. The industry fixed effect is included to gauge industry effect like variation in the intensity of exports at industry level and differences in the demand of export goods in a particular industry. The industry fixed effect will also help in capturing the differences in the relative price of output stemming from differentiated factor prices. The year fixed effect takes care of the variation in export from worldwide business environment cycles, which will probably affect firms surveyed in the same year with similar nodes. The result shows that financial constraint has a statistically significant negative effect on a firm's export decision and is statistically significant for all the measures of financial

constraint. The significant coefficients of finance variables support the notion—attached with measuring access to finance from use and supply side—that if the supply of credit is insufficient or the firm is excluded from the financial sector, their decision to export would cost more.

The results on control variables are interesting. The estimation result suggests that (except for capacity utilisation) all the control variables have the expected sign and are highly statistically significant. The findings of the study suggest that although age significantly affects the likelihood of a firm's export decision, the effect is quite small. The positive and significant coefficient of the variable use of internet for communication with clients depicts how the IT revolution has cut communication costs and improved firms' business practices. Thus, one could argue that the internet has paved the way for globalisation. In line with Clarke (2008), the estimation result shows that the likelihood of export increases by approximately 0.5–0.6 percentage point with a 1-percentage-point increase in the use of the internet. Possibly, the consistent, statistically significant, and positive coefficient of foreign ownership signifies that it facilitates easy access to technology and understanding of the new market requirement (Rasiah 2003; Lall 1986). The size of a firm seems to play a very important role in its decision to participate in the export market; this is in line with the vast literature supporting the positive effect of a firm's size on exportability (Wagner 1995). The positive and large coefficient of size perhaps reflects a firm's ability to utilise the economies of scale in production and thus cut production cost. Being a member of a business association would help a firm reduce the occurrence of disputes and, even if they get into disputes, find mechanism to settles disputes easily and effectively. Also, being part of a business association provides a firm the opportunity to join hands other members of the association and this provides leverage for entry into export market. Highly educated managers and the large share of highly educated people in the workforce helps firm to learn and adapt fast to the need to change in market, thereby increasing the likelihood of firm exportability. Finally, the experience of a firm's managers has no significant effect on its extensive margin. The positive and statistically significant coefficient of control variable corporation and audit confirm that they are also instrumental in the firm export decision function.

Now, we move on to measuring the effect of government ownership of banks on a firm's financial constraint and decision to export. To test the hypothesis, we split the sample into parts, benchmark the median value of government ownership of bank, and categorise the countries with government ownership of bank higher than median value as high and low otherwise. The estimation result (Table 3) shows that access to finance (financial constraint) is positively (negatively) associated with a firm's decision to export in countries with a higher government ownership of banks. The estimation result suggests that government ownership of bank affects a firm's access to finance and, thus, exportability.

Table 3. *Government Ownership of Bank, Access to Finance and Extensive Margin of Direct Export (Split Sample)*

Dependent Variable is Direct Export										
	High	Low	High	Low	High	Low	High	Low	High	Low
Log of Age	−0.083	0.089*	0.118***	0.043	0.045*	0.030	0.058*	0.022	0.045*	0.043
	(0.058)	(0.041)	(0.034)	(0.052)	(0.022)	(0.028)	(0.023)	(0.032)	(0.023)	(0.029)
Foreign Ownership	0.899***	0.526***	1.313***	0.643*	0.816***	0.525**	0.953***	0.473*	0.814***	0.688***
	(0.084)	(0.074)	(0.197)	(0.296)	(0.115)	(0.168)	(0.121)	(0.187)	(0.121)	(0.156)
Corporation	0.098*	0.311***	0.127**	0.300***	0.117*	0.294***	0.121**	0.291***	0.116*	0.304***
	(0.048)	(0.063)	(0.047)	(0.064)	(0.047)	(0.064)	(0.047)	(0.064)	(0.047)	(0.064)
Use of Internet	0.543***	0.623***	0.591***	0.623***	0.586***	0.623***	0.589***	0.623***	0.586***	0.621***
	(0.047)	(0.065)	(0.044)	(0.066)	(0.044)	(0.066)	(0.044)	(0.066)	(0.044)	(0.065)
Member of Business Association	0.472***	0.262***	0.463***	0.260***	0.462***	0.259***	0.462***	0.258***	0.462***	0.261***
	(0.044)	(0.052)	(0.043)	(0.052)	(0.043)	(0.052)	(0.043)	(0.052)	(0.043)	(0.052)
Education Manager(High)	0.164***	0.230***	0.157***	0.229***	0.159***	0.229***	0.158***	0.229***	0.159***	0.230***
	(0.042)	(0.065)	(0.042)	(0.065)	(0.041)	(0.065)	(0.041)	(0.065)	(0.041)	(0.065)
Size Dummy (Medium)	0.584***	0.482***	0.641***	0.483***	0.600***	0.487***	0.602***	0.484***	0.598***	0.457***
	(0.066)	(0.064)	(0.059)	(0.067)	(0.058)	(0.067)	(0.057)	(0.064)	(0.060)	(0.071)
Size Dummy (Large)	1.043***	1.217***	1.384***	1.142***	1.230***	1.126***	1.253***	1.109***	1.228***	1.108***
	(0.112)	(0.090)	(0.085)	(0.116)	(0.062)	(0.073)	(0.064)	(0.077)	(0.063)	(0.076)
Capacity Utilisation (Medium)	−0.043	0.045	−0.050	0.044	−0.050	0.044	−0.049	0.043	−0.050	0.045
	(0.054)	(0.062)	(0.051)	(0.062)	(0.051)	(0.062)	(0.051)	(0.062)	(0.051)	(0.062)
Capacity Utilisation (High)	0.009	0.125	−0.003	0.121	−0.001	0.121	−0.001	0.121	−0.001	0.123
	(0.057)	(0.068)	(0.053)	(0.068)	(0.053)	(0.067)	(0.053)	(0.067)	(0.053)	(0.067)
Access Bank Finance	5.044*	−2.655								
	(2.283)	(1.514)								
Constraint Finance (collateral)			−4.659**	−0.491						
			(1.691)	(2.464)						
Constraint Finance (cost)					−0.282	0.648				
					(1.249)	(1.680)				
Constraint Finance (collateral and cost)							−1.746	1.063		
							(1.161)	(1.662)		
Constraint Finance Y/N (collateral and cost)									0.213	0.893
									(1.085)	(1.214)
Constant	−3.141***	−1.460***	−0.537	−1.667	−1.934***	−2.039***	−1.638***	−2.098***	−2.194*	−2.684*
	(0.574)	(0.324)	(0.580)	(0.856)	(0.395)	(0.566)	(0.335)	(0.461)	(0.979)	(1.166)
Pseudo−R^2	0.278	0.281	0.282	0.281	0.281	0.281	0.281	0.281	0.281	0.281
Observation	7120	4473	8199	4473	8199	4473	8199	4473	8199	4473
Wald−chi2	1814.67	1193.749	2090.807	1195.862	2087.638	1197.997	2092.194	1198.727	2087.098	1191.86

Further, as an alternative, we estimate equation (2) which introduces government ownership of bank separately and in interaction with financial constraint variables (Table 4).

Table 4. *Government Ownership of Bank, Access to Finance and Extensive Margin of Direct Export*

Dependent Variable is Direct Export					
Access Bank Finance	−0.781				
	(2.303)				
Govt. Ownership of Bank	−0.070*	−0.056**	−0.062**	−0.046*	0.049*
	(0.029)	(0.019)	(0.023)	(0.018)	(0.022)
Govt. Ownership of Bank*Access Bank Finance	0.116**				
	(0.039)				
Constraint Finance (collateral)		−6.697**			
		(2.108)			
Govt. Ownership of Bank*Constraint Finance (collateral)		0.091**			
		(0.034)			
Constraint Finance (cost)			−3.485*		
			(1.732)		
Govt. Ownership of Bank* Constraint Finance (cost)			0.139**		
			(0.050)		
Constraint Finance (collateral and cost)				−4.272**	
				(1.539)	
Govt. Ownership of Bank Constraint Finance (collateral and cost)				0.116**	
				(0.041)	
Constraint Finance Y/N (collateral and cost)					3.747**
					(1.364)
Govt. Ownership of Bank Constraint Finance Y/N (collateral and cost)					−0.073*
					(0.036)
Constant	−1.981**	1.187	−0.803	−0.685	−4.724***
	(0.621)	(1.079)	(0.739)	(0.587)	(0.900)
Pseudo−R^2	0.241	0.242	0.241	0.242	0.241
Observation	5306	5306	5306	5306	5306
Wald−chi2	1328.505	1328.848	1315.607	1319.283	1328.342

The interaction coefficient of government ownership of bank and financial constraint is negative and significant, indicating that government ownership of banks supports a firm's decision to export and development (Tables 3 and 4). The results draw more importance in the context of the present financial crisis, which was transmitted through foreign-owned banks. To check the robustness of the findings[21], we redefine the dependent variable; the findings seem robust as the

[21] There are several ways to check the robustness of findings: use different facets of the main explanatory variable (which we have already exploited); use diversified dependent variables; reduce sample size; introduce more control variables; and use different estimation techniques.

behaviour of the main variable does not change significantly even after changing the control variable.

The WBES provides data on indirect exports of firms, which could be used to check how robustly a firm's access to finance affects its exportability. The redefined export variable *exporting* is equal to 1 if direct plus indirect exports of firm is positive and is 0otherwise. Probit estimation with *exporting* as the dependent variable shows similar results. Again, redefining the extensive margin of export as *exporter* is equal to 1 if the sum of direct and indirect export of firm exceeds 10 percent of its sale and is 0otherwise. The estimation result seems to be robust with respect to sign and significance and clears the over-identification test. Estimation result using *Exporting* and *Exporter* as two other definition of exporting add to the robustness of the result.[22]

6. Conclusion

Given the importance of exports in economic development, the policy of developed and developing country governments encourages firms to internationalise by reducing trade barriers and assisting firms financially, but the evidence that financial assistance is useful is inconclusive. Until recently, even the economic theory and empirical evidence touched upon factors other than financial constraints in the firm export decision function. Melitz (2003) incorporates firm heterogeneity into models of international trade to explain why, within industries, some firms engage internationally and others do not. In addition, the recent financial crisis has shifted focus to the ownership of the banking sector in pouring in liquidity for productive purposes.

This study draws on the argument from Chaney (2005) and Manova (2005) to examine how a firm's access to finance affects its extensive margin of export. It measures access to finance as reported by firms and their use of bank finance for new investment and working capital requirement in contrast to previous studies, which measure access to finance based on financial statements. These two measures provide a broader perspective in examining the objective with respect to firms' inability to access finance from both supply and usage sides. The probit estimation technique is used to econometrically test the hypothesis after controlling for age, size, ownership, and other firm characteristics in the data for more than 105 countries in the WBES 2002-2006. The estimation result shows that a firm's access to finance determines its decision to export. The findings endorse the role of IT in achieving the firm's objective of going international.

Government ownership of the banking sector is also examined in the context of access to finance and a firm's decision to export. The study finds that government ownership is a significant factor in firm's entry into export markets. The level (high

[22] We have not reported the result table for robustness check to conserve space.

and low from median value) of government ownership of the banking sector is instrumental in firm's access to finance. The result stands after changing the definition of firm export decision variable and financial constraint variable and thus passes the robustness criterion.

There is a gap in the existing literature on access to finance and firm internationalisation. This study reduces that gap, but is limited in that the data set is cross-sectional and thus restricts the use of lag variables in the estimation and it would be better to measure access to finance in the context of firms' intention and ability to use it productively. Assume firm A has exhausted all internal resources, and is provided some amount X at cost Y. If the firm decides to use the λ proportion of external fund X for productive investment, the firm is financially constrained, as it is possible that although the firm is financially constrained but not in strict sense of productive investment requirement and in that case diverting fund to firm Z (provided firm Z falls to the category of financially constrained firm in productive investment sense) would provide more economically meaningful result for the economy.

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Appendix

Table 1a: Country, Firm Surveyed and Income Category of Surveyed Country

Country	Number of Firm Surveyed	Income group of Country	Country	Number of Firm Surveyed	Income group of Country
Albania	374	Lower Middle	Lebanon	354	Upper Middle
Algeria	557	Lower Middle	Lesotho	75	Lower Middle
Angola	425	Lower Middle	Lithuania	644	Upper Middle
Argentina	1,063	Upper Middle	Madagascar	293	Low
Armenia	522	Lower Middle	Malawi	160	Low
Azerbaijan	170	Low	Malaysia	902	Upper Middle
Azerbaijan	350	Lower Middle	Mali	155	Low
Bangladesh	1,001	Low	Mauritania	237	Low
Belarus	575	Lower Middle	Mauritius	212	Upper Middle
Benin	197	Low	Mexico	1,480	Upper Middle
Bosnia and Herzegovina	382	Lower Middle	Moldova	627	Low
Bolivia	613	Lower Middle	Mongolia	195	Low
Botswana	342	Upper Middle	Montenegro	100	Lower Middle
Brazil	1,642	Lower Middle	Morocco	850	Lower Middle
Bulgaria	1,098	Lower Middle	Namibia	329	Lower Middle
Burkina Faso	139	Low	Nicaragua	452	Low
Burundi	270	Low	Nicaragua	478	Lower Middle
Cambodia	503	Low	Niger	125	Low
Cameroon	172	Lower Middle	Oman	337	Upper Middle
Capeverde	98	Lower Middle	Pakistan	965	Low
Chile	1,965	Upper Middle	Panama	604	Upper Middle
China	3,948	Lower Middle	Paraguay	613	Lower Middle
Colombia	1,000	Lower Middle	Peru	1,208	Lower Middle
Costa Rica	343	Upper Middle	Philippines	716	Lower Middle
Croatia	423	Upper Middle	Poland	1,583	Upper Middle
Czech	611	Upper Middle	Portugal	505	high
Dominican Republic	225	Lower Middle	Romania	855	Lower Middle
Dominican Republic	340	Low	Russia	506	Lower Middle
Congo					
Ecuador	1,111	Lower Middle	Russia	601	Upper Middle
Egypt	977	Lower Middle	Rwanda	212	Low
El Salvador	1,158	Lower Middle	Senegal	262	Low

Eritrea	79	Low	Serbia	958	Lower Middle
Estonia	389	Upper Middle	Slovakia	390	Upper Middle
Ethiopia	427	Low	Slovenia	411	high
FYROM	370	Lower Middle	South Africa	603	Lower Middle
Gambia	174	Low	South Korea	598	high
Georgia	174	Low	Spain	606	high
Georgia	200	Lower Middle	Sri Lanka	452	Lower Middle
Germany	1,196	high	Swaziland	307	Lower Middle
Greece	546	high	Syria	560	Lower Middle
Guatemala	977	Lower Middle	Tajikistan	483	Low
Guinea	223	Low	Tanzania	276	Low
Guyana	163	Lower Middle	Tanzania	419	Low
Honduras	886	Lower Middle	Thailand	1,385	Lower Middle
Hungary	860	Upper Middle	Turkey	514	Lower Middle
India	6,061	Low	Turkey	1,880	Upper Middle
Indonesia	713	Lower Middle	Uganda	300	Low
Ireland	501	high	Uganda	563	Low
Jamaica	94	Lower Middle	Ukraine	1,057	Lower Middle
Jordan	503	Lower Middle	Uruguay	621	Upper Middle
Kazakhstan	835	Lower Middle	Uzbekistan	660	Low
Kenya	284	Low	Venezuela	500	Upper Middle
Kyrgyzstan	477	Low	Vietnam	1,650	Low
Laos	246	Low	West Bank and Gaza	401	Lower Middle
Latvia	381	Upper Middle	Zambia	207	Low

Table 2a: Industry wise distribution of firms surveyed

Industry	**Number of Firm Surveyed**	**Percentage**
Textiles	4,225	5.89
Leather	1,082	1.51
Garments	6,929	9.65
Agroindustry	798	1.11
Food	6,935	9.66
Beverages	1,564	2.18
Metals and machinery	6,240	8.69
Electronics	2,393	3.33
Chemicals and pharmaceutics	3,797	5.29
Construction	3,660	5.1
Wood and furniture	3,184	4.44
Non-metallic and plastic materials	3,093	4.31
Paper	1,026	1.43
Sport goods	44	0.06
IT services	1,525	2.12
Other manufacturing	2,907	4.05
Telecommunications	295	0.41
Accounting and finance	272	0.38
Advertising and marketing	1,210	1.69
Other services	3,135	4.37
Retail and wholesale trade	10,188	14.19
Hotels and restaurants	2,211	3.08
Transport	1,456	2.03
Real estate and rental services	837	1.17
Mining and quarrying	275	0.38
Auto and auto components	1,404	1.96
Other transport equipment	98	0.14
Other unclassified	320	0.45
No information	686	0.96
Total	**71,789**	**100**

Table 3a: Variable name definition and source

Variable Name	Definition	Source
Direct Exporter	equals 1 if the direct export of the firm is positive; other wise 0	WBES 2002-2006 question
Exporter (Direct + Indirect)	equals 1 if the total of direct and indirect export of the firm is positive; other wise 0	WBES 2002-2006 question
Exporting (Direct + Indirect)	equals 1 if the total of direct and indirect export of the firm is more than 10 percent of sales; other wise 0	WBES 2002-2006 question
Bank Finance	equals 1 if the 50 percentage or more of the new investment or working capital is financed by Bank (domestic and foreign); otherwise 0	WBES 2002-2006 question
Financial Constraint (collateral)	Self reported measure of Access to finance on scale of 0-4 based on collateral requirement; 0- means no problem in Access to finance 4 reflects sever problem	WBES 2002-2006 question
Financial Constraint (cost)	Self-reported measure of Access to finance on scale of 0-4 based on interest rate; 0- means no problem in Access to finance 4 reflects sever problem	WBES 2002-2006 question
Financial Constraint (collateral and cost)	Self-reported measure of Access to finance on scale of 0-4 based on interest rate; 0- means no problem in Access to finance 4 reflects sever problem	WBES 2002-2006 question
Financial Constraint (collateral and cost) PCA Index	Based on Principle Component Analysis Index of Self-reported measure of Access to finance on scale of 0-4 based on interest rate; 0- means no problem in Access to finance 4 reflects sever problem	WBES 2002-2006 question
Capacity Utilisation Dummies.	Capacity Utilisation Dummies consist of three dummies corresponding to the establishment's average capacity utilisation levels below 50%, between	WBES 2002-2006 question.

Variable Name	Definition	Source
	50% and 80% and above 80%, over the last year. Capacity utilisation is defined as the amount of output actually produced relative to the maximum amount that could be produced with the firm's existing machinery and equipment and regular shifts.	
Government ownership of banks	What fraction of the banking system's assets are in banks that are 50% or more government owned?	Barth et al. (2006)
Firm Size Dummies.	Firm Size Dummies consist of three dummies corresponding to small, medium, and large firms. Small firms have 1-19 employees, Medium firms have20-99 employees, Large firms have over 100 employees.	WBES 2002-2006 question.
Regulatory quality	A measure of whether regulation is effective in promoting private markets	Andrianova et al. (2008)
Number of establishments.	The number of separate operating facilities of a firm.	WBES 2002-2006 question.
Age	Age is the year of the survey minus the year in which the firm is established.	WBES 2002-2006 question.
Corporations.	Corporations is a dummy variable that takes the value 1 if the firm is organized as a corporation and 0 if the firm is organized as a Cooperative, Sole Proprietorship or Partnership or some other legal form.	WBES 2002-2006 question.