Access to External Finance and Manufacturing Enterprises' Profitability in Africa: Evidence from Ethiopia

** Ajebush Argaw Shafi*
*** Ajay K. Garg*
**** Mammo Muchie*

Abstract

The financial sector plays a critical role in allocating capital across enterprises and industries by intermediating between creditors and lenders. The beneficial effects of the financial sector on economic activity is that access to external finance may allow firms to have better capacity to acquire necessary working capital and technical inputs that could allow small and medium enterprises (SMEs) to improve profitability performance. Therefore, financial market imperfections can reduce the efficiency of this transmission mechanism and it can have serious impact on enterprises' real activities and harm their profitability. This study examined the effects of access to bank credit on SME profitability using evidence from the Ethiopian Central Statistics Agency (CSA) Manufacturing Industries Survey data for the period from 2005 to 2012. The study showed that access to bank credit does not affect SME profitability. Hence, the findings support the null hypothesis that bank credit has no significant effect on SMEs' profitability improvement in Ethiopia. The findings contribute to the often contradictory and inconclusive literatures on finance and SME performance. The results are also consistent with various prior studies and pecking order theory that proposes firms will only seek external finance when they have exhausted all sources of internal finance, but it contradicts trade-off and cash flow theories.

Key words : **SMEs, performance, SMEs' profitability, bank credit, interest rate, Ethiopia**

JEL Classification : G21, G32, L25, L69, M21

Paper Submission Date : October 20, 2015 ; Paper sent back for Revision : March 6, 2016 ; Paper Acceptance Date : July 20 , 2016

Among other things, the absence of a well-functioning and efficient financial service has been considered as one reason for low profitability performance of the manufacturing enterprises sector in developing countries (Dalberg, 2011). It is logical that the financial sector plays a critical role in allocating capital across enterprises and industries by intermediating between creditors and lenders. The beneficial effects of the financial sector on economic activity is that access to external finance may allow firms to have better capacity to acquire necessary working capital and technical inputs that could allow small and medium enterprises (SMEs) to improve profitability performance. Therefore, financial market imperfections can reduce the efficiency of this transmission mechanism and it can have serious impacts on enterprises' real activities and harm their profitability.

Many empirical and theoretical studies have argued that credit constraint is the main cause of SME low profitability performance, especially in developing countries (Brixiova, 2009; Demirguk - Kunt, 2006). This has

* *Ph.D. Student,* Tshwane University of Technology (TUT), Business School, Private Bag X680, Pretoria 0001, South Africa. E-mail : shafiaa@tut.ac.za
** *Professor,* Tshwane University of Technology (TUT), Business School, Private Bag X680, Pretoria 0001, South Africa. E-mail : GargAK@tut.ac.za
*** *Professor,* Tshwane University of Technology (TUT), 210 Steve Biko Rood, Private Bag X680, Pretoria 0001, South Africa. E-mail : MuchieM@tut.ac.za

been attributed to a number of factors including lack of collateral and bias against small firms. The poor profitability performance of manufacturing enterprises in Ethiopia is also explained by lack of credit accessibility (Gebreeyesus, 2008).

There are very few academic studies concerning the relationship between access to bank credit and SME profitability, and these studies have found mixed results (Allen, Chakrabarti, De, Qian, & Qian, 2012 ; Emecheta & Ibe , 2014 ; Ifeakachukwu & Olasunkanmi, 2013 ; Khandker, Samad, & Ali, 2013 ; Kungu, Wanjau, Waititu, & Gekara, 2014 ; Olutunla & Obamuyi, 2008 ; Shinozaki, 2012). For example, Ifeakachukwu and Olasunkanmi (2013) revealed that the way credit policy is designed impacts the profitability of manufacturing firms. Olutunla and Obamuyi (2008) also argued that access to finance in the form of bank credit has a positive effect on SME profitability and growth. Both Emecheta and Ibe (2014) and Shinozaki (2012) found similar results, arguing that access to bank credit has a significant positive impact on SME profitability and growth.

On the contrary, Khandker et al. (2013) found a negative and statistically significant relationship between access to bank credit and enterprise profitability performance. Kungu et al. (2014), Malesky and Taussig (2009), and Allen et al. (2012) found that access to bank credit does not have an effect on enterprise profitability and output. These mixed results cause an ambiguous understanding of the impacts of external finance on enterprise profitability performance. As a result, the questions of to what extent the level of access to credit has real effects on SME profitability, especially in a developing country context, is inconclusive and gaps remain for research.

Thus, the aim of this study is to analyze empirically the impact of bank credit on profitability performance of SMEs in Ethiopia using the Ethiopian Survey of Large and Medium Scale Manufacturing Industries collected by Central Statistical Agency (CSA) for the period from 2005 to 2012. To the best of our knowledge, this study is the first to provide empirical evidence of whether or not access to finance in the form of bank credit has an influence on SME profitability in Ethiopia using this dataset.

This research will aid in understanding how the typical value of the profitability of SMEs changes when one of the inputs such as access to bank credit is varied while the other independent variables are held constant. The study adopts fixed effect regression modelling and panel data estimators, and takes SME profitability as a dependent variable and as a proxy for enterprise performance and considers access to bank credit as an independent variable.

Related Literature

(1) The Ethiopian Financial Sector : The Ethiopian banking sector's total assets increased by more than 13 % within a one year period from mid-2013 to mid-2014 (World Bank, 2015a). The banking sector in Ethiopia is dominated by government owned banks which are mainly interested in financing large enterprises. The majority of the total bank assets are owned by three public banks, which constitute 77% of total assets of the financial sector excluding the assets of both development and national banks, while micro finance institutions (MFIs) and insurance companies represent 5.2% and 2.2%, respectively of Ethiopia's financial sector assets. Respectively, the share of private banks in credit lending dropped from 39% of market share in 2009/10 to 32% in 2011/12, while that of the public banks rose from 61% to 68 % during the same period (ibid).

An expansion of credit to the private sector enables firms to invest in productive capacity, thereby laying the foundation for a sustainable growth path. However, Ethiopia is falling behind its peers in this area. In 2011, credit to the private sector in Ethiopia was equivalent to about 14% of the GDP compared to the regional average of 23 % (World Bank, 2015b). The share of SME lending comprised of only 7% of bank overall lending portfolios, which is much lower than other Sub-Saharan countries as well as far below that of developing economies (ibid). Private banks perform better in terms of profitability, scale efficiency and quality of credit, while state banks offer a lower interest rate spread.

SMEs are a fundamental part of the development fabric and important players in the Ethiopian economy,

however, most SMEs operate in the informal sector, which is characterized by low productivity in terms of both quantity and quality, and most SMEs are concentrated in manufacturing and trade sectors (African Development Bank Group (AfDB), 2011). The main reason for poor performance of SMEs in Ethiopia is that the sector is constrained by inefficiencies in the finance sector due to perceived and actual risks (i.e. high administrative costs, high collateral requirements, and lack of experience with financial intermediaries).

(2) Bank Credit Allocation and SME Performance : In theory, the considerations that go into banks' credit decisions are the level of expected income of a business, its variability, and the creditworthiness of the borrower. The extent to which this holds true depends on the availability of credit information, competitiveness of the credit market and the regulatory, contract enforcement, and macroeconomic environment.

The link between bank credit allocation and SME performance has its roots in the information asymmetry assumed in credit markets; adverse selection requires banks to screen and select projects with the best combination of expected return and variability. The problem of moral hazard, on the other hand, requires credit lenders to closely monitor the performance of projects to which they extend credits and enforce contracts. It is through these elements of screening, monitoring, and contract enforcement that bank lending affects the profitability performance in credit recipient SMEs.

Whether banks play this role efficiently depends greatly on the degree of information asymmetry, strength of the contract enforcement and regulatory environment, stability of the macro economy, and degree of competition in the credit market. Given the performance of the Ethiopian banking sector as discussed above, to what extent have banks been able to allocate credit to enhance SME performance? This is investigated by comparing profitability performance and rate of return on capital across a sample survey of large and medium scale local manufacturing enterprises with and without access to bank credit.

Profitability is crucial in determining the success or failure of SMEs and traditionally, it is the primary motivation for the investors to invest in line with the profit maximization objectives (Edminster, 1970 ; Jen, 1963; McMahon & Stanger, 1995). For any business, it might not be possible to be profitable at the start up stage, since the expenses for business establishment may be higher than the short- or even medium-term returns, but when businesses mature, profits have to be produced. Inefficiency of enterprise performance leads to under-capitalization problems and ,therefore, it increases dependence on external capital for further expansion, which ultimately can result in bankruptcy for small firms (ibid).

(3) Finance and Firm Performance Theories

(i) Picking - Off Theory : Profitability has been found mainly to have an inverse impact on the credit ratio in support of pecking order theory (Umer, 2014 ; Zarebski & Dimovski, 2012). Esperança, Gama, and Gulamhussen (2003) asserted that profitable enterprises are more likely to choose external finance, and vice versa. This view is consistent with researchers who discovered a negative association between profitability and credit. Rationally, the owners of small enterprises most of the time avoid debt (Vos, Yeh, Carter, & Tagg, 2007) and favour internal financing such as retained earnings as opposed to external resources to finance their enterprises' activity. Previous studies (for example, Ayed & Zouari, 2014 ; Forte, Barros, & Nakamura, 2013 ; Harrison, Panasian, & Seiler 2011; Newman, Gunessee, & Hilton, 2011; Saarani & Shahadan, 2013 ; Zarebski & Dimovski, 2012) on both large and small enterprises also confirmed this negative relationship.

Moreover, pecking-order theory hypothesis assumes that firms prefer credit over equity because credit is considered more secure and has fewer agency costs. The application for credit will be covered with collateral assets. The more the tangibility of assets, the more the secured credit, and a positive relationship is expected. In contrast, DeAngelo and Masulis (1980) stated that firms with high levels of depreciation will be anticipated to have low levels of credit.

(ii) Trade-off Theory : The trade-off theory expects a positive association between firms' profitability and credit. This is in line with the assumption of debt tax deductibility of interest payment and low-bankruptcy risk (Ooi, 1999). Rajan and Zingales (1995) asserted that credit providers would be reluctant to lend to less profitable firms than profitable firms. Bhaduri (2002) also indicated a positive association between long-term credit and profitability, but a negative association with short-term borrowing. The findings of Bhaduri (2002) are relatively similar to Ozkan (2001), who showed a negative effect that is consistent with pecking-order theory.

The trade-off theory argues that enterprises with solid assets are stronger when facing financial distress, and these assets make credit more secure. Concreteness of assets increases the liquidation value of the enterprises and decreases the hazards of mispricing and the difficulties of financial loss in the case of bankruptcy. Enterprises with mostly intangible assets should borrow less as they are unable to provide collateral in comparison with those possessing relatively high tangible assets (Jordan, Lowe, & Taylor, 1998). Trade-off theory also predicts that firms with greater collateral value favour to choose higher credit since they recognise a lower potential cost of financial distress (Harris & Raviv, 1991 ; Myers, 1977 ; Myers & Majluf, 1984; Thornhill, Gellatly, & Riding, 2004).

(iii) Free Cash Theory (Jensen, 1986) : Free cash flow theory assumes a positive association between profitability and credit access. Credit could be a governing ruse for a profitable firm (Williamson, 1988). Relatively high profitability should result in higher credit since high credit can control management discretion; this approach was used by Frydenberg (2001). Noticeably, the above rationales are expected to hold for relatively large firms. Nevertheless, this agency problem of free cash flow is non-existent in SMEs since they do not have public equity.

(4) Measuring SME Profitability : The two common measures of enterprise profitability are accounting-based measures and economic-based measures. The main differences between these two measures are that economic-based profitability always accounts for risk and a firm is profitable only if its profitability is greater than what investors can achieve independently in the capital market, while accounting-based measures exclude the involvement of risk and externality costs (Ross, Westerfield, & Jaffe, 1999). Different researchers have suggested different methods to measure profitability including profit margin or return on sales, return on assets, and return on equity.

Previous research has used several different ratios to measure profitability of SMEs depending on their research goals. For example, Hutchinson, Meric, and Meric (1988) measured SME profitability using: earnings before interest and tax/total assets ratio, net profit after tax/owners' equity, and net profit after tax/sales ratio. Burns (1985) used three ratios; return on net assets, return on total assets, and return on equity. The Table 1 illustrates the techniques and approaches used by previous researchers to measure profitability of SMEs. In general, there are a number of factors influencing enterprise profitability. From the economic profit measuring viewpoint, the Table 2 summarises key factors that influence SME profitability based on different researchers' viewpoints.

Conceptual Framework

The conceptual framework represents the model of the effects of access to bank credit on SME profitability, namely that SME profitability is expected to be positively influenced by access to bank credit. The Figure 1 illustrates the systematic approach to test the hypothesis. First, SMEs that employ more than 10 and less than 100 people are divided into a group that has access to bank credit and a group of firms that uses informal sources of finance for normal operations. Under the assumption that banks can offer better credit terms, it is examined whether firms with access to bank credit have relatively higher levels of profitability performance than the group

Table 1. Summary of Measurement of SME profitability

Scholar(s) and year	Proportion	Estimation/Measurement
Laitinen (1992)	Return on investment	Return on investment ratio
Meric, Ross, Weidman, &Meric (1997)	Return on assets	Net income/total assets
	Return on equity	Net income/vommon equity
	Return on sales	Operating profit/sales
Hutchinson, Meric, & Meric (1988)	Return on sales	Net profit after tax/sales
	Return on assets	Earnings before interest and tax/total assets
	Return on equity	Net profit after tax/owners' equity
Burns (1985)	Return on total assets	Measure of firm's efficient use of assets
	Return on equity	A measure of the profit return to the shareholders
	Return on net asset	The key measure of performance

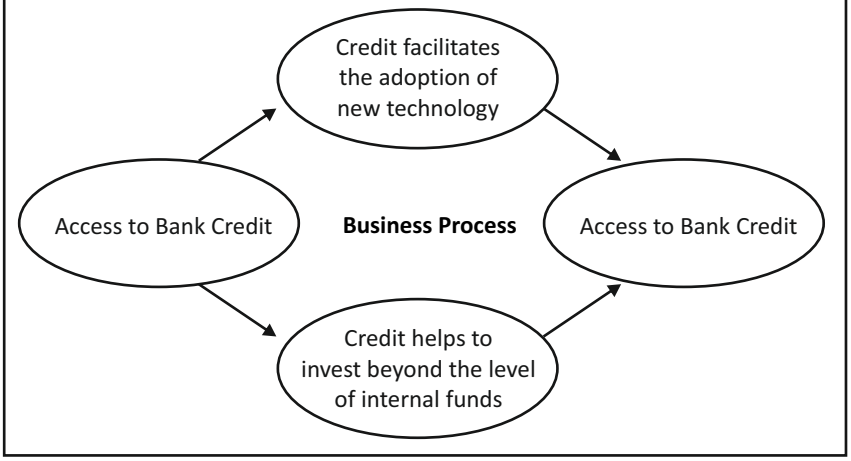
Table 2. Summary of Literature Review of Main Factors Affecting SME Profitability

Scholar(s) and year	Main factors affecting profitability
McDonald (1999)	Firms' union density, import penetration, real wage inflation, firm market share.
Laitinen (1992)	Return on investment ratio.
Ross,Westerfield, & Jaffe (1999)	Revenue, costs, and capital.
Lev (1983)	Type of product, degree of competition, degree of capital intensity as well as firm size.
Burns (1985)	Many economic factors like
Kirchhoff and Kirchhoff (1987)	Family contributions, wage and salary expenses, and Revenue.

of firms without access to bank credit.

The Figure 1 describes the general model of the impact of bank credit on SME profitability. It describes the detailed model of the effects of access to bank credit practices on SME profitability in which the components measuring determinants of SME profitability, such as revenue/sales, enterprises business size, age of the business, and interest rate are identified.

Figure 1. Study Framework (Model of Bank Credit and SME Profitability)



(i) Collateral and Enterprise Level Credit Information : Given the poor conditions of information infrastructure in the country, banks may depend more on relationships in lending in general. In Ethiopia, there was no integrated credit information bureau in the country until August 2011. The new credit information bureau is run by the National Bank of Ethiopia. It is mainly a platform for commercial banks to share credit information about their borrowers; banks are required to share and update monthly information on each and every one of their borrowers.

The actual bank lending practice is characterized by highly collateralized lending - in some cases, banks require a collateral worth up to 80% of the value of the credit. Commercial banks are legally required to make 100 % provision against bad credit without collateral and 50% provision for doubtful loans. Highly collateralized and relationship-based lending has thus far provided banks with a very little incentive for information based lending.

Although the scarcity of information is definitely a factor behind these dynamics, limited experience in credit information analysis adds to the problem. Firstly, the state-owned Commercial Bank of Ethiopia was the only source of "commercial" lending at the time of transition from the socialist system. Secondly, the number of private banks has not grown fast enough to result in pressure to push the existing frontier in credit information analysis.

Thirdly, the high dependence on collateral might have discouraged making use of available information in lending decisions. In the words of one of the commercial bank credit officers interviewed, "project proposals for credit approval are mere formalities; for one thing, they usually lack credible information, and even if they happen to provide accurate information, they don't count as much as collateral does." Finally, the comfortable profit margin with collateralized lending may have denied banks the incentive to consider improved lending practices. For instance, the first batch of entrants (1994 - 1999) enjoyed an average profit margin of 15.31% versus an average profit margin of 32.47% after the second round of entry (2004 - 2010).

(ii) Measurement Specification : The research looks at the extent to which bank credit has affected the profitability of Ethiopian manufacturing SMEs in a specific period. In accordance with related literature (Olutunla & Obamuyi, 2008), the following equation states a linear, dynamic mathematical model that is used to estimate SMEs' profitability. The equation specifies profitability as the dependent variable ; and loans, sales, age of business, size of business, and interest rate as independent variables. The equation measures the level of SME profitability on the basis of returns on investment and key measures of performance.

The fixed-effect regression model is specified as:

$$\pi = \mu_{jt} + \gamma_1 L_{jt} + \gamma_2 Sa_{jt} + \gamma_3 A_{jt} + \gamma_4 Si_{jt} + \gamma_5 I_{jt} + \varepsilon_{jt}$$

where, $\gamma_1 > 0$; $\gamma_2 > 0$; $\gamma_3 > 0$; $\gamma_4 > 0$; $\gamma_5 < 0$;

π is profit, *Sa* is sale, *L* is loans, *A* is age, *Si* is size, *I* is interest, ε_{jt} and μ_{jt} are intercepts coefficients and γ_1, γ_2, γ_3, γ_4, and γ_5 are parameters to be estimated.

Profit is measured by the amount of business return in terms of birr for firm *j* at time *t*, loans is measured by the amount of bank credit obtained by firm *j* at time *t*, sales is measured by the total amount of sales by firm *j* at time *t*, age is measured by enterprises' years of business operation by firm *j* at time *t*, enterprise size measured by the number of employees at time *t*, interest rate is measured by monetary policy rate (MPR).

All the data except interest rate have been derived from Ethiopian large and medium manufacturing enterprises survey collected by Central Statistics Agency (CSA) for the period from 2005-2012. The amount of interest rate for a given period is obtained from National Bank of Ethiopia (NBE).

Regression Modelling Results

The Figure 2 shows profitability performance of Ethiopian manufacturing enterprises over the period from 2005-2012. In general, the profitability of manufacturing enterprises in Ethiopia decreased between 2005 and 2008, and then displays a sharp increasing trend thereafter. To understand this requires further study.

(i) SME Profit with Access to Bank Credit : The Table 3 summarizes SME profitability estimation results and it is presented in a basic statistical figure that indicates the effects of credit dummy value on SME profitability in a given period of time.

The coefficient of credit dummy (one of the explanatory variables) has a negative value; however, the impact on SME profitability is statistically insignificant. A 1% increase in credit dummy would result in a decrease in the profit of manufacturing SMEs by 71.24 Birr per 1000. Thus, with respect to the key variable (bank credit) to the SME sector, the negative relationship exhibited by the key independent variable (bank credit) coefficient indicates that an increase in bank credit to SMEs would trim down profit of manufacturing SMEs, but the reduction is insignificant. Thus, it can be concluded that bank credit to the SME sector has no significant effect on the

Figure 2. Trends for SME Profitability Performance Over the Period from 2005-2012

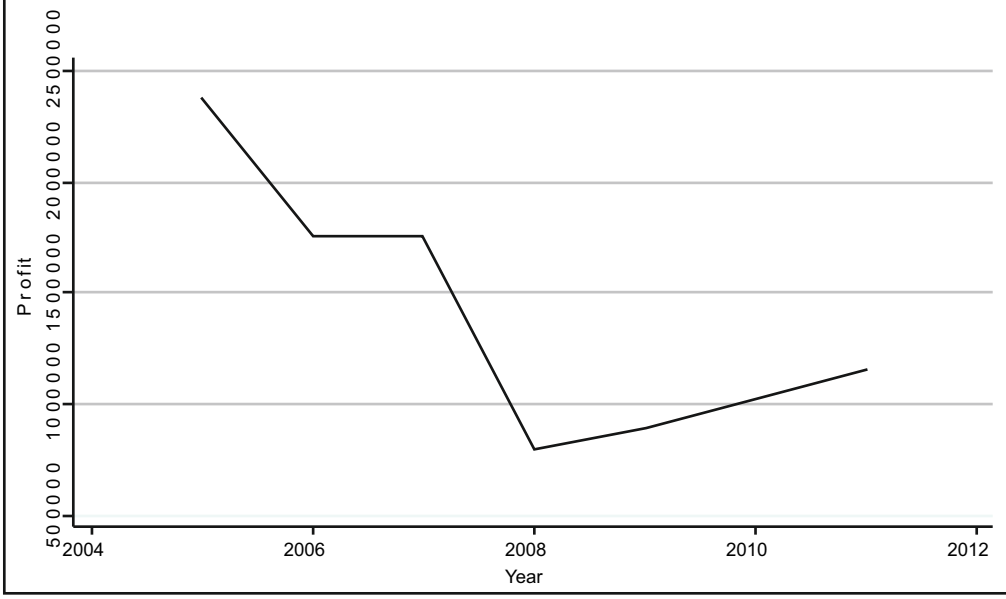


Table 3. Bank Credit and Profitability of SMEs in Ethiopia for the Period from 2005-2011

Profit	Coef.	Std. Err.	*t*	*P>|t|*	[95% Conf. Interval]	
Credit dummy	-71.243	1009.079	-0.07	0.944	-2050.727	1908.240
Sales	.0000932	.0000221	4.21	0.000	.0000498	.0001366
Age	64.545	58.026	1.11	0.106	-49.282	178.372
Size of business	-7.073	2.897	-2.44	0.015	-12.755	-1.390
Interest rate	-1400.539	530.076	-2.64	0.008	-2440.368	-360.71
Constant	1.53e+04	5792.313	2.65	0.008	3987.35	2.67e+04

Note: Credit dummy: (Note: If an enterprise obtained a bank credit, Credit dummy=1 otherwise, Credit dummy = 0).

profitability of Ethiopian manufacturing SMEs in a given period.

$$\pi = \mu_{jt} + \underset{(0.944)}{-71.243}\, L_{jt} + \underset{(0.000)*}{.0000932}\, Sa_{jt} + \underset{(0.266)}{64.545}\, A_{jt} + \underset{(0.015)*}{-7.073} Si_{jt} + \underset{(0.008)}{-1400.539}\, I_{jt} + \varepsilon_{jt}$$

Note: values in parentheses are *p*-values and * implies significant at the 10% cent level

Table 4. Bank Credit and Profitability of SMEs in Ethiopia for the Period from 2005 - 2011

Profit	Coef.	Std. Err.	*t*	*P>|t|*	[95% Conf. Interval]	
Bank credit	.0009675	.013917	0.07	0.945	-.026333	.0282681
Sales	.0932302	.0221118	4.22	0.000	.0498541	.1366064
Age	64402.24	58012.87	1.11	0.106	-49400.05	178204.5
Size of business	-7079.407	2895.508	-2.44	0.015	-12759.45	-1399.367
Interest rate	-1397638	530359.4	-2.64	0.009	-2438029	-357245.6
Constant	1.53e+07	5714867	2.67	0.008	4046163	2.65e+07

(ii) Real Credit Amount : In the regression analysis results summarized in Table 4, real bank credit amount was included in the model to find out whether it affects the profit of an enterprise. The results are consistent with both estimating profitability using credit dummy and/or actual bank credit estimates. It indicates that the amount of bank credit does not affect the enterprise profit (*p*-value = 0.945 > 0.1). The result is not significant even at the 10 % significance level. The overall bank credit has no significant impact on SME profitability and it does not hold for Ethiopian manufacturing enterprises.

In general, it is found that age (*p*-value = 0.106 < 0.01) affects the output only when the time fixed -effects are not included in the model. It affects enterprise profit positively; such that, on an average, one additional year of business age increases the annual profit by 64402.24 Birr holding other factors constant. Surprisingly, the size of business (*p*-value = 0.015 < 0.01) affects output negatively. An increase in the size of a business by one permanent employee decreases the annual profit by 7079.407 Birr on an average ; and an increase in the interest rate (*p*-value = 0.009 < 0.05) by one unit decreases the annual profit by 1397638 Birr on an average, holding other factors constant. The effect of sales (*p*- value = 0.000 < 0.05) on profit is to increase it as expected, and an increase in sales by one unit leads to an increase in the annual profit by .0932302 Birr on an average, holding other factors constant. Bank credit (*p*-value = 0.945 > 0.1) or access to bank credit (*p*-value = 0.944 > 0.1) does not affect profit.

The results of SME profitability estimation model and its empirical results presented in the Table 3 and Table 4 show that the coefficient of real bank credit amount is positive, but statistically insignificant. It shows that bank credit to the SME sector has no significant influence on manufacturing SME profitability in Ethiopia. This shows that the purpose of credit to stimulate SME profitability has not been successful.

The study's null (H_1: $\mu \neq 0$) hypothesis states that credit access has no significant effect on SMEs' profitability improvement in Ethiopia, while an alternative (H_0: $\mu = 0$) hypothesis states that credit access improves profitability performance of SMEs in Ethiopia. The research result supports the null hypothesis that bank credit has no significant effect on SMEs' profitability in Ethiopia.

This result is contradictory to our prior expectations, which assumes that bank credit is positively related to enterprise profitability. The result is also inconsistent with simple economic theory which suggests that access to bank credit should lead to higher profits (McMahon, Holmes, Hutchinson, & Forsaith, 1993). Moreover, the findings are also inconsistent with Keasey and Watson's (1991) research results which argued that the use of bank

financing by SMEs is associated with higher business performance. However, the findings confirm the work of Allen et al. (2012) that enterprises with access to bank credit do not perform better than others.

Furthermore, the research discovered that level of sale and age are positively related with enterprise profit, while the size of a business and interest rate are negatively related with an enterprise's profitability. The coefficient of age of a business carries a positive sign; and the impacts are statistically significant at the 10% level. This implies that the age of SMEs does not have a remarkable effect on SMEs' profitability.

The argument behind this finding is that older businesses are more likely to have attained diminishing costs of production and more efficiency over some range of sales and hence are able to operate more economically and efficiently than recently established ones. With regards to the Ethiopian business environment, the results of the positive relationship between profitability and age of business may not be unexpected, as older enterprises have greater chances to adjust themselves to the business environment and are involved in creative and innovative technological changes. Similarly, newly established enterprises find it difficult to adjust to unfriendly business atmospheres like changing interest and exchange rates and high labour costs, all of which were not envisaged when they started ; whereas, older enterprises are more familiar with their operating area environments and, therefore, can more easily adjust their businesses.

Although profitability depends on a number of economic and non-economic variables, the paper establishes that businesses capable of expanding their sales and market coverage across time realise more profits. Moreover, the coefficient of sales is positive and statistically significant, which is in conformity with our prior expectation of economic theory. This means that profits tend to increase with an increase in sales. For profit maximizing firms, a strategy to maintain a high level of profitability requires that firms must produce quality products which can easily be sold to generate more revenue, especially through effective and efficient marketing strategies. To achieve the full potential of sales, the product life cycle must be considered and the entrepreneurs must maximize the profitability during the growth stage.

The coefficient of size of a business, measured by the number of employees, is negative and statistically significant, which is contrary to prior expectations of a positive correlation. This means that as the size of firms becomes bigger, less profit is expected to be realised. This is because larger firms find it difficult to cover employees' salaries and expand the businesses to generate profits. The coefficient of interest rate variable is negative and statistically significant, which conforms to our a priori expectation. This implies that the profits of SMEs tend to decrease with increasing rate of interest. In Ethiopia, large enterprises have the opportunity to borrow from banks for expansion of their businesses and can enjoy the economies of scale from bulk purchasing of factors of inputs. However, the cost of credit, as affected by the level of interest rate, adversely affects business profitability, since the study findings indicate that bank credit does not have a significant impact on SME profitability. A possible reason for this result could be that the level of interest rate has an adverse impact on profitability.

Implications

The study findings could help to consider certain issues with respect to access to bank credit to SMEs, like the level of credit efficiency, interest rate regulations, and environment for investment opportunities to allocate the loan to the most solid, profitable businesses. Overall, the proposed firm's productivity growth theory, profit maximisation behaviour, and framework can help in understanding and formulating appropriate response strategies in line with investment opportunities and the level of interest rate regulation.

From a practical perspective, the research provides meaningful lessons for SME owners and managers. First, the study argues that it is important or crucial to know the effectiveness of bank credit usage as a financial resource in order to achieve maximum benefits out of it. That is, SME owners and managers should recognize the

significance of borrowing from banks related to ties to secure necessary factor inputs which might enhance SMEs' profitability.

Implications of the study can also be drawn for financial institutions engaged in lending to SMEs. The National Bank of Ethiopia should take the lead to create a platform for knowledge sharing and exposure for best practices in SMEs' financing in Ethiopia. This may help to have a common consensus on SMEs' financing among stockholders, and targeting the Ethiopian Banker's Association and MFI would be a good approach to take.

Recommendations

Negative and statistically insignificant relationship between bank credit access and SMEs' profitability sends a sobering message to policymakers in developing countries. The government and policy makers need to do much more than expand access to bank credit to improve SME profitability. Moreover, as far as the use of access to bank credit to SMEs is concerned, the focus should be regulating the credit repayment. Reasonable interest rate and a stable and efficient supply of credit are needed in order to make SMEs profitable in a country context like Ethiopia. This will be achieved by providing assistance to SMEs mainly in the form of equity and by ensuring that these enterprises are managed with discipline, which is necessary in order to enable them to achieve the objectives for which they were established.

In order to effectively address the SMEs' financing problems, the Government of Ethiopia should consider and adopt an integrated approach towards creating SMEs' financing culture among financial institutions. A stable and efficient supply of credit is needed in order to make SMEs' profitability improvements, particularly in Ethiopia. In addition to this, the Government of Ethiopia should encourage financial institutions to improve the financing environment for SMEs, strengthen support to SMEs in terms of enhanced credit facilities with possible minimum interest rate.

Conclusion

The regression results presented in this paper show that the effect of bank credit on SMEs' profitability is insignificant. This means higher levels of bank credit access does not necessarily lead to improved SME profitability. The results are contrary to the assumption that efficiently assigned credit allows firms to expand or make technological improvements and investments needed to increase their profitability beyond what their internal funds can support.

The possible implications of the results could be that, even if the idea that bank credit promotes enterprises' profitability is common among entrepreneurs; however, achieving profitability requires possible facilitation efforts. The fact of receiving bank credit in and of itself seems not to be good for SME profitability. This is likely due to the interest rate. If the interest rate is high, the amount spent in credit repayment may erode the SME's profitability. However, beyond a certain threshold of credit amount, this negative effect may disappear, resulting in a positive coefficient on the credit amount variable even when interest rate shows a negative effect.

In addition to the interest rate, the absence of conducive investment opportunities may lead firms to divert credit to non-investment uses, for instance, the financing of daily operations. Moreover, it is impossible to say access to credit improves SME profitability unless credit is efficiently assigned, and there is the presence of investment opportunities. Determining what level of credit is efficiently required needs a detailed analysis which is beyond the scope of this paper ; hence, it needs further investigation.

Limitations of the Study

Similar to other empirical research studies conducted in the field of finance and firm's performance, the

conclusions drawn in this study are based on organisational behaviour at a particular time. Thus, any development beyond August 2012 is unaccounted for because the study used CSA data of Ethiopia for the period from 2005-2012. It is to be noted here that this study is limited to SMEs in the manufacturing sector. Owing to the above limitations, the study results cannot be generalized for all the SMEs in Ethiopia. The findings of this study may be limited to the Ethiopian context and may not be necessarily reflecting access to bank credit and SMEs' performance behaviours in other countries. However, the limitations and generalisability issues do not minimize the significance of the findings. Alternatively, these limitations provide scope for other studies to further test and extend the theoretical framework developed in this study.

Scope for Further Research

By taking additional control variables, like the amount spent in loan repayment and the duration of repayment, threshold of loan amount, and the existing investment opportunities into consideration, the study can be further enriched. It is an excellent resource to do a follow up and extension of the research with the next available survey data (coverage 2013-2016) and it would make possible to ascertain the sustainability of the impact of bank credit on SMEs' performance over time. Future research is needed to compare the financing behaviours of SMEs in Ethiopia with those in other developing countries. Further investigations may lead to explore the differences in industries and sectors to enhance the knowledge of SMEs' financing needs. In addition, it would be useful to conduct a comparative study of company and non-company financing behaviours as these two structures have their own special characteristics arising from their legal status and the extent of limited liability and financial disclosure.

References

African Development Bank Group (AfDB). (2011). *Federal Democratic Republic of Ethiopia : Country strategic paper (2011-2015)*. Retrieved from http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Ethiopia-2011-2015%20CSP%20ENG1.pdf

Allen, F., Chakrabarti, R., De, S., Qian, J. Q., & Qian, M. (2012). Financing firms in India. *Journal of Financial Intermediation, 21*(3), 409 - 445. DOI : http://dx.doi.org/10.1016/j.jfi.2012.01.003

Ayed., W. H. B., & Zouari, S. G. (2014). Capital structure and financing of SMEs: The Tunisian case. *International Journal of Economics and Finance, 6* (5), 96-111.

Bigsten, A., & Gebreeyesus, M. (2007). The small, the young, and the productive: Determinants of manufacturing firm growth in Ethiopia. *Economic Development and Cultural Change, 55,* 813 - 840.

Bhaduri, S. N. (2002). Determinants of corporate borrowing: Some evidence from the Indian corporate structure. *Journal of Economics and Finance, 26* (2), 200- 215.

Brixiova, Z. (2009). *On determinants of SME start-ups in Ethiopia: A theoretical exploration.* African Development Bank, Development Research Department, Tunis, Tunisia.

Burns, P. (1985). *Financial characteristics of small companies in the UK.* Cranfield : Cranfield School of Management.

Dalberg. (2011). *Report on support to SMEs in developing countries through financial intermediaries*. Dalberg Global Development Advisors. Retrieved from http://www.eib.org/attachments/dalberg_sme-briefing-paper.pdf

DeAngelo, H., & Masulis, R. (1980). Optimal capital structure under corporate and personal taxation. *Journal of Financial Economics, 8* (1), 3-29.

Demirguk – Kunt, A. (2006). *Finance and economic development : Policy choices for developing countries* (World Bank Policy Research Working Paper 3955). Retrieved from http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2006/06/23/000016406_20060623142702/Rendered/PDF/wps3955.pdf

Edmister, R. O. (1970). *Financial ratios as discriminant predictors of small business failure (Doctoral Dissertation)*. Ohio : The Ohio State University.

Emecheta, C. B., & Ibe, C. R. (2014). Impact of bank credit on economic growth in Nigeria: Application of reduced vector autoregressive (VAR) technique. *European Journal of Accounting Auditing and Finance Research, 2* (9), 11-21.

Esperança, J. P., Gama, A. P. M., & Gulamhussen, M. A. (2003). Corporate debt policy of small firms: An empirical (re) examination. *Journal of Small Business and Enterprise Development, 10* (1), 62-80.

Forte, D., Barros, L. A., & Nakamura, W. T. (2013). Determinants of the capital structure of small and medium sized Brazilian enterprises. *BAR-Brazilian Administration Review, 10* (3), 347-369.

Frydenberg, S. (2001). *The importance of being indebted* (Working Paper, pp. 1-29). Norway : Trondheim Business School.

Gebreeyesus, M. (2008). Firm turnover and productivity differentials in Ethiopian manufacturing. *Journal of Productivity Analysis, 29* (2), 113 -129.

Harris, M., & Raviv, A. (1991). The theory of capital structure. *Journal of Finance, 46* (1), 297 - 355.

Harrison, D. M., Panasian, C. A., & Seiler, M. J. (2011). Further evidence on the capital structure of REITs. *Real Estate Economics, 39* (1), 133-166.

Hutchinson, P., Meric, I., & Meric, G. (1988). The financial characteristics of small firms which achieve quotation on the UK unlisted securities market. *Journal of Business Finance & Accounting, 15* (1), 9-19.

Ifeakachukwu, N. P., & Olasunkanmi, O. I. (2013). The impact of banks loan to SMEs on manufacturing output in Nigeria. *Journal of Social and Development Sciences, 4* (5), 212-217.

Jen, F. C. (1963). The determinants of the degree of insufficiency of bank credit to small business. *Journal of Finance, 18* (4), 694 - 695.

Jensen, M.C. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *American Economic Review, 76* (2), 323 - 329.

Jordan, J., Lowe, J., & Taylor, P. (1998). Strategy and financial policy in UK small firms. *Journal of Business, Finance and Accounting, 25* (1 -2), 1-27.

Keasey, K., & Watson, R. (1991). Financial distress prediction models : A review of their usefulness. *British Journal of Management, 2* (2), 89-102.

Khandker, S., Samad, H. A., & Ali, R. (2013). *Does access to finance matter in microenterprise growth? Evidence from Bangladesh.* World Bank Policy Research Working Paper (6333). Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2206181

Kirchhoff, B. A., & Kirchhoff, J. J. (1987). Family contribution to productivity and profitability in small businesses. *Journal of Small Business Management, 25* (4), 25 - 31.

Kungu, J. N. Wanjau, K. L. , Waititu, A. G., & Gekara, G. M. (2014). Effects of credit policy on profitability of manufacturing firms in Kenya. *Journal of Economics and Finance, 2* (4), 01-07.

Laitinen, E. K. (1992). Financial processes in newly-founded firms. *International Small Business Journal, 10* (4), 47 - 54.

Lev, B. (1983). Some economic determinants of time - series properties of earnings. *Journal of Accounting and Economics, 5*(1), 31-48.

Malesky, E. J., & Taussig, M. (2009). Where is credit due? Legal institutions, connections, and the efficiency of bank lending in Vietnam. *Journal of Law, Economics, and Organization, 25* (2), 535-578. DOI: http://dx.doi.org/10.1093/jleo/ewn011

McDonald, J. (1999). The determinants on firm profitability in Australia manufacturing. *The Economic Record, 75* (229), 115 - 126.

McMahon, R., & Stanger, A. (1995). Understanding the small business enterprise financial objective function. *Entrepreneurship: Theory and Practice, 19* (4), 21-39.

McMahon, R., Holmes, P., Hutchinson, P., & Forsaith, D. (1993). *Small enterprise financial management: Theory and practice.* Sydney : Harcourt Brace.

Meric, I., Ross, L. W., Weidman, S. M., & Meric, G. (1997). A comparison of the financial characteristics of U.S. and Japanese chemical firms. *Multinational Business Review, 5* (7), 23 - 27.

Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics, 5* (2), 147-175.

Myers, S. C., & Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics, 13* (2), 187-224.

Newman, A., Gunessee, S., & Hilton, B. (2011). Applicability of financial theories of capital structure to the Chinese cultural context: A study of privately owned SMEs. *International Small Business Journal, 30* (1), 65-83.

Olutunla, G. T., & Obamuyi, T. M. (2008). An empirical analysis of factors associated with the profitability of small and medium - enterprises in Nigeria. *African Journal of Business Management, 2* (10), 195 - 200.

Ooi, J. (1999). The determinants of capital structure evidence on UK property companies. *Journal of Property Investment and Finance, 17*(5), 464 - 480.

Ozkan, A. (2001). Determinants of capital structure and adjustment to long run target: Evidence from UK company panel data. *Journal of Business Finance and Accounting, 28*(1- 2), 175-198.

Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance, 50* (5), 1421-1460.

Ross, S. A., Westerfield, R. W., & Jaffe, J. (1999). *Corporate finance* (5th edition). Boston : Irwin and McGraw-Hill.

Saarani, A. N., & Shahadan, F. (2013). The determinant of capital structure of SMEs in Malaysia: Evidence from enterprise 50 (e50) SMEs. *Asian Social Science, 9* (6), 64-73.

Shinozaki, S. (2012). *A new regime of SME finance in Emerging Asia: Empowering growth-oriented SMEs to build resilient national economies* (ADB Working Paper Series on Regional Economic Integration ; No. 104). Retrieved from http://www.aric.adb.org/pdf/workingpaper/WP104_Shinozaki_SME_Finance.pdf

Thornhill, S., Gellatly, G., & Riding, A. (2004). Growth history, knowledge intensity and capital structure in small firms. *Venture Capital, 6* (1), 73-89.

Umer, U. M. (2014). Determinants of capital structure: Empirical evidence from large taxpayer share companies in Ethiopia. *International Journal of Economics and Finance, 6* (1), 53-65.

Vos, E., Yeh, A. J. Y., Carter, S., & Tagg, S. (2007). The happy story of small business financing. *Journal of Banking and Finance, 31* (9), 2648-2672.

Williamson, O. E. (1988). Corporate finance and corporate governance. *The Journal of Finance, 43* (3), 567-591.

World Bank. (2015 a.). *Fourth Ethiopia economic update : Overcoming constraints in the manufacturing sector.* Washington, DC. : World Bank. Retrieved from https://openknowledge.worldbank.org/handle/10986/22317. License: CC BY 3.0 IGO.

World Bank. (2015 b.). *SME finance in Ethiopia: addressing the missing middle challenge.* Washington, DC. : World Bank. Retrieved from https://openknowledge.worldbank.org/handle/10986/21488. License: CC BY 3.0 IGO.

Zarebski, P., & Dimovski, B. (2012). Determinants of capital structure of A-REITS and the global financial crisis. *Pacific Rim Property Research Journal, 18* (1), 3-19.