



Debt policy and performance of SMEs

Evidence from Ghanaian and South African firms

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Abstract

Purpose – The purpose of this research is to examine the effect of debt policy (capital structure) on the financial performance of small and medium-sized enterprises (SMEs) in Ghana and South Africa. Previous studies, especially on large firms, have shown that capital structure affects firm performance. Though the issue has been widely studied, largely missing from this body of literature is the focus on SMEs.

Design/methodology/approach – Panel data analysis is used to investigate the relations between measures of capital structure and financial performance.

Findings – Using various measures of performance, the results of this study indicate that capital structure influences financial performance, although not exclusively. By and large, the results indicate that capital structure, especially long-term and total debt ratios, negatively affect performance of SMEs. This suggests that agency issues may lead to SMEs pursuing very high debt policy, thus resulting in lower performance.

Originality/value – The main value of this paper is the analysis of the effect of debt policy on the performance of SMEs in Ghana and South Africa.

Keywords Debts, Capital structure, Small to medium-sized enterprises, Ghana, South Africa

Paper type Research paper

1. Introduction

One important financial decision firms are confronted with is the debt policy or capital structure choice. This decision is particularly crucial given the effect it has on the value of the firm. The capital structure of a firm is a specific mix of debt and equity the firm uses to finance its operations (Abor, 2005). In general, a firm can choose among many alternative capital structures. It can issue a large amount of debt or very little debt. It can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. It can issue dozens of distinct securities in countless combinations. It is important for the firm however, to find the particular combination of debt and equity that maximizes its overall market value. Managers who are astute enough to identify and deploy the appropriate mix of debt and equity are amply rewarded in the market place, because, all things being equal, this appropriate mix of debt and equity minimizes a firm's cost of financing. Given revenue and prefinancing



profit streams that are generated through non-financial factors, minimizing cost of financing maximizes net returns for the firm, thereby improving its competitive advantage in the marketplace (Gleason *et al.*, 2000). It is suggested that utilization of different levels of debt and equity in the firm's capital structure is one such firm-specific strategy used by managers in search for improved performance (Gleason *et al.*, 2000).

This interplay of debt and equity and corporate performance has been the subject of a number of studies. Such empirical studies on the effect of capital structure on profitability have tended to concentrate on large firms (see Krishnan and Moyer, 1997; Majumdar and Chhibber, 1999; Abor, 2005). Previous empirical studies on SMEs, though limited, have also focused on the determinants of capital structure. A major gap in the literature is the examination of the effect of capital structure on the performance of SMEs. This present study examines the effect of debt policy on financial performance of SMEs. Using data of Ghanaian SMEs and South African SMEs for a period of six years, panel regression model is employed for this study. The study also limited the sample to quoted South African SMEs in order to evaluate the effect of the debt policy using the Tobin's q as a measure of performance. The results of the study generally suggest that agency conflicts may be largely responsible for the excessive use of debt by SMEs, leading to negative relationship between capital structure and financial performance.

The rest of the paper is organized as follows: The next session gives a review of the extant literature on the subject. Section three describes the methodology used for this study. Section four presents and discusses the results of the empirical analysis. Finally, section five summarizes the findings of the research and also concludes the discussion.

2. Literature review

Recent theory on capital structure is based on the Modigliani and Miller's (1958) seminal work on the effect of capital structure on the value of the firm. Their theory assumes perfect markets and perfect competition in which firms operate without taxes or transaction cost and where all relevant information is available without cost. However, these assumptions do not hold in the real world or in practice and factors such as taxes, agency cost, cost of financial distress and information asymmetry are important in explaining the capital structure of firms.

Modigliani and Miller have been criticized on the grounds that their theory assumes rational economic behaviour and perfect markets conditions, owners' goals are targeted only at maximizing profits (Grabowski and Mueller, 1972), and that it has limited applicability to small firms (Chaganti *et al.*, 1995). Modigliani and Miller (1963) revised their former stance by incorporating tax benefits as determinant of the firms' capital structure choice. They argue that firms are able to maximize their value by employing more debt because of the tax-shield benefits associated with debt use. Interest on debt is considered as a tax-allowable expense. Some researchers have subsequently suggested alternatives to the Modigliani and Miller theory of capital structure by including the agency theory (Jensen and Meckling, 1976), the bankruptcy cost (Titman, 1984) and the pecking order theory (Myers, 1984; Myers and Majluf, 1984). The extant literature offers different perspectives about how the decision to acquire debt affects firm value.

Hutchinson (1995) argues that in more general terms, financial leverage has a positive effect on the firm's return on equity provided that earnings' power of the firms assets (the ratio of earnings before interest and taxes to total assets) exceeds the average interest cost of debt to the firm. He argues that the extent to which a firm's earnings' power is likely to remain above the breakeven point and the potential speed or flexibility with which it can adjust its debt usage, if its earnings' power falls below average interest costs, should help to determine the level of debt that the firm is willing to commit itself to at a given point in time. Taub (1975) found significantly positive relationship between debt ratio and measures of profitability. Nerlove (1968), Baker (1973), and Petersen and Rajan (1994) also identified positive association between debt and profitability but for industries. In their study of leveraged buyouts, Roden and Lewellen (1995) established a significantly positive relation between profitability and total debt as a percentage of the total buyout-financing package. Champion (1999) pointed out that the use of leverage was one way to improve the performance of the firm. Hadlock and James (2002) also concluded that companies prefer debt financing because they anticipate higher returns. It is believed that large debt holders have an interest in seeing that managers take performance-improving measures. Kaplan and Minton (1994), and Kang and Shivdasani (1995) found higher incidence of management turnover in Japan in response to poor performance in companies that have a principal banking relationship relative to companies that do not.

Other studies such as those by Ross (1977), Heinkel (1982) and Noe (1988) suggest that increasing leverage, by acquiring debt should, have positive implications for firm value and performance. In general, these theories ascribe a signaling or disciplinary role for debt. Since increasing debt would also increase bankruptcy and liquidation costs, only managers who expect better future performance will choose to issue debt. Graham and Harvey (2001) surveyed CFOs and report that managers are concerned with maintaining financial flexibility and their firm's credit rating when considering debt issues. Since firm performance is frequently used as an input into the credit rating decisions, this provides indirect survey evidence that managers issue debt keeping in view of expected future performance. The agency model of Jensen (1986) suggests that since debt sales bring additional cash into the firm, this could exacerbate agency problems. Alternatively, if firms use the debt issue proceeds to address the gap between investments needs and internal sources of funding, this would not necessarily lead to an increase in excess cash within the firm. The periodic interest payments on debt would then commit managers to pay out excess free cash flow. Hence, debt issues could reduce agency costs, and have positive effects on firm value. In contrast, Miller and Rock (1985), and Smith (1986) argue that all securities sales (including debt) indicate decreases in future operating performance, and hence impact negatively on firm value.

However, some studies have shown that debt has a negative effect on firm profitability. Fama and French (1998), for instance argue that the use of excessive debt creates agency problems among shareholders and creditors and that could result in negative relationship between leverage and profitability. Majumdar and Chhibber (1999) found in their Indian study that leverage has a negative effect on performance, while Krishnan and Moyer (1997) connect capital and performance to the country of origin. Gleason *et al.* (2000) support a negative impact of leverage on the profitability of the firm. In a polish study, Hammes (1998) also found a negative relationship between

debt and firm's profitability. In another study, Hammes (2003) examined the relation between capital structure and performance by comparing Polish and Hungarian firms to a large sample of firms in industrialized countries. He used panel data analysis to investigate the relation between total debt and performance as well as between different sources of debt namely, bank loans, and trade credits and firms' performance measured by profitability. His results show a significant and negative effect for most countries. He found that the type of debt, bank loans or trade credit is not of major importance, what matters is debt in general. Mesquita and Lara (2003), in their study found that the relationship between rates of return and debt indicates a negative relationship for long-term financing. They however, found a positive relationship for short-term financing and equity. In a recent study, Abor (2005) examined the effect of capital structure on the corporate profitability of listed firms in Ghana using a panel regression model. His measures of capital structure included short-term debt ratio, long-term debt ratio and total debt ratio. His findings show a significantly positive relation between the short-term debt ratio and profitability. However, a negative relationship between long-term debt ratio and profitability was established. In terms of the relationship between total debt ratio and profitability, the results of his study indicated a significantly positive association between total debt ratio and profitability.

In summary, empirical studies have given inconclusive results regarding the capital structure choice and its effect on firms' performance. This present study contributes to the issue by investigating the effect of debt policy or capital structure on firm performance by focusing on SMEs, which are often neglected in most empirical studies.

3. Research methodology

3.1 Data and measurement

This study sampled both Ghanaian and South African SMEs. The Ghanaian sample was obtained from the databases of the National Board of Small Scale Industries and the Association of Ghana Industries. The South African SMEs were sampled from the register of the Small Business Advisory Bureau database. An SME in Ghana is defined as a firm having less than 100 employees. This is based on the definition given by the Regional Project on Enterprise Development for SMEs in Ghana. South African SMEs are defined as firms that satisfy, at least, two of the following criteria; have less than 200 employees; turnover of less than 50 million South African Rand; gross assets excluding fixed property of less than 18 million South African Rand. This definition is also consistent with that of the National Small Business Act for SMEs in South Africa. The financial data was obtained from the financial statements of the firms for the six year period, 1998-2003. In all 160 Ghanaian SMEs and 200 South African SMEs were used for this study with 68 of the South African sample being listed firms.

The dependent variable is performance and the independent variables are the debt ratios. Measures of financial performance include, gross profit margin, return on assets and for the listed SMEs, Tobin's q . The debt ratios include short-term debt ratio, long-term debt ratio and total debt ratio. Trade credit is also included to examine its effects on performance. Trade credit is expected to have a positive impact on performance. Trade creditors extend credit to firms with risky but positive net present value (NPV) projects due to their superior knowledge, and higher ability to salvage value as compared to other providers of debt finance and their ability to discipline debtors by withholding future deliveries (Hammes, 2003). Two control variables (size

and growth) are also included as standard determinants of performance. The model for the empirical investigation can be stated as follows:

$$\text{Performance}_{i,t} = \beta_0 + \beta_1 \text{SDC}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{SG}_{i,t} + \mu_{it} \quad (1)$$

$$\text{Performance}_{i,t} = \beta_0 + \beta_1 \text{LDC}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{SG}_{i,t} + \mu_{it} \quad (2)$$

$$\text{Performance}_{i,t} = \beta_0 + \beta_1 \text{TDC}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{SG}_{i,t} + \mu_{it} \quad (3)$$

$$\text{Performance}_{i,t} = \beta_0 + \beta_1 \text{TCC}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{SG}_{i,t} + \mu_{it} \quad (4)$$

where:

$\text{SDC}_{i,t}$ = short-term debt/total capital for firm i in time t ;

$\text{LDC}_{i,t}$ = long-term debt/total capital for firm i in time t ;

$\text{TDC}_{i,t}$ = total debt/total capital for firm i in time t ;

$\text{TCC}_{i,t}$ = trade credit/total capital for firm i in time t

$\text{FS}_{i,t}$ = firm size (log of total assets) for firm i in time t ;

$\text{SG}_{i,t}$ = log of sales growth for firm i in time t ; and

$\mu_{i,t}$ = the error term.

The performance measures are defined as; gross profit margin = gross profit divided by sales; return on assets = net profit divided by total assets. Besides analyzing the effect of the debt policy on the profitability, the study also limited the sample to 68 listed South African SMEs in order to observe the effect of the debt policy using Tobin's q as a measure performance. Market-to-book value is used as a proxy for Tobin's q . The regression model can also be estimated as follows:

$$\text{Tobins}.q_{i,t} = \beta_0 + \beta_1 \text{SDC}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{SG}_{i,t} + \mu_{it} \quad (5)$$

$$\text{Tobins}.q_{i,t} = \beta_0 + \beta_1 \text{LDC}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{SG}_{i,t} + \mu_{it} \quad (6)$$

$$\text{Tobins}.q_{i,t} = \beta_0 + \beta_1 \text{TDC}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{SG}_{i,t} + \mu_{it} \quad (7)$$

$$\text{Tobins}.q_{i,t} = \beta_0 + \beta_1 \text{TCC}_{i,t} + \beta_2 \text{FS}_{i,t} + \beta_3 \text{SG}_{i,t} + \mu_{it} \quad (8)$$

where the explanatory variables are as defined previously.

3.1.1 Estimation method. The study employs Generalized Least Squares (GLS) panel model for the estimation. Panel data involves the pooling of observations on a cross-section of units over several time periods. Panel data approach is more useful than either cross-section or time-series data alone. One advantage of using the panel data set is that, because of the several data points, degrees of freedom are increased and collinearity among the explanatory variables is reduced, thus the efficiency of economic estimates is improved. Also, panel data can control for individual

heterogeneity due to hidden factors, which, if neglected in time-series or cross section estimations leads to biased results (Baltagi, 1995). The panel regression equation differs from a regular time-series or cross-section regression by the double subscript attached to each variable. The general form of the model can be written as:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \mu_{it} \quad (9)$$

Here, μ_{it} is a random term and $\mu_{it} = \mu_i + v_{it}$; where μ_i is the firm specific effects and v_{it} is a random term.

The choice of the model estimation whether random effects or fixed effects will depend on the underlying assumptions. In a random effect model, μ_i and v_{it} are random with known disturbances. In a fixed effects μ_i , the firm-specific effects, and v_{it} , a random term, are fixed parameters and are estimated together with the other parameters. For most panel applications, a one-way error component model for the disturbances is adopted, with $\mu_{it} = \mu_i + v_{it}$; where μ_i accounts for any unobservable firm-specific effects that is not included in the regression model, and v_{it} represents the remaining disturbances in the regression which varies with individual firms and time.

4. Empirical results

4.1 Descriptive summary statistics

Table I provides the descriptive statistics of all the variables used. The mean short-term ratio, long-term debt ratio, total debt ratio, and trade credit to capital ratio for the Ghanaian sample are shown as 0.3761, 0.0518, 0.4001, and 0.2427 respectively. The total assets of the sampled Ghanaian SMEs are valued on the average at $7.67e + 09$ Ghanaian cedis. The mean growth rate in sales is 50.39 per cent. Gross profit margin and return on assets also register average rates of 39.51 per cent and 9.25 per cent. The mean values of all the variables are significant at 1 per cent level. With

	Mean	Standard error	SD	t-statistics	p-value
<i>Ghana</i>					
SDC	0.3761	0.0109	0.2876	34.3483	0.0000
LDC	0.0518	0.0058	0.1507	8.9855	0.0000
TDC	0.4001	0.0113	0.2985	35.4914	0.0000
TCC	0.2427	0.0095	0.2534	25.5503	0.0000
SIZE	7.67e + 09	1.69e + 09	4.42e + 10	4.5329	0.0000
SG	0.5039	0.4588	1.0503	10.9822	0.0000
GPM	0.3951	0.1202	3.1948	3.2862	0.0011
ROA	0.0925	0.0130	0.3391	7.1236	0.0000
<i>South Africa</i>					
SDC	0.3317	0.0112	0.2975	29.6616	0.0000
LDC	0.1874	0.0143	0.3770	13.1375	0.0000
TDC	0.4989	0.0180	0.4783	27.6529	0.0000
TCC	0.1963	0.0091	0.1999	21.6262	0.0000
SIZE	1.94e + 08	2.44e + 07	6.64e + 08	7.9611	0.0000
SG	2.1914	1.0231	23.7519	2.1420	0.0326
GPM	-1.1644	1.0798	22.2872	-1.0783	0.2815
ROA	-0.1862	1.3958	36.5051	-0.1334	0.8939
Tobin's q	11.7399	8.3907	181.324	1.3992	0.1624

Table I.
Summary statistics

respect to the South African sample, the mean debt ratios are given as 0.3317 for short-term debt; 0.1874 for long-term debt; 0.4989 for total debt and 0.1963 for trade credit to capital ratio. The average value of total assets is $1.94e + 08$ South African rand and the average growth rate is 219.14 per cent. The mean gross profit margin and return on assets are also indicated as -116.44 per cent and -18.62 per cent respectively. The average market to book value ratio or Tobin's q for only the listed South African SMEs is given as 11.7399. The mean values of short-term debt, long-term debt, total debt ratio, and trade credit are all significant at 1 per cent level. The mean value of firm size is also significant at 5 per cent level. The mean values of the performance variables (i.e. gross profit margin, return on assets and Tobin's q) are not significant at conventional levels.

An additional test was performed to compare the debt ratios of Ghanaian and South African SMEs. The t -test of hypothesis of equal means had t -test values of 2.8366, -8.8091 , -4.6433 , and 3.5323 for short-term debt, long-term debt, total debt, and trade credit respectively, as shown in Table II. These values are all significant at 1 per cent levels. The test results suggest that the null hypothesis that capital structure is the same across the countries can be rejected. That is, capital structure varies across the two countries. The results show that Ghanaian SMEs exhibit significantly higher short-term debt and trade credits than South African SMEs, whereas South African SMEs are significantly more likely to employ long-term debt than Ghanaian SMEs. In terms of total debt, the results again indicate that South African SMEs have significantly more total debt in their capital structure than their Ghanaian counterparts. These differences may be attributable to differences in economic environments, financial markets and economies of scale.

4.2 Regression results

Regression analyses are carried out to establish the relationship between capital structure and performance. Measures of performance are regressed against different measures of capital structure. The F -statistic and Hausman test were used to test the validity of fixed and random effects. The GLS regression was however found to be a more robust and appropriate specification. The estimation was done using E-Views version 5. The GLS heteroscedastic-consistent panel regression results are presented in Tables III to VII below.

Tables III and IV show the regression results, using gross profit as a measure of performance. The effect of short-term debt is significantly and negatively associated with gross profit margin for both Ghana and South Africa. This indicates that

Sample group	Short-term debt ratio	Long-term debt ratio	Total debt ratio	Trade credit ratio
Ghana	0.3761	0.0518	0.4001	0.2427
South Africa	0.3317	0.1874	0.4989	0.1963
Combined	0.3536	0.1204	0.4496	0.2239
Diff	0.0444	-0.1355	-0.0988	0.0464
t -statistics	2.8366*	-8.8091 *	-4.6433 *	3.5323*

Table II.

Mean debt ratios across sample groups

Notes: * Significant at 1% level; Test: H_0 : $\text{mean}(X_i)_{\text{Ghana}} - \text{mean}(X_i)_{\text{South Africa}} = 0$; H_a : $\text{mean}(X_i)_{\text{Ghana}} - \text{mean}(X_i)_{\text{South Africa}} \neq 0$ where X_i = measures of capital structure

Variable	Profitability: gross profit margin			
	(1)	(2)	(3)	(4)
	<i>N</i>	Standard error	<i>N</i>	Standard error
Constant	-0.4067*	0.0078	-0.3076*	0.0053
SDC	-0.2198*	0.0017		0.0429
LDC		0.9625*		
TDC			0.0661	
TCC			-0.1710*	
Log (SIZE)	0.0384*	0.0004	0.0272*	0.0019
Log(SG)	0.0109*	0.0005	0.0317*	0.0003
<i>R</i> -squared	0.5862		0.5217	0.0024
Adjusted <i>R</i> -squared	0.5834		0.5185	
<i>F</i> -statistics	208.2544*		159.2693*	329.2537*
				0.0004
				0.0005
				0.5425
				0.5395
				180.6463*

Notes: * Indicate significance at levels of 1%, standard errors in parentheses; (1) represents regression results for short-term debt; (2) represents regression results for long-term debt; (3) represents regression results for total debt; (4) represents regression results for trade credit

Table III.
Regression results debts
on gross profit margin
(Ghana)

Table IV.
Regression results debts
on gross profit margin
(South Africa)

Variable	(1)		(2)		(3)		(4)	
	N	Standard error	N	Standard error	N	Standard error	N	Standard error
Constant	0.2757***	0.0127	0.1349***	0.0433	0.3865***	0.0358	0.0827***	0.0200
SDC	-0.3995***	0.0063						
LDC		0.2956***	0.0330					
TDC			-0.2664***					
TCC				0.0090				
Log(SIZE)	0.0036***	0.0008	0.0003	-0.4651***	0.0098		0.0128***	0.0012
Log(SG)	0.0023*	0.0013	0.0059**	0.0024	-0.0037*	0.0020	0.0083***	0.0015
R-squared	0.5983		0.188	0.0027	0.4450	0.0017	0.5358	
Adjusted R-squared	0.5926		0.1768		0.4372		0.5293	
F-statistics	105.7319***		16.4685***		56.9347***		56.9347***	

Notes: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively

Variable	(1)		(2)		Profitability: return on assets		(3)		(4)	
	N	Standard error	N	Standard error	N	Standard error	N	Standard error	N	Standard error
Constant	0.3701**	0.0265	0.3854**	0.0245	0.3003**	0.0220	0.3534**	0.0242		
SDC	-0.1021**	0.0063								
LDC		-0.1260**	0.0102							
TDC		-0.1003**	0.0044							
TCC			-0.0854**	0.0049						
Log(SIZE)	-0.0109**	0.0013	-0.0132**	0.0011	-0.0076**	0.0011	-0.0112**	0.0011		
Log(SG)	0.0018	0.0016	0.0055**	0.0017	0.0038**	0.0011	0.0030*	0.0014		
R-squared	0.3384		0.3104		0.3346		0.3258			
Adjusted R-squared	0.3339		0.3057		0.3301		0.3214			
F-statistics	75.1794**		65.7221**		75.2563		73.6115			

Notes: **, * indicate significance at levels of 5% and 1% respectively

Table V.
Regression results debts
on return on assets
(Ghana)

Table VI.
Regression results debts
on return on assets (South
Africa)

Variable	(1)		(2)		(3)		(4)	
	N	Standard error	N	Standard error	N	Standard error	N	Standard error
Constant	1.7780**	0.0111	1.2108**	0.0193	0.9571**	0.0204	-0.1152**	0.0145
SDC	0.3003	0.0017						
LDC		-0.3994**	0.0076					
TDC			-0.0374**	0.0021				
TCC				0.0236*				
Log(SIZE)	-0.1082**	0.0006	-0.0579**	0.0010	0.0094	0.0011	0.0116**	0.0007
Log(SG)	-0.0509**	0.0001	0.0098**	0.0002	-0.0475**	0.0002	0.0056**	0.0009
R-squared	0.6557		0.1597		0.0601		0.5128	
Adjusted R-squared	0.6525		0.1518		0.0513		0.5060	
F-statistics	204.3887**		20.0893		6.8050**		74.7429**	

Notes: *, ** indicate significance at levels of 5% and 1% respectively

Variable	Tobin's q			
	(5)	(6)	(7)	(8)
	N	N	N	N
	Standard error	Standard error	Standard error	Standard error
Constant	0.2276*	-0.0456	0.1617	0.1407
SDC	0.6393**			
LDC	0.0450			
TDC	-0.9695**	0.0981		
TCC		-0.6517**	0.0534**	
Log(SIZE)	0.0510**	0.0850**	1.1332**	0.0468
Log(SG)	0.1584**	0.0972**	0.0085	0.0737**
R -squared	0.5620	0.5480	0.0110	0.1376**
Adjusted R -squared	0.5556	0.5412		0.4018
F -statistics	85.9838**	81.2276		0.3929
			45.0018**	82.7885**

Notes: * ** indicate significance at levels of 10% and 1% respectively; (5) represents regression results for short-term debt; (6) represents regression results for long-term debt; (7) represents regression results for total debt; (8) represents regression results for trade credit

Table VII.
Regression results debts
on Tobin's q (South
Africa)

increasing the amount of short-term debt will result in a decrease in the gross profit margin of the firms. The results also show that long-term debt has a significantly positive relationship with gross profit margin for both countries. SMEs that employ more long-term debt record higher gross profit margin. The relation between total debt to capital ratio and gross profit margin was found to be significant and negative for both countries. In terms of trade credit, the results indicate a statistically significant and negative association between trade credit and gross profit margin for both Ghana and South Africa. Increasing trade credit in the firms' capital structure is associated with decreasing gross profit margin. In the Ghanaian sample, the control variables (size and sales growth) reveal statistically significant positive effects on gross profit margin for all measures of debt with the exception of the total debt measure, where growth is shown to have significantly negative relation with gross profit margin. Also, in the South African sample, size indicates positive relations with gross profit margin for measures of short-term debt and trade credit. The result for total debt is negative and that of long-term debt is insignificant. But sales growth indicates a significantly positive relation with gross profit margin for all measures of debt.

Tables V and VI report the regression results using return on assets as the performance measure. In the case of Ghana, the results as shown in Table V exhibit significantly negative relations between all the measures of capital structure and return on assets. For Ghanaian SMEs, adopting a high debt policy is significantly more likely to lead to lower profitability (return on assets). Increasing the proportion of debt in the firms' capital structure could result in high bankruptcy cost and this is likely to impact negatively on return on assets. Also, the results provide support for the argument that due to agency conflicts, SMEs over-leverage themselves, thus negatively affecting their own performance. This is also consistent with the findings of Gleason *et al.* (2000). In the Ghanaian sample, firm size indicates significantly negative relation with return on assets for all the measures of debt. Sales growth also shows statistically positive relation with long-term debt, total debt, and trade credit. The relationship between sales growth and return on assets for short-term debt is not statistically significant.

In the South African sample, the results as illustrated in Table VI reveal a statistically significant positive relationship between short-term debt and return on assets. Similarly, the results indicate a statistically significant relationship between trade credit and return on assets. This might be attributed to the fact that short-term debt and trade credit seem to be relatively less costly. Therefore, increasing short-term debt or trade credit with relatively low interest rate could result in high profit levels. The regression results show significantly negative association between return on assets and long-term debt, and total debt. This also suggests that long-term debt attracts higher cost and therefore employing high proportions of long-term debt in the SMEs' capital structure could lead to low return on assets. The results from the South African data imply that pursuing a high long-term debt strategy might be associated with low profitability. This position supports the findings of previous empirical studies (see Fama and French, 1998; Abor, 2005). The results from the South African data also reveal significantly negative interaction between firm size and return on assets for measures of short-term debt, long-term debt, and total debt but a statistically significant positive association between size and return on assets for the trade credit model. The sales growth variable exhibits significantly negative effect on return on

assets for measures of short-term debt and total debt but statistically significant positive impact on return on assets for measures of long-term debt, and trade credit.

The analysis was also done considering only listed SMEs in South Africa. The essence of this was to examine the effects of the various measures of capital structure on Tobin's q . The results as shown in Table VII show statistically significant positive relationships between Tobin's q and two measures of capital structure (short-term debt and trade credit). The results, however, indicate significantly negative relation between the Tobin's q and long-term debt, and total debt ratios. In other words, increasing the amount of short-term debt and trade credit in the firms' debt structure is significantly more likely to positively influence their Tobin's q or market-to-book value. Also, a rise in the long-term debt and total debt implies a reduction in the Tobin's q . The results of this study suggest that for listed SMEs employing more short-term debt and trade credit has the tendency of causing an improvement in their market-to-book value but having more long-term debt would lead to a negative impact on the market-to-book value of the firms. The results show that large firm size and high sales growth are associated with improvement in the Tobin's q or market-to-book value.

5. Conclusions and implications

One important financial decision firms are confronted with is the debt policy or capital structure choice. This decision is particularly crucial given the effect it has on the value of the firm. This study has examined the relationship between capital structure and performance of SMEs in Ghana and South Africa during a six-year period, 1998-2003. The empirical results indicate that short-term debt is significantly and negatively related to gross profit margin for both Ghana and South Africa. The results show that long-term debt has a significantly positive relationship with gross profit margin for both countries. The relation between total debt ratio and gross profit margin was found to be significant and negative. The results also reveal a statistically significant and negative association between trade credit and gross profit margin for both Ghana and South Africa. In the case of Ghana, the results show significantly negative relations between all the measures of capital structure and return on assets. In the South African sample, the results reveal significantly positive relationships between return on assets and short-term debt, and trade credit. However in terms of long-term debt and total debt, the results show statistically significant negative relationship between return on assets and both long-term debt and total debt. The results of this paper also show, for the listed SMEs, statistically significant positive relationship between Tobin's q and two measures of capital structure (short-term debt and trade credit) but indicate significantly negative relations between the Tobin's q and long-term debt, and total debt ratio.

The results of this study have shown that in the presence of control variables, capital structure has a significant influence on the performance of SMEs. By and large, the results indicate that capital structure, especially long-term and total debt ratios negatively affect performance of SMEs. The negative relationships imply that SMEs generally are averse to use more equity because of the fear of losing control and therefore employ more debt in their capital structure than would be appropriate. Apart from the problems SMEs face in acquiring equity, one reason for increasing debt use may be to avoid agency conflicts. Employing debt excessively is likely to result in high bankruptcy cost which could negatively affect performance. SMEs that pursue very

high debt policy compared to the industry average should also consider increasing the equity component in their capital structure in order to avoid the negative effects of excessive debt on performance.

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Further reading

- Abor, J. and Biekpe, N. (2005), "What determines the capital structure of listed firms in Ghana?", *African Finance Journal*, Vol. 7 No. 1, pp. 37-48.

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