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Capital Structure and Performance of Listed Banks in Ghana

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Abstract - In this paper, we empirically investigate the relationship between capital structure or leverage and performance of listed bank in Ghana from 2000 to 2010. Data was collected from Ghana stock exchange and annual report of the listed banks. Panel regression methodology was used to analyse the data.

The result revealed that the banks listed on the Ghana Stock Exchange are highly geared and this is negatively related to the banks performance. The study shows that there is high level gearing among listed banks. This can be attributed to their over dependency on short term debt as a result relatively high Bank of Ghana Lending rate and low level of bond market activities.The regression result also revealed that capital Structure is inversely related to performance of the listed bank in terms of return on Equity and Tobin's q.

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Capital Structure and Performance of Listed Banks in Ghana

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Abstract - In this paper, we empirically investigate the relationship between capital structure or leverage and performance of listed bank in Ghana from 2000 to 2010. Data was collected from Ghana stock exchange and annual report of the listed banks. Panel regression methodology was used to analyse the data.

The result revealed that the banks listed on the Ghana Stock Exchange are highly geared and this is negatively related to the banks performance. The study shows that there is high level gearing among listed banks. This can be attributed to their over dependency on short term debt as a result relatively high Bank of Ghana Lending rate and low level of bond market activities.The regression result also revealed that capital Structure is inversely related to performance of the listed bank in terms of return on Equity and Tobin's q.

It is therefore, recommended that listed banks should intensify their efforts to rely on internally generated funds as their source of finance. In addition, the Government of Ghana should liaise with the stakeholders in the financial sector in order to develop bond market to enables the banks to raise long-term debt so as to avoid over-reliance of short-term debt which is associated with high cost. Furthermore, increased tax relief for the listed banks is likely to enable them to increase their retain earning and reduce reliance on debt consequently improve internal investment and performance.

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I. Introduction

One of the most important reference theories in enterprises financing policy is the theory of capital structure. The capital structure of an enterprise is the mix of debt including preference stock and equity; this is referred to as the firms' long term financing mix, Watson and Head (2007). Capital structure decision is fundamental for any business organization because of the need to maximize return to the various stake holders and also because of the fact that such decision has great impact on the firms' ability to deal with competitive environment. One crucial issue confronting managers today is how to choose the combination of debt and equity to achieve optimum capital structure that would minimize the firm's cost of capital and improves return to owners of the business. Even though generally firms have a choice as to how to combine debt and equity, managers attempt to ascertain a particular combination that will maximize profitability and the firm's market value. The kind of combination of debt and equity that will minimize the firms cost of capital and hence maximizes the firm's profitability and market value is the optimal capital structure. Unfortunately, financial managers do not have a clear cut guideline that they can consult when taking decision in connection with optimal capital structure. The idea of modern theory of capital structure is the path breaking contribution of Modigliani and miller (1958) under the perfect capital market assumption. Modigliani and miller (1958) assumed that under condition of no bankruptcy cost and frictionless capital markets without taxes firm's value is independent of its capital structure.

Another school of thought holds the view that financing choice reflects an attempt by corporate managers to balance tax shield of greater debt against potential large cost of financial distress arising from under investment. However if too much debt can destroy firm's value by causing financial distress and under investment then too little debts can also leads to overinvestment and negatively affect returns particularly in large and mature firms (Barclays and Smith, 2005).The choice of capital structure and its resultant optimal risk exposure is very paramount in economic performance of every company. This is because the choice (Debt or Equity) should ultimately result in the growth in the value of investment made the various categories of investors particularly equity investors (Watson and Head, 2007),

This is important because of the fact that equity investors have greater expectation of returns on their investment in the form of higher dividends and capital gain (Sulaiman 2001). Any result contrary to this expectation will compel holders of equity shares disposing off their share holding which can lead to the fall in the share price of the company. The fall in share price will send a signal to potential investors of the poor performance of the company and thereby deterring potential investors from investing both in equity stock and debt.

A number of theories have been advanced to explain the capital structure of firms. However, there is lack of consensus among researchers of financial

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management as regard the optimal capital structure. The variations in the various theories being propounded to inform such all important decision further make capital structure crucial. Thus capital structure decision is very critical, particularly in relation to performance of a firm in terms of profitability and value of the equity.

In Ghana, number of studies has been conducted to examine the determinants of capital structure and profitability. However, none of this was specifically directed towards listed bank in Ghana. Abor (2007) compares the capital structures of publicly quoted firms, large unquoted firms, and small and medium enterprises (SMEs) in Ghana with panel data regression. The results show that quoted and large unquoted firms exhibit significantly higher debt ratios than do SMEs.

Abor (2005) also studied the link between corporate governance and the capital structure decision of SMEs. He specifically assesses how the adoption of corporate governance structures among Ghanaian SMEs influences their financing decisions by examining the relationship between corporate governance characteristics and capital structure using regression model. The results generally suggest that SMEs pursue lower debt policy with larger board size. However, SMEs with higher percentage of outside directors, highly qualified board members and one-tier board system were observed to employ more debt. His study made it that corporate governance structures influence the financing decisions of Ghanaian SMEs. Amidu,(2007) adopted panel data analysis to examined determinants of capital structure of banks in Ghana. None of these studies examine capital structure and its influence on firm's performance. Thus this study aimed at contributing to the debate on capital structure by examining the relationship between capital structure and firms performance in terms of return to equity, return on Asset and Tobin's q.

II. Methodology

This study employed data on banks listed on the Ghana Stock Exchange over a period of ten years spanning from 2000 to 2010. The data were collected from different sources including audited accounts of the listed banks as well as from the fact book of the Ghana Stock Exchange. These banks are: Ecobank Ghana Ltd., Ghana Commercial Bank, Cal Bank Ltd, SG-SSB Limited, HFC Bank Ltd. Standard Chartered Bank and UT Bank Ltd.

Data was analysed using both qualitative and quantitative approach. In case of qualitative approach descriptive statistical was used to compare variables numerically and to ascertain a pattern in the data set. According to Saunder et al (2007), every statistics to describe a data is usually summarizes the information in the data by disclosing the average indicators of the variables used in the study.

For the qualitative analysis panel regression method was used. Panel data was developed and used for the study as it increases efficiency by combining time series and cross-section data. Panel data involves the pooling observations on a cross section of units over several time periods. Furthermore, panel data facilitates identification of effects that cannot be detected using purely cross- section or time series data To reveal the relationship between capital structure and firm's performance, the estimation procedure used by Kuznetsov and Muravyev (2001) was adopted and modified as:

$$Y_{it} = \alpha_i + \beta_1 X_{it} + e_{it}$$

Where,

- Y_{it} is performance measure,(Tobin's Q, ROE and ROA)
- αi = refers to time-invariant firm-specific effects
- X_{it} are the independent variables
- β_1 coefficients
- e_{it} is a random disturbance.

Based on the above general model the effect of capital structure on performance of listed banks was evaluated using the model outlined below.

ROEit = ßo + ß1 LEVit + ß2SIZEit+ ß3CLBit +B4AGEit + B5BOSit + B6CAPit +eit (1)

ROAit = ßo + ß1 LEVit + ß2SIZEit+ ß3CLBit +B4AGEit + B5BOSit + B6CAPit + eit (2)

TOBQit = ßo + ß1LEVit + ß2SIZEit + ß3CLBit + B4AGEit+ B5BOSit + B6CAPit + eit (3)

Where:
ROAit = ratio of pre- tax profits to total asset for firm i in period t
TOBQit = ratio of Market Capitalization to book value of Assets for firm i in period t
LEVit = ratio of total debt to total capital for firm i in period t
FIRMSIZEit = natural log of total Revenue for firm i in period t.
DEBTit = Short-term liabilities of the firm i in period t
AGEit = age of firm i in period t.
BODSIZEit = Board Size of the firm i in period t.
MCAPit =Market Capitalization of the firm i in period t
eit = the error term

a) Choice of variables

The concept of enterprise performance allows many interpretations (Mesquita and Lara,2002) In applied studies it is common to associate improvements in firm performance with increased profitability, higher efficiency, and increased output (Myres, 2001). There are a range of performance indicators that can be used to measure performance. The choice of a particular measure is the prerogative of the researcher and subject to the availability of appropriate data. It should be stressed that no one of possible performance indicators can be given the absolute priority. It may be advantageous to employ several measures rather than select a single one relying on subjective assumptions about their appropriateness. For instance Kuznetsov and Muravyev (2001) employed labor productivity, profitability, and Tobin's Q as proxies for performance. In this study we considered three performance measures namely return on assets (RoA), Return on Equity (RoE) and Tobin's Q.

This choice is motivated by the assumption that these indicators may have different interpretations regarding firm's performance. Return on assets is calculated by dividing income after tax by total assets and Return on Equity is calculated by dividing income after tax by book value of equity shares. Tobin's q is the ratio of market values of equity to the book value equity. Market capitalization is used as proxy for the market value of equity shares.

The independent variables include capital structure variables, which are calculated as debt to equity. In addition control variables are included in order to prevent spurious regression. Control variables included in this are size of the firm, age of the firm, the square of age, current liability, board size and the square of board size.

III. Results and Discussion

a) Descriptive Statistics

Table 1 below is a summary of descriptive statistics of the dependent and explanatory variables depicting the average indicators of variables computed from the financial statements. The dependent variables computed are TOBIN'S Q (TOBQ), Returns on Equity (ROE) and the Return on Assets (ROA).

Table 1 : Descriptive statistics of variables.

Variables	Mean	STDEV	Min	Maximum
TOB Q	0.440	0.3226	0.0856	1.8067
Return on Equity	0.257	0.1184	0.0740	0.6138
Return On Asset	0.043	0.0168	0.0107	0.0792
Leverage	0.870	0.0294	0.8000	0.9200
Current liability	19.201	1.5850	15.1441	21.3050
Board size	9.023	1.8674	7.0000	13.0000
Firm Size	18.062	0.0860	16. 2283	19.8934
Market capitalisation	18.817	0.9613	17.2628	20.6455
Age	37.501	33.5386	9.0000	114.000

Source : Constructed from the financial statements of the listed banks (2000-2010)

The Tobin's q (TOBQ) measured by the bank's market capitalization to the book value of total asset has a mean value of 44.04% and that of the Return on Equity (ROE) measured by firms after tax profit divided by Equity of the listed banks is 25.8%.

However the mean for Return on Asset (ROA) measured by the firm pre-tax profit divided by the total asset shows an average return of 4.38%. The Return on Asset measures how effective the firm utilizes its fixed asset in making earnings. That is earning per unit of a given asset. Thus, when this is a higher ratio, it is an indication of a better performance as regard to the utilization of the assets of the firm. The ratio of 4.35% indicates that for every GH¢100.00 invested in asset the average return is GH¢4.35, this is a relatively low performance indicator. The ROE with the average of 25.8% suggest a remarkable average performance of the firms in respect of amount of investment by the equity shareholders. It indicates net income per cedi invested by the equity shareholders. The 25.8%

indicates that for every GH¢100.00 invested by shareholders average net earnings of GH¢25.80 is accrued to the equity holders of the seven listed banks. This suggests a higher efficiency of the capital invested by owners considering the present level of inflation and the Government of Ghana risk free interest rate.

Tobin's q (measured as the ratio of market capitalization to the book value of asset) measures the ability of the firm to replace its asset. The average Tobin's q for the period under study is 44.04% with a standard deviation of 32.26%. The results shows that the average bank listed on the Stock Exchange achieves a Tobin's Q of 44.04% and the deviation of 32.26% indicates that majority of the listed banks were not able to achieve the average Tobin's q. The standard deviation of the ROA is 1.68%. This confirms further that majority of the banks listed on the GSE actually are not performing very well with respect to utilization of asset which averages 4.35%. The standard deviation of the ROE is 11.8% indicating that those listed banks that are able to achieve this average Return on Equity if 25.8% is less than 50% of the total banks listed.

The explanatory variables include leverage, current liability, size of the firm, market capitalization, board size and Age of the firms.

The variable leverage measures the ratio of total debt to equity capital of the bank.. This is the indication of the firms' level of debt in relation to the total capital of the firm. The average leverage value is 87%. This means for every GH¢100.00 worth of capital, debt component is GH¢87.00 indicating that firms listed on the Exchange are highly geared. The standard deviation of the leverage variable of 2.9% indicates that majority of the banks on the Exchange achieved this average leverage level. This level is very characteristic of Banks who rely mostly on deposits by customers in generating their revenue hence the high leverage level. This is further confirmed by the minimum and maximum leverage levels which stood at 80% and 92% respectively.

Current Liabilities, which is determined as debts fallen due within one accounting year has an average of 97.96%. This means that on average the banks listed on the Ghana Stock Exchange have average of 98% of their debt level as being short-term.the banks thus heavily rely on short term debt the cost of which is very expensive.

The board size of the firm and the firm's size measured respectively as the number of members on the board and the firms have average of 9.0 with respective standard deviations of 86.0%. This means majority of the banks listed on the Exchange do not achieve the stated averages. Market Capitalization measured as share price multiply by the outstanding number of shares and Age of the listed banks during the period under review have averages of 18.82 and 27.5 respectively.

b) Regression result

The variables were transformed by natural log to ensure the smoothness of the variables. Preliminary tests for normality and linearity were conducted for the variables. In addition these were a test for multicolinearity among the variables using Variance Inflation Factor (VIF) values and Inverse of Variance Inflation Factor (1/VIF). The test for multicollinerity indicated and absence of multicollinearity among the variables as the VIF did not exceed 20, and similarly the 1/VIF was not less than 0.05. The three dependent variables of ROE, ROA and Tobin's q were separately regressed against the independent (explanatory) variables. The results of the three regressions are presented in Table 2.

Table 2 : Regression results.

	Return on Equity (a)		Return on Asset(b)		Tobin's q (c)	
Independent variables	Coef	Std. Err.	Coef	Std. Err.	Coef	Std. Err.
Capital structure	-0.0027**	0.0012	-0.0433	0.0294	-0.0023*	0.0012
Age	-0.0788	0.0479	-2.2302**	0.9993	-0.0788	0.0479
Board size	-0.0076	0.2123	7.8594	4.9066	-0.0073	0.2123
Total Revenue	0.9815***	0.0062	0.3418***	0.0546	-0.0184***	0.0062
Market capitalisation	-0.0021	0.0020	-0.0925**	0.0465	0.0979 ***	0.0020
Age Squared	0.0106*	0.0063	0.3047	0 .1318	0.0106 *	0.0063
Current Liability	-0.0004	0.0024	-0.1822***	0.0467	-0.0003	0.0024
Cons	0.5096	0.2627	-8.1873	6.1115	0.5096	0.2627

R-sq:	within	0.8998	0.7983	0.7999
	between	0.8993	0.9088	0.8910
	overall	0.8898	0.7998	0.8999
Wald chi2(7)		115545.50	121.45	512780.17
Prob > chi2		0.0000	0.0000	0.0000

**** Significant at 1%; ** Significant at 5%; * Significant at 10%*

Source : Ghana Stock exchange (2000-2010)

Table 2 (a) reports regression results between Return on Equity (ROE) and the explanatory variables. R2 indicates that 88.98% of the firm's Return on Equity is explained by the variables in the model. The model is statistically significant at 1% level. From Table 2 (a) capital structure (leverage) has a co-efficient of -0.0023 with p-value of 0.069 which is greater than 0.05. This means that there is a negative relationship between leverage and return on equity, however, this relationship is statistically significant at 10% level of significant.

Due to the high cost of debt as the banks employs a higher proportion of debt, this increase their interest payment consequently reduces their profit level. Since ROE is a ratio of after tax profit to owners equity, the lower profit as a result of interest payment tend to reduce the ROE, this has accounted for the observed relationship.

In addition as the banks employ more debt they are prone to indirect bankruptcy cost such as loss of sales and goodwill and may find it difficult to attract additional funds. For instance if a bank is perceived to be near bankrupt, they may lose existing client and may not be able to attract new client because of the possibility that they may lose their savings with the bank. The other control variables in the model namely the firm size (represented by total assets), Age, Board size, and market capitalization all exhibited a negative relationship with return on equity (ROE). However, only board size and total revenue exhibit statistical significant relationship with the dependent variable.

Table2 (b) shows the regression results of return on asset (RoA) against six explanatory variables. The R2 of 0.7998 indicates that 79.98% of the variation in the return on asset can be explained by the variation in the explanatory variables in the model. This results also indicate that there is a negative but statistically insignificant relationship between capital structure and banks performance as measured by RoA . The age of the firm, market capitalization and current liability also exhibit significant but negative relationship with return on asset. This result showed that a cedi increase in current liability would lead to about 18% decrease in return on asset. Furthermore, Tobin's q was used as a performance variable to evaluate the effect of capital structure on the performance of listed banks. The result is presented in Table 2 (c). The result indicates that 98.99% of the variation in Tobin's q can be explained by the variations in the explanatory variables in the model. The results show a negative but statistically significant relationship between capital structure and bank's performance as measured by Tobin's q. with a coefficient of 0.023. Thus a unit increase in the capital structure lead to a reduction in Tobin's q by 2.3%.. The control variables which are significant in this model are firm size and market capitalization. Based on the result a unit increase in firm size and market capitalisation would lead to 1.8% and 9.9% increase in Tobin's q respectively.

IV. Concluding Remarks

The first observation made was that the average capital structure of the listed Banks on the Ghana Stock exchange was 87% over the period under review implying the banks listed on the Exchange are highly geared. The high level of gearing observed amount the banks can be attributed to their over dependency on short term debt as a result relatively high Bank of Ghana Lending rate and low level of bond market activities. The gearing of these banks was as results of their over dependency on short term debt. Of the 87%, average gearing, short –Term liability constitute 86.61% of the total this (75% of total capital) whilst the remaining 23.39% being long Term Debt.

One of the reasons for the bank dependency on short term loan was the relatively high Bank of Ghana lending rare which makes the banks rely on short-term loan debts (mostly customer's deposits). In addition the bond market in Ghana is not properly developed to attract the banks to opt for long- term debt. The Study also revealed that capital Structure is inversely related to performance as revealed by the regression results of return on Equity and Tobin's q. It is important that listed Banks intensify their efforts to rely on internally generated funds to finance their operational activities. Even where external debt would be used, the banks should search for low interest-bearing loans so that the tax shield benefit of the loan will exceed the financial distress associated with it. In future, the Government of Ghana should liaise with the stakeholders in the financial sector in order to develop bond market to enables the

banks to raise long-term debt so as to avoid over-reliance of short-term debt which is associated with high cost. In addition, increase in tax relief is likely to enable the banks to have enough profit after tax that would increase retain earnings to improve internal investment.

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