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**Finance and Growth of SMEs in South Asia: Evidence from
Bangladesh, Pakistan, and Sri Lanka**

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Jeremy Smith (Head of the Department of Economics, University of Warwick) and Michael Ward
(Head of the Department of Economics, Monash University)

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Finance and Growth of SMEs in South Asia: Evidence from Bangladesh, Pakistan, and Sri Lanka

Palak Sharma

Abstract: This paper studies the determinants of access to finance in small and medium enterprises (SMEs) in three South Asian economies, Bangladesh, Pakistan, and Sri Lanka. The data for this study is from the World Enterprise Survey data set for each country collected by the World bank. The paper uses logistic regression for empirical analysis. Findings of this paper confirm that access to formal and informal finance is significantly determined by the size, age, and formalization of firms. The gender of the owner-manager, sales performance, location, and legal status of the firm are insignificant predictors of a firm's ability to raise finance. Results from this paper can help governments shape policy and develop programs that can augment a firm's ability to raise financing from formal sources.

JEL Classification Number: O11, O53

Keywords: Economic growth, informal finance, SMEs, World Enterprise survey

Introduction:

Small and medium enterprises (SMEs) are seen to be the main drivers of growth and employment across Asia. Such firms make up nearly 96% of all businesses in the region and provide employment to 62% of private sector labor (Yoshino and Taghizadeh-Hesary, 2018). Their contribution towards their economies is substantial: for example, 50% of Bangladesh's industrial GDP and 82% of its industrial sector employment comes from SMEs (Wellalage & Locke, 2017).

Cross country studies cite obstacles in access to finance as the main impediment to the growth of small businesses (Shinozaki, 2012). Financing needs are largely fulfilled through internal sources by drawing down on personal savings or borrowing from friends and family, or using non-market, relationship-based mechanisms such as trade credit. 65%-72% of SMEs (formal + informal) do not have access to formal sources of finance (Shinozaki, 2012).

Literature attributes this failure of SMEs to secure formal financing to information asymmetries driven by inadequate or absent financial infrastructure, a lack of collateral, sparse and incomplete business records, and uncertain profit and sales projections (Yoshino, and Taghizadeh-Hesary, 2018; Beck et al., 2008). This asymmetric information problem results in prohibitive transaction costs for lending institutions leading to more collateral requirements and high interest rates to service SME loans, which deter borrowing and hinder growth.

The overriding consensus is that SMEs drive local economies and augment supply chains, their steady growth forms the linchpin of any sustained industrial development in a country, and adequate access to finance is what facilitates the long-term growth of such firms (Adegboye and Iweriebor, 2018; Beck et al., 2015).

In this paper I investigate the degree of credit constraint faced by SMEs in three fast emerging economies in South Asia, namely, Bangladesh, Pakistan, and Sri Lanka and assess the factors that contribute to the inability of such enterprises to access finance across these countries. My findings show that access to formal and informal finance is significantly determined by the size, age, and formalization of firms. The gender of the owner-manager, sales performance, location, and legal status of the firm are insignificant predictors of a firm's ability to raise finance.

Literature Review:

Firms in developing countries confront multiple obstacles to growth, mainly: rundown energy and transport infrastructure, political instability, unsafe business environment, and lack of market access (Beck et al., 2015). Increasingly, literature points to access to finance as the most important growth constraint for SMEs (Beck et al., 2005). Small firms find it more challenging to obtain formal credit versus larger firms, draw less on external sources of finance, particularly bank loans, but experience significant growth when borrow from formal sources such as banks as opposed to informal lenders (Ayyagari et al., 2010; Allen et al., 2005).

Access to finance, both formal and informal, helps firms overcome credit constraints during both the start-up phase and later expansion. But SMEs in developing countries lack hard information such as formal financial statements and adequate collateral that deter banks from lending to them. For example, in Sri Lanka SMEs face severe information asymmetries since lack financial literacy and market knowledge, which coupled with weak enforcement institutions hinder credit availability from formal sources that mainly rely on hard data and government and courts for screening and enforcement purposes (Wijesinha and Perera, 2015;

Jain, 1999). Similarly, in Bangladesh, over 40% of SMEs lack access to formal financing once again mainly due to high transaction costs and stringent collateral requirements associated with a lack of information and legal infrastructure (Hossain, Yoshino, and Taghizadeh-Hesary, 2018).

But then how do firms finance themselves in the absence of bank credit? Firm level data from Indonesia suggests nearly 46% of micro, small and medium firms relied on personal savings and help from friends and family to fulfill investment needs but wish to reduce their dependence on informal sources (Shinokazi, 2012). Informal finance has an information advantage over formal finance since lenders in the informal sector rely on personal networks and social sanctions for screening and enforcement but is inefficient in alleviating credit constraints since carries exorbitant interest rates, is limited in scale, and is highly vulnerable to business cycle shocks and the sharp vicissitudes of fortune of lenders (Beck et al., 2015; Besley and Levenson, 2006).

Theory and Hypothesis:

Using firm level data from three fastest growing emerging economies in the region, Bangladesh, Pakistan, and Sri Lanka I propose to study the covariates that most significantly limit SME access to finance.

Using data from multiple waves of the World Enterprise Survey I will ascertain: i) the degree of credit constraint on firms of different sizes, ii) whether this impediment correlates to certain firm characteristics, and iii) how SMEs fund their expenditure on working capital and fixed investment in the absence of formal bank loans. My research will focus on a cross country comparison of credit constrained firms in Pakistan, Bangladesh and Sri Lanka to provide some

understanding of SMEs' access to finance in this region.

I will follow the methodology laid out by Kuntchev et al. (2013) to construct a credit constrained variable based on hard data as opposed to perception data.

This paper will categorize surveyed firms across the three countries into four main groups: Not Credit Constrained, Maybe Credit Constrained, Partially Credit Constrained, and Fully Credit Constrained and study the demographic characteristics and performance indicators of the firms that fall into each group.

My hypotheses are:

H₁: Larger firms are less likely to face credit constraints (formal + informal) than smaller firms.

H₂: Older firms are less likely to face credit constraints (formal + informal) than younger firms.

H₃: High performing firms are less likely to face credit constraints (formal + informal).

Data:

Data used are sourced from the World Bank Enterprise Surveys. The surveys provide information on financial and economic indicators of formally registered firms including data on access to finance, corruption, infrastructure, crime, competition and firm performance.

Additional demographic data on firm owners is also available. The enterprise survey is a firm level survey that collects information from a representative random sample of private sector firms using a standard core questionnaire and same sampling method across different countries.

Data for selected countries are collected each year between the same time period allowing for the creation of a panel data set. Details on the data collection method and survey instrument can be found at the World Bank Enterprise Survey website (enterprisesurveys.org).

Contribution & Policy Implications:

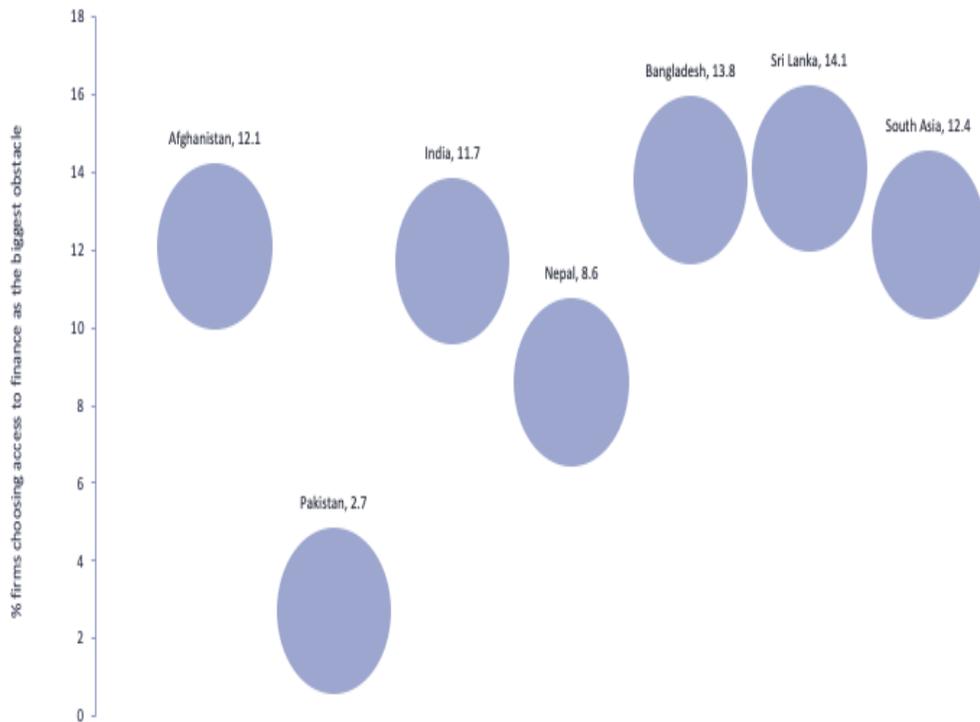
Literature shows that SMEs have the highest rates of job creation making them instrumental for poverty reduction and driving growth in developing countries. Small firms are seen to be more resilient than larger firms during times of crisis and are able to bounce back faster. For example, following the Asian financial crisis in 1997/98, surveyed export-oriented SMEs in Indonesia were able to increase trade volumes by a bigger percentage than larger firms (Magiera, 1999). SMEs are also said to be more flexible in their production processes allowing them to respond to crisis situations more effectively (Berry et al., 2001). In a post covid-19 world, developing countries may once again have to rely on SMEs to ride the path to recovery whereby necessitating knowledge on how SMEs finance their working capital and investment needs and what factors are most crucial to their growth story. From a policy perspective it is therefore critical to learn of the different ways that obstruct the operations of SMEs especially in a region that has the largest population of poor people in the world.

It is learned in developing countries firms are indeed credit constrained and so governments should work to facilitate access to formal financing to stimulate SME growth. But do one size fits all approaches make sense? For example, anecdotal evidence from Pakistan shows that SMEs although in a fix for funds are unwilling to borrow from formal sources since religious beliefs are in conflict with conventional interest-bearing borrowing (Alam, 2015). In such cases economies with predominantly Muslim populations may then have to look towards deepening Islamic financing to help firms overcome credit constraints due to their unique religious sentiments. Further, it is necessary to develop an understanding of the reasons why SMEs borrow. Are firms in these countries using formal and informal finance to fulfill working capital needs or fund expansions?

An understanding of the utilization of funds will help governments and banks design the legal framework and banking products that can most effectively address the financing needs of such firms. Since one of the main drivers of constraint to formal finance is information asymmetry it is important to learn how countries in this region can learn from success stories like Malaysia and India to both address financial illiteracy and create new institutions like credit bureaus or introduce credit guarantee schemes that incentivize formal lending institutions to extend credit to SMEs based on primary assets rather than collateral (Wijesinha and Perera, 2015). Lastly, this research will undertake a study of the idiosyncratic nature of informal markets in these three countries to uncover the similarities and differences between informal finance service providers in the region and understand how they fill the vacuum successfully in the absence of efficient formal lending institutions even though they charge above market interest rates. The findings will present important policy prescriptions to effectively tailor financing products primed for the underserved SME sector in the South Asia region.

Data Analysis/Results:

The presumption is that small and medium enterprises (SMEs) in developing countries are financially constrained. Given the importance of access to credit for firm growth, I use data from the World Bank's Enterprise Survey to answer two main questions: whether SMEs in South Asia, mainly, Pakistan, Bangladesh and Sri Lanka are in fact credit constrained, and what type of credit do SMEs use to finance their investments.

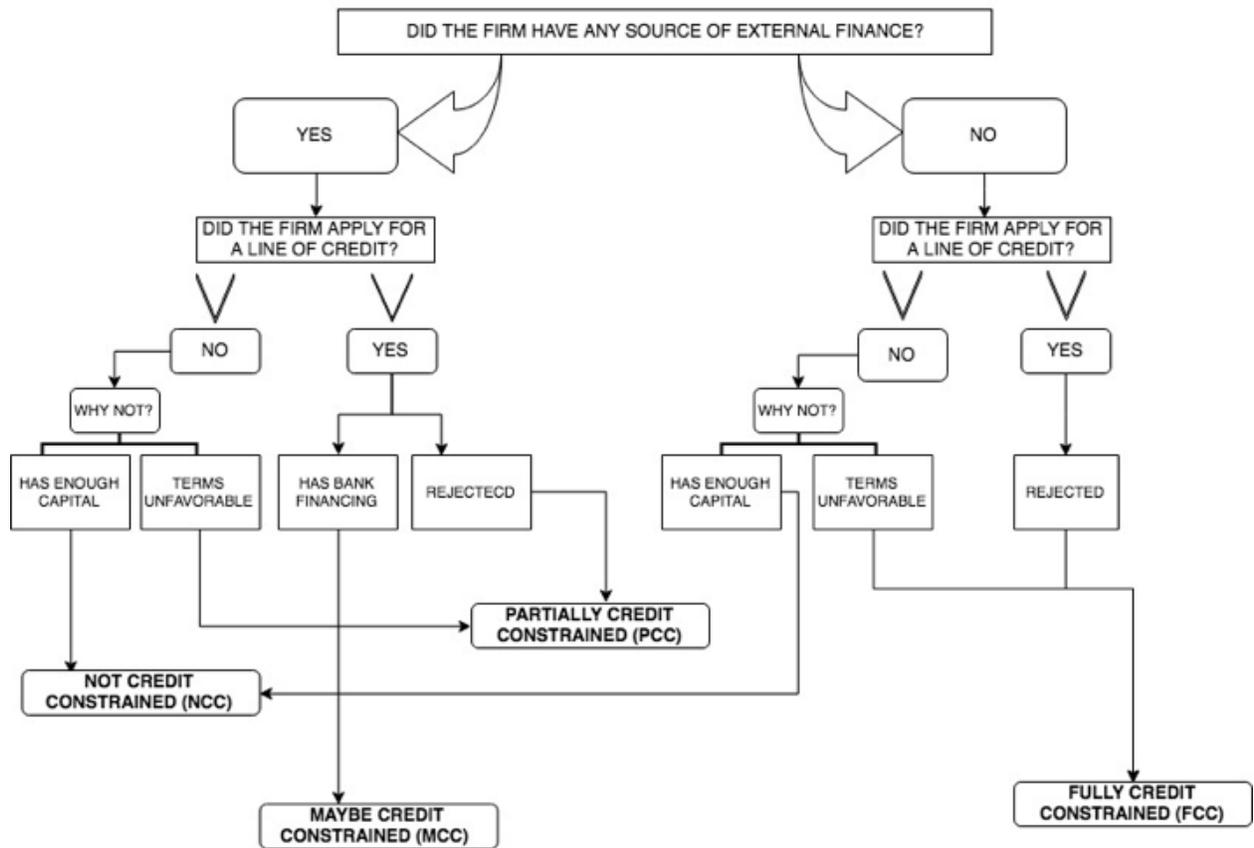


Source: Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank

Figure 1. Percentage Of Firms Who Consider Access To Finance As Biggest Obstacle.

Data from World Bank's Enterprise Unit shows that only 2.7% of Pakistani firms believe access to finance to be the biggest obstacle to growth. In comparison, 13.8% firms in Bangladesh, and 12.4% in South Asia overall, choose access to finance to be the biggest obstacle.

CLASSIFYING FIRMS BY DEGREE OF CREDIT CONSTRAINT



Using the finance section of the World Enterprise Survey (WES) I construct four major groups that measure the extent of credit constraint firms faced during the referenced year (2013).

The groups are defined as follows:

- 1) Fully Credit Constrained: firms that have no external sources of finance, and no bank loans because loan applications were rejected or firms did not bother to apply due to loan provisions.
- 2) Partially Credit Constrained: firms that have some external source(s) of finance but no bank loans either because did not apply due to loan provisions or loan application was rejected.

- 3) Maybe Credit Constrained: these firms have external sources of finance, including bank loans. However, are classified as under maybe since impossible to know if were partially rationed out on the provisions of their external finance.
- 4) Not Credit Constrained: these firms may or may not have external sources of finance but, independently of their current level of external finance, are satisfied with their current financing structure for both working capital & fixed asset investments.

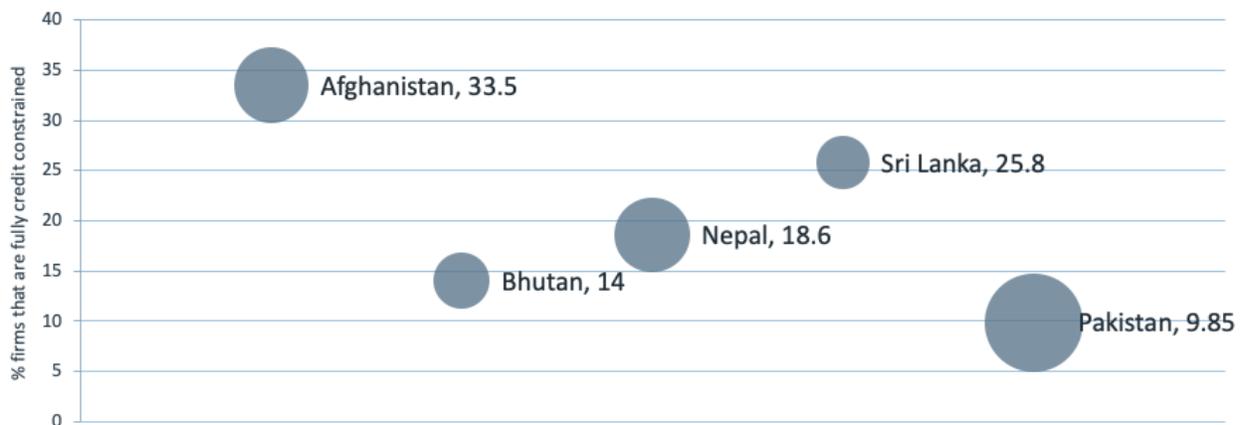
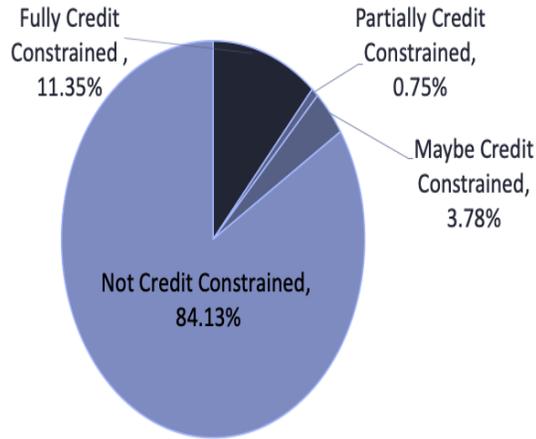


Figure 2. Degree of Credit Constraint in Firms Across Countries.

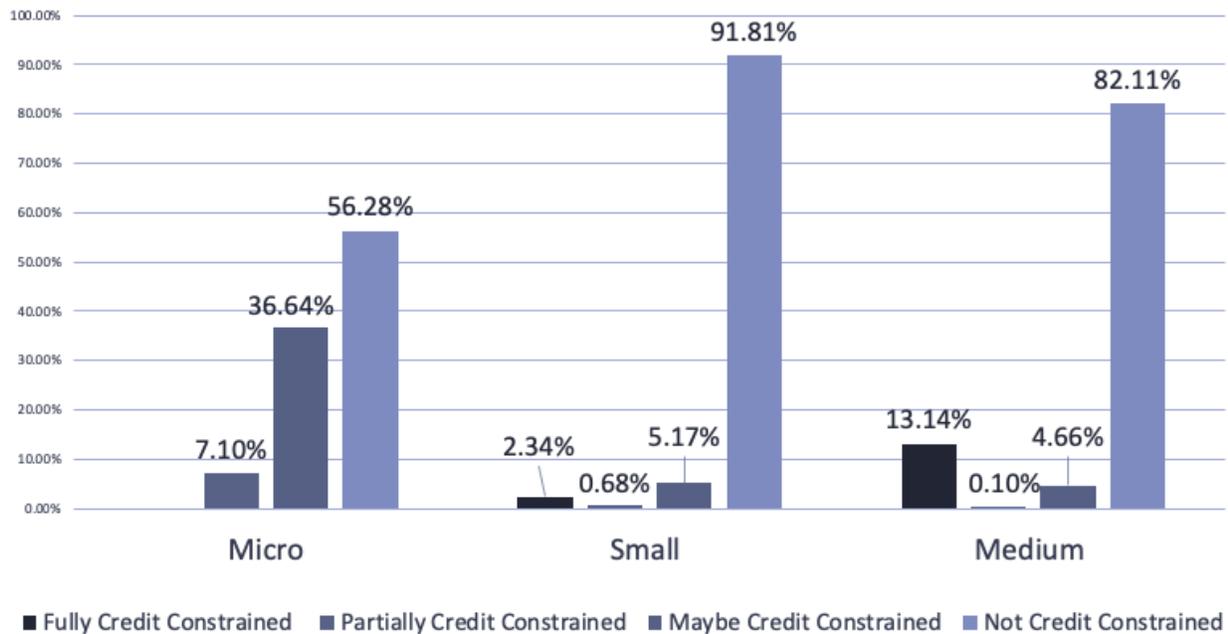
Comparable data from Enterprise Surveys allows us to map different firms' level of credit constraint and assess it against their regional counterparts. Results indicate that Pakistani firms have the least proportion of credit constrained firms. Only 9.85% of firms in the WES sample are classified as fully credit constrained. Whereas this number is significantly higher for other countries in South Asia. In Sri Lanka, the proportion of credit constrained firms is a quarter of all firms surveyed.



Source: World Enterprise Survey (2013)

Figure 3. Breakdown of Firms Per Credit Constraint Status.

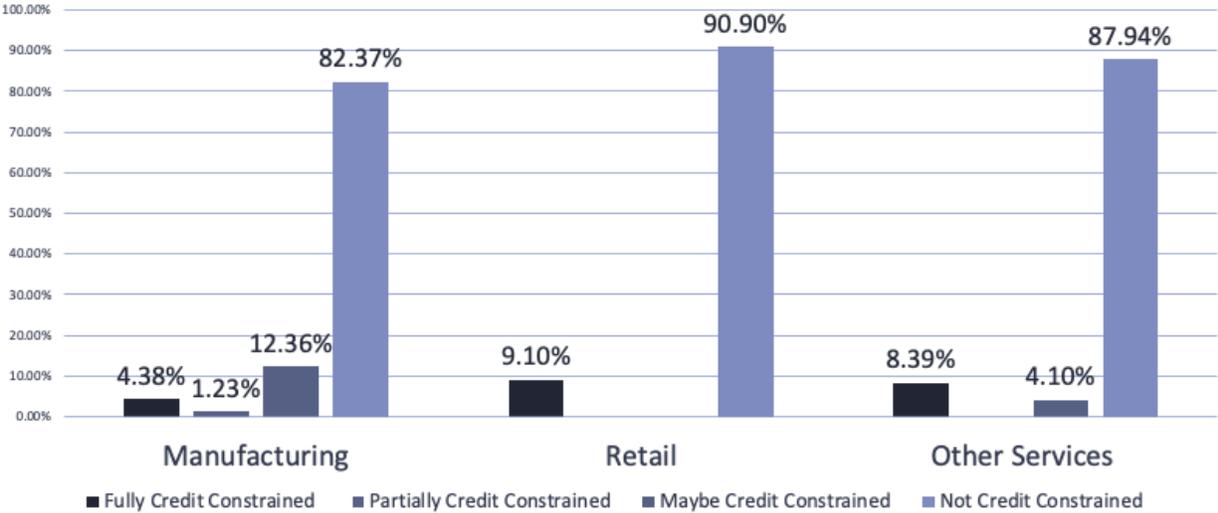
As per the definition of credit constraint used in this study, I find that largely firms fall in the “Not Credit Constrained” category. Only 12.1% of the firms are categorized as being credit constrained (either partially or fully). This holds true across regions, sectors, and size of firms.



Source: World Enterprise Survey (2013)

Figure 4. The Demographics of Credit Constrained SMEs.

The qualitative analysis of data shows that by and large surveyed firms across all firm sizes are not credit constrained. Further, it can be surmised that micro enterprises are always able to find some financing and thus are never fully left wanting for funds.

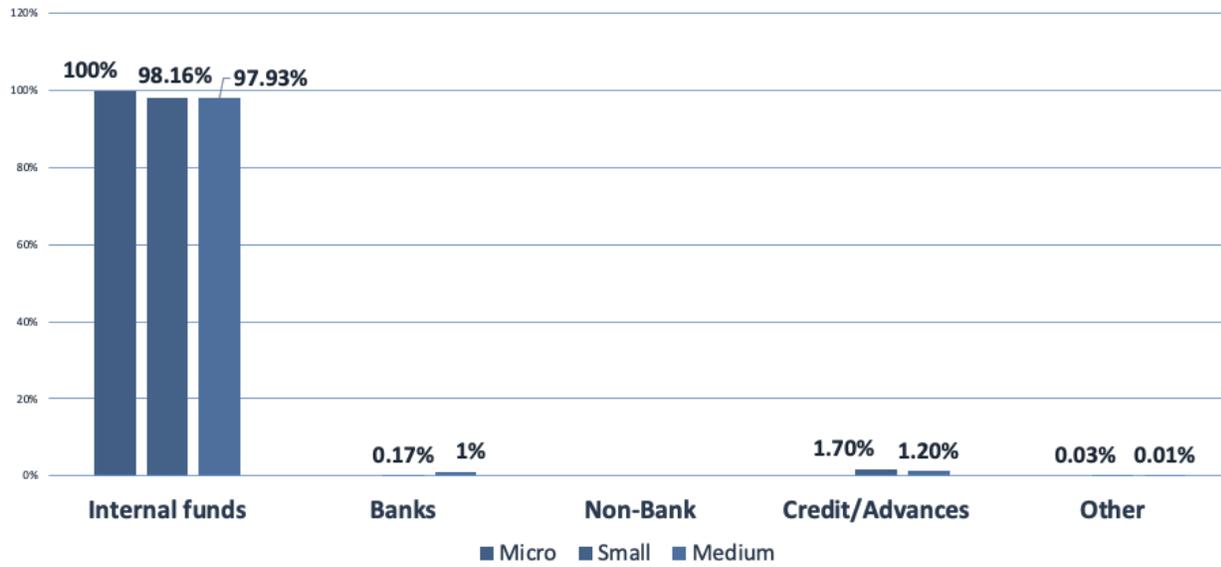


Source: World Enterprise Survey (2013)

Figure 5. Credit Constrained Status By Sector.

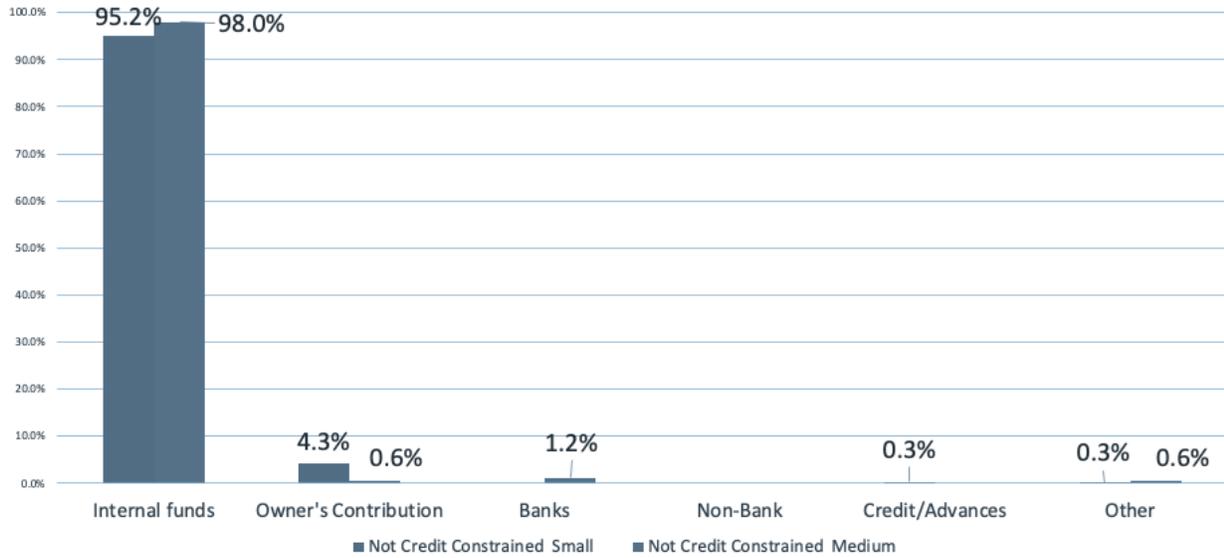
Once more, it can be observed that the firms across major sectors are not credit constrained. However, of the sectors under review, SMEs in manufacturing are seen to exhibit the largest proportion of firms that fall under either Fully, Partially or Maybe constrained classification.

The analysis further reveals that within the not credit constrained group of firms, even those firms that use multiple sources of external finance (graphic of data breakdown shown below) are not reliant on formal bank loans to fulfill their different investment needs. In fact, the surveyed firms majorly depend on informal networks and own contributions to fund investments. But one failing of the WES data is that it does not communicate to us whether these firms will ever be willing to borrow from institutional creditors in the future.



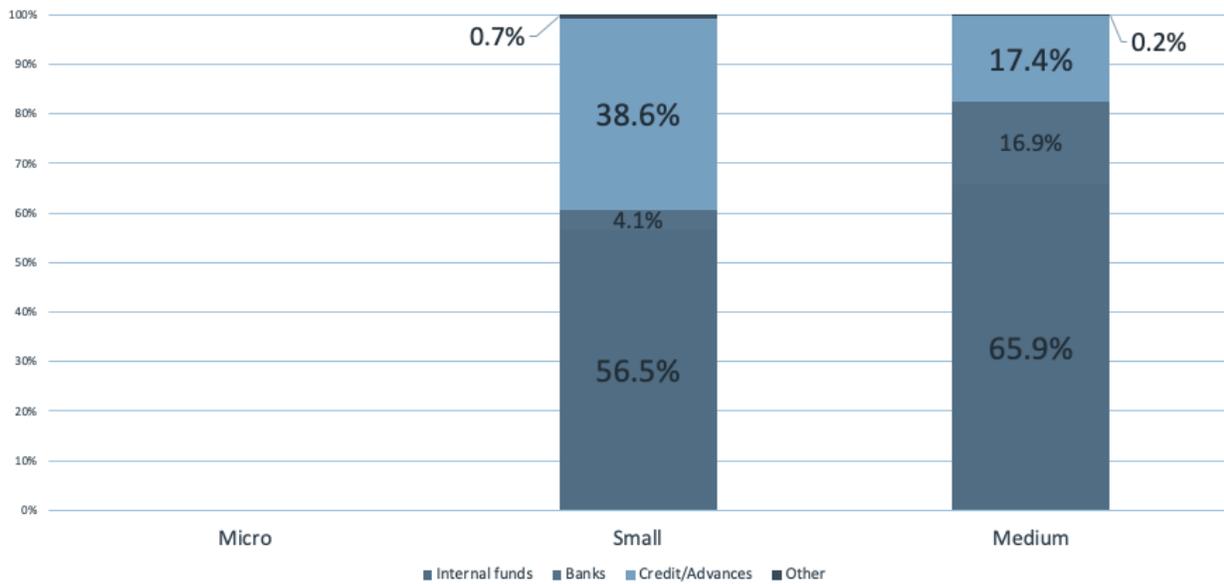
Source: World Enterprise Survey (2013)

Figure 6. Relative Sources Of Finance Used By NCC Firms For Working Capital.



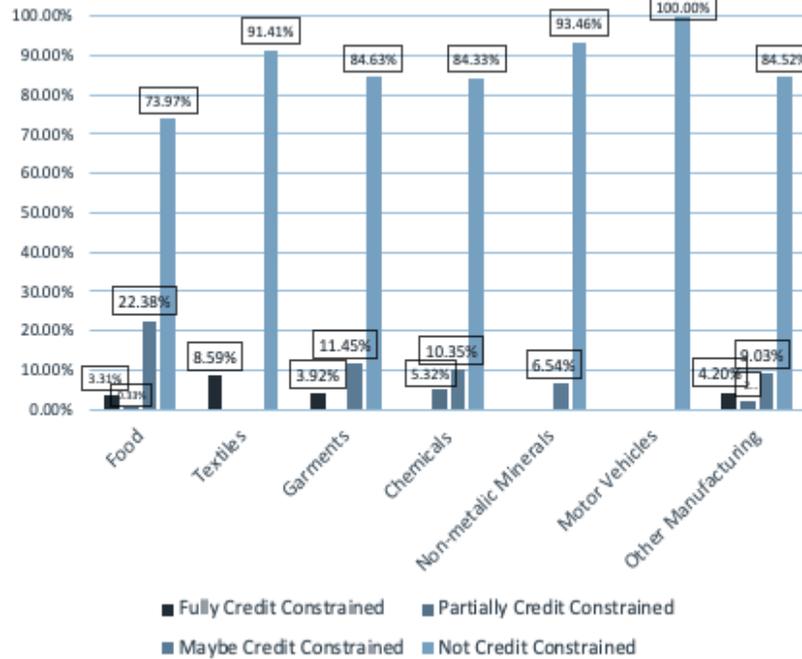
Source: World Enterprise Survey (2013)

Figure 7. Relative Sources Of Finance Used By NCC Firms For Fixed Assets.



Source: World Enterprise Survey (2013)

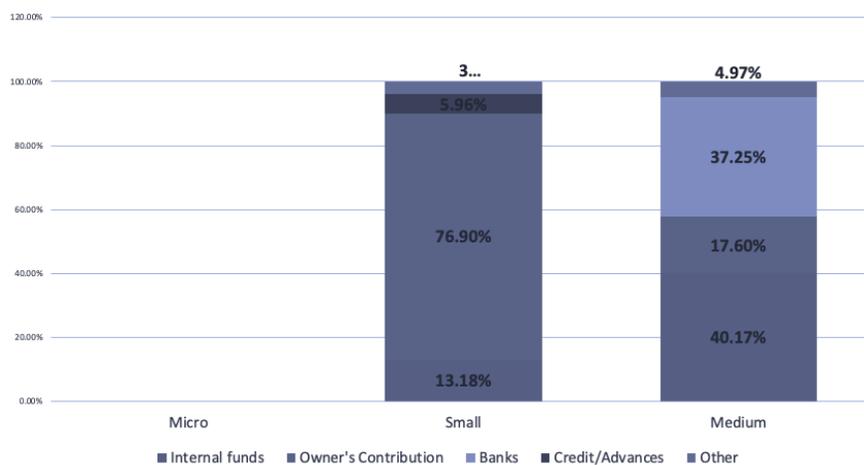
Figure 8. Relative Sources Of Working Capital Financing For Firms Who Use Multiple Sources Of Finance.



Source: World Enterprise Survey (2013)

Figure 9. Credit Constrained Status In Manufacturing.

A deeper look at data of firms from the manufacturing sector reveals that *Textile* firms seem in dire need for funds. Nearly 9% of all surveyed firms here fall under the fully credit constrained category. Comparatively, firms from the *Motor Vehicles* sector appear to be well funded and satisfied with their incumbent financing arrangements. Lastly, it is observed that firms producing chemicals or non-metallic minerals are never fully credit constrained.



Source: World Enterprise Survey (2013)

Figure 10. Relative Sources Of Fixed Asset Investments For Firms Who Use Multiple Sources Of Finance.

This section of the paper will explore the determinants of access to finance for firms. This study uses a logistic regression to model the analysis. Literature supports that availability to finance is dependent on a host of variables, namely: ownership status (Harrison & McMillon, 2003; Beck, T., Demirguc-Kunt, A., Laeven, L., & Maksimovic, V., 2006), age of the establishment (North, D., Robert, B., & Ignatius, E., 2010), the sector in which the firm operates (Byiers, B.R., Tarp., F & Bentzen, J., 2010; North et al., 2010; Drakos and Giannakopoulos, 2011), firm location (Kumar and Francisco, 2004), possession of collateralizable assets (Michaelas, N., Chittenden, F., & Poutziouris, P., 1999), and gender, experience and perception of entrepreneurs (Kon, Y., & Storey, D. J., 2003; Carter, S., Shaw, E., Wilson, F & Lam, W., 2007; Cowling, M., Liu, W., & Ledger, A., 2012).

The dependent variable in our analysis is a firm's credit constrained status. This is a dummy variable set equal to 1 if the firm is categorized as being not credit constrained and is set equal to 0 otherwise. The independent variables are those outlined above with the inclusion of sales performance. A detailed description of the regressors can be found in Table 1. Pairwise correlations of independent variables found no indication of multicollinearity.

Table 1. Description of Independent Variables

Variable	Description
Ownership / Legal status of business	Sole Proprietorship = 1; Partnership = 2; Limited Partnership = 3; Shareholding = 4
Age	Age of the business in years
Location	= 1 if firm in main business city; = 0 otherwise

Formalization	= 1 if business has audited statements ; = 0 otherwise
Size	=1 if firm is an SME; = 0 if firm is Large
Sales performance	growth of sales (in %age)
Female	= 1 if owner-manager female ; = 0 otherwise
Experience	Years of work experience of owner- manager

Table 2. Regression Results

VARIABLES	(1) OLS	(2) Logit Coeff	(3) Odds Ratio
legal status = 2, Partnership	0.0565 (0.0633)	0.246 (0.273)	1.279 (0.349)
legal status = 3, Limited Partnership	0.1 (0.107)	0.475 (0.536)	1.607 (0.862)
legal status = 4, Shareholding	-0.0967 (0.132)	-0.411 (0.506)	0.663 (0.335)
Age Establishment	0.00421** (0.00196)	0.0180** (0.00842)	1.018** (0.00857)
Location	-0.0846 (0.0549)	-0.361 (0.235)	0.6967 (0.164)
Formalization	0.153*** (0.051)	0.633*** (0.212)	1.884*** (0.3988)
Size	-0.109* (0.0598)	-0.472* (0.259)	0.6239* (0.1618)
Sales performance	-3.21e-05*** (7.95E-06)	-0.000187 (0.000151)	0.9998 (0.00015)
Experience	-0.000247 (0.00265)	-0.00114 (0.0114)	0.99886 (0.0113)
Gender	0.0613 (0.147)	0.269 (0.609)	1.308 (0.7971)
Constant	0.478*** (0.0942)	-0.0681 (0.393)	0.93414 (0.36752)

Observations	452	452	452
R-squared	0.071		

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3. Summary Statistics

LR		
chi2(10)		33.25
Prob > chi2		0.0002
Hosmer-Lemeshow		
chi2(8)		9.3
Prob > chi2		0.3178
Correctly classified		61.28%

The logit model is statistically significant at the 1% level, This confirms that the model was able to differentiate between firms that were not credit constrained versus those that did face issues accessing finance from both formal and informal sources. The validity of the model was verified further using the Hosmer-Lemeshow test. Given its value, it can be stated that there appears to be no evidence against the null hypothesis that there is no difference between observed and model predicted values. Conclusively, the model fits the data well. Further, the model was able to correctly predict 61.28% of observations and is thus considered acceptable.

The results from the regression confirm that a firm's ability to access finance is significantly impacted by its size (larger firms have a significantly higher likelihood of being not credit

constrained compared to small and medium firms); age (firms that have been in operation longer have a significant advantage over younger, start-up firms when it comes to having access to finance); formalization (firms with audited statements have a significantly higher likelihood of accessing finance than firms with no audited statements).

In *marginal* terms, with each additional year in age a firm's odds of accessing financing was seen to increase by 1.018 times. This confirms that as firms age, they also evolve from internally financed vehicles into firms that are able to use their ability to remain in business as an indicator of efficiency and profitability that gives assurances to both suppliers and formal lending institutions to extend credit to them. Further, it can be argued that older firms may also begin to accumulate collateralizable assets that lower their riskiness and induce lenders to grant credit to them. Lastly, with age firms may also begin to improve their accounting practices and have their annual statements audited by reputable third parties - outcomes that improve transparency and make these firms more attractive to lenders.

The formalization argument finds further strength from the results where in *marginal* terms, the probability of accessing finance for audited firms is seen nearly 2 times higher than their unaudited counterparts. This result is in line with literature that confirms that incomplete information on firms is a deterrent to lending and that audited statements lower borrower risk and make banks more likely to service such clients (Dharan, 1993).

In contrast to what was observed in literature, the model did not place any significance on gender of owner-managers, the experience of owner-managers, sales performance, and legal status of firms when it came to their ability to access formal and informal sources of financing. The lack of significance of gender could be explained by the fact that givendata only has 5% of firms that are managed by female owners so there is very little overall variation to determine impact. Similarly, sales growth was assessed over a 3-year period as opposed to the conventional year on year basis due to paucity of data. Further, sales data is unreliable since there is a large degree of tax evasion

in these economies and firm owners are reluctant to share accurate figures as a result.

Conclusion:

According to results, access to finance (both formal and informal) is highly dependent upon firm characteristics such as its size, age, and degree of formalization. Since SME growth is instrumental for overall economic growth and development it is important that policy is framed in a way that helps such firms embrace record keeping and formal audits of statements. This may require governments to invest in financial literacy programs for owner managers to help them formalize their accounts so lenders can make an objective assessment of these firms' creditworthiness.

Another policy intervention could be the training of loan officers by banks to use qualitative measures of evaluating the financial performance of SMEs. This could be done by assessing a firm's dealings with its suppliers and years in operation since the age of a business seems to be a reliable signifier of its efficiency and competitiveness. However, our results are constrained by the fact that this data is collected on a self-reporting basis and could suffer from positive response bias.

As a remedy, governments could engage banks to initiate studies to determine credit demand and investigate borrower characteristics that could augment a firm's ability to raise financing from formal sources. Governments could do this by offering to subsidize/guarantee loans made by participating banks to SMEs.

Lastly, it must be emphasized that these results do not offer causal links between the predictors and predicted variable. It could very well be that older firms were able to grow and survive because they had access to finance and not the other way around. Firms in developing countries are often able to acquire financing by means of political networks. In such an instance age of a business would not be a reliable indicator of firm efficiency.

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