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TOPIC

"The Impact of Financing Structure and Macroeconomic Variables on Profitability of listed

Ghanaian banks"

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ABSTRACT

The sustainability of banks profitability is very important to national economy. This is because banking institution serves as financial intermediary and hence supports the flow of funds from the borrower to the user of fund to grow economic activities. However banks profitability is affected by various variables both internal and internal. Some of these may be control by the banks whiles other may not be controlled internally.

To investigate the impact of financial structure and macroeconomic variables on listed banks profitability in Ghana, secondary financial data of all the seven (7) listed banks were collected from the Ghana Stock Exchange. The profitability variables or ratios used are return on equity (ROE), return on asset (ROA) and net profit net interest margin (NIM). The financial structure components considered are the long-term debt to the total capital; short-term debt to total capital. The macroeconomic variables include the GDP, inflationary rate and the Exchange rate (GH¢ per US$). A correlation matrix was run using SPPS regression tool with profitability ratios as the dependent variables whiles the macroeconomic and the financial structure variables are considered as the independent variables.

The results were mix: the ROA is negatively related to both total debt and short term debt and the relationship are significant. However, ROA is positively related to long term debt but not statistically significant. ROA is also negatively related to GDP and not statistically significant. ROA is positively related and statistically significant to exchange rate. Again, inflation is positively related to ROA but not significant.

ROE on the other hand is statistically significant and positively related to short term debt and total debt. Exchange rate, long term debt is negatively and significantly related to ROE while inflation is positively but insignificantly related to ROE. However, ROE is insignificantly but negatively related to GDP.

Net Interest Margin (NIM) is significantly and positively related to short term debt but insignificantly and positively related to inflation. NIM is, however, significantly and negatively related to total debt. This implies that an increase in sales growth, total debt and firm size is likely to result in a fall in NIM. Also, exchange rate, GDP and long term debt are negatively and insignificantly related to NIM. It is important to note that negative relationship between dependent variable and independent variable implies that if the dependent variable increases then the independent variable decreases.

Ghanaian banks take advantage of the high inflation regime to increase cost of borrowings to their valued customers to increase their net interest margin and hence increase profitability while strategically using short-term debt in their financial structure to avoid paying long-term high cost of borrowings which will economically destroy shareholders value. Again the banks also increase their assets base as the economy grows (GDP) to improve their profitability in terms of returns on equity through higher banks size to meet all customers and economic activities

The study provides an empirical conclusion that listed Ghanaian banks use 80.23% debt and 17.77% equity hence the capital structure of Ghanaian banks is hugely skewed toward debt. However, the debt structure of listed Ghanaian banks indicates more than 70% short term debt and less than 9% long term debt. Thus the impact of capital structure and

macro-economic variables on profitability of Ghanaian listed banks is such that short term debt positively influences profitability and long term debt negatively affects profitability.

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Chapter 1- Introduction

1.1 Background

Profit is the lifeblood of business, without which no business can survive in a competitive market. Sustainable profits must be earned to ensure the survival of business, its growth and expansion over time and in turn develop national economy. The ability to improve profitability by business leadership depends on not only their skills and experiences but also the understanding of the economic context of the country they are operating.

Financing structure and macroeconomic variables have significant influence on bank profitability. Financial structure deals with the combination of debt and equity in financing the operations of firms. Profitability and efficiency ratios such as return on assets (ROA), net interest margin (NIM), and return on equity (ROE) are all influenced by debt which is a key component of the capital structure. How much of debt that is used to finance the operations of the banks is crucial since banks are highly levered for depending on deposits of savers. Debts contribute significantly in financing long term assets that generate revenue for companies, and how debt is utilized to generate profit indicates the efficiency of management. Stakeholders may be concerned about a firm's financial health even when liquidation is unlikely.

According to Brander and Lewis, (1986) and Maksimovic, (1986) high debt firm may be aggressive and increase it outputs. However Opler and Titman (1994) also found that highly leverage firms lose market share to more conservatively financed competitors during industry downturns, when high leverage is likely to lead to financial distress. This implies that banking firms with high leverage would underperform due to its vulnerability to fierce competition and high cost of borrowing especially during a high inflationary rate or interest rate regime. According to Sharpe (1995) the cyclical nature of labor force is positively related to its degree of financial leverage: Sustainable profitability of a banking firm depends largely on the quality of management that it attracts, and many of the best managers choose to work for a company that provides better future opportunities over one that pays more but offers few opportunity for advancement. This implies that high debt may lead to not getting skilled team to manage the affairs of the bank and hence leading to inefficiency and overall poor profitability.

Macroeconomic variables such as inflation and gross domestic products have implications on debt hence the capital structure. During high inflation regime interest rates rise leading to high cost of borrowing which in turn affects the financial structure though net interest income of banks may increase. It is therefore inconclusive to study the financial performance of banks in Ghana without looking at it from capital structure perspective.

According to Demirgüç-Kunt and Huizinga (1998), and Bikker and Hu (2002) there is a positive correlation between bank profitability and the business cycle. This implies that, banks' profitability increases during economic boom periods and decreases during recession, all things been equal. During economic boom (high GDP) period, more jobs are created thereby reducing unemployment. This leads to more savings at the bank and high spending because they can afford. Both individuals and businesses borrow from the banks increasing profit from net income margin of banks. Contrary, at the recession (low or declining GDP) period, businesses contract whiles unemployment increases resulting in low borrowing and high default rate leading to banks' poor performance records.

The extent to which inflation affects bank profitability depends on whether future movements in inflation are fully anticipated, which, in turn, depends on the ability of firms to accurately forecast future movements in the relevant control variables. An inflation rate that is fully anticipated raises profits as banks can correctly adjust interest rates in order to increase revenues. On the other hand an unexpected inflationary change could raise costs due to imperfect interest rate adjustment. This implies that higher inflation may leads to lower net profitability. This is because it recovers borrowers' capability to meet requirement by eroding the real value of the debt burden. According to Bourke (1989), Molyneux and Thornton (1992), and Demirgüç-Kunt and Huizinga (1998), there is a positive relation between inflation and long term interest rates with bank performance. Gerlach et al., (2003) also found that changes in profitability are directly related to the net interest margin and to the non-performing loan (NPL) ratio, which manipulate banks' provisioning decisions. Major component of banking profitability is the interest margin on loans (Doliente, 2003). High loan rates render the cost of funds increasingly excessive to potential users thereby reducing investment activity. Similarly, exchange rate plays important role in Ghana's level of trading with other economy around the world. Constant appreciation of the foreign currencies against Ghanaian cedis has direct impact on business performance in Ghana. An increase in price of goods and services in Ghana as a result of unfavorable exchange rate will in turn increase inflation hence affecting interest rates, loan rate and the composition of debt in the financial structure and possibly declining banks profitability.

In Ghana, inflation has been volatile with up and down trajectory posing financial planning challenges for businesses. According to Financial Stability Report of the Bank of Ghana (2011), the uncertain and unpredictable inflation and exchange rates have caused banks to record huge non performing loans. This makes it more compelling to study capital structure and profitability by considering macroeconomic factors.

According to Ghana Banking survey (2010), banking industry in Ghana is experiencing a high growth, leading to an intense competition. The survey also indicates that assets of the banks have changed, but return on equity has been falling. A study by Gatsi and Akoto (2010) covering the period 1997 to 2006 of both listed and non-listed banks, revealed significant negative relationship between bank size and profitability.

1.2 Statement of the Problem

Macro-economic variables and debt-equity mix are problematic to banking performance. This situation is severe if it cannot be predicted accurately to ensure that management is well informed and the best practices and strategic decisions are in place to absorb any unexpected economic situation toward enterprise profitability. To manage this effectively, it is therefore prudent and incumbent on strategic leaders of banking firms to understand the relationship between the variables and profitability and the economic implications of these relationships in order to enhance sustainable profit for the banking institution.

1.3 Purpose and Objective of the Study

The purpose of the study is to examine the financing structure of listed Ghanaian banks and the macro-environment (variables) of the economy and how it affects their profitability. The study would focus on:

1. The relationship between the financial structure and profitability of listed Ghanaian banks.

2. The relationship between inflationary rate (INFL) and business profitability; returns on assets (ROA), return on equity (ROE) and net interest margin (NIM).

3. The relationship between exchange rate (EXCHR) and business profitability (ROA, ROE, NIM).

4. The relationship between Gross Domestic Product (GDP) and banking profitability (ROA, ROE, NIM).

1.4 Significance of the Study

Many business leaders find it difficult to adopt the right mix of capital to manage external situations. This is because they do not really understand the variables surrounding their businesses. This study would complement their understanding to forecasting business environments in Ghana and enhance their performance toward sustainable profitability.

Readers would also develop the necessary statistical models to arrive at economic explanation to the relationship between macro-economic indicators and the profitability. This is crucial to them because inability of strategic leaders to understand the economic environment in which they operate would lead to poor enterprise risk management practices of their businesses, hence leading to financial distress or liquidation of the business resulting losses to investors/owners, high unemployment due to business downsizing, etc.

1.5 Research Questions

To come out with the necessary economic understanding of relationship between the macro-economic variables and financial structure, and business profitability the research would focus on the following questions:

1. What is the relationship between the financial structure and banking profitability?
2. What is the relationship between inflationary rate and banking profitability (ROA, ROE, and NIM)?

3. What is the relationship between exchange rate and business profitability (ROA, ROE, and NIP)?

4. What is the relationship between Gross Domestic Product (GDP) and Business Profitability (ROA, ROE, and NIP)?

1.6 Methodology of the Study

The main contribution of this study is that it presents methodological approach, bringing together literature on banking financial structure and macro-economic factors that influence their business profitability in order to arrive at a scientific approach to determining the relationships between variables. Various mathematical and financial approaches are considered:

1.7 Data Collection, Processing and Analysis

Secondary data was extracted from the annual reports of the listed banks compiled from year to year captured in the Ghana Stock Exchange Annual Fact Book from 2000 to 2010.

Accounting measures of business profitability such as returns on equity (ROE), returns on assets, (ROA), and Net Interest Margin (NIM) are considered. Ross, Westerfield & Jordan (2008) explained that return on assets and return on equity are key profitability metrics by firms.

These business profitability variables would be run against macro-economic variables (such as GDP, interest rate, and inflationary rate) and financial structure of each bank using regression analysis method.

Specific theoretical and empirical findings were be reviewed focusing on Modigliani and Miller (1958;1963), Abor and Biekpe (2005) Abor (2005), Gatsi and Akoto(2010), Amidu (2007) and Kim, Heshmati, Aoun (2006). The main area of review will focus on the agency cost (Jensen and Meckling, 1976), the trade off theory, optimal capital structure and pecking order theory. Auxiliary discussion focuses on Contracting cost, signalling theory and bank regulation on capital requirements as well as macro-economic determinants of bank profitability.

1.8 Limitation

The study is limited to only banks listed on the Ghana stock exchange (GSE) from 2000 to 2010. As a result the findings may not represent all the banks in Ghana since some are not listed on the GSE.

Again, the outputs of regression analysis tool provide casual relationship between two or more variables and might not necessarily mean causal. It is therefore important for the researcher to develop economic relationship and their corresponding impact on bank profitability.

Chapter 2- Literature Review

2.1 Overview of Banking Industry

A bank is generally described as a financial institution that acts as a payment agent for customers, and borrows and lends money.

Banks' activities can be divided into retail banking, dealing directly with individuals and small businesses; business banking, providing services to mid-market business; corporate banking, directed at large business entities; private banking, providing wealth management services to high net worth Individuals and families; and investment banking, relating to activities on the financial markets. Most banks are profit-making, private enterprises. However, some are owned by government, or are non-profits: Central banks are normally government owned banks, often charged with quasi-regulatory responsibilities, e.g. supervising commercial banks, or controlling the cash interest rate. Banks also provide liquidity to the banking system and act as Lender of last resort in event of crisis (www.wikipedia.org).

2.2 The Concept of Capital Structure

The theoretical review deals with the concept of capital structure and theories that explain the capital structure. Modigliani & Miller (1958; 1963) made the first publication on financing structure to generate intense debate on the subject matter. Many studies on financing structure followed thereafter. Abor (2005) defined capital structure as the specific mix of debt and equity a firm uses to finance its operations. Ross et al, (2008) also indicated that capital Structure is a firm's choice of how much debt it should have relative to equity.

2.3 Theories of Capital Structure

Modigliani and Miller Theory (M &M Theory) established on Modigliani and Miller's M & M proposition I and M & M proposition II is one of the sound foundations for capital structure.

2.3.1 M & M proposition I

The M & M proposition I explains that it is completely irrelevant how a firm chooses to finance its operations. In other words, the value of the firm is independent of its capital structure. Modigliani and Miller (1963) explained the M & M proposition I by using the "pie" model. Modigliani and Miller took into consideration two identical firms on the left hand side of a balance sheet with exactly the same assets and operations, but different means of finance of the operations at the right hand side.

According to Modigliani & Miller Pie A had a total value of 100% with debts to equity slice of 60% to 40% respectively. Pie B however had 40% debt and 60% equity. This two-pie model is as shown in Figure 1.
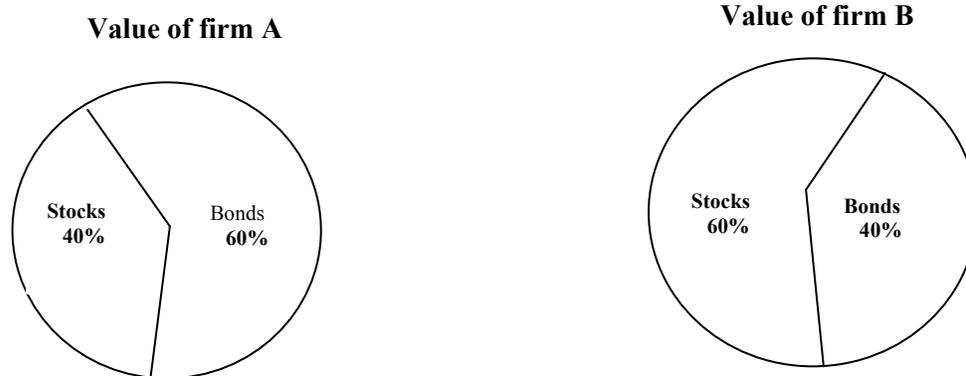
Value of firm A — Stocks 40%, Bonds 60%

Value of firm B — Stocks 60%, Bonds 40%

Figure 1: Two pie model of capital structure adapted from Van Horne and Wachowicz, Jr (2008)

Considering the illustration in figure 1, they concluded that, the value of the firm is independent of its capital structure and therefore two identical firms can choose different means of finance given the same assets and operations.

2.3.2 M & M Proposition II

The M & M proposition II however indicates that although changing the capital structure of the firm may not change the firms' total value; it does cause important changes in the firms' debt and equity. Modigliani & Miller (1963) ignoring taxes, explained these changes by using a linear function illustrated in figure 2 below:

Figure 2

Cost of capital (%)

$$R_E = R_A + (R_A - R_D) \times (D/E)$$
$$R_A = WACCE = (E/V) \times R_E + (D/V) \times R_D$$
Where $V = D + E$
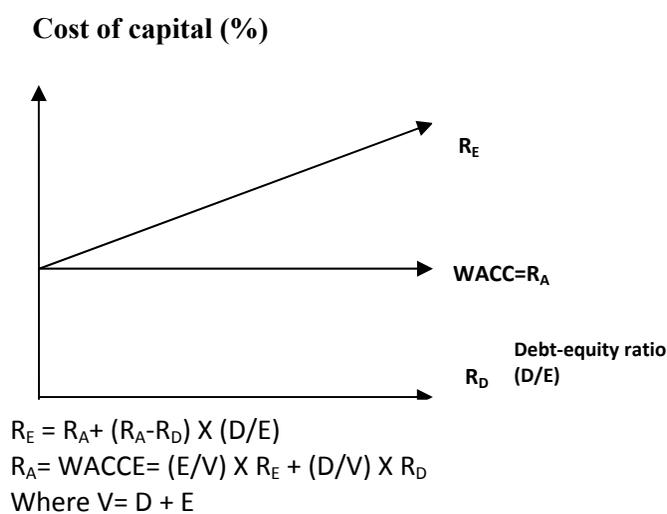
From figure 2, it can be seen that the cost of equity, RE, is given by a straight line with a slope of (RA-RD). The y-intercept corresponds to a firm with a debt-equity ratio of zero, so RA = RE in that case. Figure 2 shows that, as the firm raises its debt- equity ratio, the increase in leverage raises the risk of the equity and therefore the required return, or cost of equity (RE).

M &M Proposition II therefore tells us that the cost of equity depends on three things: the required rate of return on the firm's assets; the firm's cost of debts and the firm's debt-equity ratio. This established the equation in figure 2, that is: RE= RA+ (RA-RD) X (D/E) where RE is the cost of equity; RA is the required rate of return on the firm's assets; RD is the firms cost of debt and D/E is the firm's debt- equity ratio.

The equation means that there is a linear relation between RE and D/E represented by the capital structure. M & M proposition II therefore states that, a firm's cost of equity capital is a positive linear function of its capital structure.

We can conclude from figure 2 that the weighted average cost of capital(WACC) or the required rate of return on the firm's assets (RA) does not depend on the debt-equity ratio; it is the same no matter what the debt-equity ratio is. It therefore denotes that the firm's overall cost of capital is unaffected by its capital structure. In short, the fact that the cost of debt is lower than the cost of equity is exactly offset by the increase in the cost of equity from borrowing. In other words, the change in the capital structure weights (E/V and D/V) is exactly offset by the change in the cost of equity (RE), so the WACC stays the same.

Gatsi & Akoto (2010) maintain that firms have information that investors do not have, and that the interest of managers, and other stakeholders may not be the same. This is explained by what is called information asymmetry.

2.4 The Pecking Order Theory

The theory explains how firms use internally generated funds as the first step in financing their operation before considering external funding. Myers and Majluf (1984) noted that the pecking order theory discusses how firms will initially rely on internally generated funds than funds from external sources to finance their operations.

Gatsi & Akoto (2010) commenting on the model, argued that raising external finance is costly because of information asymmetric cost factored in the returns of outside investors making equity investment riskier. Myers & Majluf (1984) therefore opined that firms prefer retained earnings to debt and would only issue equity as a last resort. Abor (2008) supported this by saying that debt financing will only be used when there is an inadequate amount of internal funding available, and equity will only be used as a last resort. Thus, according to the pecking order theory, profitable with high earnings is expected to use less debt capital than less profitable firms.

2.5 The Static Trade-off Theory

Ross et al (2008) noted that the static theory is called static theory because it assumes that the firm is fixed in terms of its assets and operations and it only considers possible changes in the debt – equity ratio. They also stated that the model is not capable of identifying a precise optimal capital structure.

2.6 Market Timing Theories

This theory argues that managers critically observe the funds market and taking advantage of the information gap, would only issue new shares when they believe these shares are overvalued by investors and vice versa (Abor & Amidu 2007). Abor & Amidu (2007) further explain that pertinent problems within the firm may not be known immediately to outside investors (unless there is a presence of insider – trading) and thus would not reflect in the share prices of the companies. This assumption is true because in the real world, capital market is not efficient. Thus market timing focused on the problem of agency where self seeking managers issue securities at the time they aware other market participants are not well informed.

2.7 Signalling Theory

The thrust of this theory is that any decision about capital structure provides a signal to investors. More debt provides both positive and negative information to shareholders and debt holders respectively.

As a result firms with higher prospects of profitability and cash flows may use more debt in their capital structure to signal their value and financial viability.

2.8 Capital Structure and the Issue of Tax Benefits

According to Ross et al (2008) the benefits associated with tax when there is debt in the capital structure is called tax shield. Modigliani & Miller (1963) argue that corporate tax laws allow firms to deduct interest payments but not dividends in computing taxable profits which lowers the tax burden of such firms.

Modigliani & Miller (1963) and Miller (1977) explained that the tax benefit encourage profitable firms to add on more debt which may eventually result in value minimization. The value of a leverage firm would equal that of an identical all-equity firm plus the percent value of its interest tax shield. This is expressed as $V_L = Vu + T_D$.

Gatsi and Akoto (2010) opined that the present value represents the contribution of debt financing to the market value of the firm. This could be estimated basically by multiplying the tax rate by the principal amount of outstanding debt, (provided the firm expects to maintain its current debt level).

Gatsi and Akoto (2010), however argue that this proposition must not deceive managers into introducing very high levels of debt into their operations because of the associated benefits.

2.9 Bankruptcy Cost

Titman (1984) maintain that Bankruptcy Cost refers to cost that occurs when a firm fails to honor its debts obligation over time. Bankruptcy costs may relate to legal and administrative costs in the bankruptcy process. Abor (2008) also had this to say: "if a business is perceived to be close to bankruptcy, customers may be less willing to buy its goods and services because of the risk that the firm may not be able to meet its warranty obligations.

2.10 Macro-economic and Determinants of Bank Profitability

Gerlach et al., (2003) explain that net interest margin and the non-performing loan ratio are the two most important measures or determinants of bank profitability. Carbo-Valverde et al. (2007) and Elsas et al. (2006) establish that banks generate higher profit when there is a wide spectrum of income streams over the banks' income sources. There is a positive relationship between profitability and market share and also between concentration and profitability. He also fined a positive relationship between profitability and risk and also a positive correlation between market growth and profit which arise due to entry barrier.

Kunt and Huizinga (1998) analyzed how bank characteristics and the overall banking environment affect both interest rate margins and bank returns. Results suggested that macroeconomic and regulatory conditions have a pronounced impact on margins and profitability.

2.10.1 Gross Domestic Products (GDP)

GDP refers to the market value of goods and services produced by residents and non-residents in the country over a period of time usually one year. GDP reflects the growth rate of the economy. A high GDP level is indicative of economic growth and a small GDP level shows a shrinking economy (recession). The GDP is calculated as the sum of consumption volumes, investments, government spending and net exports (Imports–Exports). GDP growth characterizes the state of the economy, and the growth in comparison with other countries indicates the benefit of capital investment in the economy of this country.

Bank performance is expected to be sensitive to macroeconomic control variables. Changes in macroeconomic conditions affect banks' performance and financial strength. GDP growth as a control for cyclical output effects, which we expect to have a positive influence on bank profitability. As GDP growth slows down, and, in particular, during recessions, credit quality deteriorates, and defaults increase, thus reducing bank returns. Demirgüç-Kunt and Huizinga (1998), and Bikker and Hu (2002) find a positive correlation between bank profitability and the business cycle. This implies that, all other things being equal, bank's profitability increases during economic boom periods and decreases during recession.

All macroeconomic variables have highly significant relationship with bank profitability and have expected signs. According to Gerlach et al., (2003) increases in GDP growth, inflation (INF) and all reduce bank net profitability. Higher inflation also lowers net profitability. This may be so because it recovers borrowers' capability to meet requirement by eroding the real value of the debt burden.

2.10.2 Inflationary Rate

Inflation is the persistent and appreciable increase in the general price levels of goods and services unaccompanied by increase in production. In other words it is a state in an economy where more money chases fewer goods. While we expect a positive effect of commodity prices on bank profitability, the extent to which inflation affects bank profitability depends on whether future movements in inflation are fully anticipated, which, in turn, depends on the ability of firms to accurately forecast future movements in the relevant control variables. An inflation rate that is fully anticipated raises profits as banks can appropriately adjust interest rates in order to increase revenues, while an unexpected change could raise costs due to imperfect interest rate adjustment. Other studies, for example, Bourke (1989), Molyneux and Thornton (1992), Demirgüç-Kunt and Huizinga (1998), have found a positive relation between inflation and long term interest rates with bank performance. In particular, inflation has a positive effect on bank profits, which suggest that banks forecast future changes in inflation correctly and promptly enough to adjust interest rates and margins.

Peng et al (2003) study how changes in the Hong Kong dollar risk premium, calculated by a broadening of spreads between Hong Kong dollar and US dollar interest rates, may have influenced banks' total net interest margin and asset quality. Gerlach and Peng (2003) find that bank lending is directly related to economic growth and fluctuations in property prices and that regulatory measure have facilitated limit banks' exposure to swing in the property market.

2.10.3 Exchange Rate

Exchange rate plays a crucial role in global economic system. An exchange rate is the rate at which a currency trades for another on the foreign exchange market. In other words, it is a value of a currency as compared to another. A rise or fall of the domestic currency with foreign currencies in the free market exchange rate influences business performance positively or otherwise.

According to Shapiro (1974) and Dumas (1978) changes in exchange rates negatively impact multinational firms' cash flows, its profitability, and therefore its market value. Bartov and Bodnar (1994) also find negative and significant correlation between abnormal returns of U.S. multinational firms and lagged changes in the value of the dollar. On the contrary, different empirical evidence were established by Jorion (1990), Amihud (1993), and Bailey and Cheung (1995). They find no significant relationship between contemporaneous dollar fluctuations and U.S. multinational firms' stock returns.

2.10.4 Interest Rate

Interest rates are positively related to banking performance. Declines in interest rates decrease the debt servicing load, that helping to preserve asset quality. Changes in interest rates also have asymmetric effects across banks. Diamond (1991) suggests that real interest rates manipulate company's preference between risky and safe projects. Low real interest rates increase the present value of firm's future proceeds. In view of the fact that selecting more risky projects would locate that future return at risk, as the expected future value of the company go up, the motivation to low-risk projects also go up. So, lower real interest rates are forecasted to reduce the likelihood of default and that reduces the risk ness of banks loan Portfolios. Many studies show that bank performance is correlated with the business cycle (Lowe & Rohling 1993; Kaufman 1998).

2.10.5 Trade Balance

An important macroeconomic variable in Ghana that creates so much volatility in the economy has to deal with economic interactions with other countries. Trade balance of Ghana as a macroeconomic variable has effect on the profitability of Bank. This is because the strength of the cedi to a large extent is dependent on the ratio of Ghana's import and exports. The balance is active if the export goods value exceed the import goods' costs (surplus), otherwise the balance is passive (shortfall). A surplus balance has a positive effect on the growth rate of the cedi and a negative balance will depreciates or weaken the value of the cedi against major trading currencies such as the dollar, Euro and the British pound. The bank loses on income from forex or forex profits should there be a negative balance and vice versa.

Income is made from the purchase and sale of foreign currencies and the bank always loses significantly if there is depreciation of the Cedis especially against the US dollar.

Exported goods will only have a higher value if they are refined locally before export. It is also imperative that our exports have elastic supply. Ghana has always recorded a deficit trade balance as a result of exports of goods in their raw state and its time the Banks comes in to help by assisting local industries to enter into manufacturing.

3.0 Quantitative Research

This study seeks to use quantitative research technique to study the impact of macroeconomic variables and capital structure on the profitability of listed banks in Ghana. The use of mathematical and statistical techniques including models is key tools in the conduct of quantitative research. Quantitative research mainly provides objective relationships between variables in a particular study. It also provides quick and simple approach to research (Fitzgerald and Rumrill, 2005). Using quantitative research methodology for this study is clearly in line with Cooper & Schindler (2001) who explained that the approach allows for the use of numerical facts and model specification. A study of the above subject therefore, lends itself to the main tenets of quantitative research methodology to help find out objectively the empirical relationship between capital structure and macroeconomic factors as well as profitability of listed Ghanaian banks that may be generalized for industry and policy analysis.

3.1 Panel Data

Though the data is secondary in the form of the financial statement of the listed banks, the study will be based on the panel data approach. Stock and Watson (2007) described panel data to be synonymous with longitudinal data such that each data is observed from cross–sectional perspective. This is statistically prudent because the ratios that will represent the dependent and independent variables will correspond with different time series for different banks over the study period.

3.2 Dependent Variables

For the purpose of this study, the profitability variables are the dependent variables. The profitability variables or ratios to be used are return on equity (ROE), return on asset (ROA) and net profit net interest margin (NIM). The return on equity is an important measure of profitability in that it indicates how much of the profit is distributed to shareholders. At the same time, it indicates or signals the efficiency of management in generating returns for shareholders who are overly concerned with value maximization. The return on equity is computed as the ratio of the pre-tax profit divided by the total equity capital.

That is ROE = <u>Pre –tax profit x 100</u>

                Total equity

The return on asset measures the profitability with respect to the size of the assets hence it is expressed as the profit after tax divided by total assets.

That is   <u>Net Income x 100</u>

            Total assets

Net interest margin is expressed as the difference between the interest income and the interest expense divided by the earning assets.

3.3 Independent Variables

For the purpose of this study, the independent variables are representative of leverage ratios and the control variables. The leverage ratios are as follows:

3.4 The Ratio of Short-Term Debt to Total Capital

This is expressed as short –term debt as a ratio of total capital to determine how much short term debt is used to finance the activities of the listed banks in Ghana and how this affect profitability over the years. A positive relationship is expected when the dependent variables are regressed against this variable in line with the fact that banks are heavily leveraged but mostly with respect to deposits which tend to be short lived.

3.5 The Ratio of Long-Term Debt to Total Capital

This ratio determines the degree to which listed Ghanaian banks use long term debts to finance their activities and how this reflects in profitability measures over time. Since banks tend to utilize more deposits it is expected that an inverse relation will exist between the dependent variables and this ratio.

3.6 The Ratio of Total Debt to Total Capital

The focus of capital structure is the use of total debt as against equity to influence profitability. This ratio measures the extent to which bank operations are financed by total debt. The expected relation between the dependent variable and this ratio is negative.

3.7 Firm Size

According to Abor (2005), firm size contributes to firm profitability and large firms have greater opportunity to take on more debts to finance their operations. In using the size of the firm as control variable for the study, the natural logarithm is taken of the asset over the period covered by the study.

3.8 Sales Growth

Sales growth is also significantly important in that from capital structure theories such as pecking order theory and information asymmetry there is a relationship between profitability and sales growth.

Other controlled variables are gross domestic product and inflation. Gross domestic product is important because the overall economic activities affect banking business such in the period of flourishing economic activity, demand for finance from banks increase to finance various needs of the deficit units in the economy. Inflation spells out the rate at which prices of goods and services are changing over a period of time. This feeds into the level of interest rate hence the lending rate of banks.

3.9 Summary of dependent and independent variable relationships

Category	Variables	Measurement or Ratio Used
Dependent Variables	1. Return on Asset (ROA)	$\dfrac{Net\ Income}{Total\ Assets}$ (After – Tax Profit per Cedi of Assets)
	2. Return on Equity (ROE)	$\dfrac{Pre\ Tax\ Profit}{Total\ Equity}$ or Net Income
	3. Net Interest Margin (NIM)	$\dfrac{Net\ Income}{sales}$ (After – Tax Profit per Cedi of Sales)
Independent Variable	1. Short –Term Debt	$\dfrac{Short\ Term\ Debt}{Total\ Capital}$
	2. Long – Term Debt	Long –Term Debt/Total Capital
	3. Total Debt	$\dfrac{Short + Long\ Term\ Debt}{Total\ Capital}$
	4. Size	Log of Total Assets
	5. Sales growth	% change in net interest income

3.10 How the Model is specified

The model representing the dependent and independent variables are specified below

$$Y_{i,t} = \beta_0 + \beta_1 STD_{i,t} + \beta_2 SIZE_{i,t} + \beta_2 SG_{i,t} + \beta_2 EX_{i,t} + \bar{e}_{i,t} \quad ......………………\text{i}$$

$$Y_{i,t} = \beta_0 + \beta_1 LTD_{i,t} + \beta_2 SIZE_{i,t} + \beta_2 SG_{i,t} + \beta_2 EX_{i,t} + \bar{e}_{i,t} \quad ………………\text{ii}$$

$$Y_{i,t} = \beta_0 + \beta_1 TD_{i,t} + \beta_2 SIZE_{i,t} + \beta_2 SG_{i,t} + \beta_2 EX_{i,t} + \bar{e}_{i,t} \quad ......…………………\text{iii}$$

Where:

$Y_{i,t}$ Represents ROE, ROA and NIM i in time t

STD   Represents Short Term Debts for firm i in time t

LTD   Represents Long Term Debts for firm i in time t

TD   Represents Total Debt for firm i in time t

SIZE   Represents Firm Size for firm i in time t

$EX_{i,t}$ Represents GDP, Inflation and Exchange rate

$\bar{e}_{i,t}$ Is the error term

3.11 Processing of Data

The ratios to be computed will be imported into excel for running the regression using SPSS.

In testing the hypothesis for the study, Net interest margin and Return on equity shall be the dependent variables. Ratio of short term debt to total debt, ratio of long term debt to total debt, debt to equity ratio, return on assets, firm size and sales growth shall be the independent variables for the multiple regressions.

Both profitability and leverage ratios are computed data extracted from the annual financial statements for the listed banks from 2000 to 2010. This means that an eleven year data will be used which will reflect the recent past performance of Ghanaian banks. The annual financial statements are compiled from the Ghana Stock Exchange Fact Book which reports the annual financial statements of listed firms in Ghana on yearly basis.

CHAPTER 4-Discussion and Analysis

4.0 Presentation of Finding and Analysis

This chapter presents the findings and analysis of panel data extracted from the annual reports of listed Ghanaian banks as published in the Ghana Stock Exchange Fact Book from 2000 to 2010. The analysis is based on the generalized least square (GLS) regression in which profitability ratios (ROA,ROE and NIM) served as dependent variables and leverage ratios such short term debt to total capital, long term debt to total capital and total debt to total capital served as independent variables. Sales growth and firm size, GDP, inflation and exchange rate were used as control variables.

4.1 Table 1: Descriptive Statistics for Listed Ghanaian Banks

Variables	Observation	Mean	Minimum	Maximum	Standard Deviation
Return on Asset	77	6.389	.040	14.125	3.641
Return on Equity	77	40.396	3.963	108.360	26.126
Net Income Margin	77	77.375	4.505	401.821	62.554
Short-Term Debt	77	72.196	9.580	92.585	26.315
Long-Term Debt	77	8.015	.000	75.189	16.705
Total Debt	77	80.231	26.773	93.922	18.059
Firm Size	77	6.929	4.556	9.325	1.252
Sales Growth	77	26.578	-305.675	151.562	50.721
Gross Domestic Product	11	5.191	3.700	6.500	.969
Inflation	11	18.082	10.700	40.500	8.241
Exchange Rate (GH¢ to US$)	11	.987	.689	1.400	.234

From table 1 above the average return on equity for the listed banks was 40.40% which is well above the industry average of about 28% as indicated in the 2010 Ghana Banking Survey for both listed and non listed banks. This implies on average shareholders of listed Ghanaian banks may receive a return of 40.40%. Return on asset averaged 6.39% over the study period.

The rather small return on asset is indicative of competition in the banking industry. This requires listed banks to adopt forward looking strategies to remain profitable. The high net income margin of about 77.38% may be attributed to high interest rate in the Ghanaian banking industry which led to improved interest income of the banks. This is indicative of the positive relationship between high interest rate caused by high inflation. This implies with reduced interest rate and stable economic environment, banks may have to diversify their business portfolio to increase noninterest income such as investment in new businesses rather than loans and Treasury bill investments.

The 6.93% and 26.58% average firm size and sales growth respectively seem to be in consonance with earlier research in the banking industry by Gatsi and Akoto (2010).

Gross domestic product (GDP), Inflation and Exchange rate do affect the entire economic activities in Ghana including banking. Over the study period GDP averaged 5.19% with inflation at 18.08%. The average GDP of 5.19% provides ample business opportunity in Ghana that attracts bank finance. With 18.08% average inflation, is also manageable since this rate dropped from about 40.5% in 2000. An exchange rate of 0.987 is also favourable for banking business.

Again, from table 1, the descriptive statistics show that listed Ghanaian banks utilized more short term debts to finance their operations than long term debt. The short term debt of about 72.20% indicate that banks source their funding mostly from savings and deposits which are short term in nature. This is also a confirmation as to why listed Ghanaian banks have not recorded any issuance of bond which is a typical long term fund. This may also pose some risk to the banks since there may be maturity mismatch. The average long term debt utilized by listed Ghanaian banks was 8.02% while the total debt was 80.23%. This implies that long term debt account for less than 9% of the financing of banking operations.

This also indicates that short term debt contributed more in financing assets of the banks than long term debt. Though banks are highly levered, their debt structure does not follow what is expected within the framework of Modigliani and Miller (1963) where leverage is skewed to long term debt.

The average total debt of 80.23% implies, listed banks in Ghana use more debt to finance their operations than equity which averaged 12.66%. This also shows that Ghanaian banks are indeed highly levered. This demands that banks engage in proper asset and portfolio management to mitigate any risks associated with leverage.

4.2 Table 2: Correlations Matrix for Dependent and Independent Variables

Variables	ROA	ROE	NIM	STD	LTD	TD	Firm Size	Sales Growth	GDP	Inflation	Exchange Rate
ROA	1										
ROE	.413 (.000)	1									
NIM	.581 (.000)	.283 (.013)	1								
STD	-.369 (.001)	.519 (.000)	.265 (.020)	1							
LTD	.078 (.501)	-.357 (.001)	-.163 (.157)	-.734 (.000)	1						
TD	-.467 (.000)	.425 (.000)	-.537 (.000)	.778 (.000)	-.145 (.207)	1					
Firm Size	-.250 (.028)	-.396 (.000)	-.512 (.000)	-.208 (.069)	.370 (.001)	.038 (.744)	1				
Sales Growth	.075 (.518)	.148 (.200)	-.479 (.000)	.158 (.169)	-.047 (.687)	.189 (.101)	.184 (.110)	1			
GDP	-.247 (.030)	-.204 (.075)	-.025 (.826)	.040 (.729)	-.079 (.495)	-.015 (.897)	.098 (.397)	-.095 (.410)	1		
Inflation	.294 (.009)	.271 (.017)	.033 (.776)	-.029 (.801)	.084 (.466)	.034 (.767)	-.133 (.250)	.186 (.105)	-.598 (.000)	1	
Exchange Rate	-.435 (.000)	-.421 (.000)	-.073 (.526)	.046 (.689)	-.128 (.268)	-.049 (.675)	.135 (.242)	-.144 (.210)	.105 (.365)	-.426 (.000)	1

Note: Correlation is significant at the 5% (2-tailed); Significant value in bracket

The correlation matrix in table 2, indicate whether there is positive or negative relationship between dependent variables on one hand and the independent and control variables on the other. This is important as it shows whether there is any relationship between indicators of capital structure and profitability. From table 2, ROA is negatively related to both total debt short term debt and the relationship is significant. ROA is however, positively related to long term debt but not statistically significant. ROA is also negatively related to GDP and firm size but is not statistically significant. ROA is related positively to sales growth and exchange rate; however, the relation between sales growth and ROA is not significant while that between ROA and exchange rate is significant. Inflation is positively related to ROA but not significant. Implying that high inflation has the possibility of increasing ROA and a fall in inflation is likely to reduce ROA which is a measure of profitability.

ROE on the other hand is significantly and positively related to short term debt and total debt. Exchange rate, long term debt and firm size are negatively and significantly related to ROE while both sales growth and inflation are positively but insignificantly related to ROE. However, ROE is insignificantly but negatively related to GDP.

NIM is significantly and positively related to short term debt but insignificantly and positively related to inflation. NIM is, however, significantly and negatively related to sales growth, firm size and total debt. This implies that an increase in sales growth, total debt and firm size is likely to result in a fall in NIM. Also, exchange rate, GDP and long term debt

are negatively and insignificantly related to NIM. It is important to note that negative relationship between dependent variable and independent variable implies that if the dependent variable increases then the independent variable decreases.

4.3 Table 3- Actual Regression Results

| Variables | Profitability: ROA | | | | | |
| | 1 | | 2 | | 3 | |
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Firm Size	-0.892	0.002	-0.684	0.045	-0.534	0.031
Sales Growth	0.010	0.150	0.004	0.603	0.010	0.127
GDP	-0.646	0.136	-0.705	0.151	-0.749	0.149
Inflation	-0.017	0.768	-0.012	0.847	-0.013	0.842
Exchange Rate (GH¢ to US$)	-5.470	0.001	-5.816	0.002	-6.345	0.001
Constant	25.677	0.000	20.452	0.000	28.426	0.000
STD	-0.060	0.000				
LTD			0.023	0.349		
TD					-0.102	0.000
R-squared	0.432		0.272		0.511	
Wald chi^2(6)	53.120		26.200		61.650	
Prob. > chi^2	0.000		0.000		0.000	

Notes: Significant level at 5%; 1 represents regression result for STD; 2 represent regression result for LTD; 3 represents regression result for TD   **Random-effects GLS regression**

From table 3, ROA is significantly and negatively related to short term debt with probability of 0.000. This means that an increase in short term debt may lead to decrease in ROA. There is insignificant but positive relationship between ROA and long term debt with probability of 0.349. Thus an increase in long term debt may result in an increase in ROA for the banks. Again, ROA is negatively related to total debt but significant. Hence, any increase in total debt may result in reduction in ROA. This indicates that improper management of total debt may generate downward performance of ROA. For the control variables, firm size and exchange rate are negatively related to ROA but significant. However, GDP and inflation negatively and insignificantly related to ROA though sales growth is insignificantly but positively related to ROA.

4.4 Table 4

Variables	Profitability: ROE					
	1		**2**		**3**	
	Coef.	**Sig.**	**Coef.**	**Sig.**	**Coef.**	**Sig.**
Firm Size	-4.924	0.006	-4.653	0.033	-7.771	0.000
Sales Growth	0.023	0.603	0.053	0.289	0.043	0.351
GDP	-4.599	0.115	-4.673	0.136	-3.779	0.234
Inflation	-44.475	0.827	-0.092	0.820	-0.116	0.778
Exchange Rate (GH₵ to US$)	10.812	0.000	-46.074	0.000	-37.913	0.001
Constant	108.182	0.000	146.791	0.000	105.127	0.001
STD	0.484	0.000				
LTD			-0.521	0.001		
TD					0.587	0.000
R-squared	0.548		0.424		0.494	
Wald chi^2(6)	82.400		51.450		64.530	
Prob. > chi^2	0.000		0.000		0.000	

Notes: Significant level at 5%; 1 represents regression result for STD; 2 represent regression result for LTD; 3 represents regression result for TD **Random-effects GLS regression**

From table 4, ROE is significantly and positively related to short term debt with probability of 0.000, total debt with probability 0.000 and exchange rate with probability of 0.000. This means that an increase in short term debt, total debt and appreciation of the Ghanaian cedi may lead to increase in ROE. There is significant but negative relationship between ROE and long term debt with probability of 0.001. Thus an increase in long term debt may result in reduction in ROE for the banks. Again, ROE is positively related to GDP but insignificant. Hence, any increase in total debt may result in increase in ROE.

4.5 Table 5

Variables	Profitability: NIM					
	1		**2**		**3**	
	Coef.	**Sig.**	**Coef.**	**Sig.**	**Coef.**	**Sig.**
Firm Size	-25.471	0.000	-20.142	0.000	-21.002	0.000
Sales Growth	-0.421	0.000	-0.522	0.000	-0.406	0.000
GDP	1.119	0.871	-0.386	0.959	-0.186	0.975
Inflation	0.116	0.897	0.206	0.833	0.147	0.851
Exchange Rate (GH¢ to US$)	-9.229	0.718	-19.687	0.484	-20.879	0.347
Constant	320.379	0.000	249.872	0.000	381.366	0.000
STD	-0.750	0.000				
LTD			-0.170	0.657		
TD					-1.605	0.000
R-squared	0.510		0.423		0.628	
Wald chi^2(6)	72.920		51.220		118.110	
Prob. > chi^2	0.000		0.000		0.000	

Notes: Significant level at 5%; 1 represents regression result for STD; 2 represent regression result for LTD; 3 represents regression result for TD **Random-effects GLS regression**

From table 5, NIM   is significantly and negatively related to short term debt with probability of 0.000. This means that an increase in short term debt may lead to decrease   in NIM. There is insignificant but negative relationship between NIM and long term debt with probability of 0.657. Thus an increase in long term debt may result in reduction in NIM for the banks. Again, NIM is negatively and significantly related to total debt with probability of 0.000. Hence, any increase in total debt may result in decrease in NIM. .

Both firm size and sales growth are negatively and significantly related to NIM, however, both GDP and inflation are positively and insignificantly related to NIM. Exchange rate is negatively and insignificantly related to NIM. This implies that with depreciation of the Ghanaian cedi, NIM may fall for the listed banks

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.0 Conclusion

Banking firms play major role in national economy by serving as intermediary and for the flow of funds from the lender to the user of fund toward economic growth activities. However banks sustainability is sensitive to various factors both internal and external. Therefore it is important for strategic leaders of the banks to understand these factors well to strategically management the sustainability of their profitability within their risk appetite.

The purpose of this research is to investigate the impact of financial structure and the macroeconomic variables of the listed banks in Ghana. This is important because of the volatile nature of Ghana inflationary rate regime which directly and indirectly affects economic activities of all sectors, especially the banking sectors with its profitability hugely affected by factors.

Though the results were mix, it was observed that both ROE and NIM are statistically and positively related with short term debt and total debt. This implies that Ghanaian banks increase shareholders returns when they have more debt in their financial structure. However the negative relationship between all the profitability variables (ROA, ROE NIM) and long-term debt implies that Ghanaian banks strategically rely hugely on short- term to increase profitability. The over relying on short-term term instead of long-term debt toward long-term strategy may imply that the banks cannot predict the future well and therefore prefer short-term debt to achieve corporate profitability. This is confirmed by the volatile nature of Ghanaian inflationary regime. Inability to predict any sudden change in inflation may affect proper review of loan interest rate and hence affect the real value of loans leading to economic losses in banking profitability.

It can be concluded that Ghanaian banks take advantage of the high inflation regime to increase cost of borrowings to their valued customers to increase their net interest margin and hence increase profitability while strategically using short-term debt (average of 72.2%) in their financial structure to avoid paying long-term high cost of borrowings which will economically destroy shareholders value.

Again the banks increases their assets base as the economy grows (GDP) to improve their profitability in terms of returns on equity. This is true because loans rendered to customers are essential part of bank assets and therefore an increase in economic activities leads to more borrowing and expansion of banks activities to provide services to all customers hence increasing bank size and assets.

The study therefore, provides an empirical conclusion that listed Ghanaian banks use 80.23% debt and 17.77% equity hence the capital structure of Ghanaian banks is hugely skewed toward debt. However, the debt structure of listed Ghanaian banks indicates more than 70% short term debt and less than 9% long term debt. Thus the impact of capital structure and macroeconomic factors on profitability of Ghanaian listed banks is such that short term debt positively influences profitability and long term debt negatively affects profitability.

The volatile nature of Ghanaian economic indicators and the important role of banking firms to the development of the economy require further studies that will thoroughly capture all the market and profitability variables to define theoretical and pragmatic directions to the strategic leaders of the banks to sustainability economic development.

5.1 Recommendation

Banks play major role in the sustainability of the economy. The economic environment in Ghana is problematic to the banking firms: High inflation, interest rate, exchange rate and high long dept components in the bank's financial structure may in the long affect banks sustainable profitability.

This study revealed that short term debt is profitable to listed Ghanaian banks hence the banks should improve upon the mobilization of savings and deposits which form the bulk of short term debt. The low return on asset indicates high competition thus it is recommended that banks improve their investment strategies and diversify their current portfolio to remain competitive.

Although, the inflationary rate in Ghana has been reducing for the past 18months, and has been a single digit for some months now, prime rate is still about 24%. This leads to high borrowing costs which deter investment activities and hence low borrowing power for banks to increase profit through high net interest margin. It is therefore recommended that government should develop a stable and steady economic environment that will support the ability of the banking firms to strategically forecast inflations, exchange rate and other economic variables toward long-term corporate decisions.

Finally further studies into impact of financial structure and macroeconomic variables on Ghanaian banks would support long term strategic direction of the banks.

References

Abor, J. (2005), "The Effect of Capital Structure on Profitability: An Empirical Analysis of Listed Firms in Ghana", *The Journal of Risk Finance,* Vol. 6 No. 5.

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.

Amidu, M. (2007), "Determinants of Capital Structure of Banks in Ghana: An Empirical Approach", *Baltic Journal of Management* Vol. 2 No. 1, pp. 67-79.

Amihud, Y. (1993), Evidence on Exchange Rates and Valuation of Equity Shares, *One Irwin: Homewood,* IL.

Bailey, W. and Y. P. Cheung (1995), Exchange Rate Fluctuations, Political Risk, and Stock Returns: Some Evidence from an Emerging Market, *Journal of Financial and Quantitative Analysis*, 30, 541-561.

Bank of Ghana (Sept., 2011), Monetary Policy Report, Financial Stability, Vol. 5: No: 42011.

Barclay, M., and Smith, C. (2005). The capital structure puzzle: The evidence revisited. *Journal of Applied Corporate Finance,* 17(1).

Bartov, E. and G. M. Bodnar (1994), Firm Valuation, Earnings Expectations and the Exchange Rate Exposure Effect, *Journal of Finance*, 49, 1755-86.

Bartov, E., Bodnar, G. M. and A. Kaul (1996), Exchange Rate Variability and the Riskiness of US Multinational Firms: Evidence from the Breakdown of the Bretton Woods System, Journal of Financial Economics, 42, 105-32.

Bikker, J.A., Hu, H. (2002), "Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements", *BNL Quarterly Review.* 221, 143 -175.

Bourke, P. (1989), "Concentration and other determinants of bank profitability in Europe, North America and Australia", *Journal of Banking and Finance* 13, 65-79.

Bourke, P. (1989).Concentration and other determinants of bank profitability in Europe, North

Brander, J. A., and Lewis, T. R. (1986), "Oligopoly and Financial Structure: the Limited Liability Effect." *American Economic Review* 76 (1986), pp.956-70.

Brealey, R.A., & Myers, S.C. (2003). *Principles of corporate finance.* International edition. Boston, MA: McGraw-Hill

Brounen, D. And Eichholtz, M.A. (2001), "Capital Structure Theory: Evidence from European Property Companies' Capital Offerings" *Real Estate Economics*, Vol.29 No.4

Demirgüç-Kunt, A. and A. Huizinga (1998), "Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence", *World Bank Economic Review* 13, 379-408.

Diamond, D. (1991), Monitoring and Reputation: The Choice between Bank Loans and Directly Placed Debt, *Journal of Political Economy*, 44(4), p. 689.721.

Doliente, S. J. (2003), "Determinants of Bank Net Interest Margins of Southeast Asia" *Isi Journal*.

Dumas, B. (1978), The Theory of the Trading Firm Revisited, *Journal of Finance*, 33, 1019-1029.

Fitzgerald, S. M. and Rumrill, jr., P. D. (2005), "*Quantitative Alternatives to Narrative Reviews For Understanding Existing Research Literature*" Kent State University, Department of Educational Foundations & Special Services, Centre for Disability Studies, Bureau of Research Training and Services

Gatsi ,J.G and Akoto, R.K (2010), Capital Structure and Profitability in Ghanaian Banks, Working Paper available at Social Science Research Network

Gerlach, S. & Peng, W. (2003), Bank Lending and Property Prices in Hong Kong. *HKIMR Working Paper*, 2003

Hausman, J.A. (1978), "Specification Tests in Econometrics", *Econometrica,* Vol. 46,

Kunt, D., A., & Huizinga H. (1999). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. *World Bank Economic Review*, 13(2), pp 379-408.

Kunt, D., A., & Huizinga H. (2000). Financial Structure And Bank Profitability. *World Bank Mimeo.*

Kaufman, G. (1998).Central Banks, Asset Bubbles and Financial Stability, Federal Reserve Bank of Chicago. *Working Papers* .Series WP98/12, 37.

Jensen, M. and Meckling, W. (1976), "Theory of the Firm: Managerial Behaviour, Agency

Costs and Ownership Structure", *Journal of Financial Economics*, Vol. 3,

Jorion, P. (1990), The Exchange Rate Exposure of US Multinational Firms, Journal of Business, 63, 331-45.

M. and Meckling, W. (1976), "Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure", *Journal of Financial Economics*, Vol. 3,

Maksimovic, V. (1986), "Optimal Capital Structure in Oligopolies." PhD Dissertation, Harvard University.

Miller, M.H. (1977), "Debt and Taxes", *Journal of Finance*, Vol. 32

Modigliani, F. and Miller, M. (1958), "The Cost of Capital, Corporate Finance and the Theory of Investment", American Economic Review, Vol. 48.

Modigliani, F. and M. Miller. (1963), "Corporate income taxes and the cost of capital: A correction". *American Economic Review*, Vol.53,

Moulyneux, P. and J. Thornton (1992), "Determinants of European Bank Profitability: A Note," *Journal of Banking and Finance* 16, 1173-1178.

Myers, S.C. (1984). The capital structure puzzle, *Journal of Finance*, 39,575-92.

Myers, S.C., & Majluf, N.S. (1984). Corporate financing and investment Decisions: when firms have information that investors do not have. *Journal of Financial Economics*,12,187-221. Saunders, M, Lewis,

Opler, T., and Titman, S. (1994), "Financial Distress and Corporate Performance." *Journal of Finance,* 49, pp.1015-40.

P and Thornhill, A (2003), "Research *Methods for Business Studies*" Prentice Hall, UK

Sekaran, U. (2003). "*Research Methods for Business*", John Wiley & Sons, Inc.

Silverman, D. (1997), "Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction", *Sage Publications, London, UK.*

Sharpe, S. (1995), "Financial Market Imperfections, Firm Leverage and Cyclicality of Employment." *American Economic Review,* 84 pp. 1060-74.

Stock, J.H. and Watson, M, W (2007), "Introduction *to Econometrics*" Prentice Hall, UK.

CAL BANK	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ROA	4.77	5.31	7.16	5.74	5.53	4.59	4.33	3.02	3.39	2.32	2.47
ROE	32.61	35.06	52.22	45.54	27.49	24.29	31.73	22.88	30.72	18.00	15.99
NIM	70.80	78.00	114.75	100.02	92.89	55.01	72.02	59.11	69.98	46.45	33.98
STD to TC	86.44	84.85	86.29	87.40	79.89	81.12	86.35	86.80	88.96	87.10	82.99
LTD to TC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TD to TC	86.44	84.85	86.29	87.40	79.89	81.12	86.35	86.80	88.96	87.10	84.55
E to TC	13.56	15.15	13.71	12.60	20.11	18.88	13.65	13.20	11.04	12.90	15.45
Firm Size	5.49	5.49	5.61	5.77	5.92	5.99	6.20	5.37	5.53	5.66	5.71
Sales Growth	15.03	6.34	21.14	32.05	45.67	64.85	16.62	27.47	36.48	37.76	63.80

GCB	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ROA	7.91	7.80	6.07	4.23	4.17	3.97	5.03	4.07	3.01	1.07	4.32
ROE	74.71	86.41	64.48	43.55	38.85	32.20	42.67	26.55	23.93	10.15	36.46
NIM	76.97	50.61	55.29	37.48	39.11	33.35	44.86	52.12	37.65	15.67	32.12
STD to TC	89.41	90.98	90.58	90.28	89.26	87.68	88.21	84.68	87.41	89.42	88.15
LTD to TC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TD to TC	89.41	90.98	90.58	90.28	89.26	87.68	88.21	84.68	87.41	89.42	88.15
E to TC	10.59	9.02	9.42	9.72	10.74	12.32	11.79	15.32	12.59	10.58	11.85
Firm Size	6.36	6.58	6.67	6.71	6.75	6.77	6.89	9.06	9.22	9.28	9.32
Sales Growth	94.75	151.56	-13.11	12.83	4.02	17.12	24.73	3.07	46.55	-0.26	115.85

HFC BANK (GHANA) LTD	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ROA	12.94	2.91	12.92	3.47	4.07	1.38	1.70	1.76	2.20	2.70	2.29
ROE	23.82	21.49	17.46	19.47	23.85	8.78	15.97	20.76	28.85	20.97	10.35
NIM	24.56	15.52	12.46	21.53	24.65	9.93	14.49	11.95	23.31	14.32	32.94
STD to TC	9.58	21.02	22.42	26.16	32.28	43.02	58.41	84.64	78.64	64.15	58.80
LTD to TC	75.19	67.12	64.32	56.02	50.64	41.24	30.92	3.92	13.75	23.01	19.07
TD to TC	84.77	88.15	86.74	82.18	82.92	84.27	89.33	88.56	92.39	87.15	77.87
E to TC	15.23	11.85	13.26	17.82	17.08	15.73	10.67	11.44	7.61	12.85	22.13
Firm Size	7.78	8.44	7.80	8.72	8.78	8.85	9.03	8.21	8.58	8.42	8.50
Sales Growth	76.39	60.78	14.39	42.25	18.14	-0.12	28.52	88.38	49.05	37.90	44.88

STANCHART	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ROA	4.81	7.30	7.15	7.60	6.93	6.92	6.25	3.07	4.45	10.82	6.09
ROE	79.13	80.44	77.16	72.84	68.85	54.66	61.12	48.84	49.00	52.46	51.80
NIM	77.35	62.95	75.37	88.87	86.55	80.29	80.16	67.31	57.48	70.10	66.46
STD to TC	91.73	87.75	87.62	88.23	88.41	87.01	84.47	88.20	90.83	88.64	88.25
LTD to TC	2.19	3.18	3.10	1.34	1.52	0.38	5.35	0.38	0.09	0.00	0.00
TD to TC	93.92	90.93	90.73	89.57	89.93	87.39	89.82	88.58	90.92	88.64	88.25
E to TC	6.08	9.07	9.27	10.43	10.07	12.61	10.18	11.42	9.08	11.36	11.75
Firm Size	6.50	6.36	6.48	6.59	6.64	6.71	6.84	6.15	5.99	5.89	6.22
Sales Growth	55.77	35.25	7.90	16.84	5.47	25.31	23.06	18.10	18.91	56.58	27.91

SG-SSB	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ROA	10.29	11.59	6.83	5.48	6.92	5.08	3.93	3.73	5.01	4.65	3.12
ROE	74.24	71.89	45.16	35.09	45.78	37.29	28.26	26.66	31.39	24.42	17.88
NIM	72.02	73.48	67.21	49.31	68.64	52.16	45.46	45.01	53.95	52.29	25.13
STD to TC	83.29	81.90	84.87	84.38	84.90	86.37	86.09	86.02	84.05	80.95	82.56
LTD to TC	2.86	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TD to TC	86.15	83.90	84.87	84.38	84.90	86.37	86.09	86.02	84.05	80.95	82.56
E to TC	13.85	16.10	15.13	15.62	15.10	13.63	13.91	13.98	15.95	19.05	17.44
Firm Size	6.08	6.13	6.23	6.32	6.39	6.46	6.56	8.62	8.64	8.76	8.80
Sales Growth	79.00	23.77	-19.06	33.39	5.79	15.56	11.26	9.55	17.11	26.98	9.37

TRUST BANK LIMITED	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ROA	11.34	11.79	14.12	13.77	12.06	5.16	7.69	2.35	5.34	3.68	0.04
ROE	95.31	104.12	104.80	108.36	99.72	49.37	71.60	30.19	54.56	38.52	3.96
NIM	185.58	176.26	185.01	182.71	153.36	118.54	115.85	41.25	88.30	52.74	4.51
STD to TC	89.25	88.68	89.38	87.29	87.91	89.55	89.26	92.22	90.21	90.44	92.59
LTD to TC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TD to TC	89.25	88.68	89.38	87.29	87.91	89.55	89.26	92.22	90.21	90.44	92.59
E to TC	10.75	11.32	10.62	12.71	12.09	10.45	10.74	7.78	9.79	9.56	7.41
Firm Size	5.78	5.83	5.96	6.14	6.25	6.30	6.37	6.42	6.44	6.47	7.46
Sales Growth	3.68	20.12	51.76	50.61	35.32	-38.35	77.68	-2.13	10.57	23.03	24.84

ECOBANK	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ROA	12.54	9.50	11.68	11.68	12.23	12.61	11.25	11.54	12.07	5.68	7.21
ROE	18.36	17.61	20.13	20.13	10.61	21.30	18.27	17.60	16.48	7.83	19.08
NIM	75.32	142.73	125.12	117.27	112.01	101.69	114.96	202.64	266.01	102.74	401.82
STD to TC	42.57	46.02	41.98	20.38	16.48	23.80	22.18	19.89	13.03	12.75	17.58
LTD to TC	0.00	0.00	0.00	21.60	15.28	16.98	16.22	14.51	13.74	14.66	19.83
TD to TC	42.57	46.02	41.98	41.98	31.76	40.79	38.41	34.40	26.77	27.41	37.42
E to TC	57.43	53.98	58.02	58.02	68.24	59.21	61.59	65.60	73.23	72.59	62.58
Firm Size	7.50	7.83	8.01	8.01	8.03	8.30	8.41	4.56	4.78	4.87	5.00
Sales Growth	14.16	19.55	116.31	6.69	12.79	113.46	0.65	-18.01	32.86	50.13	-305.68

Years	GDP	Inflation	Excahange Rate (GH to US$)
2000	3.70	40.50	0.69
2001	4.20	21.30	0.73
2002	4.50	15.20	0.84
2003	5.20	23.60	0.89
2004	5.60	11.80	0.91
2005	5.90	14.80	0.91
2006	6.40	10.90	0.92
2007	6.30	12.80	0.97
2008	6.50	18.00	1.20
2009	4.10	19.30	1.40
2010	4.70	10.70	1.40