

Assessing the Debt Performance and Policy of SMES; the Case of Northern and Southern Ghana

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Abstract:- Capital structure has been proven to impact business performance in previous research, particularly on big enterprises. Although the topic has gained a lot of publicity, the focus on SMEs, mostly between the North and South of Ghana, is generally absent from the literature. The study assessed the relationship between debt and Policy performance of SMEs in northern and Southern Ghana from 2011 – 2021 using panel data regression. The results from the T-test reveal that capital structure is not equal or the same across the north and south of Ghana. However, there was a positive relationship between firm size and sales growth (SG) and trade credit respectively in Techiman. In Accra, the results show a positive relationship between short-term debt (SDC), total credit (TCC), and return on assets (RoA) at 1% significance level respectively. However, there was a statistically significant and negative relationship between total debt (TDC), TCC, and gross profit margin respectively for SMEs in the north and south of Ghana. For the listed SMEs in Tamale, the results reveal a negative association between SDC, Long-term debt (LDC), TDC, and Tobin's q (TQ). For SMEs in Kumasi, the findings reveal a negative association between SDC, LDC, TDC, and RoA respectively. For SMEs in Tamale and Techiman, the findings reveal a negative association between all measures of capital structure and RoA at different significant levels. However, there is a positive relationship between TCC and TQ. However, there was a positive relationship between TCC and RoA.

Keywords: Debts; Capital structure; Firm; developed and developing countries; Performance.

1. Introduction

Globally, Small and Medium Enterprises, (SMEs) have gained popularity in both developed and developing countries in recent times. For instance, policymakers, economists, and business professionals have in recent times recognized that SMEs form major drivers of economic growth (Otman, K. 2021; Amoako, E. O. (2019). Generally, SME's boost job opportunities, increase production volumes, enhance exports, and introduce innovation and entrepreneurial skills to an economy (Asare, C. & Angmor, P.L.2015). More to the point, SMEs' dynamical locus in developing countries, in particular, ensures that growth goals are achieved (Asare, C. & Angmor, P.L.2015).

SMEs are a crucial instrument for economic growth in Ghana. Addaney, M., Awuah, S. B., & Afriyie, A. (2016) and Meher, K. C., & Ajibie, D. (2018). In proportion to a rise in people's income and productivity in the industrial sector through SMEs, the unemployment burden is reduced Ophelia, A., Min, S., Aliou, D. M., Farhana, A., George, N., Justice, G., & Philip, A. S. (2021). Ghana's economic growth has been aided by increased labour supply and productivity advances during the previous two decades, with the country's Gross Domestic Product (GDP) increasing from 2% to 6% International Monetary Fund (2019). SMEs have made enormous contributions to economic growth and development in Ghana. Mintah, S., & Darkwah, S. (2018). It has been established that, in 2017, the Registrar General Department launched an online system for registering new businesses, which resulted in a large turnout Ophelia, A., Min, S., Aliou, D. M., Farhana, A., George, N., Justice, G., & Philip, A. S. (2021). 58,504 of the roughly 87,000 corporations filed in 2017 were sole proprietorships, including online registrations Acquah-Hayford, N. (2018). Subsequently, there were indications in The Business and Financial Times that there was 21,700 company limited by shares registrations and 5,754 company limited by guarantee

registrations Acquah-Hayford, N. (2018). Moreover, according to the Ghana Statistical Service Ghana Statistical Service. (2012). SMEs account for 70% of all industrial firms, contribute around 70% of GDP International Trade Centre. (2016) and account for 92 percent of Ghana's firms. Furthermore, the SME's market consumes over 60% of the working labour force, with the bulk of these people living in rural settings Ghana Statistical Service. (2012).

Despite these, a variety of challenges and impediments that obstruct and complicate operations and growth of SMEs exist globally Wang, Y. (2016). Generally, debt policy is one of the most crucial financial decisions that firms must make Abor, J. (2008). Thus, considering the impact on the firm's worth, this choice is very important. A company's debt policy is the blend of debt and equity it utilizes to fund its activities according to (Saeed, M. M., Gull, A. A., & Rasheed, M. Y. 2013; Abor, J. 2005). Largely, companies can select from a variety of debt policies Miglo, A. (2020). In other words, it can issue a huge or little quantity of debt. Lease financing, the usage of warrants, the issuance of convertible bonds, the signing of forward contracts, and the trading of bond swaps are all options available to it (Abor, J. 2007; Ghazouani, T. 2013). It can issue hundreds of different securities in a variety of amalgamations Abor, J. (2007). However, the company must identify the debt-to-equity ratio that optimizes its entire market worth amalgamations Abor, J. (2007). Largely, smart and clever management detects and uses the right combination of equity and debt. This smart move considerably attracts market reward as everything considered, the right mix of debt and equity lowers a company's cost of capital amalgamations Abor, J. (2007). Considering earnings and pre-financing profit flows provided by non-financial sources, lowering financing costs optimizes net returns for the business, hence boosting its market competitiveness (Heil, M. 2017; Gleason, K. C., Mathur, L. K., & Mathur, I. 2000). It has been argued that one such company- technique employed by managers in quest of greater performance is the employment of varying degrees of debt and equity in the firm's debt policy (Nenu, E. A., Vintilă, G., & Gherghina, Ș. C. 2018; Gleason, K. C., Mathur, L. K., & Mathur, I. 2000).

A flurry of literature has examined the interaction between debt and equity and company performance (Shad, M. K., Lai, F. W., Shamim, A., & McShane, M. 2020; Nuryani, Y., & Sunarsi, D. 2020; Abor, J. 2007). These empirical researches on the influence of debt policy on revenues and profits have primarily focused on big enterprises (Singh, N. P., & Bagga, M. 2019; Qayyum, N u., I & Noreen, U. 2019). Prior studies on SMEs, albeit restricted in scope, have likewise concentrated on the drivers of debt policies Cariola, A., Fasano, F., La Rocca, M., & Skatova, E. (2020). The evaluation of the debt performance and policy of SMEs is a significant gap in the literature. Taking all of this into account, it is critical to address the issue of debt performance and the policy of SMEs. Placing the analysis in the Ghanaian context, the study seeks to find out how debt is impacting SMEs in Ghana and what are the prevailing policies.

2. Literature Review

The pioneering work of Modigliani and Miller, published in 1958, on the effect of debt policy on firm value, has inspired modern debt policy theory. Generally, this theory suggests ideal and efficient markets rivalry, as well as the absence of taxes, coupled with unfettered access to all useful details according to Abor, J. (2007). Yet, it has been argued that in reality, these claims are incorrect, reasons spanning the cost of financial distress, agency costs, information asymmetry, and tax largely help understand a company's debt policy according to Abor, J. (2007). Modigliani and Miller's theory has been attacked for assuming flawless market circumstance coupled with ideal economic behaviour, as well as the notion that owners primary goal is to boost revenue according to Grabowski, H. G., & Mueller, D. C. (1972), and for having restricted pertinence to micro-enterprises Chaganti, R., DeCarolis, D., & Deeds, D. (1995). Following this, Modigliani, F., Miller, M. H., (1963), incorporated tax gains as a major factor in determining a business's debt policy. This incorporation was significant since tax gains are linked with debt utilization, businesses may optimize their worth by using more debt, and interest on debt is a deductible item for tax purposes. A burgeoning of literature consequently has proposed different options to that of Modigliani and Miller's debt policy. For instance, the pecking order theory Myers, S. C. (1984), the bankruptcy cost Titman, S. (1984), the agency theory Jensen, M. C., & Meckling, W. H. (1976), etc. have all been proposed. Diverse opinions about the choice to attain debt influence the value of a business may be found in the current research. Generally, Hutchinson, R. W. (1995) holds the view that financial leverage impacts businesses positively particularly through return on equity if earning's power of the business's assets, thus (incomes before taxes and interest divided by total assets) surpasses the business's average debt/ loan interest rate). It was further contended that given

corporation's earning capacity with its degree, is anticipated to stay far above the breakeven threshold, as well as the elasticity to modify its debt consumption if its income capacity drops below the mean interest rates, would aid in determining the quantity of the debt that the company is ready to channel its resources within a stipulated period. The study of Taub, A. J. (1975) for instance, discovered a strong link between debt ratio and profitability indicators as opposed to that of Petersen, M. A., & Rajan, R. G. (1994) who found it vice versa. The findings of Roden, D. M., & Lewellen, W. G. (1995) established a substantial positive relationship between profitability and total debt as a proportion of the total buyout financing package in their analysis of leveraged buyouts Abor, J. (2007). One strategy to increase a business's performance, according to Champion, D. (1999), is to employ leverage. Generally, firms desire debt financing since larger returns are expected, according to Hadlock, C. J., & James, C. M. (2002). Largely, large debt holders are thought to be interested in seeing management employ performance-improvement initiatives. For instance, in Japan, (Kaplan, S. N., & Minton, B. A. 1994; Kang, J. K., & Shivdasani, A. 1995) found that enterprises with a major banking connection have a greater rate of management turnover in reaction to bad performance than those without.

An avalanche of literature (Samour, S., & Hassan, L. 2016; Noe, T. 1988), perceives that raising leverage through debt acquisition should improve business value and performance. In essence, these ideas attribute debt to having a warning or punitive measures. As debt levels rise, so does the likelihood of bankruptcy and liquidation. Only those management who predict greater future results will prefer to issue debt. When it comes to debt difficulties, Graham, J. R., & Harvey, C. R. (2001) questioned CFOs and found that managers are worried about preserving financial flexibility and their company's credit rating. This is largely because business performance is commonly considered as a factor in credit rating choices, this gives indirect survey fact that management issues loans based on predicted future success. Jensen, M. C. (1986) agency model implies that because debt sales rake in more revenue, they might worsen agency difficulties. Nevertheless, if corporations employ the earnings of a debt offering to bridge the gap between investment demands and internal sources of finance, this will not always result in an increase in excess capital within the company Abor, J. (2007). Management would then be obligated to pay out excess free cash flow due to periodic interest payments on debt. As a result, debt difficulties may lower agency costs while also increasing business value. Miller, M. H., & Rock, K. (1985) contend, instead, that all securities transactions (including debt) foreshadow projected operating performance declines, and hence have a negative influence on company value. Debt, instead, has been found in certain studies to have a detrimental impact on the profitability of businesses Abor, J. (2007). According to (Fama, E. F., & French, K. R. 1998; Rahman, M. M., Saima, F. N., & Jahan, K. 2020; Abor, J. 2005), high debt generates agency difficulties among shareholders and creditors, which can lead to a negative link between profitability and leverage. Majumdar, S. K., & Chhibber, P. (1999) notes that leverage impacts negatively on a firm's performance, however, the study of Krishnan, V. S., & Moyer, R. C. (1997) reveals that performance and capital, for instance, are directly connected to the nation of origin. In the view of (Hammes, K. 1998; Gleason, K. C., Mathur, L. K., & Mathur, I. 2000) leverage has a detrimental influence on a firm's profitability. In comparing Polish and Hungarian enterprises to look at the relationship between debt policy and performance, findings reveal a considerable and unfavorable influence on most countries Hammes, K. (2003). The study further noted that whether a debt is classified as a loan from a bank or trade credit is irrelevant, however, what matters is that there is a debt. As observed by de Mesquita, J. M. C., & Lara, J. E. (2003) there exists a negative link between rates of return and debt particularly on the subject of long-term financing, however, the study discovered that short-term borrowing and equity had a positive link.

In Ghana, Abor, J. 2005 utilized a panel regression model to investigate "What determines the capital structure of listed firms in Ghana?" In detail, the study further emphasized 'the impact of capital structure on the corporate profitability of Ghanaian listed enterprises' with a focus on short-term debt ratio, long-term debt ratio, and total debt ratio forming his capital structure metrics. Results showed that short-term debt ratio and profitability have a considerable positive relationship. The long-term debt ratio, on the other hand, was found to have a negative correlation with profitability. The study further revealed a positive link between total debt and profitability.

In conclusion, empirical research on debt performance and policy selection and its impact on company performance have shown mixed results. This study adds to the debate by looking at the debt Performance and

Policy of SMEs in Ghana with an emphasis on SMEs, which are frequently overlooked particularly within the locus of empirical analyses.

3. Methodology

3.1 Study Area

The study's focus was on Tamale, Techiman, Kumasi, and Accra. With a total surface area of 550 km² MoFEP. (2014) and a population of 371,351, the Tamale Metropolis is located in the centre section of Ghana's Northern region. It is the country's third-largest metropolis after Accra and Kumasi Ghana Statistical Service. (2012). With a large number of unregistered businesses, the Metropolis is distinguished by entrepreneurs Alhassan, E. A., Hoedoafia, M. A., & Alhassan, E. A. (2016). Techiman, on the other hand, is located in the middle section of the Brong Ahafo Region and has an area of 669.7km² Okorley, E. L., & Addai, E. O. (2010), has a population of 147,788 GSS, (2013), and is known for its entrepreneurs. With an estimated population of about 4 million people and a land area of 225.67 km² (87.13 sq mi) Alhassan, E. A., Hoedoafia, M. A., & Alhassan, E. A. (2016), Accra is the capital of Ghana and the Greater Accra region according to Asumadu-Sarkodie, S., Owusu, P. A., & Jayaweera, M. (2015). Manufacturing employs 16.7% of the Greater Accra Region's population, while wholesale and retail trade employs 30.4 % Ghana District Repository (2006). Kumasi, also, is the Ashanti region's capital in Ghana. It has a population of 2,035,064 and has a total area of 254 km². Kumasi's estimated SME's stock was 26,989 units in 2014 GSS, (2013).

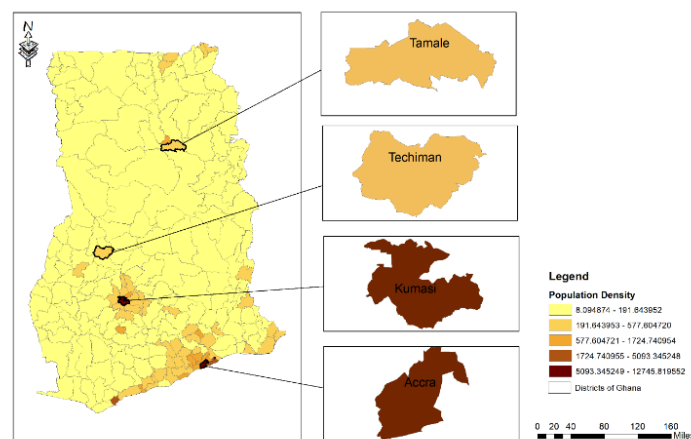


Figure 1. Study area map

3.2 Sample Size

Generally, SMEs imply firms having less than 100 employees, according to the Regional Project on Enterprise Development for SMEs in Ghana Abor, J. (2007). The study sampled 70 participants for responses for the four selected cities (Tamale, Techiman, Kumasi, and Accra) in Ghana. Tamale and Techiman were selected to represent the northern part of Ghana while Kumasi and Accra represented southern Ghana. A total of 70 questionnaires were shared amongst these SMEs. Out of this, 62, 64, 67, and 69 responses were received from Tamale, Techiman, Kumasi, and Accra respectively. This represented 89%, 91%, 96%, and 99% of the total sample for Tamale, Techiman, Kumasi, and Accra respectively.

3.3 Technique for Sampling

The study employed convenience sampling in attaining 70 SMEs. These SMEs are believed to possess the relevant experience for the study and are willing and have sufficient time to participate Ackah, J., & Vuvor, S. (2011). Largely, convenience sampling entails eliciting responses within a sample frame from available and ready respondents. The merit of this technique is that respondents participate of their own volition and are not chosen against their will. The technique was selected for the study to enhance the response rate. This is because respondents in this sector are hesitant in releasing information since they believe that any information given out

could be leaked to competitors and also expose them to tax authorities. Also, the quality of response is assured since respondents take time to respond to the questionnaires.

3.4 Debt policy and performance analysis

The financial information for SMEs was gathered from company financial statements for 10 years (2011-2021). Here 43 and 48 SMEs were listed from the Tamale and Accra samples respectively. Performance and debt ratios were used as dependent and independent variables respectively. Factors selected for the measurement of financial performance encompass the Gross Profit Margin (GPM), Return on Assets (RoA), and the Tobin's Q (TQ) for the listed SMEs. Moreover, Trade credit (TC) was selected to assess its impacts on performance. There is an expected positive effect of TC on the performance of SMEs which is probed. This is due to the superior knowledge and ability to salvage SMEs with risky, however, positive net present value (NPV). Trade creditors prefer extending credit to them. Unlike other debt financing providers who punish defaulters via deliberately delaying future deliveries, Hammes, K. (2003). Sales growth (SG) and size of SMEs were used as control variables as well as standard determinants of performance. For the evaluation of the various SMEs, the study used the following empirical models;

$$Performance_{n,t} = \beta_0 + \beta_1 SDC_{n,t} + \beta_2 FS_{n,t} + \beta_3 SG_{n,t} + \mu_{n,t} \quad (1)$$

$$Performance_{n,t} = \beta_0 + \beta_1 LDC_{n,t} + \beta_2 FS_{n,t} + \beta_3 SG_{n,t} + \mu_{n,t} \quad (2)$$

$$Performance_{n,t} = \beta_0 + \beta_1 TDC_{n,t} + \beta_2 FS_{n,t} + \beta_3 SG_{n,t} + \mu_{n,t} \quad (3)$$

$$Performance_{n,t} = \beta_0 + \beta_1 TCC_{n,t} + \beta_2 FS_{n,t} + \beta_3 SG_{n,t} + \mu_{n,t} \quad (4)$$

Where

$SDC_{n,t}$ is the Short-term debt/total capital for SME n in time t ;

$LDC_{n,t}$ is the Long-term debt/total capital for SME n in time t ;

$TDC_{n,t}$ is the total debt/total capital for SME n in time t ;

$TCC_{n,t}$ is the total credit/total capital for SME n in time t ;

$FS_{n,t}$ is the size of firm (log of total assets) for SME n in time t ;

μ_{nt} is the error term for SME n in time t ;

The measurement of performance is defined as;

$$GPM = (\text{gross profit})/\text{Sales} \quad (5)$$

$$RoA = (\text{Net profit})/(\text{Total Assets}) \quad (6)$$

Aside from this, the study assessed the effects of debt policy utilizing the TQ as a performance measurement. This was limited to 43 and 48 SMEs listed in Tamale and Accra respectively. Here, the value of the Market-to-book is employed as a proxy for TQ. For the analysis of regression, the following models were used;

$$TQ_{n,t} = \beta_0 + \beta_1 SDC_{n,t} + \beta_2 FS_{n,t} + \beta_3 SG_{n,t} + \mu_{n,t} \quad (7)$$

$$TQ_{n,t} = \beta_0 + \beta_1 LDC_{n,t} + \beta_2 FS_{n,t} + \beta_3 SG_{n,t} + \mu_{n,t} \quad (8)$$

$$TQ_{n,t} = \beta_0 + \beta_1 TDC_{n,t} + \beta_2 FS_{n,t} + \beta_3 SG_{n,t} + \mu_{n,t} \quad (9)$$

$$TQ_{n,t} = \beta_0 + \beta_1 TCC_{n,t} + \beta_2 FS_{n,t} + \beta_3 SG_{n,t} + \mu_{n,t} \quad (10)$$

Where the definition of explanatory variables has been given previously.

3.5 Mode of Estimation

The Generalized Least Square (GLS) panel model was used for the estimation. Panel data was retrieved from data on a cross-section of components for specific time frames. Here, the panel dataset is used due to the increase in

degree of freedom as a result of several data points and to reduce collinearity in the explanatory variables. Thus, enhancing the efficacy of economic computations. Moreover, individual heterogeneity as a result of unseen factors, which if ignored in cross-section estimations or time-series leads to biased results is controlled by panel dataset. The model is therefore given as;

$$Y_{n,t} = \beta_0 + \beta_1 X_{n,t} + \mu_{n,t} \quad (11)$$

Here, $\mu_{n,t}$ = random term and $\mu_{n,t} = \mu_n + v_{n,t}$ where μ_n is the SME specific effects and $v_{n,t}$ is a random term.

The estimates from the model whether fixed or random effects is selected based on the underlying assumptions. For instance, in fixed effects, the SME specific μ_n and the random term ($v_{n,t}$) are fixed factors and are computed together with other factors whereas the SME specific μ_n and the random term ($v_{n,t}$) are random with known disturbance in the random-effect model. However, a single-way component model for the disturbance is used for most panel applications. Here, $\mu_{n,t} = \mu_n + v_{n,t}$, where μ_n are the hidden SME-specific properties that are not captured in the modelling process and $v_{n,t}$ denote the outstanding noise in the model which differs per SME and time.

4. Results and Discussion

4.1 Summary Statistics Description

Table 1 presents the descriptive statistics of the variables employed in the study. SMEs in Tamale recorded an average SDC, LDC, TDC, and TCC of 0.3985, 0.0726, 0.5215, and 0.2425 respectively. Also. SMEs in Techiman recorded an average SDC, LDC, TDC and TCC of 0.2457, 0.1245, 0.8254 and 0.04258 respectively. For SMEs in Kumasi, an average SDC, LDC, TDC, and TCC of 0.7235, 0.1650, 0.5211, and 0.3124 were recorded respectively. Finally, Accra recorded an average SDC, LDC, TDC, and TCC of 0.3472, 0.1974, 0.5471, and 0.1824 respectively. However, the average total assets for Tamale, Techiman, Kumasi and Accra were valued at GHC 4.51e+08, GHC 8.58e+09, GHC 11.51e+10 and GHC 2.81e+14 respectively. The SG on the average for Tamale, Techiman, Kumasi, and Accra was 61.25%, 55.87%, 78.21%, and 85.47% respectively. In terms of the average gross profit margin (GPM), Tamale, Techiman, Kumasi and Accra recorded 42.51%, 51.47%, -142.15%, and -116.44% respectively. Mean return on assets of 9.28%, 8.25%, -12.78%, and -19.54% for Tamale, Techiman, Kumasi, and Accra were recorded respectively. The average value for the variables used for the study was statistically significant at 1% (except for Tobin's q and SG in Tamale and Techiman respectively which were significant at 5% level) significance level for Tamale and Techiman (see Table 1). However, variables for SMEs in Kumasi and Accra were significant at 1% level except for the performance variables GPM, ROA, and Tobin's q (see Table 1). The Tobin's q on the average for the listed SMEs in Tamale and Accra recorded 7.2578 and 12.2547 respectively.

Table I: Summary statistics

	Mean	Standard error	SD	t-statistics	p-value
Tamale					
SDC	0.3985	0.0159	0.2886	35.3753	0.0012
LDC	0.0726	0.0047	0.1813	7.8524	0.0000
TDC	0.5215	0.0243	0.3012	37.5127	0.0000
TCC	0.2425	0.0082	0.2365	23.5870	0.0001
SIZE	4.51e+08	1.25e+08	3.40e+09	4.2879	0.0014
SG	0.6125	0.4726	1.0612	11.8751	0.0000
GPM	0.4251	0.1314	2.1145	3.2578	0.0000
RoA	0.0928	0.0141	0.3357	6.1357	0.0000
Tobin's q	7.2578	2.4578	95.2541	0.8741	0.02874
Techiman					

SDC	0.2457	0.1247	0.2287	30.3458	0.0000
LDC	0.1245	0.0154	0.1725	9.5480	0.0000
TDC	0.8254	0.1240	0.3657	38.571	0.0025
TCC	0.4258	0.0185	0.3457	24.5582	0.0002
SIZE	8.58e+09	1.58e+09	4.62e+10	4.6241	0.0000
SG	0.5587	0.4725	1.1874	10.2872	0.0124
GPM	0.5147	0.1257	3.4215	3.2578	0.0013
RoA	0.0825	0.0512	0.3571	7.1825	0.0000
Kumasi					
SDC	0.7235	0.1285	0.2854	35.2546	0.0000
LDC	0.1650	0.0154	0.1751	7.5480	0.0000
TDC	0.5211	0.2154	0.3021	36.2487	0.0000
TCC	0.3124	0.0214	0.3547	26.5871	0.0000
SIZE	11.51e+10	2.25e+10	5.57e+09	5.2564	0.0001
SG	0.7821	0.8701	1.7258	11.6841	0.0005
GPM	-1.4215	1.1345	24.8254	20.5781	0.3240
RoA	-0.1278	1.1124	35.3874	23.8452	0.2154
Accra					
SDC	0.3472	0.0254	0.2824	29.7214	0.0000
LDC	0.1974	0.0247	0.3824	14.1542	0.0000
TDC	0.5471	0.1287	0.5147	29.1240	0.0000
TCC	0.1824	0.0925	0.2014	22.5471	0.0000
SIZE	2.81e+14	3.55e+ 21	7.25e+19	8.8214	0.0000
SG	0.8547	1.1278	24.8231	2.4210	0.0425
GPM	-1.1644	1.0798	22.2872	-1.0270	0.2815
RoA	-0.1954	1.4125	37.0542	-0.2141	0.7254
Tobin's q	12.2547	8.2874	192.357	1.5587	0.3457

4.2 T-test Results

To compare the ratios of debt of SMEs across the north and south of Ghana, the t-test of the hypothesis of equal means recorded t-test estimates of 2.9785, -7.9124, -5.7541, and 4.2578 at 1% significance level for SDC, SDC, TDC, and TCC ratio respectively (see Table 2). The results from the test reveal that capital structure is not equal or the same across the north and south of Ghana. This implies that capital structure varies significantly from north to south of Ghana. Therefore, we reject the null hypothesis that capital structure is the same across the north and south of Ghana. SMEs in the north are seen to incur higher SDCs and TCCs compared to SMEs in the south who are more likely to incur LDCs. For total debts, SMEs in Kumasi and Accra (southern Ghana) have more total debts present in their capital structure compared to Tamale and Techiman (northern Ghana) (see Table 2). Abor, J. (2007) noted that factors such as economies of scale, financial markets, and economic environments may be a cause of these variations.

Table II: Mean debt ratios between north and south of Ghana

City	SDC ratio	LDC ratio	TDC ratio	TCC ratio
Tamale (north)	0.3962	0.1487	0.3357	0.2689
Techiman (north)	0.3884	0.1458	0.3214	0.2748

Kumasi (south)	0.3572	0.2821	0.4124	0.2578
Accra (south)	0.3425	0.2347	0.5234	0.1857
Combined	0.3711	0.1528	0.3982	0.2468
Diff. North and South	0.0125	-0.0112	-0.1394	0.0501
t-statistics	2.9785 ***	-7.9124 ***	-5.7541 ***	4.2578 ****

NB: *** Significance at 1% level; Test: Ho: mean (Xi) north - mean (Xi) South = 0; Ha: mean (Xi)north - mean (Xi)South \neq 0 where Xi = measures of capital structure.

4.3 Relationship between Capital Structure and Performance

Table III: Regression results debts on GPM (Tamale)

Profitability: GPM								
Variable	N	Short-term debt	N	Long-term debt	N	Total debt	N	Trade credit
		SE		SE		SE		SE
SDC	-0.3215**	0.0128						
LDC		0.8514**	0.0678					
TDC			-0.2752*	0.0121				
TCC				-0.2980*	0.0117			
Log (size)	0.1247*	0.0013	0.1574*	0.0005	0.0391*	0.0225	0.0421*	0.0014
Log (SG)	0.0245**	0.0035	0.2147**	0.0019	0.0035**	0.0541	0.0657*	0.0117
R-Squared	0.6578		0.5784		0.7112		0.5847	
Adjusted R-squared	0.6046		0.5147		0.6965		0.5570	
F-statistics	214.254*		164.2254*		381.2564*		191.657	
Con	-0.45126*	0.0057	-0.3325	0.0078	0.1457*	0.0854	-0.5247*	0.0128

NB: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard Error

The study employed regression analyses to develop a relationship between performance and capital structure. We regressed different measures of performance and the measures of capital structure. The validity of random and fixed effects was tested using the Hausman test and the F-statistic. The study found the GLS regression to be the most appropriate and robust method to be used for the analysis. The study employed E-views version 12 for the computation. The results for the GLS heteroscedastic consistent panel regression for Tamale, Techiman, Kumasi and Accra are presented in Tables 3 – 6. For the regression results for SMEs in Tamale, Techiman, Kumasi, and Accra, GPM was used as a measure of performance. In terms of the effect of Short-term debts, SMEs from north to south of Ghana exhibit a significant and negative association with GPM (see Table 3-6). This implies that an increase in the amount of SDC will lead to a decrease in the GPM of the SMEs. Conversely, there is a positive and statistically significant relationship between LDC and GPM for SMEs in the North and South of Ghana. This means that SMEs with more LDC may accrue higher GPM. However, there was a statistically significant and a negative relationship between TDC, TCC, and GPM respectively for SMEs in the north and south of Ghana (see Table 3-6). Thus, an increase in TDC and TCC in the capital structure of SMEs will result in a decrease in GPM respectively.

For the control variables, the size and SG of SMEs in Tamale and Techiman were statistically significant and had positive relationships with GPM (see Table 3 and 4 respectively). However, size and SG of SMEs in Kumasi were statistically significant and had positive associations with GPM except for trade credit measure where SG had negative relations with GPM. The result for total debt of SMEs in Kumasi is positive and

insignificant (Table 5). On the other hand, size and SG of SMEs in Accra were statistically significant and had positive associations with GPM except for total debt and trade measure where size and SG had negative relations with GPM respectively (see Table 6). In terms of the model performance, R squared ranged from 57.84% - 71.12%, 35.14% - 55.14%, 60.21% - 71.05% and 57.21% - 64.40% for Tamale, Techiman, Kumasi and Accra respectively. For adjusted R-squared, performance ranged from 51.47% - 69.65%, 33.57% - 51.98%, 60.01% - 69.14% and 52.08% - 62.41% for Tamale, Techiman, Kumasi and Accra respectively.

Table IV: Regression results debts on GPM (Techiman)

Profitability: GPM								
Variable	N	Short-term debt		Long-term debt		Total debt		Trade credit
		SE	N	SE	N	SE	N	SE
SDC	-0.1245	0.0118						
LDC		0.8247*	0.0781					
TDC			-0.1812**	0.0087				
TCC				-0.2124*	0.1540**			
Log (size)	0.2271**	0.0751	0.0374*	0.0128	0.0115**	0.0125	0.1745*	0.1570
Log (SG)	0.0206*	0.1284	0.1424*	0.0254	0.1584**	0.0845	0.4572*	0.1247
R-Squared	0.4125		0.5514		0.5487		0.3514	
Adjusted R-squared	0.3824		0.5198		0.5127		0.3357	
F-statistics	225.5870*		151.2021*		325.2744*		188.0240	
Con	-0.5124*	0.0097	-0.3845	0.0475	0.1541	0.0429	0.4128	0.0524

NB: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard Error

Table V: Regression results debts on GPM (Kumasi)

Profitability: GPM								
Variable	N	Short-term debt		Long-term debt		Total debt		Trade credit
		SE	N	SE	N	SE	N	SE
SDC	-0.1452**	0.0147						
LDC		0.3657*	0.1578**					
TDC			-0.1784***	0.0287				
TCC				-0.2874*	0.1478			
Log (size)	0.5471**	0.0245	0.3871**	0.0041*	0.0348	0.0035	0.0874*	0.0254
Log (SG)	0.1240***	0.0178	0.4247	0.0047	0.0028*	0.0847	-0.0248**	0.0054
R-Squared	0.7105		0.6127		0.6021		0.6517	
Adjusted R-squared	0.6914		0.6524		0.6001		0.6254	
F-statistics	227.2341*		165.2807*		315.2587		189.2551	
Con	0.3157*	0.0875	-0.5427*	0.0547	0.01285*	0.1547	-0.2548*	0.0254

NB: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard Error

Table VI: Regression results debts on GPM (Accra)

Profitability: GPM								
Variable	N	Short-term debt	N	Long-term debt	N	Total debt	N	Trade credit
		SE		SE		SE		SE
SDC	-0.3874***	0.0057						
LDC		0.2874**	0.0174					
TDC			-0.2791**	0.0074				
TCC				-0.4471***	0.0658			
Log (size)	0.0514**	0.0687	0.0174	0.0147	-	0.0214	0.0245***	0.0475
					0.0174**			
Log (SG)	0.0547*	0.0115	0.0487**	0.0257	-	0.0084	-0.0278***	0.0555
					0.0335**			
R-Squared	0.5782		0.5680		0.6440		0.5721	
Adjusted R-squared	0.5425		0.5597		0.6241		0.5208	
F-statistics	112.5870**		18.4715**		156.8547		156.9554**	
							*	
Con	0.2824***	0.1357	0.2147***	0.2477	0.3865**	0.0358	0.0827*	0.0200
					*			

NB: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard Error

Table 7-10 present the results from the regression model utilizing the RoAs as the degree of performance. For Tamale, Table 7 reveals a negative association between all degrees of capital structure and RoA at different significant levels. Similar trend was revealed in SMEs in Techiman (see Table 8). However, there was a positive relationship between size and SG and trade credit respectively. Here, employing high debt policy for SMEs in Tamale and

Table VII: Regression results debts on RoA (Tamale)

Profitability: RoA								
Variable	N	Short-term debt	N	Long-term debt	N	Total debt	N	Trade credit
		SE		SE		SE		SE
SDC	-0.2751*	-0.1150**						
LDC		-0.1573*	0.0214					
TDC			0.0214					
TCC			-0.0774***	0.0042				
Log (size)	-0.0187***	0.0114	-0.0152**	0.0117	-0.0081*	0.0892	-0.0478***	0.0514
Log (SG)	0.0011	0.0024	0.0099***	0.0127	0.2358**	0.0111	0.0230*	0.0874
R-Squared	0.4424		0.3925		0.4540		0.3524	
Adjusted R-squared	0.4512		0.3875		0.4104		0.3341	
F-statistics	77.1178**		71.5721*		78.2547**		79.2541	
Con	0.3581*	0.0357	0.3584**	0.0288	0.3027*	0.0247	0.3781*	0.3145

NB: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard errors

Techiman is likely to result in lower profitability (RoA). Thus, lower profitability in terms of return on assets is expected to occur when SMEs in the north adopt high debt policy. This also implies that an increase in debt proportion of the capital structure of SMEs is likely to cause bankruptcy and this has the high propensity to negatively affect return on assets. The over-leveraging of SMEs as a result of conflicts of agency, will adversely affect the performance of SMEs. This confirms the findings of (Gleason, K. C., Mathur, L. K., & Mathur, I. 2000; Abor, J. 2007). For SMEs in Tamale and Techiman, the size of SMEs was statistically negative association with RoA for all measures of debt in Tamale. However, firm size had a negative relationship with RoA for SDC and LDC while recording a positive relationship with RoA for TDC and TCC respectively in Techiman. SG shows a positive association at different significance levels (see Tabel 7) for all the debt measures except for SDC which was not statistically significant at conventional levels in

SMEs in Tamale. For the case of Techiman, SG reveals a positive relationship at different significant levels (see Table 8) with RoA for all the measures of debt. In Kumasi, Table 9 shows a negative association between SDC, LDC, TDC, and RoA respectively at 1% significance level. This implies that an increase in SDC, LDC, and TCC leads to lower profitability in SMEs in Ghana. Thus, the pursuant of high proportions of SDC, LDC, and TDC may lead to a decrease in RoA. However, there is a positive relationship between TCC and RoA. Therefore, TCC with lower interest rate has the high propensity to increase levels of profit. This is in line with the findings of (Gleason, K. C., Mathur, L. K., & Mathur, I. 2000; Fama, E. F., & French, K. R.1998). The results reveal a negative relationship between firm size and the measurement of RoA for SDC, LDC, TCC, and TDC. However, there was a positive relationship between SG and the measurement of RoA for SDC, LDC, TCC, and TDC. For the case

of Accra, Table 10 shows a positive relationship between SDC, TCC, and RoA at 1% significance level respectively. This reveals a proportional relationship between SDC, TCC, and RoA respectively. Thus, when SMEs in Accra pursue a high SDC strategy in their capital structure, the impact on RoA may be high. However, LDC and TDC recorded a negative relationship with RoA. Similarly, the size of firms and the measure of RoA for SDC, LDC, and TDC recorded a negative association at 5%,1%, and 1% significance levels respectively. Also, SG had negative relations with the measure of RoA for SDC and TDC at 1% and 5% significance levels respectively (see Table 10).

Table VIII: Regression results debts on RoA (Techiman)

Profitability: RoA								
Variable	N	Short-term debt		Long-term debt		Total debt		Trade credit
		SE	N	SE	N	SE	N	SE
SDC	-0.8541*	-0.9810*						
LDC		-0.1147**	0.0178					
TDC			0.0484					
TCC			-0.1478**	0.0017				
Log (size)	-0.0871***	0.0874	-0.0178**	0.0478	0.0547**	0.0847	0.0187***	0.0847
Log (SG)	0.0178*	0.0547	0.0578**	0.0257	0.0157**	0.0157	0.0874*	0.0478
R-Squared	0.4827		0.4351		0.4124		0.5147	
Adjusted R-squared	0.4125		0.4102		0.3927		0.5014	
F-statistics	79.286*		86.7271**		78.5813**		79.2570	
Con	0.3451	0.0578	0.4215**	0.0347	0.3487*	0.1475	0.4257***	0.0478

NB: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard errors

Table IX: Regression results debts on RoA (Kumasi)

Profitability: RoA

Variable	N	Short-term debt		Long-term debt		Total debt		Trade credit
		SE	N	SE	N	SE	N	SE
SDC	-0.1438***	-0.3145						
LDC		-0.2879***	0.0124					
TDC			-0.5147					
TCC			0.5081**	0.0846				
Log (size)	-0.0214***	0.1472	-0.3548***	0.2987	0.0871***	-0.0874	-0.0214***	0.0145
Log (SG)	0.0178	0.0781	0.0175***	0.3571	0.1038***	0.0154	0.0140*	0.0145
R-Squared	0.4581		0.5721		0.5624		0.4928	
Adjusted R-squared	0.4124		0.5522		0.5417		0.4714	
F-statistics	84.2614*		95.2651***		85.2253*		73.5485	
Con	0.3701**	0.0265	0.3854**	0.0245	0.3003**	0.0220	0.3534**	0.4872*

NB: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard errors

Table X: Regression results debts on RoA (Accra)**Profitability: RoA**

Variable	N	Short-term debt		Long-term debt		Total debt		Trade credit
		SE	N	SE	N	SE	N	SE
SDC	0.3847***	0.0874						
LDC		-0.3897**	0.0547					
TDC			-0.0421***	0.0071				
TCC				0.0267**	0.0084			
Log (size)	-0.1247**	0.0057	-0.0879***	0.0019	-0.0495***	0.0056	0.0416*	0.0078
Log (SG)	-0.1458***	0.0015	0.0018**	0.0048	-0.0154**	0.0084	0.0886**	0.0087
R-Squared	0.6987		0.6587		0.5901		0.5567	
Adjusted R-squared	0.6845		0.6212		0.5713		0.5357	
F-statistics	198.4570***		28.0887***		60.8058***		79.7459*	
Con	1.8741**	0.4751	1.5785**	0.1573	0.9831*	0.5144	-0.1152**	0.0184

NB: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard errors

Table XI: Regression results debts on TQ (Tamale)**Profitability: TQ**

Variable	N	Short-term debt		Long-term debt		Total debt		Trade credit
		SE	N	SE	N	SE	N	SE
SDC	-0.5874*	0.0481						
LDC		-0.9578*	0.0871					
TDC			-0.6117**	0.0724				

TCC				0.1881*	0.1148			
Log (size)	0.4510*	0.0081	0.1760**	0.0689	0.0798***	0.0547	0.2528***	0.1159
Log (SG)	0.1824**	0.0871	0.0247**	0.0547	0.1547**	0.0125	0.2375**	0.1574
R-Squared	0.6578		0.5698		0.4452		0.5782	
Adjusted R-squared	0.6816		0.5481		0.4256		0.5624	
F-statistics	88.8238*		85.6476***		49.0158*		92.7854***	
Con	0.2887*	0.1578	-0.1578	0.1725	0.2897**	0.1782	0.1448	0.1891

NB: *, **, *** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard errors

4.4 Impacts of the selected measure of capital structure on Tobin's q (TQ)

The analysis considered only listed SMEs in Tamale and Accra. This was conducted to assess the implications of the selected measure of capital structure on TQ in northern and southern Ghana respectively. Table 11 and 12 presents the results of the analysis for Tamale and Accra respectively. For the listed SMEs in Tamale, the results reveal a negative association between SDC, LDC, TDC, and TQ (Table 11). This shows that an increase in SDC, LDC, and TDC will lead to a reduction in

TQ. However, there is a positive relationship between TCC and TQ. This implies that an increase in TCC in the debt structure of SMEs has the high propensity to positively affect their TQ.

For SMEs in Tamale, TQ is likely to increase when there is an increase in firm size and SG. For SMEs in Accra, TQ recorded a positive association with SDC, TDC, and TCC at different significance levels (Table 12). However, there was a negative relationship between TQ and LDC. This means that whereas an increase in SDC, TDC, and TCC in the debt structure of SMEs in Accra positively affects their TQ, the same increase in LDC will lead to a decrease in TQ. Thus, SMEs in Accra employing more SDC, TDC, and TCC is more likely to trigger improvement in their TQ. However, pursuing more LDC would have a negative effect on the TQ value of the SMEs in Accra. Moreover, large size of SMEs, as well as high SG, is likely to cause improvement in the TQ.

Table XII: Regression results debts on TQ (Accra)

Profitability: TQ								
Variable	N	Short-term debt		Long-term debt		Total debt		Trade credit
		SE	N	SE	N	SE	N	SE
SDC	0.4215***	0.4121						
LDC		-0.8547***	0.1784					
TDC			0.7148***	0.6481				
TCC				1.1984***	0.0871			
Log (size)	0.1587**	0.4127	0.2457***	0.0278	0.0277** *	0.2471	0.4781***	0.1872
Log (SG)	0.5871***	0.0147	0.1872**	0.0214	0.2176** *	0.0547	0.1247**	0.1781
R-Squared	0.7121		0.6120		0.5921		0.5612	
Adjusted R-squared	0.6912		0.5981		0.5725		0.5547	
F-statistics	98.9247***		91.3241**		47.0178* **		93.8485** *	
Con	0.2471*	0.2487	-1.1547*	0.1754	0.2745	0.1587	0.2147	0.4125

NB: *,**,*** indicate significance at levels of 10%, 5% and 1% respectively; SE = Standard errors

5. Conclusions

The study assessed the association between debt performance and policy of SMEs in northern and Southern Ghana from 2010 – 2021. The results from the T-test reveal that capital structure is not equal or the same across the north and south of Ghana. Also, findings of the study reveal that SMEs from north to south of Ghana exhibit a significant and negative association with GPM in terms of the effect of Short-term debts. Conversely, there is a positive and statistically significant relationship between LDC and GPM for SMEs in the North and South of Ghana. However, there was a statistically significant and a negative relationship between TDC, TCC, and GPM respectively for SMEs in the north and south of Ghana. For SMEs in Tamale and Techiman, the findings reveal a negative association between all measures of capital structure and RoA at different significant levels. However, there was a positive relationship between size and SG and trade credit respectively in Techiman. For SMEs in Kumasi, the findings reveal a negative association between SDC, LDC, TDC, and RoA respectively. However, there was a positive relationship between TCC and RoA. In Accra, the results show a positive relationship between SDC, TCC, and return on assets at 1% significance level respectively. However,

LDC and TDC recorded a negative relationship with return on assets. For the listed SMEs in Tamale, the results reveal a negative association between SDC, LDC, TDC, and TQ. However, there is a positive relationship between TCC and TQ. TQ recorded a positive association with SDC, TDC, and TCC at different significance levels. However, there was a negative relationship between TQ and LDC.

Furthermore, the results indicate that the prevalence of control variables can substantially affect the performance of SMEs. Thus, capital structure such as LDC and TDC have negative effects on SMEs' performance. This negative association signifies the averse nature of most SMEs to employ more equity out of fear of losing control and as a result utilize more debts in their capital structure than necessary. Agency conflicts are amongst one of the major factors for incurring more debts, however, excessive debt is likely to negatively affect the performance of SMEs resulting in high bankruptcy costs. Therefore, equity components are to be employed more in the capital structure of SMEs to totally reduce or avoid adverse impacts of high debts that may affect the performance of SMEs

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