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Determinants predicting credit accessibility of SME: Evidence from Bangladesh

Raj Kumar Moulick
University of Rajshahi, Bangladesh
Email: ***raj.ais85@gmail.com*** **or** ***raj.ais85@ru.ac.bd***

Abstract

Small and medium enterprises (SMEs) play a vibrant role in socio economic development of a country by sustaining economic growth, employment creation and poverty reduction. But accessibility to bank credit is a key challenge faced by the SME firms. The main objective of the study is to examine the determinants of SME financing in Bangladesh. By analysis of 350 SME survey data and 50 credit officer, internal capital, collateral, financial statement and profitability are the determinants of SME financing. The data used in the study was at a single point in time. Due to the absence of central database, the work of data collection was very difficult.

Keywords: **SMEs, Determinants, Financing**

INTRODUCTION

Small and Medium Enterprises (SMEs) have been playing a vital role in encouraging economic growth, poverty diminution and prospective contribution to the overall industry through creation of employment, attaining millennium development goals and women empowerment [1]. It requires lower energy, infrastructure facilities. The environmental risk is also lower. In fiscal year 2017-18, SMEs contribute to GDP more than 23%. The number of SMEs is about a million in Bangladesh. SMEs offered about 80% jobs are in the industries sector [2]. The total number of jobs offered by SME firms is about 78 lakh. Among the SME firms, more than ninety percent are small and seven percent medium [3]. SMEs used local unutilized resources.

The performance of this sector has an overwhelming impact on major macroeconomic objectives like human resources development and food security. In fact, the SMEs are renowned as engines of economic growth. To attain high and continued economic growth, a triggering force is obligatory to exit from widespread scarcity and socio-economic deprivation. The entrepreneurs can cooperate a larger role in economic development, but they are held back to get access to financing from the financial institutions. Several studies on SMEs and bank financing have given the center of attention due to the tremendous significance of SMEs to the world economies [4-8]. Ayyagari and team showed that SMEs are only in charge for the designer of about 60 percent of employment in the manufacturing sector in their analysis of 76 developed and developing countries [5].

Research question

SMEs are measured as an engine of development. SME firms represent a large number of small industries, service enterprises and trade enterprises. These three sectors of SMEs put in the highest part of employment in developing countries like Bangladesh. They also contribute more than 23 percent in 2017-18 fiscal year. But the growth and development are mostly vulnerable for their hardly access to bank credit for various reasons. Information asymmetry and weak financial position of the firm, collateral problem are the constraints from the supply side. These constraints restrict to get access in bank credit [9-12].

Q1: what are the determinants to get access to bank credit?

Research objectives

The main objective of the research is:

To examine the determinants of SME financing in Bangladesh by accepting a theoretical framework based on the literature of the theories: Information Asymmetry and Pecking Order Theory.

LITERATURE REVIEW AND HYPOTHESIS FORMATION

Internal finance

Internal finance means the capital provided by the owner or any private investors such as family members, friends, and partners [13]. Practically it provides by the equity investor against the purchase of share of the firm. As a investor they desired the firm to be profitable and all the profit deposited to his account. For the reason, the owner of the firm did not want share split facing the fear of losing his control over the firm. But due to the technological advancement they had to depend on bank credit. Credit accessibility of SME depended on loan repayment capacity of the firm [14]. The repayment capacity means ability of the firm to pay the loan with interest. So, it included internal capital of the firm, collateral, and profitability [15]. So internal capital influenced on firm's access to bank loan.

Ho1: There is no influence of internal capital on debt accessibility.

Collateral

Collateral is a mortgaged asset that bank agree to as safety for expanding a loan. If the firm failed to pay on credit payments, the bank took the mortgaged asset and sold it to fill up losses [16,17]. The information asymmetry of the SME firms is significant [15,18-20]. Due to information asymmetry, bank felt credit risk. To avoid the credit risk, bank tried to identify the ability of the firm to repay. Hence, to minimize the credit risk, collateral based lending was preferred with high interest rate. So, there is a influence of collateral on access to bank credit.

Ho2: There is no influence of collateral on debt accessibility.

Asymmetric Information and SME Financing

Since most of the SMEs are not able to finance on their own requirements they have to go to the external financial sources. SME financing is a risky financing for lenders and taking credit facilities from the formal financial institution is also difficult task for SMEs. Irregularity of SMEs in recording financial transactions, proper management of fund, lack of modernism and asymmetric information are familiar matter related to SME industry. During the process of a credit facility, asymmetry of information creates a great influence. When it comes to SME lending there is a gap between borrower and the lender regarding financial and non-financial information [21].

SME financing suffers more serious information asymmetry to the extent that most SMEs are more opaque and can only provide less collateral. Informal lenders have an advantage over formal financial institutions in collecting "soft information" about SME borrowers. [22, 23].

To effectively lighten the borne financial restriction, SMEs finance is a risky project with the help of innovative contract, equity-for-guarantee swap (EGS), within which it secures guaranteed debt at the expense of equity dilution to an outside insurer. In addition, asymmetric information indeed induces high-type firms to speed up investment, leads to higher guarantee costs [24].

Ho3: There is no influence of the financial information on debt accessibility.

Profitability

The profitability of the business is the capacity to generate a return on an investment [25]. According to the pecking order theory, profitability has an affirmative relation with external financing. SME firms used to employ internal source than debt finance. Profitable firms with retained earnings can use internal source than to external source [26,27]. The POT is not easily applicable for SME due to their less accessibility in debt finance and extra internal capital compared to large farms. For that updated POT by Ang in 1991 can be used. The use of external fund is associated with profitability after the use of internal finance. For the advancement of the firm, if the firm is not able to arrange the sufficient internal funds, they seek debt finance [28-30]. But due to the debt finance, firms get tax benefit from the Government.

Ho3: There is no influence of the profitability on debt accessibility.

Statistical Model and the Variables

We run the following ordinary least square regression in order to achieve the objectives of the paper.

D = α +$\boldsymbol{\beta}$1 Internal finance +$\boldsymbol{\beta}$2 Collateral +$\boldsymbol{\beta}$3 Financial information+$\boldsymbol{\beta}$4 profitability + ε

Dependent variable

Debt accessibility (D) is the dependent variable. D is the firm's financial leverage calculated by total credit divided by total asset.

Debt Accessibility (D) = Total Debt (TD) / Total Asset (TA)

Total debt means the loan taken by the firm form the banks and total asset is the sum of total fixed asset plus total current assets of the firm. Previous studies used the debt accessibility as financial leverage as the ratio of total debt to total assets [31,32]. Debt accessibility of the firm is used as capital structure of the theories of POT.

Conceptual framework

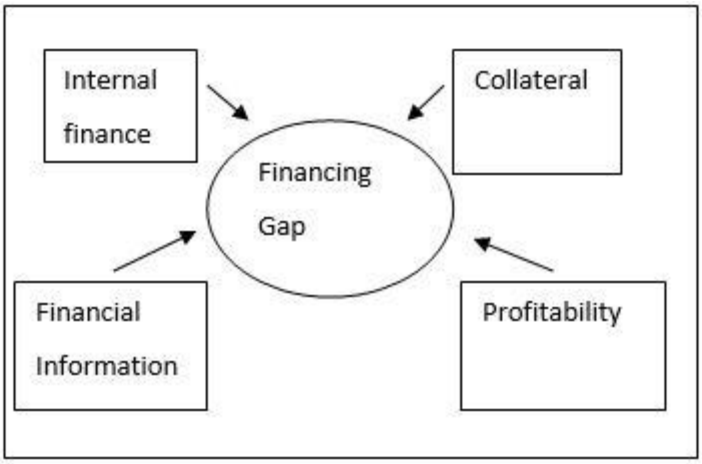

Figure 1. Conceptual framework

DATA AND METHODOLOGY

Here research paradigm, methodology and design are included. A quantitative approach has been used in this research. A positivist paradigm is objective, deductive and confirmatory and forms the foundation of the quantitative research. An interpretivist paradigm is subjective reflections of the knowledge of the research- participant interaction.

A random sampling method was identified the field survey in Bangladesh. The sample of the population also wrapped up firms encompassing industries consisting of retail, manufacturing, construction and service industries. A total number of 350 questionnaires were collected from the respondent for this study. For more accuracy of the results, 50 credit officers of different banks were selected randomly.

After editing and processing the collected data have been analyzed by using mean, frequency distribution, Standard deviation (SD), Initial Examination of SME Survey Data, Normality of Numerical Variables, Natural Logarithm function of Variables, Generation of Dummy Variable for Categorical Independent Variables, Check for Missing Data, Check for Significant Outliers, Coefficients of Variance (CV), Ramsey's Tests for Model Specification Error, Link test for Model Misspecification Error. Researcher used in tabulating and processing data SPSS programme, one of the important key tools for processing and analyzing data (Table 1).

Table1. Descriptive Statistics

	N	Min	Maxi	Mean	Std. Dev	Skewness		Kurtosis	
	Stati	Stati	Stati	Stati	Stati	Stati	Std. Error	Stati	Std. Error
Debt Accessibility	151	.26	.66	.4213	.11627	.549	.197	-1.064	.392
internal fund	151	5.45	1300.00	98.2875	238.44602	3.622	.197	12.452	.392
Ln_intfinan	151	1.70	7.17	3.3994	1.27555	1.283	.197	1.261	.392
Ln_profit	151	1.61	6.91	3.0706	.96075	.705	.197	.676	.392
profit	151	5.00	1000.00	39.1912	88.40303	9.057	.197	95.105	.392
Valid N (listwise)	151								

A total number of 350 questionnaires were collected. Among them 151 questionnaire respondents took debt bank loan. Respondent (190) did not take bank credit. 5 respondents were rejected due to different reasons. 4 questionnaires were cancelled due to incomplete. The comparison between the borrower respondents and application rejected respondent is not possible. So, the researchers took only borrower respondents.

Natural Logarithm function of Variables: The debt accessibility with minimum value .26, maximum value .66 and mean value .4213 was perfectly skewed with skewedness value .549. But in case of internal capital with minimum value 5.45, maximum value 1300.00 and mean value 98.2875 was not in normal distribution. For this reason, the internal capital is transformed to Ln_ internal capital which is perfectly skewed and normally distributed. At the same way profit is transformed to Ln_profit to conform perfectively skewed. For data analysis Ln profit and Ln_internal capital was used.

Generation of Dummy Variable for Categorical Independent Variables: The categorical variable was to be converted to dummy variable. Here financial statement and collateral were converted into dummy variable. Collateral variable was converted to ‘Dummy equal’ and ‘Dummy double’. Financial statement was converted to ‘Dummy financial st. Profit and loss account’, ‘Dummy fin. St. Profit and loss+ Balance sheet’ and ‘Dummy fin. St. profit and loss+ Balance sheet + cash flow statement’

Check for missing data: Though the researcher’s attempt to avoid data missing there might be the risk of presence of data missing. The researcher dropped the subject matter to avoid missing.

Model specification error: Ramsey’s RESET test was carried on to test the omitted variable. With the p value .012, the model has no omitted variable.

No Multicollinearity: No multicollinearity means that there is no perfect relation among the independent variable [33]. By pearson correlation matrix and variance inflation factor (VIF). The both methods were carried on to detect multicollinearity. In this study no multicollinearity exists here (Table 2-5).

Table 2. Pearson Correlation matrix

		Debt accessibility	Ln_internal capital	Ln_profitability	Financial Statement:	Collateral
Pearson Correlation	Debt Accessibility	1.000				
	Ln_Internal capital	-.403	1.000			
	Ln_profitability	-.449	.831	1.000		
	Financial Statement:	.363	.501	.549	1.000	
	Collateral	.185	.432	.436	.368	1.000

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.507[a]	.257	.215	.10303	.257	1.131	8	142	.000

Table 4. Collinearity Statistics						
Model		Standardized Coefficients	t	Sig.	Collinearity Statistics	
					Tolerance	VIF
	Ln_Internal capital	.072	.535	.023	.293	3.414
	Ln_profitability	.308	.224	.028	.279	3.590
	Collateral:					
	Dummy equal	.140	.394	.041	.532	1.879
	Dummy double	.050	.466	.050	.461	2.170
	Financial Statement:					
	Dummy financial St. Profit and loss account	.063	.424	.002	.246	4.073
	Dummy fin. St. profit and loss+ Balance sheet	.091	.667	.006	.291	3.441
	Dummy fin. St. profit and loss+ Balance sheet + cash flow statement	.095	.829	.008	.408	2.450

Table 5. Descriptive Statistics of banks' credit officer response				
	N	Minimum	Maximum	Mean
Owners capital	50	1.00	5.00	3.4400
Financial Statement of Firm	50	2.00	5.00	3.7000
mortgage and guarantee system	50	1.00	5.00	4.1200
Profitability of the firm	50	1.00	5.00	3.8200

FINDINGS

1. The P value of Ln_internal capital was .023 which was less than .05. The t test value was .535 which was less than 1.96. So, the regression result provided strong evidence to reject the null hypothesis Ho1: there is no influence of internal capital on debt accessibility. So, there is a strong influence of internal capital on debt accessibility. The beta coefficient of Ln_internal capital (.072) meant that if one unit of internal capital increased the possibility of debt capital increased by 7.2 percent. Hence, in accordance with the previous studies, internal capital has a positive influence on debt accessibility to bank loan. The credit officer of the bank mentioned that a certain percent of total investment had to be the owner of the firm. The mean (3.44) value indicated that internal capital has a positive influence on debt accessibility to bank loan.

2. Since the collateral is categorical variable, the variable was categorized into dummy variable namely: 'Dummy Equal' and 'Dummy Double'. The 'dummy equal' with P value (.041) and t test value (.394) was significant. The p value and t test value were smaller than the alpha value .05 and t critical value 1.96. The 'dummy double' variable with P value (.050) and t test value (.466) was significant. The p value and t test value were smaller than the alpha value .05 and t critical value 1.96. So, the regression result provided strong evidence to reject the null hypothesis Ho2: there is no influence of collateral on debt accessibility. So, there is a strong influence of collateral on debt accessibility. The beta coefficient of collateral (.140 and .050) meant that if one unit of collateral increased the possibility of debt capital increased by 14.0 and 5.0 percent respectively. Hence, in accordance with the previous studies, collateral has a positive influence on debt accessibility to bank loan. The mean (4.10) value of credit officer's responses indicated that collateral has a positive influence on debt accessibility to bank loan.

3. Since the financial information variable was categorized into dummy variable namely: 'Dummy profit and loss account', 'Dummy profit and loss account + balance sheet' and 'dummy profit and loss account+ balance sheet+ cash flow statement'. The 'dummy

profit and loss' variable with P value (.002) and t test value (.424) was significant. The p value and t test value were smaller than the alpha value .05 and t critical value 1.96. The 'dummy profit and loss and balance sheet' with P value (.006) and t test value (.667) was significant. The p value and t test value were smaller than the alpha value .05 and t critical value 1.96. The 'dummy profit and loss+ balance sheet+ cash flow statement' variable with P value (.008) and t test value (.829) was significant. The p value and t test value were smaller than the alpha value .05 and t critical value 1.96. So, the regression result provided strong evidence to reject the null hypothesis Ho3: there is no influence of financial statement on debt accessibility. So, there is a strong influence of financial statement on debt accessibility. The beta coefficient of financial statement (.063, .091 and .095) meant that the debt accessibility is more in 'dummy profit and loss+ balance sheet+ cash flow statement'. Hence, in accordance with the previous studies, financial statement has a positive influence on debt accessibility to bank loan. The mean (3.70) value of credit officer's responses indicated that financial statement has a positive influence on debt accessibility to bank loan.

4. The P value of Ln_profitability was .008 which was less than .05. The t test value was .829 which was less than 1.96. So, the regression result provided strong evidence to reject the null hypothesis Ho1: there is no influence of profitability on debt accessibility. So, there is a strong influence of profitability on debt accessibility. The beta coefficient of Ln_profitability (.308) meant that if one unit of profitability increased the possibility of debt capital increased by 7.2 percent. Hence, in accordance with the previous studies, profitability has a positive influence on debt accessibility to bank loan. The mean (3.82) value indicated that profitability has a positive influence on debt accessibility to bank loan.

Overall findings

This study used mixed research methodology to attain the financing constraints in accessibility to bank loan. The analysis of SME survey data through regression analysis and hypothesis testing revealed that the determinants of SME financing developed in literature review were quantified. The credit officer of the banks also supported the result in identifying the determinants of SME financing. So internal capital, collateral, financial statement, and profitability are the determinants of SME financing. Internal capital, collateral and profitability measured the ability of the firm to repay the credit. Low financial statement created information asymmetry made the credit risk. So, these are the determinants of SME financing.

CONCLUSION AND RECOMMENDATION

Firm's internal capital, collateral, financial statement, and profitability are the determinants of SME financing. The SME owner should work on financial information provision to raise the access to bank credit. Relationship lending in lieu of collateral based lending can be applied. Incentive for the banks, alternative to bank loans, institutional linkage and central database are the recommendations that can be applied to promote the SMEs' growth as well as economic development of Bangladesh.

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