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Determinants of Capital Structure in Nigerian Banking Sector

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Abstract

Capital is considered as the cornerstone of a bank's financial strength since it supports bank operations by providing a buffer to absorb unanticipated losses from its activities and, in the event of problems, enabling the bank to continue to operate in a sound and viable manner while the problems are addressed or resolved. The objective of this study is to examine the relationship between the level of leverage ratios with "Size", "Dividend Payout", "Profitability", "Tangibility", "Liquidity", "Growth" and "Tax Charge"; with reference to the capital structure models and theories, and to identify leverage ratios which indicates the most pertinent factor motivating the capital structure choice in Nigerian Banking Industry between 2006 and 2010.

The research work makes use of the econometric procedure in estimating the relationship between banks capital structure and its key determinants. The pooled ordinary Least Square (Pooled OLS) technique was employed in obtaining the numerical estimates of the coefficients in different equations.

The findings of the study revealed that the main determinant factors which contribute to the bank leverage level of the Banking industry in Nigeria between the years 2006 to 2010 are

mainly bank size, dividend payout, profitability, tangible assets, growth, business risk and tax charge factors with all of these factors conforming to sign expectations based on theoretical findings. The paper recommended that major players such as bank managers, financial analysts and policy maker will have better understanding about the factors which may influence the capital structure of the Nigerian banking sector and enhance competitiveness in the banking sector.

Keywords: Capital Structure, Bank Size, Dividend Payout, Profitability, Tangible Assets, Business Risk, Tax and Banking Industry

Introduction

Determinants of capital structure in financial institutions differ from non-financial institutions due to issues peculiar to these institutions. For banks, which constitute the largest portion of financial institutions in Nigeria, liabilities relating to legal capital regulations are the most important factors determining the capital structure.

Banks generally hold more capital than the minimum capital ratios required by capital regulations that banks are obliged to meet. In general, this is explained by the fact that banks tend to operate in a prudential manner against probable shocks. However, recent studies demonstrate that factors that determine the capital adequacy ratio are not only limited to legal liabilities, but variables specific to banks are important in determining the level of capital.

There is no doubt that the banking sector plays a significant role in the economy of Nigeria. Banks should choose and adjust their strategic mix of capital in order to maximize the value of the firm and ensure that their operations are not either highly geared or too lowly geared in order to achieve optimum capital structure. Thus, the determination of appropriate capital requirement and sources of raising funds are highly important. This is because finance represents the heart of all businesses.

Lack of adequate capital has always been identified as the major causes of business failure. In Nigeria, the banking industry is regulated by the Central Bank of Nigeria. As at 2010, the minimum capital requirement for Commercial banks that intend to be in operation was N25 Billion. In order to raise this capital, banks needed to mix both debt and equity strategically for the purpose of achieving an optimum capital structure.

Capital Structure therefore, measured by "Leverage" can be narrowed down into long-term debt/equity and short-term debt/equity. Short-term debt exposes a firm to refinancing risk, used within reasonable limits and is justified by cost and asset matching considerations. When market value of equity is above its book value, the firm is able to sell additional equity if the need arises. It is now prevalent that short-term financing become a necessity in the firm's need of working capitals or representing an ongoing portion of the asset base. Although equity financing is more expensive than employing debt, striking a balance of both elements is deemed reasonable. Capital structure therefore is regarded as one of the financial components which could imply the firms' health conditions (MARC, 2010).

Since the famous proposition of Modigliani and Miller (1958) that, in perfect capital markets, capital structure choice is irrelevant to firm value, considerable research has been undertaken to identify the nature of market frictions likely to affect firm value. However, such research is typically restricted to non-banks. The special nature of the deposit contract, the degree of leverage in banking and the regulatory constraints imposed on banks have meant that banks (and financial institutions in general) have been excluded in previous empirical studies on standard capital structure choice. Nevertheless, understanding the determinants of capital

structure is as important for banks as for non-banks firms. Diamond and Rajan (2000) found that a bank's capital structure affects its stability as well as ability to provide liquidity and credits effectively. Given that a well-functioning and well-developing banking system plays a crucial role in promoting growth of an economy (Levine, 1997), and the predominant role of capital ratios in prudential regulation, it is imperative to understand the factors which drive the capital structure decision of banks.

In general, capital is regarded as the cornerstone of a bank's financial strength. It supports bank operations by providing a buffer to absorb unanticipated losses from its activities and, in the event of problems, enabling the bank to continue to operate in a sound and viable manner while the problems are addressed or resolved. The maintenance of adequate capital reserves by a bank can engender confidence in the financial soundness and stability of the bank by providing continued assurance that it will honor its obligations to depositors and creditors.

Statement of the Problem

In Nigeria, banks have not lived up to expectation of achieving optimum capital structure. If this is not achieved, it is at the peril of both the providers of capital and the firm itself. Hence, many developing countries have experienced banking problems requiring major reforms to address weak banking supervision and inadequate capital. It has been shown that in addition to deposit insurance (implicit or explicit), official capital structure regulations play a crucial role in aligning the incentives of bank owners with depositors and other creditors (Berger, Herring and Szego (1995).

However, it is not altogether clear whether the imposition of capital requirements actually reduces risk-taking incentives. Santos (1999), notes that actual capital requirements may increase risk-taking behavior. Also, Shrieves and Dahl (1992) argue that higher capital requirements may induce borrowers to shift to capital markets and in the process impair capital allocation, while Gorton and Winton (1995) show that raising capital requirements can increase the cost of capital. Thus, theory provides conflicting predictions on whether capital requirements curtail or promote bank performance. This study will make effort at clearing the air as regard the determinants of capital structure in banks with evidence drawn from the Nigerian banking sector.

Objectives of the Study

The main objectives of this study are:

i. to explore the relationship between the level of leverage ratios with "Size", "Dividend Payout", "Profitability", "Tangibility", "Liquidity", "Growth" and "Tax Charge"; with reference to the capital structure models and theories, and
ii. to identify leverage ratios which indicates the most pertinent factor motivating the capital structure choice by the Banking Industry in Nigeria between 2006 and 2010.

Research Questions

The following are the research questions we hope to answer from this research paper;

i. What are the key determinants of capital structure in the Nigerian Banking industry?
ii. What do various theories and models of Capital Structure say about banking industry capital structure determinants? and
iii. What are the most commonly used measures of Bank Leverage ratios?

Theories of Bank Capital Structure

Capital structure is defined as the specific mix of debt and equity a firm uses to finance its operations. Four important theories are used to explain the capital structure decisions. These are the Static Trade-Off Theory, Agency Theory, Pecking-Order Theory and Bankruptcy Cost Theory.

Although there is a large theoretical literature on what makes banks special, a surprisingly small number of banking theorists have addressed banks' capital structure decisions. While the empirical evidence doesn't yet firmly reject the view that banks hold the regulatory minimum plus some cushion, the high capital levels of the last 20 years have led some theorists to explore optimal capital decisions driven by market pressures, in the context of the modern theory of the banking firm.

Static Trade-Off Theory

The Modigliani and Miller model started by debating that the market value of any firm is independent of its capital structure, based on the premise that capital structure does not affect a firm's cash flow (Kyereboah-Coleman, 2007). When interpreted, the argument shows that the capital structure is not expected to vary from company to company. Barclay and Smith (2005), following on their preceding 1995 and 1999 papers, justify this "invariance" argument by trying to understand the conditions under which it was developed. The authors concluded that the conditions could be deliberately artificial and could be excluding information costs, personal or corporate taxes, contracting or transaction costs, and a fixed investment policy.

In 1963 Modigliani and Miller revised their initial stance that the financing decisions of firms do not affect their value, suggesting that firms with higher profits should use more debt, thus substituting debt for equity to take advantage of interest induced tax shields. Kyereboah-Coleman (2007) sources Myers (1984) as advancing the static trade-off theory. The theory explains how a firm decides on the debt-to-equity ratio on the assumption that some optimal capital structure exists, enabling the firm to operate efficiently and ensuring external claims on cash flow are reduced. Miller (1988) contends this to imply that firms are encouraged to increase their debt levels. For this reason, Voulgaris et al. (2004) argue that a trade-off between tax gains and increased bankruptcy costs increases a firm's cost of capital. In highlighting limitations to optimal level of firm debt, Voulgaris et al. consider the arguments of the Stiglitz (1974) and (1988) papers; that bankruptcy costs increase as the firm's level of debt increases. Myers and Majluf (1984) proposed that firms should attempt to achieve an optimal capital structure that maximizes the value of the firm by balancing the tax benefits with bankruptcy costs which are associated with increasing levels of debt.

Since the evolution of the trade-off theory, debate has raged with researchers adapting the assumptions to more realistic expectations and analysis (Kyereboah-Coleman, 2007). One amongst some identified short comings, is that in reality high profitable companies tend to have less debt than less profitable companies as the former utilize the profits for financing.

Warner (1977) pointed that bankruptcy costs are much lower than the tax advantages of debt, implying much higher debt than predicted.

Agency Theory

Jensen and Meckling (1976) predicted capital structure choice based on the existence of agency costs, i.e. costs due to conflicts of interest. According to them, there are essentially two sources of conflicts. Conflicts between shareholders and managers arise since managers

have an incentive to consume on perquisites while putting less effort on maximizing profit for the firm. This is because managers bear the entire costs of pursuing profit maximization while they do not receive the entire gain. By increasing the level of debt, this agency cost of managerial discretion can be mitigated.

However, increasing debt level may give rise to another type of agency cost, namely conflicts between shareholders and debt-holders. The conflicts arise due to shareholders' incentive to invest in suboptimal projects. Returns to debt-holders are fixed. If an investment earns a return well above the face value of debt, shareholders would receive most of the gain, but if the investment fails debt-holders will bear all the cost because the maximum amount that shareholders can lose is the amount of their investments (limited liability). Consequently, shareholders will have preference for investing in highly risky projects even though they are value-decreasing. This agency cost of debt financing is referred to as "asset substitution effect". Accordingly, the optimal capital structure choice involves balancing the trade-off between the benefit of debt arising from mitigating the agency cost of managerial discretion against the agency cost of debt arising from "asset substitution effect".

The Pecking-Order Theory

Myers (1984) and Myers and Majluf (1984) suggests that capital structure choice is driven by the magnitude of information asymmetry present between the firm insiders and the outside investors. The more severe the information asymmetry, the more risk the outside investors are facing and hence the more discount they demand on the price of issued securities. Consequently, firms will prefer financing through internal funds and if they do need to raise outside capital, they will firstly issue risk-free debt then followed by low-risk debt. Equity is only issued as a last resort. As stated in Myers (1984), the static trade-off theory assumes that firms set an optimal debt ratio and they move gradually towards it. The theory proposes that the optimal debt ratio is set by balancing the trade-off between the benefit and cost of debt. The benefit of debt arises from the tax deductibility of interest payments on debt and the cost of debt comes in the form of higher probability of bankruptcy and the loss suffered in the event of bankruptcy.

The pecking order theory based on assertion that firms use debt only when retained earnings are insufficient and raise external equity capital only as a last resort. More recent models of capital structure choice include 'windows of opportunity' and 'managerial optimism' (Heaton, 2002). Baker and Wurgler (2002) suggest that managers could minimize the cost of capital by timing the market (issuing equity when share prices increase) implying that market conditions influence the pecking order. However, Hovakimian (2006) shows that the timing of equity issuance does not have any significant long-lasting impact on capital structure. In a quest for the factors that managers consider in deciding the financing mix of a firm, many studies have examined the role of several firm-specific factors. In a review article, Harris and Raviv (1991) report that leverage is positively related to non-debt tax shields, firm size, asset tangibility, and investment opportunities, while it is inversely related to bankruptcy risk, research and development expenditure, advertising expenditure, and firm's uniqueness.

Bankruptcy Cost Theory

Bankruptcy costs are the costs incurred when the perceived probability that the firm will default on financing is greater than zero. The potential costs of bankruptcy may be both direct and indirect. Examples of direct bankruptcy costs are the legal and administrative costs in the bankruptcy process. Haugen and Senbet (1978) argue that bankruptcy costs must be trivial or

nonexistent if one assumes that capital market prices are competitively determined by rational investors. Examples of indirect bankruptcy costs are the loss in profits incurred by the firm as a result of the unwillingness of stakeholders to do business with them. Customer dependency on a firm's goods and services and the high probability of bankruptcy affect the solvency of firms (Titman, 1984). 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. Also, employees might be less inclined to work for the business or suppliers less likely to extend trade credit.

These behaviors by the stakeholders effectively reduce the value of the firm. Therefore, firms that have high distress cost would have incentives to decrease outside financing so as to lower these costs. Warner (1977) maintains that such bankruptcy costs increase with debt, thus reducing the value of the firm. According to Modigliani and Miller (1963), it is optimal for a firm to be financed by debt in order to benefit from the tax deductibility of debt. The value of the firm can be increased by the use of debt since interest payments can be deducted from taxable corporate income. But increasing debt results in an increased probability of bankruptcy. Hence, the optimal capital structure represents a level of leverage that balances bankruptcy costs and benefits of debt finance. The greater the probability of bankruptcy a firm faces as the result of increases in the cost of debt, the less debt they use in the issuance of new capital (Pettit and Singer, 1985).

Determinants of Banks Capital Structures

Capital structure of banks is determined by various internal and external factors. The macro variables of the economy of a country like tax policy of government, inflation rate, capital market condition, are the major external factors that affect the capital structure of a firm. The characteristics of an individual firm, which are termed here as micro factors (internal), also affect the capital structure of enterprises. This section presents how the micro-factors affect the capital structure of a firm with reference to the relevant capital structure theories stated earlier.

(1) Size

The bankruptcy cost theory explains the positive relation between the capital structure and size of a firm. The large firms are more diversified (Remmers et al 1974), have easy access to the capital market, receive higher credit ratings for debt issues, and pay lower interest rate on debt capital (Pinches and Mingo 1973). Further, larger firms are less prone to bankruptcy (Titman and Wessels 1988) and this implies the less probability of bankruptcy and lower bankruptcy costs. The bankruptcy cost theory suggests the lower bankruptcy costs, the higher debt level. The empirical studies carried out during the 1970s, as suggested by this theory, also show the positive relation between the size of firms and capital structure (Martin et al., 1988). But results of some empirical studies do not corroborate with this theoretical relation.

(2) Growth Rate

The agency cost theory and pecking order theory explain the contradictory relation between the growth rate and capital structure. Agency cost theory suggests that equity controlled firms have a tendency to invest sub-optimally to expropriate wealth from the enterprises' bondholders. The agency cost is likely to be higher for enterprises in growing industries which have more flexibility in their choice of future investment. Hence, growth rate is negatively related with long-term debt level (Jensen and Meckling, 1976). This theoretical result is backed up by the empirical studies carried out by Kim and Sorensen (1986), and Titman and Wessels, (1988) but Kester, (1986) study rejected this relation. Pecking order theory,

contrary to the agency cost theory, shows the positive relation between the growth rate and debt level of enterprises. This is based on the reasoning that a higher growth rate implies a higher demand for funds, and, ceteris paribus, a greater reliance on external financing through the preferred source of debt (Sinha 1992). For, pecking order theory contends that management prefers internal to external financing and debt to equity if it issues securities (Myers 1984). Thus, the pecking order theory suggests the higher proportion of debt in capital structure of the growing enterprises than that of the stagnant ones. Chung (1993), Chaplinsky and Niehaus (1990) showed the evidence contrary to the pecking order theory.

(3) Profitability

The static trade-off hypothesis pleads for the low level of debt capital of risky firms (Myers 1984). The higher profitability of firms implies higher debt capacity and less risky to the debt holders. So, as per this theory, capital structure and profitability are positively associated. But pecking order theory suggests that this relation is negative. Since, as stated earlier, firm prefers internal financing and follows the sticky dividend policy. If the internal funds are not enough to finance financial requirements of the firm, it prefers debt financing to equity financing (Myers 1984). Thus, the higher profitability of the enterprise implies the internal financing of investment and less reliance on debt financing, Aremu, Ekpo and Mustapha (2013). Most of the empirical studies support the pecking order theory. The studies of Titman and Wessels (1988), Kester (1986), Friend and Hasbrouck (1989), Friend and Lang (1988), Gonedes et al (1988) show that negative relationship exist between the level of debt in capital structure and profitability. Indian and Nepalese studies also show the same evidence as foreign studies do (Baral, 1996). Only a few studies show the evidence in favor of static trade-off hypothesis contention.

(4) Dividend Payout

The bankruptcy costs theory pleads for adverse relation between the dividend payout ratio and debt level in capital structure. The low dividend payout ratio means increase in the equity base for debt capital and low probability of going into liquidation. As a result of low probability of bankruptcy, the bankruptcy cost is low. According to the bankruptcy cost theory, the low bankruptcy cost implies the high level of debt in the capital structure. But the pecking order theory shows the positive relation between debt level and dividend payout ratio Titman and Wessels (1988). According to this theory, management prefers the internal financing to external one. Instead of distributing the high dividend, and meeting the financial need from debt capital, management retains the earnings. Hence, the lower dividend payout ratio means the lower level of debt in capital structure.

(5) Business Risk

In banking, one of the most important determinants of capital is related to the risk that banks have taken. Legal regulations relate the level of capital that banks must maintain with the level of risks that they carry. The main reason of this is that capital is viewed as a shield against unexpected losses and bankruptcy. Both agency and bankruptcy cost theories suggest the negative relation between the capital structure and business risk. The bankruptcy cost theory contends that the less stable earnings of the enterprises, the greater is the chance of business failure and the greater will be the weight of bankruptcy costs on enterprise financing decisions. Similarly, as the probability of bankruptcy increases, the agency problems related to debt become more aggravating. Thus, this theory suggests that as business risk increases, the debt level in capital structure of the enterprises should decrease (Taggart 1985). Studies carried out in western countries during 1980s show the contradictory evidence in this regard (Martin et al, 1988). The studies carried out in India and Nepal also show the contradictory

evidence on the relation between the risk and debt level. Sharma (1983) and Chamoli (1985) show the evidence against, and Garg (1988) and Paudel (1994) do for the relation consistent with the bankruptcy and agency cost theories.

(6) Tax Charge

Numerous empirical studies have explored the impact of taxation on corporate financing decisions in the major industrial countries. Some are concerned directly with tax policy, for example, MacKie-Mason (1990), Shum (1996) and Graham (1999). MacKie-Mason (1990) studied the tax effect on corporate financing decisions and provided evidence of substantial tax effect on the choice between debt and equity. He concluded that changes in the marginal tax rate for any firm should affect financing decisions. When already exhausted (with loss carry forwards) or with a high probability of facing a zero tax rate, a firm with high tax shield is less likely to finance with debt. The reason is that tax shields lower the effective marginal tax rate on interest deduction. Graham (1999) concluded that in general, taxes do affect corporate financial decisions, but the magnitude of the effect is mostly "not large".

On the other hand, DeAngelo and Masulis (1980) show that there are other alternative tax shields such as depreciation, research and development expenses, investment deductions, etc., that could substitute the fiscal role of debt. Empirically, this substitution effect is difficult to measure, as finding an accurate proxy for tax reduction that excludes the effect of economic depreciation and expenses is tedious (Titman and Wessels, 1988).

Dammon and Senbet (1988) argue that there is also an income effect when investment decisions are made simultaneously with financing decisions. They suggest that increases in allowable investment-related tax shields due to changes in the corporate tax code are not necessarily associated with reduction in leverage at the individual firm level when investment is allowed to adjust optimally. They explain that the effect of such an increase depends critically on the trade-off between the "substitution effect" advanced by DeAngelo and Masulis (1980) and the "income effect" associated with an increase in optimal investment. The tax incentive of debt contributes to its presence in the capital structure, as the interests payments on debt is tax-deductible, hence reducing company's tax burden (Dzolkamaini, 2005).

(7) Tangibility

Due to the conflict of interest between debt providers and shareholders (Jensen and Mekling, 1976), lenders face risk of adverse selection and moral hazard. Consequently, lenders may demand security, and collateral value (proxied by the ratio of fixed to total assets) may be a major determinant of the level of debt finance available to companies (Scott (1977), Stiglitz and Weiss (1981), Williamson (1988) and Harris and Raviv (1990)).

The degree to which firms' assets are tangible and generic should result in the firm having a greater liquidation value. Capital intensive companies will relatively employ more debt (Myers, 1977), as pledging the assets as collateral (Myers, 1977; Harris and Raviv, 1991) or arranging so that a fix charge is directly placed to particular tangible assets of the firm. Bank financing will depend upon whether the lending can be secured by tangible assets (Storey, 1994; Berger and Udell, 1998).

Measurement of Capital Structure

Surprisingly, there is no clear cut definition of Capital Structure also known as leverage in the academic literature. The specific choice depends on the objective of the analysis. Rajan and Zingales (1995) apply four alternative definitions of leverage. Because their approach is one of the cleanest in academic the literatures and it is the most adopt their framework.

The first and broadest definition of leverage ratio is the ratio of total (non-equity) liabilities to total assets. This can be viewed as a proxy of what is left for shareholder in case of liquidation. However, this measure does not provide good indication of whether the firm is at risk of default in the near future. In addition, since total liabilities also include items like accounts payable which are used for transaction purposes rather than for financing, it is likely to overstate the amount of leverage. In addition, provisions and reserves such as pension liabilities, potentially affect this measure of leverage. A second definition of leverage is the ratio of debt (both short term and long term) to total assets. This measure of leverage only covers debt in a narrower sense (i.e., interest bearing debt) and excludes provisions. However, it fails to incorporate the fact that there are some assets which are offset by specific non-debt liabilities. For example, an increase in gross amount of trade credit is reflected in a reduction in this measure of leverage because the level of accounts payable may differ across industries. Rajan and Zingales (1995) suggested using a measure of leverage unaffected by the gross level of trade credit.

A third definition of leverage is the ratio of debt to net assets which is total assets less accounts payable and other current liabilities. This measure of leverage and is unaffected by non-interest bearing debt and working capital management. However, it is influenced by factors that has nothing to do with financing; for example, assets held against pension liabilities may decrease this measure of leverage. In Switzerland, this should not be important because pension liabilities need not be expensed in the balance sheet. In contrast to most other continental European countries, pension money is managed in separated entities.

The fourth and final definition of leverage is one minus the ratio of total equity to total Assets. This measure of leverage looks at the capital employed and thus best represents effect of past financing decisions it most directly relates to the agency problems associated with debt as suggested by Jensen and Meckling (1976) and Myers (2001). An additional issue is whether leverage should be computed as the ratio of the book value to the market value of equity. Again, the correct choice is not easy. Fama (1965, 1970) argue that most of the theoretical predictions apply to book leverage. He suggested that book ratios better reflect management's target debt ratios. The market value of equity is dependent on a number of factors that are out of direct control for the firm. Therefore, using market values may not reflect the underlying alterations within the firm. In fact, corporate treasures often explicitly claim to use book ratios to avoid distortions in their financial planning caused by the volatility of market prices. A similar rationale is often heard from rating agencies. From a more pragmatic point of view, market value of debt is not readily available.

A final adjustment for cash balances seems particularly important because many firms hold substantial cash and short-term investment. This needs not be inefficient but may rather be interpreted as slack in the context of Myers (2001) and Myers and Lambrecht (2007) which can be used to invest in positive net present value projects that come along without approaching capital market. Alternatively, firm could use the funds and immediately repay debt or repurchase its own stock. Following Rajan and Zingales (1995) cash balances was interpret as excess liquidity and compute adjusted leverage ratios by subtracting cash and cash equivalents from both the numerator and the denominator of the ratios introduced earlier.

Methodology

The research work makes use of the econometric procedure in estimating the relationship between banks capital structure and its key determinants. The pooled ordinary Least Square

(Pooled OLS) technique was employed in obtaining the numerical estimates of the coefficients in different equations. The Pooled OLS method is chosen because it possesses some optimal properties; its computational procedure is fairly simple and it is also an essential component of most other estimation techniques. The estimation period covers 2006 through 2010. The data was sourced mainly from the Annual Reports and Statement of Accounts of First Bank of Nigeria Plc, United Bank for Africa, Guaranty Trust Bank Plc, Zenith Nigeria Plc and First City Monument Bank Plc.

The Study Hypotheses

This study has tested the following null hypotheses on relation between the defined variables and capital structure of some listed banks in Nigeria:

H_{01}: There is no significant relation between Bank Size and Bank Leverage.
H_{02}: There is no significant relation between Tangibility and Bank Leverage.
H_{03}: There is no significant relation between Growth and Bank Leverage.
H_{04}: There is no significant relation between Profitability and Bank Leverage.
H_{05}: There is no significant relation between Dividend Payout and Bank Leverage.
H_{06}: There is no significant relation between Business Risk and Bank Leverage.
H_{07}: There is no significant relation between Tax Charge and Bank Leverage.

Econometric Model

This study is based on testing the validity of the works of Jensen and Mekling (1976) among others and on this basis, the model below is estimated to draw conclusion from the findings of our study;

$$LEVERAGE_{i,t} = \beta_0 + \beta_1(SIZE_{i,t}) + \beta_2(PR0F_{i,t}) + \beta_3(TANG_{i,t}) + \beta_4(DIVPAY_{i,t}) + \beta_5(RISK_{i,t}) + \beta_6(GROW_{i,t}) + \beta_7(TAX_{i,t}) + \varepsilon_i$$

Where:

LEVERAGE	**:**	1 minus Equity all over Total Asset (LEVERAGE)
SIZE	**:**	Natural Logarithm of Total Assets (SIZE)
TANGIBILITY	**:**	Total Fixed Assets all over Total Assets (TANG)
PROFITABILITY	**:**	Profits Before Interest and Tax plus Interest Expense all over Total Assets (PROF)
DIVIDEND PAYOUT	**:**	Dividend Paid Out all over Profits After Tax (DIVPAY)
GROWTH	**:**	Growth Rate of Sales i.e. Gross Earnings for Banks (GROW)
TAXATION	**:**	Tax Paid all over Profit Before Interest and Tax (TAX)
RISK	**:**	Total Risk Assets all over Total Assets (RISK)
ε	**:**	Stochastic Error Term representing all other variables not captured
t	**:**	Represents time periods of the observations i.e. 2006 - 2010
i	**:**	Represents observations of each Bank at the point in time

Data Analysis

Table 1

Pooled Ols Regression Result

Dependent Variable: LEVERAGE

Method: Least Squares

Date: 08/19/12 Time: 09:01

Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.032716*	0.099913	10.33611	0.0000
DIVPAY	0.031180*	0.038984	6.799818	0.0000
GROWTH	-0.000083*	0.000268	-5.312386	0.0000
PROF	-0.688234*	1.380209	-8.498654	0.0000
RISK	-0.180464*	0.141619	-4.274295	0.0000
SIZE	0.003174*	0.005333	6.595147	0.0000
TANG	-0.021376*	1.693401	-8.012623	0.0000
TAX	-0.155469*	0.147762	-6.052161	0.0000

R-squared	0.986561	**Mean dependent var**	0.826625
Adjusted R-squared	0.909262	**S.D. dependent var**	0.061422
S.E. of regression	0.059890	**Akaike info criterion**	-2.538275
Sum squared resid	0.060976	**Schwarz criterion**	-2.148235
Log likelihood	39.72844	**Hannan-Quinn criter.**	-2.430095
F-statistic	31.177653	**Durbin-Watson stat**	2.005306
Prob(F-statistic)	0.000000		

(*, **, *** indicates Levels of Significance at 1%, 5% and 10% respectively)

Source: Computed from E-Views 7.1

Discussion of Research Findings and Results

Table 1 above shows the result from the data analysed for this study. As can be seen in the table above, the model estimated give almost a perfect result as compared to the various theories as well as empirical literatures reviewed on the determinants of capital structure among banks generally. The estimated model above has an R^2 and Adjusted R^2 98.66% and 90.93% respectively as its coefficient of variation. This indicates that majority of the variations or changes in the capital structure of the understudied bank in Nigeria a largely determined by the dependent variables selected for this study. This is further supported by the F-Statistic which is given at 31.17 and significant at 1% level of significance from the F-Statistic Prob. This shows that the coefficients of the variables in our model are statistically different from zero. The Durbin-Watson Statistic estimated at 2.00 indicates that there is no trace of serial correlation in the error terms of our model which may render it a spurious regression.

Still on table 1 above, it can be observed that all the determinants of Bank Leverage in our model are statistically significant at 1% and rightly signed in all instances. Dividend Payout with a coefficient given at 0.031180 is statistically significant at 1% and positively related to Leverage. This supports the finding and Wessels (1988) based on the pecking order theory that banks management prefers the internal sources of financing to external one but only have to resort to external financing when there is the need for expansion as such, lower

dividend payout ratio means the lower level of debt in capital structure. Size with a coefficient of 0.003174 is also significant at 1% as well as exhibiting a positive relationship with Bank Leverage ratio thereby supporting the findings of Remmers et al (1974) on the basis of the Bankruptcy Cost Theory that large firms are more diversified and as such, have easy access to the capital market, receive higher credit ratings for debt issues, and pay lower interest rate on debt capital hence they are less prone to bankruptcy.

But other variables in our Capital Structure model show negative relationships with leverage. For instance, Growth, Profitability and Risk with their coefficients estimated as 0.000083, 0.688234 and 0.180464 respectively are also statistically significant at 1% level. For Growth, this supports the finding that the agency cost theory and pecking order theory based on the empirical works of Jensen and Meckling (1976), Kim and Sorensen (1986) as well as Titman and Wessels, (1988) that equity controlled firms have a tendency to invest sub-optimally to expropriate wealth from the enterprises' bondholders. While for Profitability, our result supports the findings of the pecking order theory which suggests the higher profitability of the enterprise implies the internal financing of investment and less reliance on debt financing thereby having support from the works of Titman and Wessels (1988) and Kester (1986). As for Risk, our findings find support in the agency and bankruptcy cost theories which suggests that the greater the chance of a business failure, the greater will be the weight of bankruptcy costs on enterprise financing decisions and as the probability of bankruptcy increases, the agency problems related to debt become more aggravating (Taggart 1985).

Finally, the last variables in our model Tangibility and Tax Charge estimated as 0.021376 and 0.155469 are also inversely related to Bank Leverage ratio in our model and statistically significant at 1% respectively. For Tangibility, this is expected as supported by the findings of Hutchinson and Hunter (1995) that Tangible assets by impacting on financial leverage augments risk through the increase of operating leverage. While Tax Charge though rightly signed is also seen to conform to *"a priori"* expectations in our model and finds support for this in the work of Dzolkamaini, (2005) that as tax incentive of debt contributes to its presence in the capital structure, the interest payments on debt is tax-deductible, hence reducing company's tax burden.

Conclusion and Recommendation

This study examines the determinants of capital structure of Banks in Nigeria. Previous research is mainly focus on the large listed firms covering small number of countries. The study discussed the capital structure decisions of banks in the Nigerian Banking industry covering the 5 biggest banks in the country as at 2010 from their different financial results during the period of the study. In contrast to early studies, the study main focus is on the big banks because their contribution to the GDP is higher when compared to the smaller banks and they comprise the majority of firms controlling the largest deposits in the Nigeria. The study analyzed whether the determinants of capital structure as posited by various authors affect the capital decisions of these banks. The study therefore use database which has not been used for the examination of the capital structure before in Nigeria.

As a result of this research findings, it is found that the main determinant factors which contribute to the bank leverage level of the Banking industry in Nigeria between the years 2006 to 2010 are mainly bank size, dividend payout, profitability, tangible assets, growth, business risk and tax charge factors with all of these factors conforming to sign expectations based on theoretical findings and previous empirical literatures of various authors also cited in this research work.

The study recommends that future studies should increase the length of the research period of the study to ensure that there is no biasness in drawing up samples for conclusions. Perhaps by covering a longer time period, it will be more meaningful in explaining dependent variable. Secondly, through this study, it is hoped that major players such as bank managers, financial analysts and policy maker will have better understanding about the factors which may influence the capital structure of the Nigerian banking sector and enhance competitiveness in the banking sector.

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Table

Pooled Data of The Five Big Banks Used

BANK	YEAR	LEVERAGE	SIZE	TANG	PROF	DIVPAY	TAX	RISK	GROWTH
FBN	**2006**	0.880558	13.195883	0.0259261	0.044371	0.424130	0.234251	0.326412	23.785750
FBN	**2007**	0.890380	13.544857	0.0220873	0.046317	0.570798	0.169344	0.287312	29.482553
FBN	**2008**	0.694262	13.968627	0.0250159	0.051742	0.735438	0.198501	0.375618	64.693123
FBN	**2009**	0.824385	14.387877	0.0261231	0.050606	0.680476	0.239341	0.576875	34.295559
FBN	**2010**	0.825968	14.487055	0.0268825	0.039561	0.107737	0.209615	0.519814	18.321455
ZENITH	**2006**	0.835615	13.322474	0.0378244	0.041942	0.574463	0.241850	0.326978	66.758320
ZENITH	**2007**	0.872352	13.692146	0.0390795	0.047539	0.529214	0.248186	0.246969	53.196386
ZENITH	**2008**	0.798526	14.334323	0.0286215	0.058870	0.611856	0.049347	0.248253	113.153351
ZENITH	**2009**	0.791264	14.268620	0.0477823	0.072838	0.615464	0.421629	0.425415	33.677151
ZENITH	**2010**	0.804179	14.397423	0.0354951	0.043297	0.800570	0.223991	0.373219	-33.357466
UBA	**2006**	0.944057	13.654451	0.0378577	0.043928	0.160098	0.083586	0.125927	237.485298
UBA	**2007**	0.850482	13.912953	0.0437366	0.048550	0.356008	0.111012	0.290497	17.457220
UBA	**2008**	0.876221	14.234281	0.0369484	0.062126	0.416679	0.107052	0.266787	52.641782
UBA	**2009**	0.865999	14.152610	0.0453265	0.055614	1.003491	0.133760	0.387820	42.854273
UBA	**2010**	0.868961	14.175024	0.0392397	0.041901	0.994924	0.093282	0.397389	-28.485442
GTB	**2006**	0.866771	19.536086	0.0384470	0.059025	0.484010	0.211416	0.273622	34.138731
GTB	**2007**	0.900843	19.985881	0.0412856	0.059475	0.476441	0.152251	0.237696	46.562762
GTB	**2008**	0.804470	20.638012	0.0392375	0.060913	0.341093	0.188848	0.450826	103.054852
GTB	**2009**	0.815204	20.742982	0.0404795	0.063124	0.625753	0.115422	0.527632	59.439599
GTB	**2010**	0.807673	20.787894	0.0429478	0.067487	0.542830	0.197106	0.528217	-8.801085
FCMB	**2006**	0.752387	18.484700	0.0648788	0.060281	0.117531	0.219476	0.178881	76.841555
FCMB	**2007**	0.882161	19.386926	0.0485576	0.041658	0.167155	0.272892	0.318018	127.986823
FCMB	**2008**	0.715984	19.958001	0.0356268	0.049359	0.180383	0.343810	0.401034	102.954639
FCMB	**2009**	0.750924	20.058530	0.0406417	0.029054	2.044493	0.148151	0.525241	41.882489
FCMB	**2010**	0.746005	20.088526	0.0368382	0.054750	0.752809	0.033127	0.610351	-18.629890

Source: Annual Reports of Selected Banks from 2006 – 2010.