EFFECTS OF CAPITAL STRUCTURE ON PROFITABILITY OF QUOTED BANKS IN NIGERIA

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A RESEARCH DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES THROUGH THE DEPARTMENT OF BUSINESS ADMINISTRATION AND ENTREPRENEURSHIP, BAYERO UNIVERSITY KANO, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc.) DEGREE IN MANAGEMENT

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DECLARATION

I declare that this work is the product of my own efforts; undertaken under the supervision of Prof. Garba Bala Bello and has not been presented and will not be presented elsewhere for the award of a degree and all sources are duly acknowledged.

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CERTIFICATION

This is to certify that this thesis was adequately supervised and approved as having satisfied the requirements for the award of master's degree (M.Sc.) in Management by the Department Business Administration and Entrepreneurship, Bayero University Kano.

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APPROVAL

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DEDICATION

This thesis is dedicated to our Noble Prophet Peace & Blessings be upon Him

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ABSTRACT

This study examines the effect of capital structure on profitability of the quoted banks. The study is carried out based on the historical panel data analysis. The main objective of this research is to assess the effects of capital structure on performance of quoted Banks in Nigeria. To achieve this objective; an ex-post factor research design was employed. Data were generated from secondary sources, specifically, the annual reports and accounts of quoted banks from 2004 to 2013. The population of the study consists of seventeen banks listed on the Nigerian Stock Exchange, out of which seven were sampled. Descriptive statistics, Pearson correlation, as well as fixed-effect and random-effect generalized least square (GLS) regression techniques were utilized as tools of analysis in the study. The findings establish that capital structure affects Nigerian banks' profitability significantly. The study recommends that banks should choose appropriate mix of capital structure in order to maximize their profitability, consider the principles of finance in their decision making, utilize the services of professionals in complex business situations, and utilize equity judiciously.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Every business requires funds to carry out its activities. The needed funds may be for daily running or business expansions. This fund is referred to as capital. Capital therefore refers to the means of funding a business. Capital of firms when sourced becomes a burden on enterprises simply because it is other persons' resources which they are to compensate as they derive maximum benefits from it. It is therefore a symbol of a company's financial liabilities. Two major sources are available for firms willing to raise funds for their activities. These sources are internal and external sources. The internal source refers to the funds generated from within an enterprise which is mostly retained earnings. It results from success enterprises earn from their activities. Firms may in the same vein look outside to source for their needed funds to enhance their activities. Any funds sourced not from within the earnings of their activities are termed external financing. The external funding may be by increasing the number of co-owners of a business or outright borrowing in form of loan. Issuance of equity helps in sourcing for fund through external financing leading to increment in the number of owners where its holders are entitled to dividends when surplus is declared and after meeting the mandatories.

According to Dare and Sola (2010), capital structure is the debt-equity mix of business finance. It is used to represent the proportionate relationship between debt and equity in corporate firms' finances. Therefore, in this context, the composition of equity and debt in a firms' capital is what we mean by capital structure. This is in line with the definition

Chou (2007) as a mixture of debt and equity financing of a firm. An optimal capital structure is the best debt/equity ratio of a firm, which minimizes the cost of financing and maximizes the value of the firm.

On the other hand, firms have different investors with different expectations from the firm. While some investors are contended with regular stream of income with little risks from their investment, others are willing to go for higher risks so as to receive higher return. In order to meet these divergent expectations of investors a firm may need to have a capital structure that has different categories of capital to meet different requirements of investors. It is only when a business has fixed interest bonds or fixed dividend capital (i.e Preference shares), that the income will be large enough to allow for adequate dividend to be paid to ordinary shareholders. (Olokoyo, F.O. 2002)

Consequently, for growth strategy, a firm may have to retain part of its earnings for the purpose of expansion and with a view of stabilizing dividend payments around a certain percentage and retain any excess in the business. This from the side of investors inspires confidence as there is the assurance of regular dividend payment (Batty, 1982).

Financial performance is the extent to which a firm is able to generate more wealth for its investors brings about capital appreciation in the value of share increase, return on equity, return on asset, dividend per share and other growth parameters.

The Nigerian banking industry, which is the focus of this study, evolved in the 20th Century with the establishment of industrial and commercial banks in the country. Unfortunately, a large number of the banks collapsed immediately after their establishment due to the problem of low paid-up capital, borrowing without security,

extravagant life style of management and competition from foreign banks (Adedeji, 2003). Regional banks and later states banks that replaced these banks were also not doing well due to the same reasons (Adedeji, 2003). However, in the 1980's there was an unprecedented increase in the number of banks in Nigeria, including new generation banks such as First Bank Plc, Union Bank Plc, and United Bank for Africa Plc, which were before this time involved in arm-chair banking. In the 1990's as a result of sharp banking practices that emerged, as well as the inadequate capital of the banks many became distressed and went underground. This situation made CBN to raise the capital base of the banks to N1 Billion in order to safeguard the banking industry from collapse, make it more effective and play an effective role in the development of the country (Adedeji, 2003). Today Nigeria has 17 banks listed on the Nigerian Stock Exchange with statutory capital base of N25 Billion for each bank after the 2005 recapitalization exercise.

The main aim of this research therefore, is to examine the effect of capital structure on financial performance of quoted banks in Nigeria with a view to understanding how capital structure can be used to enhance financial performance of banks in Nigeria.

1.2   Statement of the Problem

A major revelation showed that many owners and directors abused or misused their privileged positions or breached their fiduciary duties by engaging in self-serving activities. The abuses included granting of unsecured credit facilities to owners, directors and related companies which in some cases were in excess of their banks' statutory lending limits, in violation of the provisions of the law (Oluyemi, 2005). A critical review

of the nation's banking system over the years has shown that one of the problems confronting the sector had been that of poor corporate governance. From the closing reports of banks liquidated between 1994 and 2002, there were evidences that clearly established that poor corporate governance led to their failures.

Ogundina (1999) observes that the Nigerian financial system over the years has been under severe stress as a result of large amounts of nonperforming loans. The classified loans and advances of the whole banking industry in 1990 amounted to N11.9 billion, representing 44.1 percent of the total loans and advances. The problem of bad debts is usually exacerbated by the negligence on the part of the lending officers. Some of these loans were not granted without regard to the basic tenets of lending, nor do they comply with any rational lending criteria. This makes it extremely difficult or impossible to recover a substantial part of the loans.

Generally, banks are expected to absorb the losses from the normal earnings. But there may be some unanticipated losses which cannot be absorbed by normal earnings. Capital comes in handy on such abnormal loss situations to cushion off the losses. In this way, capital plays an insurance function. Adequate capital in banking is a confidence booster. It provides the customer, the public and the regulatory authority with confidence in the continued financial viability of the bank. Confidence to the depositor that his money is safe; to the public that the bank will be, or is, in a position to give genuine consideration to their credit and other banking needs in good as in bad times and to the regulatory authority that the bank is, or will remain, in continuous existence. Banks play a pivotal role in the shaping up of the economy of a country, given the relationship between the

well being of the banking sector and the growth of the economy (Rajan and Zingales 1998; Cetorelli and Gambera 2001; Beck and Levine 2004). The knowledge that capital adequacy influences the financial sector's profitability is essential not only for the managers of banks, but for numerous stakeholders such as the central banks, bankers associations, governments, and other financial authorities.

However, studies like (Kosmidou, 2008; Gul, Irshad and Zaman (2011) assert that there capital adequacy of banks determines profitability. Without profits, no firm can survive and attract outside capital to meet its investment target in a competitive environment. Thus, profitability plays a key role in persuading depositors to supply funds in terms of bank deposits on advantageous terms. But in Nigeria, low capitalization of banks made them less able to finance the economy and more prone to unethical and unprofessional practices. Soludo (2005) observes that many banks appear to have abandoned essential intermediation role of mobilizing savings and inculcating banking habit at the household and micro enterprise levels. Due to capital inadequacy of many banks in the country, they were faced with high cost of financial distress and this certainly affected profitability. Asedionlen (2004) opines that recapitalization may raise liquidity in short term but will not guarantee a conducive macroeconomic environment required to ensure high asset quality and good profitability.

Another problem is that, study of this nature in the area of capital structure and financial performance of Nigerian banks has been scanty, because banks are generally excluded from studies of capital structure and this therefore, constitute a natural hold-out sample

that may be of particular interest given its relatively homogenous composition and particular institutional context (Adedeji, 2003; Groop and Heider, 2009).

On the overall, it can be said that the investigation of capital structure and performance of financial institutions such as banks has been largely overlooked. Thus, there is a conspicuous gap in the empirical research on capital structure of corporate financial firms in Nigeria (Fatokun, 2004). This research will be conducted to bridge that gap.

1.3   Objectives of the Study

The main objective of this study is to evaluate the effects of capital structure on Profitability of listed banks in Nigeria. The specific objectives of the study are the following:

i.   To determine the effect of debt ratio on Return on Asset (ROA) of listed banks in Nigeria.

ii.   To determine the effect of Equity financing on Return on Asset (ROA) of listed banks in Nigeria.

iii. To determine the effect of Debt ratio on Return on Equity (ROE) of listed banks in Nigeria.

1.4   Research Questions

In view of the above objectives, the following research questions are raised with a view to finding appropriate answers:

i.   What is the effect of debt ratio on Return on Asset (ROA) of listed banks in Nigeria?

ii.   What is the effect of equity financing on Return on Asset (ROA) of listed banks in Nigeria?

iii. What is the effect of debt ratio on Return on Equity (ROE) of listed banks in Nigeria?

1.5   Hypotheses of the Study

Based on the aforementioned research questions, the following hypotheses are formulated in null form for testing:

Ho1:   Debt ratio does not have significant effect on Return on Asset (ROA) of banks in Nigeria.

Ho2:   Equity financing does not have significant effect on Return on Asset (ROA) of banks in Nigeria.

Ho3:   Debt ratio does not have significant effect on Return on Equity (ROE) of banks in Nigeria.

1.6   Significance of the Study

In both developed and developing countries, there has been an argument on the effect of capital structure of a firm on firm performance and economic growth in general. Capital structure is one of the financial topics that have the important drive in terms of firms' ability in fulfilling the needs of the stakeholders. It also represents the major clam in firm assets. Some of the researchers in the area of capital structure agreed with the theory of capital structure which states that capital structure of a firm have positive effect on the performance and as well as increase the growth of the country's economy (Dare & Sola, 2010; Sanghoon, 2008; Stephen & Stefan, 2001; Mminquan & Jianfuo, 2008; Aliu, 2010; Olokoyo, 2012; & Onwumere, Onudugo & Imo, 2013).

The study is meant to complement the few existing literature on capital structure and financial performance of quoted banks in Nigeria, assist the practitioners as well as policy makers due to its strategic impact on financing policy and to assist management of banks in finding ways of increasing the value of their banks. It will serve as a quantitative policy document for management and board of Directors of quoted banks in Nigeria, it will enable them raise finance at the best of times, change their capital structure at appropriate times, make appropriate allocation of available resources to different projects, manage investments and monitor fluctuations in the business/financial environment through the application of agency theory, which seeks to maximize the benefits of agency relationship. It was also assist banks in tax management in order to gain from benefits of trade-off between tax and risk of bankruptcy theory and preparation of regular cash flow, to take advantage of pecking order theory, which seeks to maximize the benefits of internal financing before external financing.

Again this study was assists Nigerian listed banks to determine the appropriate mix of debt and equity that was help them in achieving optimal capital structure and hence achieve appreciable financial performance. Similarly, the study would benefit the investing public in the banking sector of Nigeria in monitoring the profitability, financial stability, growth potentials and dividend policies, with a view to making good investment decisions. The creditors and the depositing/saving public was be able to assess the credit worthiness of the banks by looking at their abilities to pay regular stream of interests, withdrawals and principal as they fall due. Government on the other hand was also benefit from this study by making proper data analysis of each quoted bank with regard to tax assessment. The importance of this study could also be viewed from the fact that its

findings can add to the existing literature on capital structure and financial performance of banks in Nigeria. On the practical dimension, this study can help bank decision makers to focus on their major banking activities which have the potential of increasing their banks financial performance.

1.7   Scope and Limitations of the Study

The study limits its scope on the impact of capital structure on financial performance of quoted banks in Nigeria considering only ROA and ROE as performance proxies, this study covers all the banks that are quoted on the floor of the Nigerian Stock Exchange. This study is an evaluation of the impact of capital structure on financial performance of quoted banks in Nigeria, within a time frame of ten years i.e. 2004-2013. This time frame is considered adequate in view of the fact that it takes care of the new era of banking in the country, which started in 2004.

CHAPTER TWO

LITERATURE REVIEW

2.1   Introduction

This chapter contains review of related literature on concepts, empirical studies, models and theories on the subject matter of the study. The review covers the concept of capital structure and its optimality. Optimal capital structure for banks, the concept of financial performance, measures of financial performance, factors affecting firm's financial performance and theories related to capital structure.

2.2   The Concept of Capital Structure

Anyafo (2002) views capital structure engineering as the financial planning process directed at satisfactorily balancing the array of possible types of finance available to a company. The main aim is to achieve business growth and be able to make appreciable returns for the owners. The amount of capital to be raised, the sorts and sources of finance to be employed are the main factors which must be carefully considered in the process of designing an appropriate capital structure for a firm. The composition of the total capital of a company which is the net worth (assets less liabilities) constitutes its capital structure (Anonymous, 2009).

Capital structure can also be seen as the composition of total capital employed by a firm, which may include both equity and debt in different proportion (Gitman, 1976). Capital structure can aid financial performance positively if the borrowed capital at 12% can be invested to earn a return of 14%, which is greater than the cost of borrowing (Baker 1978). However this may not always be the case as the financial performance may also

affect the common stockholder negatively. When the unfavorable situation occurs, as it frequently does, one possible solution would be to pay off the loans that carry high interest rates. But the problem is that by the time the negative results occur, many banks may not have sufficient amounts of cash to retire long-term debt or preferred stock on short notice, even deposits/savings suffer as happened in some Nigerian banks before and after recapitalization. Therefore, the common stockholders may be affected for a long period of time due to the unfavorable effect of leverage (Walter and Robert, 1983).

Myers (1984) opines that in deciding how much leverage is appropriate and to be able to maintain positive financial performance, firms can always plan flexible capital structures within the regulatory circle in order to be able to vary them according to changing operational and environmental circumstances. This is because preference shares and debentures may be redeemed, and if short-term capital is employed as a temporary expedient, this may be paid off and replaced by retained earnings. Since capital structure is made up of equity and debt, coupled with the fact that they complement one another with each having its benefits and drawbacks, corporate stewardship and management are always attempting to find the perfect capital structure in terms of risk/reward payoff for shareholders (Kennon, 2009).

2.2.1 The Concept of Equity

Baker (1978) refers to equity capital as the money or its equivalent that the owners of a business inject directly into its operations. If the business is a sole proprietorship or a partnership, this type of financing would likely be in the form of an owner's contribution and would appear on the balance sheet as owner's equity. If the business is incorporated,

anyone contributing equity capital would receive shares in the business. Equity capital results in some degree of ownership to those making the contribution (Gitman, 1976).

Equity capital is the most expensive type of capital a company can utilize because it's 'cost' is the return the firm must earn to attract investment (Kennon, 2009). However, Baker (1976) opines that companies still favour equity capital over debt, even when interest rates are low because of the fact that taking on debt increases operating risk as interest must be paid, in bad and good times alike. There is the fear of being over-leveraged by taking on large amounts of debt coupled with the current economic climate, which has made many lenders to become less eager to finance business growth. In addition to this, there is the inability of firms to borrow more than three times the company's cash flow, versus the loans of up to four times cash flow. This is because by the time the company reached a ceiling on borrowing, raising equity capital may become necessary. One of the advantages of equity financing is that it has the effect of increased managerial discretion when a company has more positive investment opportunities and outside investors have poor ability to choose good companies (Loth, 2008).

2.2.2 The Concept of Debt

Debt is the amount owed or borrowed from outsiders and financial institutions. It refers to assets which are owed and the term can cover other obligations. Without the instruments or institutions of debt, there would be no issue of capital structure or leverage in the form it exists now (Anonymous, 2008). Looking at it from another angle, debt capital refers to borrowed money used in the business to generate more income, the safest type being long term bonds because the company has years, if not decades, to come up

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with the principal, while paying interest only in the meantime (Kennon, 2009). Capital structure engineering is between debt and equity and should not be seen as substitute to one another because they are different in nature and complement each other in boosting the financial performance of a company (Baker, 1978).

There is no universal agreement as to what constitutes a debt. For many analysts, the debt component in a company's capitalization is simply a balance sheet's long-term debt, even though investment literature often equates a company's debt with its liabilities. Loth (2008) adopted a stricter interpretation of debt and opines that the debt component of a company's capitalization consists of short-term borrowings (notes payable), the current portion of long-term debt, and two-thirds (rule of thumb) of the principal amount of operating leases and redeemable preferred stock.

Firms use different types and sources of debt in their capital structure, which are in some cases clearly stated in the notes to the financial statements, and includes among others: secured and unsecured debt; private and public debt: syndicated and bilateral debt; funded debt; basic debt and any combination of characteristics of those listed (Milken, 2009). They also give these types of debts different names such as acceptances, off balance-sheet engagements, contingent liabilities and others.

2.3   Empirical Studies on Capital Structure Optimality

The theory of the capital structure (debt and equity finance mix) is an important reference theory in enterprise's financing policy. Whether its optimality exists or not is one of the most important and complex issues that have engaged the attention of financial experts and academics for decades.

Modigliani and Miller (1958), proposes under the perfect capital market assumption that if there is no bankruptcy cost, capital markets are frictionless, and without taxes, the firm's value is independent of the capital structure and that the firm's value will depend on its profitability. However, subsequent analysis shows that debt can reduce the tax to pay (Modigliani and Miller, 1963) refuted and modified this conclusion to recognize tax shield and therefore opine that the best capital structure of enterprises should be 100% of the debt. But this seems unreasonable in the real world, more especially in territories where tax is the main stay of government incomes.

On capital structure optimality, Jensen and Mackling (1976) introduce the concept of agency costs, which is generated by the existence of debt and outside equity. When considering corporation tax, bankruptcy costs and agency costs at the same time, trade-off theory can be introduced to extract a balance between tax advantage, bankruptcy and agency costs to derive the existence of the optimum capital structure.

Pecking order hypothesis's predictions about leverage is that debt typically grows when investment exceeds retained earnings and falls when investment is less than retained earnings as opposed to a more complex view of the model. Fama and French (2002) test and documented some qualitative predictions of the Pecking order theory against the qualitative predictions of the trade-off model and suggest that more profitable firms are less levered and this is consistent with the Pecking order. They also find out that the firms with greater investment opportunities are less levered as predicted by the trade-off theory. Shyam-Sunder and Myers (1999), in their study focus more on the key quantitative predictions of the Pecking order rather than focusing on the qualitative predictions and

conclude that it is likely that the negative relation between leverage and expected investment predicted by the complex Pecking order hypothesis and the positive relation between leverage and investment of the simple Pecking order hypothesis may dominate. Myers (1984) further explains that in a Pecking order hypothesis world, where firms do not have leverage targets, it had been advocated that considering future as well as current financing costs may lead to the desired targets which can be yielding. Firms with more expected investments may tend to have less leverage, but can go for more leverage in time when net cash flows available can absorbed the debt.

Trade-off theory, which can always be used in conjunction with Pecking order hypothesis, suggests that firms with substantial amount of intangible assets should rely on equity financing, whereas those firms having tangible assets should rely more heavily on debt financing (Harris and Raviv, 1991). However, it is evident that the advantages and disadvantages of offering excessive debt are significant. Tradeoff theory acknowledges the tax advantages of debt, while considering the threat of bankruptcy associated with it. Myers (1984) is comfortable with trade-off theory because it explains why firms do not use excessive debt.

Static trade-off theory of optimum capital structure as determined by the balancing of corporate tax saving advantage of debt against the costs of bankruptcy is intuitively appealing, and despite its many favorites, many questions as to whether or not expected increase in tax-shield benefits from employing debt finance may offset the financial distress cost such as cash flow volatility, possible bankruptcy cost in the event of default, competitive threat if strained for cash and others. Even though these questions were

answered by Deangelo and Masulis (1980); Bradley, Jarrell and Kim (1984); Barclay and Smith (1999) and Myers (2001), others still questioned it. First Miller (1977) and Graham, and Harvey, (2001), argues that the tax savings seem large and certain, while the bankruptcy costs seems to be negligible, implying that many firms should be more highly levered than they really are. Second, Myers (1984) on his part argues that if this theory were key force, then the tax variables should provide an important insight about optimum capital structure decision. He found the tax effects to be fairly minor empirically. Third, Static-Order-Hypothesis predicts that more profitable firms should carry more debt since they have more profits that need to be protected from taxation. This prediction is the same with a number of scholars (Myers, 1984; Titman and Wessel, 1988; and Fama and French, 2002). Higher profitability implies lower expected costs of financial distress and also the firm use more debt relative to book assets. Besides that, size as measured by assets, sales or firm age is an inverse proxy for volatility and for the costs of bankruptcy. The trade-off theory predicts that larger and more mature firms use more debt.

Agency which is another optimal capital structure theory was developed by Berle and Means (1932) as cited in Simmerly and Lee (2000). They observed that ownership and control had become separated in larger corporations as a result of the dilution in equity positions. This situation provided an opportunity for professional managers, as those in control, to act in their own best interest (Walsh and Seward , 1990). Today, the central issue for agency theory is how to resolve the conflict between owners and managers over the control of corporate resources through the use of contracts which seek to allocate decision rights and incentives (Jensen, 1986 and Rumelt et al., 1994). Managers are said to favour perks, power and empire building even at the expense of shareholders. To

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control such behaviour, debt is useful since debt must be repaid to avoid bankruptcy. Bankruptcy is costly for managers since they may be displaced and thus lose their job benefits. The idea that debt mitigated agency conflicts between shareholders and managers can be found in many important studies (Jensen and Meckling, 1976; Jensen, 1986; and Hart and Moore, 1988). There may also be agency conflicts between shareholders and debt-holders (Myers, 1977).

As important as this theory is, it is important to note that the formation of capital structure does not necessarily control the agency cost The agency cost of debt comprises of problems of excessive dividends, issuance of senior ranking debt, asset substitution and underinvestment (Smith and Warner, 1979), which measure the possibility of bankruptcy, restructuring the debt and cost of monitoring debt covenant. The firm having higher debt financing will have increased likelihood of agency cost of debt.

Generally managers being part of the owners tend to transfer wealth from bondholders to shareholders. In this circumstance, the use of incentive contracts, such as options is more proper to mitigate this concern. It has been evidenced also that more profitable firms have more debt in order to control managerial behaviour.

Agency theory therefore predicts that growth firms should have less debt. Firms that are expected to make profitable investments should have less need for discipline that debt provides. Regulated firms such as banks are likely to have fewer agency problems and so debt is less valuable as a control mechanism. But in Nigeria most of our banking problems emanated from agency behaviour. In conclusion it should be realized that in the real world situation, 'there is no single listed firm that is entirely funded by either debt or

equity because of the fact that financial structure has important implication on owner-manager behaviour and creditor.

Onwumere, Onudugo and Imo (2013) in a study of the relationship between financial structure and economic growth in Nigeria using regression analysis, it was revealed that total financial structure has positive and significant effect on economic growth in Nigeria. It was also discovered that the banking and capital market exert more influence on economic growth while insure sector were found to have no significant effect on economic growth.

In a study on the structure of the Nigeria banking sector and its impact on bank performance, Ugwunta, Ani, Ugwuanyi and Ugwu (2012) utilizes explanatory variables such as total deposit, concentration ratio in terms of deposit, the ratio of demand deposits to total deposit for the banking sector, the ratio of foreign assets to total asset and the number of banks while profitability was formally measured as Return On Assets (ROA) which serve as dependent variable. Regression analysis was employed and it was discovered that Nigerian banking sector is oligopolistic in structure and that market concentration is a major determinant of bank profitability in Nigeria.

Tinusa and Babalola (2012) used panel data methodology to investigate the impact of corporate governance on capital structure decision of Nigeria firms. The study found that corporate governance h s important implications on the financing decisions of the firm.

Akinleye (2012) made use of panel data in examining the speed of adjustment towards the target capital structure by Nigerian listed firms. It was discovered that firms adjust

toward target leverage at a moderate speed, with a half-life of 3.9 year for book leverage, even after controlling for the determinants of capital structure and fixed effects.

Omorogie and Erah (2010) studied capital structure and corporate performance in Nigeria between 1995 and 2009 employing Ordinary Least Square (OLS) techniques of model estimation. It was found that capital structure has not sustained effective funding required for growth and development of corporates because of its high rate of growth.

Iwarere and Akinleye (2010) used descriptive survey to investigate capital structure determinants in the Nigerian banking industry. The result identifies credit rating, volatility of earning cash flow, financial distress, transaction costs, and financial flexibility as the important factor in choosing appropriate amount of debt for bank.

Olokoyo (2012) in a study of relationship between capital structure and corporate performance of Nigeria quoted firms .the study employed panel data approach by using fixed effect estimation, random-effect estimation and pooled regression model and it was discovered that maturity structure of debts effect on performance of firms significantly and the size of the firm has a significant positive effect on the performance of firms in Nigeria.

Michael (2012) investigated capital structure determinant of quoted firms in Nigeria and lessons for corporate financing decisions using regression analysis of data obtained from Nigeria stock exchange fact book. it shows that capital structure is positively determined by cost of equity ,existence of debt tax shield, covenant restrictions in debt agreements,

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firm dividend policy, competitor's capital structure or mix and profitability and negativity correlated with cost of debt.

Akinlo (2011) examine the determinants of capital structure of 66 firms listed on the Nigerian stock exchange during the period of 1997 to 2007 musing panel data. The results shows that there is a negative relationship between leverage and growth opportunities and legibility, but negatively related to liquidity as well as size.

Patrick, Joseph and Kemi (2013) in a recent study on the impact of capital structure on firms performance in Nigeria using fixed effect regression estimation model. It was discovered that there is positive relationship between return on investment and leverage of the firm over a period of ten years. Their result support the traditional theory of capital structure which asserts that leverage is a significant determinant of firm performance.

Babalola (2012) used ordinary least square in investigating the effects of optimal capital structure on firms' performance in Nigeria. It was discovered that there is a relationship between optimal capital structure under trade-off theory and the optimal capital structure of manufacturing firms.

Ogbulu and Emeni (2012) investigated the determinants of corporate capital structure in Nigeria using ordinary least-square method and cross sectional survey; it was found that size has a negative and significant influence on capital structure. Dare and Sola (2010) examine the relationship between capital structure and corporate performance in Nigeria petroleum industry using fixed-effect estimation, Random-effect estimation and maximum likelihood estimation. It was found that there was positive relationship

between earnings per share and leverage ratio on one hand and positive relationship between dividend per share and leverage ratio on the other hand.

Mesquita and Lara (2003) examine the relationship between capital structure and profitability of some Brazilian firms. They are of the view that there is a difficult decision as to whether company should use debt or equity and this decision becomes more difficult when a company is operating in an unstable environment and that this problem occurs largely in Brazil. They also examine effect of short and long-term financing on return on equity (ROE). They conclude that in the short-run there exists inverse relationship between debt and profitability. Although they fail to indicate how significant is this relationship in either direction of impact.

Booth, Aivazian, Demirguc-Kunt and Maksimovic (2001) assess the portability of capital structure theories across developing countries with different structures of economic and financial institutions. After analyzing firms in 10 countries they reveal that the same variables are pertinent in making decision about capital structure across the countries studied irrespective of the fact that the countries have different structures of institutions and development stages. However, there exist country peculiarities at work which create differences in the outcomes of the decisions regarding capital structures of firms studied. They conclude that however, some structures are portable across different countries but most of the things are to be done at local levels which are quite different due to the structure and country factors such as growth rate, inflation, and others.

Raheman, Zulfiqar and Mustafa (2007) investigate effect of capital structure on the profitability of firms listed on Islamabad Stock Exchange using Pearson's correlation

coefficient and regression analysis on 94 non-financial firms for period 1999-2004 on a pooled OLS model. They find that capital structure has a significant effect on the profitability of these firms. Specifically, they discover that long-term debts have negative relationship with profitability while equity is positively correlated with profit. They therefore subscribe to a balanced financing mix to avoid unforeseen future loses. In Nigeria, Uremadu and Efobi (2008), examine impact of capital structure on corporate profitability in Nigeria using 10 manufacturing companies for 5 years (2002-2006) using Pearson's correlation coefficient and OLS regression model on a pooled time series data. They find that ratio of long-term debt to equity capital (gearing) has a positive and significant impact on return on capital employed (ROCE). They recommend that company management should properly manage composition of their capital structure more especially as it relates to long-term debts and equities including corporate reserves.

All the above reviewed empirical studies provide us with a solid background for the study as well as give us idea regarding capital structure and profitability at the global level. These works have also given us the results and conclusions of those researches that have already been conducted on a similar field of study for different countries and environments and from different perspectives.

2.4   Optimal Capital Structure for Banks

Banks play special roles in the economy, and therefore, their capital structure is regulated by Central Banking System of jurisdiction, with the aim of safeguarding the economy against systemic risk, investors' protection, and the orderly functioning of financial markets (Herring and Santomero, 1999). Even though, the safety nets that have been

rigged to protect banks from systemic risk have succeeded in preventing banking panics, but at the cost of not allowing banks to go into risk taking in high yielding ventures. Regulators have a variety of options to correct this distortion, but none can be relied upon to produce an optimal capital solution (Herring and Santomero, 1999). Banks optimal capital requirement is defined as the capital ratio that maximizes the value of the bank in the absence of regulatory capital requirements and all the regulatory mechanisms that are used to enforce them, but in the presence of other regilatory structure that protects the safety and soundness of banks (Macesich, 2000). While the requirement differs for each bank, it is the ratio toward which each bank would tend to move in the long run in the absence of regulatory capital requirements. Moving towards this direction may not be possible because financial institutions lack any plausible rationale in the frictionless world of Modigliani and Miller, and that the deviations from Modigliani and Miller's frictionless world are important, so that financial institutions may be able to enhance their market values by taking on an optimal amount of leverage, which is assumed to be a trade-off between the effects of bank capital on liquidity creation, the expected costs of bank distress, and the ease of forcing borrowers' repayment (Diamond and Rajan, 1999).

Just like in non-financial industry, theorists suggest that bank optimal capital structure is irrelevant in full information, complete contract world, and to first order of approximation, also in a more imperfect "real" world as explained by (Miller, 1995). But at other extreme, economists based their arguments on the high costs of equity issuance for industrial firms and concluded that banks will have similar difficulties in issuing long term equity (Stein, 1998) and greater bank capitalization will only be obtained at same cost.

It is therefore viewed that departures from the frictionless Modigliani and Miller's world may help explain market capital requirements for banks, because tax considerations tend to reduce market capital requirements, while the expected costs of financial distress tend to raise these requirements, and transactions costs together with asymmetric information problems may either increase or reduce the capital held in equilibrium (Matyszak, 2007). Regulatory capital requirements are blunt standards that respond only minimally to perceived differences in risk rather than the continuous prices and quantity limits set by uninsured creditors in response to changing perceptions of the risk of individual banks.

For these reasons, bank's optimal capital structure is a mirage. However, it has been suggested that there should he an ideal system by regulatory authorities for setting capital standards Although this may be prohibitively expensive, if not impossible, since regulators lack precise estimates of social costs and benefits to tailor a capital requirement for each bank, and they cannot easily revise the requirements continuously as conditions change (Diamond and Rajan, 1999). To keep bank risk to a tolerable level, therefore, capital standards must be higher on average than they otherwise would be if the capital ratios could be set more precisely, raising bank costs and reducing the amount of intermediation in the economy in the long run(Allen and Gale, 1998).

Whether optimal capital structure or not, Tian and Zeitun (2007) argue that profitable firms were less likely to depend on debt in their capital structure than less profitable ones. It has also been argued by the same authors that firms with a high growth rate have a high debt to equity ratio. Bankruptcy costs were also found to have an important effect on capital structure (Kraus and Litzenberger, 1973; and Harris and Raviv, 1991). If a firm's

capital structure influences a firm's performance, then it is reasonable to expect that the firm's capital structure would affect the firm's health and its likelihood of default. With regard to banks, it is possible that the debt to equity ratio aids in understanding banks' risk management strategies and how banks determine the likelihood of default associated with financially distressed firms.

2.5 The Concept of Financial Performance in Banks

Generally, financial performance, a multi-dimensional measure, is the use of simple outcome based financial indicators that are assumed to reflect the fulfillment of the economic goals of the firm (Venkatraman and Ramanujam, 1986). This is because the usefulness of a measure of performance may be affected by the objective of a firm which could equally affect its choice of performance measure and the development of the stock and capital market. However, the financial performance of banks and other financial institutions has been measured using a combination of financial ratios, benchmarking, measuring performance against budget or a mix of these methodologies (Avkiran, 1995). Profitability ratios (return on assets, return on equity, return on capital employed, earning per share), liquidity ratios (current, acid test, networking capital), solvency ratios (equity/assets, fixed assets/equity, current assets/equity) and operational efficiency ratios (assets turnover, operating expenses/gross assets, operating expenses/gross revenue) are commonly used to measure the financial performance of banks. This is in line with much of the current bank performance literature which describes the objective of financial organizations as that of earning acceptable returns and minimizing the risks taken to earn this return (Hempel et al, 1986). Therefore, traditional measures of bank performance have measured both risks and returns.

With regards to financial performance, Tian and Zeitun (2007) opines that one of the main factors that could influence a firm's performance is capital structure. Since bankruptcy costs exist, deteriorating returns occur with further use of debt in order to get the benefits of tax deduction. Therefore, there is an appropriate capital structure beyond which increases in bankruptcy costs are higher than the marginal tax-sheltering benefits associated with the additional substitution of debt for equity. Firms are willing to maximize their performance, and minimize their financing cost, by maintaining the appropriate capital structure or the optimal capital structure. Harris and Raviv (1991) also argue that capital structure is related to the trade-off between costs of liquidation and the gain from liquidation to both shareholders and managers. So firms may have more debt in their capital structure than is suitable as it gains benefits for both shareholders and managers. Another study by Gleason, Mathur and Mathur (2000) found that firms' capital structure has a negative and significant impact on firms return on assets (ROA), growth in sales and pretax income. Therefore, high levels of debt in the capital structure would decrease a firm's performance.

However, not only does a firm's level of leverage affect corporate performance and failure but also its debt maturity structure (Barclay and Smith, 1995 and Ozkan,2002). Schiantarelli and Sembenelli (1999) investigated the effects of firms' debt maturity structure on profitability for Italy and the United Kingdom and found a positive relationship between initial debt maturity and medium term performance. In other words, the choice of debt structure could have an impact on both corporate performance and failure risk. Furthermore, there are other factors, such as firm size, age, growth, risk, tax

rate, factors specific to the sector of economic activity, and factors specific to macroeconomic environment of a country, which may influence firm performance.

As earlier stated, there is no doubt that the banking sector plays a significant role in the economy of any country. In the effort to raise capital and the pursuance of optimal capital structure, banks need to adjust and mix both debt and equity strategically in order to finance their operations efficiently and effectively within their operational guidelines. This implies that banks should neither be highly geared nor lowly geared in order to maximize the value of the firm (Salawu, 2007). In addition, the Central Bank of Nigeria has set the minimum capital base of N25 Billion in regulating the banking industry. Despite this, Nigerian banks are still far from achieving optimal capital structure and significantly, this is at the peril of both the providers of capital and the banking industry.

In summary, the foregoing studies have shown that a firm's performance could be affected by the capital structure choice and by the structure of debt maturity. Debt maturity affects a firm's investment options. Also, tax rate is expected to have an impact on a firm's performance. So, investigating the impact of capital structure variables on a firm's performance will provide evidence of the effect of capital structure on firm performance.

2.6   The Relationship between Capital Structure and Financial Performance of Banks

The relationship between financial factors and firm performance is not always clear-cut as it has been empirically proved to be either positive or negative since there are many variables in capital structure choice, which will affect company's performance (Hall and Weiss l967, Gale 1972, Hurdle 1974, Shepherd 1994, Oustapassidis 1998). Positive

relationship between capital structure and financial performance can occur when management of an organization effectively manages risk to reduce the volatility of corporate cash flows and hence reduces the costs associated with potential financial distress thereby reducing the average cost of capital (Anderson, 2005). At the same time, the reduction in the cost of capital makes debt more attractive and provides incentives to engage in incremental business projects that contribute to corporate performance (Myers and Majluf, 1984). Jensen's (1986) free cash flow argument predicts that more leverage may increase financial performance because the managers of indebted firms are less able to invest in projects with negative net present value. Margaritis and Psillaki (2009) in testing the relationship among capital structure, equity ownership and firm performance, found support for the core prediction of the Jensen and Mackling (1976) agency cost hypothesis in that higher leverage is associated with improved efficiency over the entire range of observed data. Also, high agency costs are value destroying. At the individual firm level it appears that those firms with high Research & Development and high agency costs are more valuable if they have a higher debt-equity ratio. Based on the notion of financial distress, it has been argued that more profitable firm's can sustain higher levels of (tax-advantageous) debt financing. But according to the Pecking order theory, more profitable firms should have lower leverage ratios than less profitable firms since they are able to finance their investment with retained earnings. This conclusion is reinforced by the argument in Titman and Wessels(1988) that more profitable firms tend to use earnings to pay down debt and would therefore have lower leverage than less profitable firms. In that particular study they explain that the firms that finance their investment activities by retained profits are more profitable than those that finance their activities

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through borrowed capital. On sensitivity of performance to capital structure on selected Food and Beverage Company in Nigeria, the study shows that, performance indicators to turnover(EBIT, EPS and DPS) and the measures of leverage are significantly sensitive (Akintoye, 2008).

But Ai (1997) reveals in a study of the relationship between capital structure and profitability of Malaysian firms that profitability was inversely related to the amount of liability in a company's capital structure, therefore the more debt a firm incurs the worse its earnings. This view is also supported by Mei and Bo (2008). According to them, debt ratio is negatively related to firm profitability although unleveraged firms are in general less profitable than leveraged firms. In general, their findings are consistent with most predictions of the signaling theory. Moderate debt taking by a firm may, on the margin, yield market share gains. After some point, however, additional indebtedness leads to significant sales underperformance Mesquita and Lara (2003) contend that higher debt ratios are found among firms that have greater access to public debt markets, while, smaller, less profitable firms have higher proportion of tangible assets. They indicate that the return rates are inversely proportional to the debt. In other words, the larger the debt, the lower will be the profitability. As to the relationship between return rates and debt, the results indicate inverse relationship for the long run financing, and direct relationship for short-run financing and equity. Highly profitable firms might he able to finance their growth by using retained earnings and by maintaining a constant debt ratio. In contrast, less profitable firms will be forced to resort to debt financing (Myers and Majluf 1984) and (Donaldson, 1963). Also Berger and Bonaccorsi (2006) used profit efficiency as performance measure to evaluate the operational efficiency or effectiveness of managers

to raise revenue and control cost in line with the concept of value maximization. The result shows that neither higher leverage nor lower equity capital ratio are connected with higher profit efficiency for all range of data.

With regard to banks, research in this area has not been much but has been similar in terms of not showing a clear directional effect on the relationship between capital structure and firm performance. Berger and di Patti (2002), in a study of capital structure and firm performance in the Banking Industry came up with findings consistent with the agency costs hypothesis - higher leverage or lower equity capital ratio associated with profit efficiency, all else equal. However, the data were not consistent with the prediction that the relationship between performance and leverage may be reversed when leverage is very high due to the agency costs of outside debt. Pratomo and Ismail (2006) also supported this position. According to them, higher leverage or a lower equity capital ratio is associated with higher profit efficiency. On the other hand, Inderst and Mueller (2008) postulated a negative association between profitability and leverage, in contrasts with the predictions of standard capital structure theories in corporate finance. Specifically, they argued that decrease in the bank's profitability due to more intense loan market competition leads to an increase in the bank's optimal debt level and leverage ratio. This position lends support to an earlier position by Gropp and Heider (2006), when they examined the capital structures of 200 large banks. They concluded that higher profitability is associated with lower leverage. Profitable firms have relatively less debt relative to the market value of their equity. They suggest that increases in the market value of equity, due to an increase in operating income, are not completely offset by an increase in the firm's borrowing (Titman, and Wessels, 1988). All these empirical studies

provide support for the assumption by the traditional approach to valuation and leverage that there is an optimal capital structure and that the firm can increase its total value through the judicious use of leverage (Van Horne, 1977). To conclude, although researchers generally agree that capital structure of firms has an effect on the performance of firms, they do not agree on the direction of the effect. While some of the empirical literatures reviewed suggest a negative relationship between debt and performance, others support a positive relationship.

2.7   Performance Measures

Performance measurement systems were developed as a means of monitoring and maintaining organizational control, which is the process of ensuring that an organization aims at strategies that lead to the achievement of its overall goals and objectives. Performance measures, the key tools for performance measurement systems, play a vital role in every organization, as they are often viewed as forward-looking indicators that assist management to predict a company's economic performance and many times reveal the need for possible changes in operations (Nanni, Dixon and Vollmann 1990; Otley, 1999; Simons, 1999).

However, the choice of performance measures is one of the most critical challenges facing organizations today (Ittner and Larcker, 1998; Knight, 1998). This is because poorly chosen performance measures routinely create the wrong signals for managers, leading to poor decisions and undesirable results. The two outstanding performance measures are traditional accounting or financial-based and market or non-financial or economic value-base.

Traditional accounting-based performance measurement systems were developed at a time when the main focus was decision-making, and responsibilities for decision-making were very clearly defined. According to Knight, (1998) these performance measurement systems were designed to measure accountability to confirm that people met their budget and followed orders' as expected. To achieve this, the system measures accounting variables such as Earnings per Share (EPS), Return on Capital Employed (ROCE), Return on Investment (ROI), Return on Assets (ROA), Return on Equity (ROE) and others.

But it has been widely argued (Rappaport, 1986; 1998; Stewart, 1991 1999) that most of the accounting performance measurement systems failed to capture and encourage a corporation strategy, producing mostly poor information leading to wrong decisions, since profitability is considered as almost the sole indicator of corporate performance. Opponents of this approach suggest that it encourages management to take a number of actions which focused on the short term at the expense of investing for the long term It results in such action as cutting back on Research & Development revenue expenditure in an effort to minimize the impact on the costs side of the current year's Profit & Loss account, or calling for information on profits at too frequent intervals so as to be sure that targets are being met, both of which actions might actually jeopardize the company's overall performance rather than improve it (Alastair, 2008).

Another criticism against this performance measures is that it is financially based, increasingly popular both as a decision making tool and as an incentive compensation system (Knight, 1998). Kaplan (2001) maintains that "if senior managers place too much

emphasis on managing by the financial numbers, the organization's long term viability becomes threatened." That is, to provide corporate decision makers with solely financial indicators is to give them an incomplete set of management tools. Thus, VBM approach, based mainly on NPV techniques, FCF, and cost of capital, has as its main objective the maximization of shareholder value.

In recent years, SHV approach and VBM became particularly popular both as a decision making tool and as an incentive compensation system as well. VBM, because it is also integrated based. It takes into consideration indicators such as manufacturing and production, sales and marketing, people, research and development and the environment integrated value-based management systems influence the strategy, structure, processes, analytical techniques, and performance measures of a firm (Arnold. 1998). The most prominent areas of application include strategy development, mergers & acquisitions (M&A), and performance measurement.

Despite all these, there is still a lot of resistance, because executives tend to avoid using multiple indicators because they are difficult to design and sometimes difficult to relate to one another. They have a strong preference for single indicators of performance which are well tried and which produce ostensibly unambiguous signals. But the new school lays great emphasis on the fact that multiple indicators are made necessary by the sheer complexity of corporate activity.

Meanwhile, Management researchers prefer accounting measures of performance, such as return on equity (ROE), return on investment (ROI), and return on assets (ROA), along with the variability in these returns measures, while researchers from finance and

economics seem to prefer market returns or cash flow measures along with their variability as performance measures. All explanatory proxies are averaged over a number of periods to minimize the measurement error due to random period to period fluctuation in variables. The standard deviation of these performance measures was also obtained in order to assess the volatility.

2.8 Variables Used in Measuring Financial Performance

Financial statement analysis as a judgmental process has among its primary objectives, the identification of major changes in trends, and relationships and the investigation of the reasons underlying those changes. The judgment process can be improved by experience and the use of analytical tools. Evaluating the financial performance of a business therefore includes looking at how its profit stacks up against the capital used and how liquid the business is to pay all its commitments and operating risks (Herring, Santomero, 1999). This analytical tool in the case of financial analysis is mostly the ratio analyses, which include profitability, liquidity, solvency, efficiency ratios and operational efficiency.

2.8.1 Profitability

Profitability, the management's ability to control expenses and earn a return on the resources committed to the business, measures the extent to which a business generates a profit from the factors of production and focuses on the relationship between revenues and expenses and on the level of profits relative to the size of investment in the business. Some of the measures of profitability include: ROA, which is useful indicator as to whether a business is using its assets well and getting the most value out of capital

expenditure. Companies using then assets well will have a relatively high return, while those less well-run businesses will have a relatively low return and the higher the value, the more profitable is the business. ROE measures the rate of return on the owner's equity employed and indicates whether or not a company is generating adequate profits in relation to the resources invested in it by shareholders. ROCE allows the company to see how well the money invested in the business is performing compared with other investments (Tangen, 2003). This is because it measures whether or not a company is generating adequate profits in relation to the funds invested in it and is a key indicator of investment performance. A business could have difficulty servicing its borrowings if a low return is being earned for a longer time and EPS which is an indicator of whether the shareholders are getting expected returns with regards to their shareholding in a company and in comparisons to other companies in the same industry. Earnings per share are generally considered to be the single most important variable in determining a shares price, and the higher the ratio the better.

2.8.2 Liquidity

Liquidity, which can he analyzed both structurally and operationally. Gorton and Pennacchi (1990), measures the ability of the business to meet its financial obligations as they fall due, without disrupting the normal, ongoing operations of the business. A frequent cause of liquidity problems occurs when debt maturities are not matched with the rate at which the business' assets are converted to cash. The ratios used to test liquidity performance are current, acid test and net working capital. Current ratio assess the ability of the bank to convert its assets into cash, acid test ratio, which is similar to current ratio highlights liquidity position when stocks are ignored, while net working

capital ratio gives an indication of the ability to pay expected and unexpected bills without using cash. The higher the ratio, the more liquid the business is considered to be.

2.8.3 Solvency

These ratios suggest how sustainable the company exposure is to long-term debt. Li (2004) measures the degree of protection of suppliers of long-term funds, capital replacement and term debt repayment margin ratios. Solvency also aid in judging a firm's ability to raise more debt and its capacity to pay its liabilities on time.

Solvency is not only concerned with long-term but also short-term assets and liabilities and provides an indication of the business' ability to repay all indebtedness if all of the assets were sold. It measures the amount of borrowed capital used by the business relative to the amount of owners' equity capital invested in the business. Solvency measures (George and George. 1988) also provide an indication of the business' ability to withstand risks by providing information about the firm's ability to continue operating after a major financial adversity. This ratio also measures if the total liabilities of a business are too high, indicating a possible over dependency on outside sources for long-term financial support. By comparing shareholders funds to total assets, a confidence factor for unsecured creditors to the business can be produced. As a general rule, the higher the result, the better for businesses with long operational history to develop high levels of net worth.

Other three widely used financial ratios to measure solvency but which provide equivalent information are the debt-to-asset ratio, the equity-to-asset ratio (sometimes

referred to as percent ownership) and the debt-to-equity ratio (sometimes referred to as the leverage ratio). The higher these ratios are, the greater the risk exposure of the firm.

2.8.4 Operational Efficiency

The concept of operational efficiency can be regarded as the relationship between outputs of a system and the corresponding inputs used in their production. Efficiency is treated as a relative measure which reflects the deviations from maximum attainable output for a given level of input English and Yaisawarng (1992), argue that an efficient asset-liability management requires maximizing bank's profit, as well as, controlling and lowering various risks, and their study showed how shifts in market perceptions can create trouble during crisis.

Financial efficiency measures the degree of efficiency in using labour, management and capital. This is because inputs can be measured in both physical and financial terms; a large number of efficiency measures in addition to financial measures are usually possible.

Five measures of financial efficiency that are commonly used are the asset turnover ratio, operating expense ratio, depreciation expense ratio, interest expense ratio and net income from operations ratio. The asset turnover ratio measures how efficiently assets are being used to generate revenue. This research work utilizes the ratios of asset turnover, operating expenses/gross assets and operating expenses/gross revenue. The higher the ratio, the more efficiently assets are being used to generate revenue.

2.9 Factors Affecting Firms' Financial Performance

Firm's performance and growth is affected by financial and non-financial factors, such as debt, leverage, liquidity, capitalization, investment, size, age, location, export performance and managerial efficiency. The literature review on each of these variables is presented below.

2.9.1 Asset turnover

The efficiency of the management of a firm can be measures by the way and manner they utilize the assets of the firm to yield positive returns to the firm. asset turnover ratio is an important financial ratio than can be used to achieve the purpose of measuring management efficiency.

2.9.2 Size

The size of the firm assists large firms to exploit economies of scale and scope because of their efficiency compared to small firms, which may find it difficult to compete with the large firms particularly in highly competitive markets. The negative effect is as firms become larger, they might suffer from x-inefficiencies, leading to inferior financial performance (Majumdar, 1997).

2.9.3 Age

Age made older firms, who must have enjoyed the benefits of learning, more experienced and are not prone to the liabilities of newness (Stiochcombe, 1965), and therefore, enjoy superior performance and benefit from reputation effects, which allow them to earn a higher margin on sales. But they are also prone to inertia, and the bureaucratic ossification that goes along with age they might have developed routines, which are out

of touch with changes in market conditions, in which case an inverse relationship between age and profitability or growth could be observed. Older firms are unlikely to have the flexibility to make rapid adjustments to changing circumstances and are likely to lose out in the performance stakes to younger and more agile, firms (Marshall, 1920). The age of a firm may also have an impact on firm's performance, hence the introduction of a controlling variable, AGE in this study. Stiochcombe (1965) argues that older firms can achieve experience – based economies and can avoid the liabilities of newness.

2.9.4 Asset Tangibility

This is considered to be the major determinant of a firm's performance. The most common argument in the literature favours a positive relationship between asset tangibility and performance. Mackie (1990) concludes that a firm with high fraction of plant and equipment (tangible assets) is the asset base made the debt choice more likely and influences the firm performance. Akistnye (2008) argues that a firm which retains large investments is tangible assets will have smaller costs of financial distress than a firm that relies on intangible assets.

2.9.5 Growth Opportunities

The extant literature considers growth opportunities available to a firm as an important determinant of firm's performance, hence the introduction of a controlled variable, GROW, a proxy for growth opportunities in this study. Zeitun and Tian (2007) argue that growth firms are able to generate profit from investment.

2.10 Theoretical Framework

Following the pioneering work of Modigliani and Miller (1958) and (Miller, 1977) on capital structure, three conflicting theories of capital structure have been developed. They are: Static trade-off, Pecking order, and Agency cost theories.

2.10.1 Static Trade-off Theory

This is the process of striking a balance between tax advantages of debt and bankruptcy costs. Trade-off theory states that there is an advantage to financing with debt (namely, the tax benefit of debts) and that there is a cost of financing with debt (the bankruptcy costs of debt). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. The static trade-off theory of capital structure(also referred to as the tax based theory) states that optimal capital structure is obtained where the net tax advantage of debt financing balances leverage related costs such as financial distress and bankruptcy, holding firm's assets and investment decisions constant (Baxter and Nevins, 1967; and Altman, 1984). In view of this theory, issuing equity means moving away from the optimum and should therefore be considered bad news. According to (Myers, 1984), firms adopting this theory could be regarded as setting a target debt-to-value ratio with a gradual attempt to achieve it.

2.10.2 Pecking Order Theory

The pecking order theory as popularized by Myers (1984) is the sequence of raising funds for some companies through: retained earnings, payables and bank debt, bonds and other

more complex debt, and common stock issues. This approach is used because it raises funds in the order of low to high flotation costs, keeping the costs at minimum, so that when management finally announces a stock sale, the financial manager minimizes the possibility of reduction in the firms share price taking place (Anonymous, 2007). Pecking order theory (also referred to as the information asymmetry theory) states that firms prefer to finance new investment, first internally with retained earnings, then with debt, and finally with an issue of new equity. Myers (1984) argues that an optimal capital structure is difficult to define as equity appears at the top and the bottom of the "pecking order'. Internal funds incur no flotation costs and require no disclosure of the firm's proprietary financial information that may include firm's potential investment opportunities and gains that are expected to accrue as a result of undertaking such investments.

2.10.3 Agency Theory

Agency theory refers to a set of propositions in governing a modern corporation which is typically characterized by large number of shareholders or owners who allow separate individuals to control and direct the use of their collective capital for future gains. These individuals, typically, may not always own shares but may possess relevant professional skills in managing the corporation. The theory offers many useful ways to examine the relationship between owners and managers and verify how the final objective of maximizing the returns to the owners is achieved, particularly when the managers do not own the corporation's resources.

Jensen and Meckling (1976) identify managers as the agents who are employed to work for maximizing the returns to the shareholders, who are the principals, they also assume that as agents do not own the corporation's resources, they may commit 'moral hazards' (such as shirking duties to enjoy leisure and hiding inefficiency to avoid loss of rewards) merely to enhance their own personal wealth at the cost of their principals. To minimize the potential for such agency problems, Jensen (1986) recognizes two important steps: first, the principal-agent risk-bearing mechanism must be designed efficiently and second, the design must be monitored through the nexus of organizations and contracts.

The agency theory of capital structure slates that an optimal capital structure will be determined by minimizing the costs arising from conflicts between the parties involved. Jensen and Meckling (1976), argue that agency costs play an important role in financing decisions due to the conflict that may exist between shareholders and debt holders. If companies are approaching financial distress, shareholders can encourage management to take decisions, which, in effect, expropriate funds from debt holders to equity holders. Sophisticated debt holders will then require a higher return for their funds if there is potential for this transfer of wealth. Debt and the accompanying interest payments, however, may reduce the agency conflict between shareholders and managers. Debt holders have legal redress if management fails to make interest payments when they are due, hence managers concerned about potential loss of job, will be more likely to operate the firm as efficiently as possible in order to meet the interest payments, thus aligning their behavior closer to shareholder wealth maximization.

This study adopted the agency theory because it holds management responsible for all organizational financial responsibilities, since the managers take all financial decisions on behalf of the firm's stakeholders and they are treated as people with perfect knowledge of what is happening in the financial world. The management is therefore in a better position to determine an optimal capital structure for the banks by minimizing the costs arising from conflicts between all parties, ensure shareholders wealth maximization by applying pecking order theory, and make interest payments and principal to debt holders when they are due and ensure a balance between tax benefits and the risks of bankruptcy, as well as, ensure there is no potential loss of jobs to maximize the benefits of the workers.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Introduction

This section explains the research design and other methodological issues involved in this study. The population of the study will be presented, as well as the sampling technique and the sample size of the study. The dependent and the independent variables and their measurements explained. Lastly, methods of data collection and the techniques of data analysis are also explained

3.2   Research Design

The study is mainly theory driven. The research design used in this study is the ex-post facto design. This design is used where the phenomenon under study has already taken place; the data was obtained from the financial statements of the listed banks which are historical in nature, thereby rendering the research ex post facto. Descriptive statistics table was used to enable trend analysis of financial performance for the ten year period in focus and interpretation of the ratios. Later Ordinary Least Square (OLS) regression analysis (through the use of STATA 11 Software Package) was applied to test the significance of the effect of capital structure on financial performance of quoted banks in Nigeria with a view to confirm or negate the hypothesis formed. The Total Debt ratio and equity as a proxy of Capital Structure were the independent variables and Return on Asset (ROA) and Return on equity (ROE) were the dependent variables respectively. Also Asset turnover (TURN), firms size (SIZE), firms age (AGE), Asset tangibility (TANG), and Growth opportunity (GROW) are the control variables.

3.3   Population and Sample Size of the Study

The population of the study is made up of all the banks listed on the floor of the Nigerian Stock Exchange, their year of incorporation and year of listing is shown on the table below.

Table 3.1: Study Population

S/N	BANK NAME	YEAR OF INCORP.	YEAR OF LISTING
1	ACCESS BANK	1989	1998
2	DIAMOND BANK	1990	2005
3	ECOBANK NIGERIA	1986	2006
4	ECOBANK TRANSITIONAL	1985	2006
5	FIDELITY BANK	1987	2005
6	FIRST BANK	1969	1971
7	F.C.M.B	1982	2004
8	GT BANK	1990	1996
9	NPF MICRO FINANCE	1993	2010
10	SKYE BANK	1989	2005
11	STANBIC IBTC	1989	2005
12	STERLING BANK	1960	1992
13	UNION BANK	1917	1970
14	UBA	1961	1970
15	UNITY BANK	1987	2005
16	WEMA BANK	1945	1991
17	ZENITH BANK	1990	2004

Source: Generated by the Researcher from NSE 2011/2012 Fact Book

Table 3.1 shows the total population of the study, out of which the sample of the study is arrived, the criterion used for choosing the working population is listing latest by 2003, any bank that is listed after 2003 is automatically out because the period under study is 2004-2013. The banks that met with this criterion are listed in table 3.2

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Table 3.2: Sample of the Study

S/N	BANK NAME	YEAR OF INCORP.	YEAR OF LISTING
1	ACCESS BANK	1989	1998
2	FIRST BANK	1969	1971
3	GT BANK	1990	1996
4	STERLING BANK	1960	1992
5	UNION BANK	1917	1970
6	U.B.A	1961	1970
7	WEMA BANK	1945	1991

Source: Generated by the Researcher from NSE 2011/2012 Fact Book

The sample of the study is therefore defined to comprise seven banks, which was studied.

3.4 Source and Method of Data Collection

The study used only data from secondary source. This is because the nature of information required for this work is basically from published financial statements of the sampled banks.

3.5 Study Variable and their Measurements

The study investigated the influence capital structure has on financial structure of quoted banks in Nigeria. Capital structure is the independent variable while financial performance represents the dependent variable as used by previous studies such as (Abor 2005, Chinaemeram & Anthony 2012, Mesquite & Lara 2003). All the study variables were measured on ratio scale.

3.5.1 Dependent Variables

These are variables hypothesized to be influenced by capital structure. The study employed return on Assets (ROA) and Return on Equity (ROE) as the two dependent variables, and measures of bank performance. ROA and ROE were chosen because they are important accounting – based and widely accepted measures of financial performance. ROA can also be viewed as a measure of management's efficiency in utilizing all the assets under its control, regardless of source of financing. The measurement of ROA is given by Profit after Tax to Total Asset, and ROE is measured by Profit after Tax to Total Number of Ordinary shares in issue, some writers such as Betis and Hall (1982), Demsets and Lehn (1985), Habib and Victor (1991), Onaolapo and Kajola (2010), Chinaemeram and Anthony (2012) among others, made use of ROA and ROE as performance proxies in their studies.

3.5.2 Explanatory Variables

The explanatory variables consist of independent and control variables. The independent variables are total debt ratio which is the aggregate of short term and long term debts. The ratio is measured by total debt (TD) to total asset (TA), and equity financing ratio which is defined by dividing total number of shares outstanding by the total asset as used by previous research like Abor (2005), Salawu (2007), Chinaemeram and Anthony (2012), Chechet and Olayiwola (2014) among others. The following controlled variables are used; Asset Turnover (TURN), firm's size (SIZE) which is measured by taking the logarithms of total assets, firm's Age (AGE) which is given by the number of years since the inception of the bank to the observation date, Asset Tangibility (TANG) which is the ratio of fixed asset to total asset, and Growth opportunity (GROW) which is the change in

the natural logarithms of total asset, as previously used by Chinaemeram and Anthony (2012).

3.6   Method of Data Analysis and Model Specification

This study relied on quantitative analysis of data to test the hypotheses of the study. As the study focuses on effect of capital structure on financial performance, the data collected from the financial statements was analyzed using multiple regression technique. Furthermore, the estimation method used is Ordinary Least Square (OLS) method, so as to determine the direction, magnitude and level of significance of the relationship between dependent and independent variables. The researcher decides to use OLS because the method gives equal importance to all the items in the time series. The regression model stated below was used to estimate the functions relating capital structure variable and financial performance measure as used by Abor (2005) and Chinaemeram and Anthony (2012). Tangibility measured as the ratio of net fixed assets to total asset was introduced in to the model to unveil its effect on financial performance as asserted by Titman and Wessels (1998) and Salawu (2007). The general model for this study as is mostly found in the extant literature is represented by,

$$Y = a + \beta 1\ D1 + \beta 2\ Z2 + \varepsilon \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Where:

Y is the dependent variable

D1 is the independent variable

Z2 is the controllable variable

$\beta 1$ and $\beta 2$ are the coefficients of the explanatory and controllable variables, respectively.

ε is the error term. It has zero means, constant variance and non-auto correlated

Specifically, when the above model is adopted here, equation (1) above can be written as:

$$ROA = a + \beta1 (DR) + \beta2 (EQT) + \beta3 (TURN) + \beta4 (SIZE) + \beta5 (AGE) + \beta6 (TANG) + \beta7 (GROW) + \varepsilon \dots (2)$$

$$ROE = a + \beta1 (DR) + \beta2 (EQT) + \beta3 (TURN) + \beta4 (SIZE) + \beta5 (AGE) + \beta6 (TANG) + \beta7 (GROW) + \varepsilon \dots (3)$$

Where:

ROA = Return on Asset

DR = Debt Ratio

EQT = Equity Ratio

TURN = Asset Turnover

SIZE = Firm's Size

AGE = Firm's Age

TANG = Asset Tangibility

GROW = Growth Opportunities

a = Represent the fixed intercept element

ε = Error term

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1   Introduction

This chapter presents the analysis made of the documentary data generated and the tests of null hypotheses. The statistical software STATA 11 was used to analyze the relationship between the dependent and the independent variables using Pearson correlation coefficients and regression analytical tools. It also presents the descriptive statistics results which provide summary statistics for the variables of the study. The correlation coefficients result in an effort to establish the nature of the correlation between the dependent and the independent variables and also to ascertain whether or not multi-collinearity exists as a result of the correlation among variables.

4.2   Descriptive Statistics of the Variables of the Study

The Table 4.1 provides summary statistics for the variables of the study. The summary statistics include measures of central tendency, such as the mean, and the measures of dispersion (the spread of the distribution), such as the standard deviation. All the variables were computed from the relevant balance sheets and income statements of the sampled banks.

Table 4.1: Descriptive Statistics of the Variables

Variables	MEAN	STD DEV	MIN	MAX
ROA	-0.006	0.0972935	-0.52025	0.14
ROE	3.772786	25.39291	-5.73377	212.491
TD RATIO	0.0579209	0.1067503	0	0.79094
EQT RATIO	0.0374279	0.0474729	0.0001	0.27348
TURN	0.1125714	0.0282168	0.06	0.21
SIZE	11.68	0.5173876	10.24	12.6
AGE	46.78571	23.92373	14	96
TANG	0.0406579	0.0230294	0.01	0.12
GROW	0.0001429	0.4672351	-2.1	0.76

Source: Generated by the Researcher from the Annual Reports and Accounts of the Sampled Banks using STATA (Version 11).

Table 4.1 discloses that the returns on asset (ROA) of the seven banks over the ten year period to 2013 have an average negative 0.006% while that of the Return on Equity (ROE) is about 3.77%. The result indicates that on the average for every N1 worth of total asset of the banks no profit after tax was earned, only a loss of N0.6 was recorded, while N3.77 was earned as after tax profit on every N1 equity share issued. The above analysis shows that the selected banks have a low accounting performance during the period of study, the mean debt ratio is 0.06, equity ratio is 0.04, Asset turnover is 0.11 and size of the banks is 11.68. The average age of the banks is about 47 years. This shows that the banks are not relatively young. The mean Asset tangibility is about 0.04. This indicates that the proportion of the banks fixed assets to the total assets is about 4% the mean growth opportunity is about 0.01%.

4.3   Correlation between the Variables of the Study

In an effort to establish the nature of the correlation between the dependent and the independent variables and also to ascertain whether or not multi-collinearity exists as a result of the correlation among variables, Correlation analysis assesses the inter-relationship and association between variables. The Pearson correlation analysis is used here to assess the relationship between the variables of capital structure and profitability table 4.2 is computed for this purpose. The correlation matrix in Table 4 provides some insights into which of the independent variables are related to the dependent variable *ROA*.

Table 4.2.1: Correlation Coefficients of the Variables (ROA)

Variables	ROA	TD RATIO	EQT RATIO	TURN	SIZE	AGE	TANG	GROW	VIF
ROA	1.0000								
TDRATIO	-0.4495	1.0000							1.29
EQTRATIO	-0.5336	0.0921	1.0000						3.09
TURN	-0.0721	-0.0114	0.0003	1.0000					1.41
SIZE	0.4055	-0.0342	-0.7080	-0.3553	1.0000				2.95
AGE	-0.1571	0.1220	-0.0243	-0.0335	-0.0021	1.0000			1.15
TANG	-0.7546	0.3761	0.6482	0.1640	-0.5694	0.2616	1.0000		2.72
GROW	0.1715	0.0519	-0.2291	-0.3602	0.4503	0.0292	-0.3520	1.0000	1.44

Source: Generated by the Researcher from the Annual Reports and Accounts of the Sampled Banks using STATA (Version 11).

The correlation matrix as per table 4.2.1 above shows the relationship between all pairs of explanatory variables used in the regression model. It reveals negative and positive correlation with the dependent variable, the positive correlation imply that as the size

(SIZE), and growth (GROW) increase, the return on asset (ROA) of listed banks will also increase. On the other hand, total debt ratio (TDRATIO), equity ratio (EQTRATIO), turnover (TURN), age (AGE), and asset tangibility (TANG) shows a negative correlation; as the debt ratio, equity ratio, asset turnover, age and asset tangibility increases the return on asset decreases. The values are on the diagonal are all 1.0000 which shows that each variable is perfectly correlated with itself. Similarly from the table 4.2.1, The VIF which is simply the reciprocal of TV ranges from 1.15 to 3.09, and this indicates the absence of Multi-collinearity. VIF shows multi-collinearity when its value exceeds 10, this result is supported by the study of Tobachnick & Fidell (1996); as cited in Sabari, (2012).

Table 4.2.2: Correlation Coefficients of the Variables (ROE)

Variables	ROE	TD RATIO	EQT RATIO	TURN	SIZE	AGE	TANG	GROW	VIF
ROA	1.0000								
TDRATIO	-0.0716	1.0000							1.29
EQTRATIO	-0.1238	0.0921	1.0000						3.09
TURN	0.2845	-0.0114	0.0003	1.0000					1.41
SIZE	-0.2510	-0.0342	-0.7080	-0.3553	1.0000				2.95
AGE	-0.1771	0.1220	-0.0243	-0.0335	-0.0021	1.0000			1.15
TANG	0.0578	0.3761	0.6482	0.1640	-0.5694	0.2616	1.0000		2.72
GROW	-0.5383	0.0519	-0.2291	-0.3602	0.4503	0.0292	-0.3520	1.0000	1.44

Source: Generated by the Researcher from the Annual Reports and Accounts of the Sampled Banks using STATA (Version 11).

From the above table 4.2.2, the values on the diagonal are all 1.000, indicating that each variable is perfectly correlated with itself. It also shows the relationship between all pairs of explanatory variables used in the regression model. It reveals negative and positive

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correlation with the dependent variable, the positive correlation imply that as the asset turnover (TURN), and asset tangibility (TANG) increase, the return on equity (ROE) of listed banks will also increase. On the other hand, total debt ratio (TDRATIO), equity ratio (EQTRATIO), size (SIZE), age (AGE), and growth opportunity (GROW) shows a negative correlation; as the debt ratio, equity ratio, size, age and growth opportunity increases the return on equity (ROE) decreases. Similarly from the table 4.2.1, The VIF which is simply the reciprocal of TV ranges from 1.15 to 3.09, and this indicates the absence of Multi-collinearity. VIF shows multi-collinearity when its value exceeds 10, this result is supported by the study of Tobachnick & Fidell (1996); as cited in Sabari, (2012).

4.4   Regression Results of Findings and Discussions

The Regression Analysis was used to examine the effect of capital structure on profitability of sampled banks. The regression results show the summary of the Ordinary Least Square (OLS), Random Effects (RE) and fixed Effects (FE) estimation techniques are presented in Table 4.3 and 4.4. Gill and Beger (2012) noted that, when using Multiple Regression analysis, there is a possibility of endogeneity occurring, in a situation whereby certain variables are omitted. It leads to measurement errors. In order to examine whether endogeneity exist, which could potentially lead to biased coefficient, a Hausman Specification Test to make the choice between Fixed Effect (FE) and Random Effect (RE) Regression was performed. This test is necessary considering that there is a trade-off between the efficiency of the random effect and the consistency of the fixed approach. The test also determines whether the estimates of the coefficients, taken as a

group, are significantly different in the two regressions. If any variables are dropped in the fixed effects regression, they are excluded from the test.

Table 4.3: Regression Results of the Effects of Capital Structure on ROA

	OLS				FIXED-EFFECT				RANDOM-EFFECT			
Variables	Coef.	Std. Err.	T	P	Coef.	Std. Err.	T	p	Coef.	Std. Err.	Z	p>|z|
TD RATIO	-0.1803	0.0814	-2.2100	0.0300	-0.2189	0.0953	-2.3000	0.0250	-0.1803	0.8143	-2.2100	0.02700
EQT RATIO	-0.2980	0.2830	-1.0500	0.2960	-0.0080	0.3546	-0.0200	0.9820	-0.2980	0.2830	-1.0500	0.2920
TURN	-0.0183	0.3222	-0.0600	0.9550	0.0279	0.3675	0.0080	0.9400	-0.0183	0.3222	-0.0600	0.9550
SIZE	-0.0083	0.0254	-0.3300	0.7440	-0.0369	0.0486	-0.7600	0.4510	-0.0083	0.0254	-0.3300	0.7430
AGE	0.0002	0.0003	0.4800	0.6360	0.0047	0.0061	0.7700	0.4440	0.0002	0.0003	0.4800	0.6340
TANG	-2.7069	0.5469	-4.9500	0.0000	-3.3190	0.6145	-5.4000	0.0000	-2.7069	0.5469	-4.9500	0.0000
GROW	-0.0127	0.0197	-0.6400	0.5220	-0.0113	0.0206	-0.5500	0.5850	-0.0127	0.0196	-0.6400	0.5200
Cons	0.2175	0.3208	0.6800	0.5000	0.3514	0.3875	0.9100	0.3680	0.2175	0.3208	0.4980	0.4980
R-squared	0.6169											
Adj R-squared	0.5736											
Within					0.5873				0.5721			
Between					0.0078				0.8239			
Overall					0.1306				0.6169			
F value	14.26											
Prob>F	0.0000				0.0000				0.0000			
Hausman test (Prob>Chi)					0.4900							

Source: Generated by the Researcher from the Annual Reports and Accounts of the Sampled Banks using STATA (Version 11).

The results of OLS show the coefficient of determinations "R-square" shows 61.69% indicating that the variables considered in the model accounts for about 61.69% change in the dependent variables that is ROA, while remaining of the change is as a result of other variables not addressed by this model, it donates that 61.69% of total variation in the return on asset (ROA) of Nigerian listed Banks is caused by total debt ratio, equity ratio,

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asset turnover, size, age, asset tangibility and growth opportunity of the banks. This indicates that the model is fit and the explanatory variables are properly selected, combined and used as substantial value of the reporting quality is accounted by the explanatory variables. This is confirmed by the value of F-statistics of 14.26. Hence the study can be relied upon. Thus, the model equation can be written as:

Profitability (ROA) = 0.2174915 $-\beta_1$ 0.1803445 - β_2 0.2980007 - β_3 0.0183067 - β_4 0.0083356 + β_5 0.000163 $- \beta_6$ 2.70689 $- \beta_7$ 0.0126506+ ε

In evaluating the model based on the random effect (RE) as the result of Hausman test reveal an insignificant value of 0.4900 thus RE is better, regression result in table 4.3 shows the relationship between ROA and total debt ratio (TDRATIO) is negative and significant at 1% level. This can be justified with negative z-value of -2.21 and p>/z/ value of 0.02 also negative co-efficient of -0.18 evidencing that, with an increase in total debt of listed banks while all other variables remain constant ROA will decrease and vice versa. This shows an inverse relationship between TDR and ROA.

Also, the result shows that the relationship between ROA and equity ratio is negative and significant at 1% level. This can be justified with negative z-value of -1.05 and p>/z/ value of 0.29 and negative co-efficient value of -0.29 showing that as equity increase by N1 while other variables remain constant ROA will decrease by N0.29. Moreover, the result shows that the relationship between ROA and asset turnover (TURN) is negative but insignificant at 1% level. This can be justified with negative z-value of -0.06 and p>/z/ value of 0.95, also negative co-efficient of -0.01 revealing that as the asset turnover increase by N1 while all other variables remain constant ROA will decrease by N0.95.

Similarly, the result shows negative but insignificant relationship between ROA and size at 1% level. This can be justified with z-value of -0.33 and p>/z/ value 0.74, also negative co-efficient of -0.00. This implies that size has negative but insignificant relationship with ROA.

However, the relationship between ROA and age (AGE) is positive but insignificant at 1% level, this is evidenced by the positive z-value of 0.48 and p>/z/ value of 0.63 also positive co-efficient 0.00, this means that the older the bank the more profitable is and vice versa. This shows positive relationship.

The result also shows that the relationship between ROA and Asset tangibility (TANG) is negative and significant at 1% level, this can be justified with z-value of -4.95 and p>/z/ value of 0.00 and also co-efficient value of -2.70 meaning that as the asset tangibility increase while all other variables remain constant the ROA decreases and vice versa. Also the result shows the negative but insignificant relationship between ROA and growth opportunity (GROW) at 1% level, this is evidenced with z-value of -0.64 and p>/z/ value of 0.52 again co-efficient value of -0.01 has proven that with the increase in growth opportunity of the banks while other variables remain constant there will be a decrease in ROA and vice versa. This is consistent with the findings of Krishnan and Moyer (1997), Majumdar and Chibber (1997), Pratomo and Ismail (2006), Zeitun and Tian (2007), Akintoye (2008), Chinaemeram and Anthony (2012), among others that attest a negative relationship.

On the overall, the aggregate influence of capital structure included in the model on return of asset (ROA) of listed banks is about 61.69% which is indicated by R-squared

(overall), while the remaining 38.31% is controlled by other factors that are not included in the model. The overall probability is significant at 1% level. It shows that the model is fitted and therefore, provides substantial evidence that capital structure affects probability of listed banks in Nigeria. The random effect regression table based on STATA output is contained in Appendix III.

Table 4.4: Regression Results of the Effects of Capital Structure on ROE

	OLS				FIXED-EFFECT				RANDOM-EFFECT			
Variables	Coef.	Std. Err.	T	P	Coef.	Std. Err.	T	P	Coef.	Std. Err.	Z	p>|z|
TD RATIO	-5.8430	25.474	-0.2300	0.8190	-18.451	28.703	-0.6400	0.5230	-5.8430	25.474	-0.2300	0.8190
EQT RATIO	-313.35	88.526	-3.5400	0.0010	-392.30	106.73	-3.6800	0.0010	-313.35	88.526	-3.5400	0.0000
TURN	-48.229	100.80	-0.4800	0.6340	54.679	110.62	0.4900	0.6230	-48.229	100.80	-0.4800	0.6320
SIZE	-20.720	7.9373	-2.6100	0.0110	-47.736	14.636	-3.2600	0.0020	-20.720	7.9373	-2.6100	0.0090
AGE	-0.1857	0.1071	-1.7300	0.0880	4.2893	1.8245	2.3500	0.0220	-0.1857	0.1071	-1.7300	0.0830
TANG	108.48	171.07	0.6300	0.5280	254.44	184.99	1.3800	0.1750	108.48	171.07	0.6300	0.5260
GROW	-25.026	6.1507	-4.0700	0.0000	-19.415	6.2050	-3.1300	0.0003	-25.026	6.1507	-4.0700	0.0000
Cons	267.55	100.34	2.6700	0.01000	359.90	116.65	3.0900	0.0003	267.55	100.34	2.6700	0.0080
R-squared	0.4496											
Adj R-squared	0.3875											
Within					0.5161				0.4487			
Between					0.2604				0.4594			
Overall					0.0013				0.4496			
F value	7.24											
Prob>F	0.0000				0.0000				0.0000			
Hausman test (Prob>Chi)					0.3600							

Source: Generated by the researcher from the annual reports and accounts of the sampled banks using STATA (Version 11).

The results of OLS show the coefficient of determinations "R-square" shows 44.96% indicating that the variables considered in the model accounts for about 44.96% change in the dependent variables that is ROE, while remaining of the change is as a result of other

variables not addressed by this model, it donates that 44.96% of total variation in the return on equity (ROE) of Nigerian listed Banks is caused by total debt ratio, equity ratio, asset turnover, size, age, asset tangibility and growth opportunity of the banks. This indicates that the model is fit and the explanatory variables are properly selected, combined and used as substantial value of the reporting quality is accounted by the explanatory variables. This is confirmed by the value of F-statistics of 7.24. Hence the study can be relied upon. Thus, the model equation can be written as:

Profitability (ROE) = 267.5547 – β_1 5.843017 - β_2 313.3576 - β_3 48.22875 - β_4 20.71982 - β_5 0.1856572 + β_6 108.4849 – β_7 25.02564+ ε

In evaluating the model based on the random effect (RE) as the result of Hausman test reveal an insignificant value of 0.3600 thus RE is better, regression result in table 4.4 shows the relationship between ROE and total debt ratio (TDRATIO) is negative but insignificant at 1% level. This can be justified with negative z-value of -0.23 and p>/z/ value of 0.81 also negative co-efficient of -5.84 evidencing that, with an increase in total debt of listed banks while all other variables remain constant ROE will decrease and vice versa. This shows an inverse relationship between TDR and ROE.

Also, the result shows that the relationship between ROE and equity ratio is negative and significant at 1% level. This can be justified with negative z-value of -3.54 and p>/z/ value of 0.00 and negative co-efficient value of -313.35 showing that as equity increase by N1 while other variables remain constant ROE will decrease by N313.35. Moreover, the result shows that the relationship between ROE and asset turnover (TURN) is negative but insignificant at 1% level. This can be justified with negative z-value of -0.48

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and p>/z/ value of 0.63, also negative co-efficient of -48.22 revealing that as the asset turnover increase by N1 while all other variables remain constant ROE will decrease by N48.22. Similarly, the result shows negative but insignificant relationship between ROE and size at 1% level. This can be justified with z-value of -2.61 and p>/z/ value 0.00, also negative co-efficient of -20.72. This implies that size has negative but insignificant relationship with ROE.

The result also shows that the relationship between ROE and Age (AGE) is negative and significant at 1% level, this can be justified with z-value of -1.73 and p>/z/ value of 0.08 and also co-efficient value of -0.18 meaning that as the age increase while all other variables remain constant the ROE decreases and vice versa.

However, the relationship between ROE and Asset tangibility (TANG) is positive but insignificant at 1% level, this is evidenced by the positive z-value of 0.63 and p>/z/ value of 0.52 also positive co-efficient 108.48, this means that as the asset tangibility of banks increase while other variables remain constant ROE will also increase. This shows positive relationship.

Also the result shows the negative and significant relationship between ROE and growth opportunity (GROW) at 1% level, this is evidenced with z-value of -4.07 and p>/z/ value of 0.00 again co-efficient value of -25.02 has proven that with the increase in growth opportunity of the banks while other variables remain constant there will be a decrease in ROA and vice versa. This is consistent with the findings of Krishnan and Moyer (1997), Majumdar and Chibber (1997), Pratomo and Ismail (2006), Zeitun and Tian (2007),

Akintoye (2008), Chinaemeram and Anthony (2012), among others that attest a negative relationship.

On the overall, the aggregate influence of capital structure included in the model on return of asset (ROE) of listed banks is about 44.96% which is indicated by R-squared (overall), while the remaining 55.04% is controlled by other factors that are not included in the model. The overall probability is significant at 1% level. It shows that the model is fitted and therefore, provides substantial evidence that capital structure affects probability of listed banks in Nigeria. The random effect regression table based on STATA output is contained in Appendix III.

4.5   Test of Hypothesis

4.5.1   Hypothesis one

In chapter one, the first hypothesis that was formulated on capital structure variables and probability of listed banks in Nigeria is as follows:

Ho_1: Debt ratio does not have significant effect on Return on Asset (ROA) of banks in Nigeria.

The hypothesis was tested using random effect regression analysis. Regression result in table 4.3 shows that there is significant relationship between DR and ROA. Therefore the findings of this study shows that hypothesis one is rejected, this is also confirmed by the z-value of -2.21 and p value of 0.0200, it indicated that debt ratio has a significant effect on ROA, which gives the basis of rejecting the hypothesis **Ho_1**.

4.5.2 Hypothesis Two

The second hypothesis that was formulated in chapter one on capital structure variables and probability of listed banks in Nigeria is as follows:

H$_{O2}$: Equity financing does not have significant effect on Return on Asset (ROA) of banks in Nigeria.

The hypothesis was tested using random effect regression analysis. Regression result in table 4.3 shows that there is significant relationship between EQTR and ROA. Therefore the findings of this study shows that hypothesis two is rejected, this is also confirmed by the z-value of -1.05 and p value of 0.2900, it indicated that equity ratio has a significant effect on ROA, which gives the basis of rejecting the hypothesis **H$_{O2}$**.

4.5.3 Hypothesis Three

The third hypothesis that was formulated in chapter one on the effects of capital structure on Profitability of quoted banks in Nigeria is as follows:

H$_{O3}$: Debt ratio does not have significant effect on Return on Equity (ROE) of banks in Nigeria.

The hypothesis was tested using random effect regression analysis. Regression result in Table 4.4 shows that there is insignificant relationship between debt ratio and return on equity. Therefore the findings of this study shows that hypothesis three is accepted, it has also confirmed by the z-value of -0.23 and p value of 0.8190, it indicated that debt ratio does not have significant effect on return on equity, which gives the basis of accepting the hypothesis **H$_{O3}$**.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1   Summary

The data collected for the purpose of this research have been processed and presented;

Firstly, the test results of the first null hypothesis of the study that Debt ratio does not have effect on the Return on Asset (ROA) of banks in Nigeria, using Pearson correlation, fixed effect regression and random effect regression analysis. The results shows that total debt ratio have negative and significant relationship with the Return on Asset of the quoted Banks in Nigeria. Therefore, the study concludes that Debt ratio has a significant impact on the profitability of the Quoted banks in Nigeria based on the documentary evidence.

Secondly, the test results of the second null hypothesis of the study that Equity financing does not have effect on the Return on Asset of the quoted banks in Nigeria is presented. This test used documentary data to measure the relationship between the two variables using Pearson correlation and random effect GLS regression analysis. The analyses of the results show that equity financing is negatively related to return on Asset (ROA) of the quoted Banks in Nigeria and the relationship is significant.

Lastly, the test results of the third null hypothesis of the study that Debt Ratio does not have effect on the Return on Equity of the quoted Banks in Nigeria is discussed. The analyses of the results show that Debt ratio is negatively related to Profitability of the Quoted Banks in Nigeria however the relationship is insignificant.

5.2 Conclusions

Capital structure decision is very important part in firm management decision. The ability of the firm to attain high level of profitability is dependent on how they chose appropriate mixture of capital structure. The optimal capital structure could be achieved by firm that manages the tradeoff between Debt and Equity financing. Based on the research findings the following conclusions are drawn:

Firstly, debt ratio is negatively related to return on asset (ROA) of the quoted Banks in Nigeria and the relationship is significant based on the documentary evidence. When a bank maintains a high level of debt the interest rate may likely increase, hence the profitability of the bank will decrease.

Secondly, equity ratio is negatively related to the Return on Asset (ROA) of the quoted Banks in Nigeria, and the relationship is significant.

Thirdly, debt ratio is negatively related to the Return on equity (ROE) of the quoted Banks in Nigeria however the relationship is insignificant.

In the overall it can be deduced that capital structure affects Nigerian Banks' profitability significantly.

5.3 Recommendations

Banks generally play a crucial role in the economic development of every country. One critical decision banks face is the debt/equity choice. Among others, this choice is necessary for the profit determination of firms. What this means is that banks that are able to make their financing decisions prudently would have a competitive advantage in the industry and make superior profits. However, it is essential to recognize that this

decision can only be wisely taken if banks know how debt policy influences their profitability. Therefore banks should take into view the following matters in order to increase their profitability;

i) An appropriate mix of capital structure should be adopted in order to increase the profitability of banks. Findings revealed that debt is negatively correlated to profitability (-0.4495 and -0.0716) of listed banks in Nigeria. As such in the case of higher debt, profitability will tend to decline. The reason behind this may be due to the high interest bearing securities engaged in debt. In addition to this an increase in the level of debt also increases the riskiness of banks. Therefore, banks should depend a lot on internal sources of financing in order to increase their profitability.

ii) It is important that listed Banks intensify their efforts to rely on internally generated funds to finance their operational activities. Even where external debt would be used, the banks should search for low interest-bearing loans so that the tax shield benefit of the loan will exceed the financial distress associated with it.

iii) Debt/equity relationship of the banks should always be monitored because the optimal capital structure depends on the trade-off between the two, when there is high interest rate internal financing is more preferable to debt. Hence the service of professionals is very crucial.

iv) Banks should utilize equity judiciously.

5.4   Suggestions for Further Research

This research examined the effects of capital structure on profitability of quoted banks in Nigeria and has provided the way for future research in the area. This research study only seven banks out of seventeen, other researchers are expected to cover other banks not covered by this study. Secondly, future researchers can cover other components of profitability like return on capital employed (ROCE) and others.

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APPENDIX I

QUOTED NIGERIAN BANKS DATA SHEET

S/N	BANK	YEAR	TOTAL DEBT	TOTAL ASSET	FIXED ASSET	PROFIT AFTER TAX	TURN OVER	TOTAL NO OF SHARES IN ISSUE
1	FIRST BANK	2004	-	312,490,000,000.00	9,564,000,000.00	11,096,000,000.00	45,121,000,000.00	3,502,000,000.00
1		2005	-	377,496,000,000.00	12,108,000,000.00	12,184,000,000.00	49,475,000,000.00	3,953,264,997.00
1		2006	-	538,145,000,000.00	13,952,000,000.00	16,053,000,000.00	61,243,000,000.00	5,238,669,388.00
1		2007	22,101,000,000.00	762,881,000,000.00	16,850,000,000.00	18,355,000,000.00	79,299,000,000.00	10,477,338,776.00
1		2008	29,414,000,000.00	1,165,461,000,000.00	29,155,000,000.00	30,473,000,000.00	130,600,000,000.00	19,890,000,000.00
1		2009	35,473,000,000.00	1,772,454,000,000.00	46,302,000,000.00	1,275,000,000.00	175,355,000,000.00	29,006,297,206.00
1		2010	124,617,000,000.00	1,957,258,000,000.00	52,616,000,000.00	26,936,000,000.00	207,524,000,000.00	32,632,000,000.00
1		2011	93,102,000,000.00	2,463,543,000,000.00	55,352,000,000.00	47,462,000,000.00	275,629,000,000.00	32,632,000,000.00
1		2012	76,168,000,000.00	3,186,129,000,000.00	75,386,000,000.00	75,670,000,000.00	287,274,000,000.00	32,632,084,356.00
1		2013	83,476,000,000.00	3,967,200,000,000.00	80,970,000,000.00	83,820,000,000.00	390,340,000,000.00	32,632,194,000.00
2	ACCESS BANK	2004	468,475,000.00	31,341,507,000.00	1,843,687,000.00	637,473,000.00	5,515,086,000.00	3,000,000.00
2		2005	-	66,918,315,000.00	2,417,425,000.00	501,515,000.00	7,494,855,000.00	8,111,214,625.00
2		2006	1,651,090,000.00	174,553,866,000.00	3,953,161,000.00	737,149,000.00	13,360,358,000.00	13,956,321,723.00
2		2007	3,289,458,000.00	328,615,194,000.00	8,161,511,000.00	6,083,439,000.00	27,881,451,000.00	6,978,160,860.00
2		2008	19,799,541,000.00	1,043,465,021,000.00	13,364,613,000.00	16,056,464,000.00	57,627,098,000.00	16,142,501,847.00
2		2009	5,736,241,000.00	647,574,719,000.00	20,154,091,000.00	(880,752.00)	56,943,666,000.00	16,262,046,799.00
2		2010	22,685,778,000.00	726,960,580,000.00	19,161,511,000.00	12,931,441,000.00	79,065,123,000.00	17,888,251,478.00

2		2011	29,143,914,000.00	945,966,603,000.00	15,966,638,000.00	13,660,448,000.00	96,234,017,000.00	17,888,251,478.00
2		2012	95,594,904,000.00	1,515,754,463,000.00	58,938,450,000.00	36,353,643,000.00	180,725,850,000.00	22,882,918,908.00
2		2013	120,342,026,000.00	1,704,094,012,000.00	63,203,245,000.00	26,211,844,000.00	127,710,965,000.00	22,882,972,239.00

TD RATIO = TD/TA	ROA = PAT/TA	ROE = PAT/TNOS	A.T (TURN)	Log of TA (SIZE)	STITTS (AGE)	ROFA2TA (TANG)	CILOFTA (GROW)
-	0.03551	3.16848	45,121,000,000.00	11.49484	35	0.03061	-
-	0.03228	3.08201	49,475,000,000.00	11.57691	36	0.03207	0.08208
-	0.02983	3.06433	61,243,000,000.00	11.73090	37	0.02593	0.15399
0.02897	0.02406	1.75188	79,299,000,000.00	11.88246	38	0.02209	0.15156
0.02524	0.02615	1.53208	130,600,000,000.00	12.06650	39	0.02502	0.18404
0.02001	0.00072	0.04396	175,355,000,000.00	12.24857	38	0.02612	0.18208
0.06367	0.01376	0.82545	207,524,000,000.00	12.29165	39	0.02688	0.04307
0.03779	0.01927	1.45446	275,629,000,000.00	12.39156	40	0.02247	0.09991
0.02391	0.02375	2.31888	287,274,000,000.00	12.50326	41	0.02366	0.11170
0.02104	0.02113	2.56863	390,340,000,000.00	12.59848	42	0.02041	0.09522
0.01495	0.02034	212.49100	5,515,086,000.00	10.49612	15	0.05883	(2.10236)
-	0.00749	0.06183	7,494,855,000.00	10.82554	16	0.03613	0.32943
0.00946	0.00422	0.05282	13,360,358,000.00	11.24193	17	0.02265	0.41638
0.01001	0.01851	0.87178	27,881,451,000.00	11.51669	18	0.02484	0.27476
0.01897	0.01539	0.99467	57,627,098,000.00	12.01848	19	0.01281	0.50179
0.00886	(0.00000)	(0.00005)	56,943,666,000.00	11.81129	20	0.03112	(0.20719)
0.03121	0.01779	0.72290	79,065,123,000.00	11.86151	21	0.02636	0.05022
0.03081	0.01444	0.76365	96,234,017,000.00	11.97588	22	0.01688	0.11436
0.06307	0.02398	1.58868	180,725,850,000.00	12.18063	23	0.03888	0.20475
0.07062	0.01538	1.14547	127,710,965,000.00	12.23149	24	0.03709	0.05086

3	**GT BANK**	2004	3,525,804,000.00	119,698,240,000.00	4,022,808,000.00	4,056,557,000.00	18,053,377,000.00	3,000,000,000.00
3		2005	6,909,788,000.00	167,897,704,000.00	7,399,936,000.00	5,330,796,000.00	23,833,771,000.00	5,746,495,809.00
3		2006	9,237,585,000.00	305,080,565,000.00	11,729,436,000.00	7,905,506,000.00	31,970,318,000.00	6,000,000,000.00
3		2007	58,063,369,000.00	478,369,179,000.00	19,749,488,000.00	13,013,146,000.00	46,856,581,000.00	8,000,000,000.00
3		2008	62,896,528,000.00	921,817,327,000.00	36,030,992,000.00	28,073,252,000.00	95,144,561,000.00	14,922,998,891.00
3		2009	77,848,223,000.00	1,019,911,536,000.00	41,285,479,000.00	23,848,061,000.00	151,698,107,000.00	18,653,750,000.00
3		2010	89,920,710,000.00	1,067,172,389,000.00	42,538,693,000.00	36,511,628,000.00	138,347,028,000.00	23,317,188,000.00
3		2011	240,625,891,000.00	1,525,010,483,000.00	52,494,230,000.00	47,980,889,000.00	172,331,511,000.00	29,431,179,224.00
3		2012	169,194,418,000.00	1,620,317,223,000.00	55,496,808,000.00	85,263,826,000.00	204,324,447,000.00	29,431,179,224.00
3		2013	233,040,108,000.00	1,904,365,795,000.00	61,419,683,000.00	85,545,510,000.00	172,433,167,000.00	29,431,179,224.00
4	**STERLING BANK**	2004	-	17,453,100,000.00	2,100,987,000.00	(3,920,223,000.00)	1,512,790,000.00	4,773,000,000.00
4		2005	-	19,435,289,000.00	2,152,451,000.00	(4,820,558,000.00)	1,611,280,000.00	4,773,000,000.00
4		2006	-	111,197,074,000.00	7,217,445,000.00	961,645,000.00	12,444,596,000.00	10,552,911,291.00
4		2007	-	145,974,674,000.00	4,864,389,000.00	620,658,000.00	21,057,246,000.00	10,552,911,291.00
4		2008	11,073,200,000.00	236,502,923,000.00	5,217,665,000.00	6,523,153,000.00	32,950,915,000.00	12,563,090,000.00
4		2009	14,201,550,000.00	205,640,827,000.00	5,089,200,000.00	(6,660,406,000.00)	43,464,716,000.00	12,563,091,543.00
4		2010	25,058,101,000.00	259,579,523,000.00	4,416,723,000.00	4,178,493,000.00	30,386,957,000.00	12,563,091,543.00
4		2011	31,774,742,000.00	504,427,737,000.00	8,930,814,000.00	4,644,220,000.00	45,173,435,000.00	15,703,864,431.00
4		2012	34,919,651,000.00	580,225,940,000.00	7,793,316,000.00	6,953,539,000.00	68,856,815,000.00	15,704,000,000.00
4		2013	43,358,125,000.00	707,797,181,000.00	9,069,368,000.00	8,274,864,000.00	69,972,761,000.00	21,592,813,593.00
5	**UNION BANK**	2004	-	367,798,000,000.00	12,401,000,000.00	7,750,000,000.00	39,185,000,000.00	3,355,733,333.00
5		2005	-	398,271,000,000.00	14,482,000,000.00	9,375,000,000.00	44,791,000,000.00	4,474,311,110.00
5		2006	-	517,564,000,000.00	20,612,000,000.00	10,036,000,000.00	50,736,000,000.00	9,022,823,649.00
5		2007	-	619,800,000,000.00	25,029,000,000.00	12,126,000,000.00	71,090,000,000.00	9,651,595,445.00
5		2008	-	907,074,000,000.00	26,120,000,000.00	24,737,000,000.00	92,935,000,000.00	11,580,000,000.00
5		2009	134,651,000,000.00	1,106,779,000,000.00	53,268,000,000.00	(71,052,000,000.00)	130,187,000,000.00	13,510,000,000.00

5		2010	150,258,000,000.00	845,231,000,000.00	53,860,000,000.00	118,016,000,000.00	113,961,000,000.00	13,524,755,973.00
5		2011	27,000,000,000.00	827,200,000,000.00	46,600,000,000.00	(76,700,000,000.00)	54,400,000,000.00	13,524,755,973.00
5		2012	34,000,000,000.00	886,500,000,000.00	45,100,000,000.00	7,900,000,000.00	81,200,000,000.00	13,524,755,973.00
5		2013	45,280,000,000.00	1,002,756,000,000.00	45,527,000,000.00	3,836,000,000.00	80,997,000,000.00	13,524,755,973.00

0.02946	0.03389	1.35219	18,053,377,000.00	11.07809	14	0.03361	(1.15341)
0.04115	0.03175	0.92766	23,833,771,000.00	11.22504	15	0.04407	0.14696
0.03028	0.02591	1.31758	31,970,318,000.00	11.48441	16	0.03845	0.25937
0.12138	0.02720	1.62664	46,856,581,000.00	11.67976	17	0.04129	0.19535
0.06823	0.03045	1.88121	95,144,561,000.00	11.96464	18	0.03909	0.28488
0.07633	0.02338	1.27846	151,698,107,000.00	12.00856	19	0.04048	0.04392
0.08426	0.03421	1.56587	138,347,028,000.00	12.02823	20	0.03986	0.01967
0.15779	0.03146	1.63027	172,331,511,000.00	12.18327	21	0.03442	0.15504
0.10442	0.05262	2.89706	204,324,447,000.00	12.20960	22	0.03425	0.02633
0.12237	0.04492	2.90663	172,433,167,000.00	12.27975	23	0.03225	0.07015
-	(0.22461)	(0.82133)	1,512,790,000.00	10.24187	44	0.12038	(2.03788)
-	(0.24803)	(1.00996)	1,611,280,000.00	10.28859	45	0.11075	0.04672
-	0.00865	0.09113	12,444,596,000.00	11.04609	46	0.06491	0.75750
-	0.00425	0.05881	21,057,246,000.00	11.16428	47	0.03332	0.11818
0.04682	0.02758	0.51923	32,950,915,000.00	11.37384	48	0.02206	0.20956
0.06906	(0.03239)	(0.53016)	43,464,716,000.00	11.31311	49	0.02475	(0.06073)
0.09653	0.01610	0.33260	30,386,957,000.00	11.41427	50	0.01701	0.10116
0.06299	0.00921	0.29574	45,173,435,000.00	11.70280	51	0.01770	0.28853
0.06018	0.01198	0.44279	68,856,815,000.00	11.76360	52	0.01343	0.06080
0.06126	0.01169	0.38322	69,972,761,000.00	11.84991	53	0.01281	0.08631
-	0.02107	2.30948	39,185,000,000.00	11.56561	87	0.03372	(0.28430)
-	0.02354	2.09529	44,791,000,000.00	11.60018	88	0.03636	0.03457
-	0.01939	1.11229	50,736,000,000.00	11.71396	89	0.03983	0.11379
-	0.01956	1.25637	71,090,000,000.00	11.79225	90	0.04038	0.07829
-	0.02727	2.13618	92,935,000,000.00	11.95764	91	0.02880	0.16539

0.12166	(0.06420)	(5.25922)	130,187,000,000.00	12.04406	92	0.04813	0.08642
0.17777	0.13963	8.72592	113,961,000,000.00	11.92698	93	0.06372	(0.11709)
0.03264	(0.09272)	(5.67108)	54,400,000,000.00	11.91761	94	0.05633	(0.00936)
0.03835	0.00891	0.58411	81,200,000,000.00	11.94768	95	0.05087	0.03007
0.04516	0.00383	0.28363	80,997,000,000.00	12.00120	96	0.04540	0.05352

UBA	2004	3,385,000,000.00	208,806,000,000.00	6,363,000,000.00	4,185,000,000.00	23,928,000,000.00	2,550,000,000.00
	2005	1,676,000,000.00	248,928,000,000.00	6,154,000,000.00	4,653,000,000.00	25,506,000,000.00	3,060,000,000.00
	2006	1,135,000,000.00	851,241,000,000.00	32,226,000,000.00	11,468,000,000.00	86,079,000,000.00	7,060,000,000.00
	2007	1,135,000,000.00	1,102,348,000,000.00	48,213,000,000.00	19,831,000,000.00	101,106,000,000.00	11,496,779,980.00
	2008	-	1,520,093,000,000.00	56,165,000,000.00	40,002,000,000.00	154,093,000,000.00	17,245,369,970.00
	2009	14,760,000,000.00	1,400,879,000,000.00	63,497,000,000.00	2,167,000,000.00	219,843,000,000.00	21,556,462,462.00
	2010	83,956,000,000.00	1,432,632,000,000.00	56,216,000,000.00	12,889,000,000.00	157,666,000,000.00	25,867,754,954.00
	2011	137,040,000,000.00	1,666,053,000,000.00	47,066,000,000.00	(7,966,000,000.00)	126,098,000,000.00	32,334,693,692.00
	2012	114,520,000,000.00	1,927,257,000,000.00	63,118,000,000.00	47,375,000,000.00	177,429,000,000.00	32,981,387,565.00
	2013	48,866,000,000.00	2,217,417,000,000.00	67,661,000,000.00	46,483,000,000.00	214,273,000,000.00	32,981,387,565.00
WEMA BANK	2004	-	71,423,836,000.00	4,067,049,000.00	967,148,000.00	12,856,096,000.00	3,110,920,827.00
	2005	-	97,909,060,000.00	4,163,622,000.00	844,285,000.00	15,287,866,000.00	8,903,250,530.00
	2006	103,158,000.00	120,109,067,000.00	7,146,743,000.00	(6,601,963,000.00)	14,836,623,000.00	9,923,016,486.00
	2007	-	165,081,532,000.00	11,716,227,000.00	2,554,098,000.00	26,430,982,000.00	10,069,943,173.00
	2008	-	128,906,575,000.00	14,410,672,000.00	(57,738,739,000.00)	21,633,431,000.00	10,069,943,000.00
	2009	87,779,538,000.00	110,981,613,000.00	13,780,071,000.00	(57,738,739,000.00)	12,938,450,000.00	10,069,943,000.00
	2010	50,069,457,000.00	203,144,627,000.00	12,614,282,000.00	16,238,533,000.00	19,929,693,000.00	12,821,249,880.00
	2011	50,069,457,000.00	222,238,550,000.00	13,484,000,000.00	(7,649,477,000.00)	25,640,625,000.00	12,821,249,880.00
	2012	57,006,619,000.00	245,704,597,000.00	12,433,326,000.00	(5,040,629,000.00)	25,055,599,000.00	12,821,249,880.00
	2013	57,587,958,000.00	330,872,475,000.00	12,468,085,000.00	1,596,531,000.00	28,542,092,000.00	38,574,466,081.00
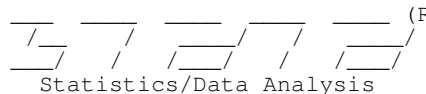
0.01621	0.02004	1.64118	23,928,000,000.00	11.31974	43	0.03047	(0.68145)
0.00673	0.01869	1.52059	25,506,000,000.00	11.39607	44	0.02472	0.07633
0.00133	0.01347	1.62436	86,079,000,000.00	11.93005	45	0.03786	0.53398
0.00103	0.01799	1.72492	101,106,000,000.00	12.04232	46	0.04374	0.11227
-	0.02632	2.31958	154,093,000,000.00	12.18187	47	0.03695	0.13955
0.01054	0.00155	0.10053	219,843,000,000.00	12.14640	48	0.04533	(0.03547)
0.05860	0.00900	0.49827	157,666,000,000.00	12.15613	49	0.03924	0.00973
0.08225	(0.00478)	(0.24636)	126,098,000,000.00	12.22169	50	0.02825	0.06555
0.05942	0.02458	1.43642	177,429,000,000.00	12.28494	51	0.03275	0.06325
0.02204	0.02096	1.40937	214,273,000,000.00	12.34585	52	0.03051	0.06091
-	0.01354	0.31089	12,856,096,000.00	10.85384	59	0.05694	(1.49200)
-	0.00862	0.09483	15,287,866,000.00	10.99082	60	0.04253	0.13698
0.00086	(0.05497)	(0.66532)	14,836,623,000.00	11.07958	61	0.05950	0.08875
-	0.01547	0.25364	26,430,982,000.00	11.21770	62	0.07097	0.13812
-	(0.44791)	(5.73377)	21,633,431,000.00	11.11028	63	0.11179	(0.10742)
0.79094	(0.52025)	(5.73377)	12,938,450,000.00	11.04525	64	0.12417	(0.06502)
0.24647	0.07994	1.26653	19,929,693,000.00	11.30781	65	0.06210	0.26255
0.22530	(0.03442)	(0.59662)	25,640,625,000.00	11.34682	66	0.06067	0.03901
0.23201	(0.02051)	(0.39315)	25,055,599,000.00	11.39041	67	0.05060	0.04359
0.17405	0.00483	0.04139	28,542,092,000.00	11.51966	68	0.03768	0.12925

BANK	YEAR	TD RATIO	ROA	ROE	ASST TURN	SIZE	AGE	TANG	GROW
1	2004	0.00	0.04	3.17	0.14	11.49	35.00	0.03	0.00
1	2005	0.00	0.03	3.08	0.13	11.58	36.00	0.03	0.08
1	2006	0.00	0.03	3.06	0.11	11.73	37.00	0.03	0.15
1	2007	0.03	0.02	1.75	0.10	11.88	38.00	0.02	0.15
1	2008	0.03	0.03	1.53	0.11	12.07	39.00	0.03	0.18
1	2009	0.02	0.00	0.04	0.10	12.25	38.00	0.03	0.18
1	2010	0.06	0.01	0.83	0.11	12.29	39.00	0.03	0.04
1	2011	0.04	0.02	1.45	0.11	12.39	40.00	0.02	0.10
1	2012	0.02	0.02	2.32	0.09	12.50	41.00	0.02	0.11
1	2013	0.02	0.02	2.57	0.10	12.60	42.00	0.02	0.10
2	2004	0.01	0.02	212.49	0.18	10.50	15.00	0.06	-2.10
2	2005	0.00	0.01	0.06	0.11	10.83	16.00	0.04	0.33
2	2006	0.01	0.00	0.05	0.08	11.24	17.00	0.02	0.42
2	2007	0.01	0.02	0.87	0.08	11.52	18.00	0.02	0.27
2	2008	0.02	0.02	0.99	0.06	12.02	19.00	0.01	0.50
2	2009	0.01	0.00	0.00	0.09	11.81	20.00	0.03	-0.21
2	2010	0.03	0.02	0.72	0.11	11.86	21.00	0.03	0.05
2	2011	0.03	0.01	0.76	0.10	11.98	22.00	0.02	0.11
2	2012	0.06	0.02	1.59	0.12	12.18	23.00	0.04	0.20
2	2013	0.07	0.02	1.15	0.07	12.23	24.00	0.04	0.05
3	2004	0.03	0.03	1.35	0.15	11.08	14.00	0.03	-1.15
3	2005	0.04	0.03	0.93	0.14	11.23	15.00	0.04	0.15
3	2006	0.03	0.03	1.32	0.10	11.48	16.00	0.04	0.26
3	2007	0.12	0.03	1.63	0.10	11.68	17.00	0.04	0.20
3	2008	0.07	0.03	1.88	0.10	11.96	18.00	0.04	0.28
3	2009	0.08	0.02	1.28	0.15	12.01	19.00	0.04	0.04
3	2010	0.08	0.03	1.57	0.13	12.03	20.00	0.04	0.02
3	2011	0.16	0.03	1.63	0.11	12.18	21.00	0.03	0.16
3	2012	0.10	0.05	2.90	0.13	12.21	22.00	0.03	0.03
3	2013	0.12	0.04	2.91	0.09	12.28	23.00	0.03	0.07
4	2004	0.00	-0.22	-0.82	0.09	10.24	44.00	0.12	-2.04
4	2005	0.00	-0.25	-1.01	0.08	10.29	45.00	0.11	0.05
4	2006	0.00	0.01	0.09	0.11	11.05	46.00	0.06	0.76
4	2007	0.00	0.00	0.06	0.14	11.16	47.00	0.03	0.12
4	2008	0.05	0.03	0.52	0.14	11.37	48.00	0.02	0.21
4	2009	0.07	-0.03	-0.53	0.21	11.31	49.00	0.02	-0.06
4	2010	0.10	0.02	0.33	0.12	11.41	50.00	0.02	0.10

4	2011	0.06	0.01	0.30	0.09	11.70	51.00	0.02	0.29
4	2012	0.06	0.01	0.44	0.12	11.76	52.00	0.01	0.06
4	2013	0.06	0.01	0.38	0.10	11.85	53.00	0.01	0.09
5	2004	0.00	0.02	2.31	0.11	11.57	87.00	0.03	-0.28
5	2005	0.00	0.02	2.10	0.11	11.60	88.00	0.04	0.03
5	2006	0.00	0.02	1.11	0.10	11.71	89.00	0.04	0.11
5	2007	0.00	0.02	1.26	0.11	11.79	90.00	0.04	0.08
5	2008	0.00	0.03	2.14	0.10	11.96	91.00	0.03	0.17
5	2009	0.12	-0.06	-5.26	0.12	12.04	92.00	0.05	0.09
5	2010	0.18	0.14	8.73	0.13	11.93	93.00	0.06	-0.12
5	2011	0.03	-0.09	-5.67	0.07	11.92	94.00	0.06	-0.01
5	2012	0.04	0.01	0.58	0.09	11.95	95.00	0.05	0.03
5	2013	0.05	0.00	0.28	0.08	12.00	96.00	0.05	0.05
6	2004	0.02	0.02	1.64	0.11	11.32	43.00	0.03	-0.68
6	2005	0.01	0.02	1.52	0.10	11.40	44.00	0.02	0.08
6	2006	0.00	0.01	1.62	0.10	11.93	45.00	0.04	0.53
6	2007	0.00	0.02	1.72	0.09	12.04	46.00	0.04	0.11
6	2008	0.00	0.03	2.32	0.10	12.18	47.00	0.04	0.14
6	2009	0.01	0.00	0.10	0.16	12.15	48.00	0.05	-0.04
6	2010	0.06	0.01	0.50	0.11	12.16	49.00	0.04	0.01
6	2011	0.08	0.00	-0.25	0.08	12.22	50.00	0.03	0.07
6	2012	0.06	0.02	1.44	0.09	12.28	51.00	0.03	0.06
6	2013	0.02	0.02	1.41	0.10	12.35	52.00	0.03	0.06
7	2004	0.00	0.01	0.31	0.18	10.85	59.00	0.06	-1.49
7	2005	0.00	0.01	0.09	0.16	10.99	60.00	0.04	0.14
7	2006	0.00	-0.05	-0.67	0.12	11.08	61.00	0.06	0.09
7	2007	0.00	0.02	0.25	0.16	11.22	62.00	0.07	0.14
7	2008	0.00	-0.45	-5.73	0.17	11.11	63.00	0.11	-0.11
7	2009	0.79	-0.52	-5.73	0.12	11.05	64.00	0.12	-0.07
7	2010	0.25	0.08	1.27	0.10	11.31	65.00	0.06	0.26
7	2011	0.23	-0.03	-0.60	0.12	11.35	66.00	0.06	0.04
7	2012	0.23	-0.02	-0.39	0.10	11.39	67.00	0.05	0.04
7	2013	0.17	0.00	0.04	0.09	11.52	68.00	0.04	0.13

STATA VERSION 11.0 GENERATED RESULTS
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 ___  ___  ____  ___  ____  (R)
/__    /   / __/  /   /___/
___/  /   /___/  /   /___/   12.0   Copyright 1985-2011 StataCorp LP
  Statistics/Data Analysis          StataCorp
                                    4905 Lakeway Drive
    Special Edition                 College Station, Texas 77845 USA
                                    800-STATA-PC        http://www.stata.com
                                    979-696-4600        stata@stata.com
                                    979-696-4601 (fax)


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Notes:
      1.  (/v# option or -set maxvar-) 5000 maximum variables

Checking for updates...
(contacting http://www.stata.com)
host not found
http://www.stata.com did not respond or is not a valid update site
unable to check for update; verify Internet settings are correct.

. *(11 variables, 70 observations pasted into data editor)

. xtset bank year
        panel variable:  bank (strongly balanced)
         time variable:  year, 2004 to 2013
                 delta:  1 unit

.
. summarize roa tdratio eqtratio turn size age tang grow

    Variable |      Obs        Mean    Std. Dev.        Min        Max
-------------+--------------------------------------------------------
         roa |       70    -.005962    .0972935    -.52025     .13963
     tdratio |       70    .0579209    .1067503          0     .79094
    eqtratio |       70    .0374279    .0474729      .0001     .27348
        turn |       70    .1125714    .0282168        .06        .21
        size |       70    11.67998    .5177342   10.24187   12.59848
-------------+--------------------------------------------------------
         age |       70    46.78571    23.92373         14         96
        tang |       70    .0406579    .0230836     .01281     .12417
        grow |       70    .0001429    .4672351       -2.1        .76


. summarize roe tdratio eqtratio turn size age tang grow

    Variable |      Obs        Mean    Std. Dev.        Min        Max
-------------+--------------------------------------------------------
         roe |       70    3.772786    25.39291   -5.73377    212.491
     tdratio |       70    .0579209    .1067503          0     .79094
    eqtratio |       70    .0374279    .0474729      .0001     .27348
        turn |       70    .1125714    .0282168        .06        .21
        size |       70    11.67998    .5177342   10.24187   12.59848
-------------+--------------------------------------------------------
         age |       70    46.78571    23.92373         14         96
        tang |       70    .0406579    .0230836     .01281     .12417
        grow |       70    .0001429    .4672351       -2.1        .76


. correlate roa tdratio eqtratio turn size age tang grow
(obs=70)
```

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```
             |     roa  tdratio eqtratio    turn     size      age     tang
-------------+---------------------------------------------------------------
         roa |   1.0000
     tdratio |  -0.4495   1.0000
    eqtratio |  -0.5336   0.0921   1.0000
        turn |  -0.0721  -0.0114   0.0003   1.0000
        size |   0.4055  -0.0342  -0.7080  -0.3553   1.0000
         age |  -0.1571   0.1220   0.0243  -0.0335  -0.0021   1.0000
        tang |  -0.7546   0.3761   0.6482   0.1640  -0.5694   0.2616   1.0000
        grow |   0.1715   0.0519  -0.2291  -0.3602   0.4503   0.0292  -0.3520

             |     grow
-------------+---------
        grow |   1.0000


. correlate roe tdratio eqtratio turn size age tang grow
(obs=70)

             |     roe  tdratio eqtratio    turn     size      age     tang
-------------+---------------------------------------------------------------
         roe |   1.0000
     tdratio |  -0.0716   1.0000
    eqtratio |  -0.1238   0.0921   1.0000
        turn |   0.2845  -0.0114   0.0003   1.0000
        size |  -0.2510  -0.0342  -0.7080  -0.3553   1.0000
         age |  -0.1771   0.1220   0.0243  -0.0335  -0.0021   1.0000
        tang |   0.0578   0.3761   0.6482   0.1640  -0.5694   0.2616   1.0000
        grow |  -0.5383   0.0519  -0.2291  -0.3602   0.4503   0.0292  -0.3520

             |     grow
-------------+---------
        grow |   1.0000


. regress roa tdratio eqtratio turn size age tang grow

      Source |       SS       df       MS              Number of obs =      70
-------------+------------------------------           F(  7,    62) =   14.26
       Model |  .402920129    7  .057560018           Prob > F      =  0.0000
    Residual |  .250235576   62  .004036058           R-squared     =  0.6169
-------------+------------------------------           Adj R-squared =  0.5736
       Total |  .653155705   69  .009466025           Root MSE      =  .06353


-------------------------------------------------------------------------------
         roa |     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+-----------------------------------------------------------------
     tdratio |  -.1803445   .0814337    -2.21   0.030    -.3431282   -.0175608
    eqtratio |  -.2980007   .282994     -1.05   0.296    -.8636976    .2676963
        turn |  -.0183067   .3222235    -0.06   0.955    -.6624223    .625809
        size |  -.0083356   .0253734    -0.33   0.744    -.0590563    .0423851
         age |   .000163    .0003425     0.48   0.636    -.0005216    .0008476
        tang |  -2.70689    .5468754    -4.95   0.000    -3.800078   -1.613702
        grow |  -.0126506   .019662     -0.64   0.522    -.0519543    .0266532
       _cons |   .2174915   .3207662     0.68   0.500    -.4237109    .8586939
-------------------------------------------------------------------------------

. estat vif

    Variable |      VIF       1/VIF
-------------+----------------------
    eqtratio |     3.09    0.324087
        size |     2.95    0.338951
        tang |     2.72    0.367048
        grow |     1.44    0.693078
        turn |     1.41    0.707582
     tdratio |     1.29    0.774037
         age |     1.15    0.871341
-------------+----------------------
    Mean VIF |     2.01
```

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```
. xtreg roa tdratio eqtratio turn size age tang grow, re

Random-effects GLS regression              Number of obs      =        70
Group variable: bank                       Number of groups   =         7

R-sq:  within  = 0.5721                     Obs per group: min =        10
       between = 0.8239                                    avg =      10.0
       overall = 0.6169                                    max =        10

                                           Wald chi2(7)       =     99.83
corr(u_i, X)   = 0 (assumed)               Prob > chi2        =    0.0000

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     tdratio |  -.1803445   .0814337    -2.21   0.027    -.3399517   -.0207373
    eqtratio |  -.2980007    .282994    -1.05   0.292    -.8526587    .2566574
        turn |  -.0183067   .3222235    -0.06   0.955    -.6498532    .6132398
        size |  -.0083356   .0253734    -0.33   0.743    -.0580665    .0413954
         age |    .000163   .0003425     0.48   0.634    -.0005083    .0008342
        tang |   -2.70689   .5468754    -4.95   0.000    -3.778746   -1.635034
        grow |  -.0126506    .019662    -0.64   0.520    -.0511874    .0258862
       _cons |   .2174915   .3207662     0.68   0.498    -.4111986    .8461816
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |  .06222503
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. estimate store random

. xtreg roa tdratio eqtratio turn size age tang grow, fe

Fixed-effects (within) regression          Number of obs      =        70
Group variable: bank                       Number of groups   =         7

R-sq:  within  = 0.5873                     Obs per group: min =        10
       between = 0.0078                                    avg =      10.0
       overall = 0.1306                                    max =        10

                                           F(7,56)            =     11.39
corr(u_i, Xb)  = -0.7533                    Prob > F           =    0.0000

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     tdratio |  -.2189148   .0953479    -2.30   0.025    -.4099196    -.02791
    eqtratio |  -.0079571   .3545572    -0.02   0.982    -.7182205    .7023063
        turn |   .0278539   .3674789     0.08   0.940    -.7082948    .7640026
        size |  -.0369245     .04862    -0.76   0.451    -.1343221     .060473
         age |   .0046752    .006061     0.77   0.444    -.0074663    .0168168
        tang |  -3.318959   .6145448    -5.40   0.000     -4.55004   -2.087878
        grow |  -.0113307    .020612    -0.55   0.585    -.0526215    .0299602
       _cons |   .3513672   .3875081     0.91   0.368    -.4249048    1.127639
-------------+----------------------------------------------------------------
     sigma_u |  .11629361
     sigma_e |  .06222503
         rho |  .77742475   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(6, 56) =      1.44              Prob > F = 0.2167

. estimate store fixed

. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random        Difference          S.E.
-------------+----------------------------------------------------------------
```

```
    tdratio |   -.2189148    -.1803445      -.0385703        .049596
    eqtratio |   -.0079571    -.2980007       .2900436       .2136005
        turn |    .0278539    -.0183067       .0461606       .1766713
        size |   -.0369245    -.0083356       -.028589        .041474
         age |    .0046752       .000163       .0045123       .0060513
        tang |   -3.318959     -2.70689      -.6120691       .2803438
        grow |   -.0113307    -.0126506       .0013199       .0061856
---------------------------------------------------------------------
                    b = consistent under Ho and Ha; obtained from xtreg
           B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

              chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =        6.44
            Prob>chi2 =      0.4900
            (V_b-V_B is not positive definite)

. regress roe tdratio eqtratio turn size age tang grow

      Source |       SS       df       MS              Number of obs =      70
-------------+------------------------------           F(  7,     62) =    7.24
       Model | 20004.1758       7  2857.73941          Prob > F      = 0.0000
    Residual | 24487.0203      62  394.951941          R-squared     = 0.4496
-------------+------------------------------           Adj R-squared = 0.3875
       Total | 44491.1962      69  644.799944          Root MSE      = 19.873


-------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+-----------------------------------------------------------------
     tdratio |  -5.843017    25.47404    -0.23   0.819    -56.7649     45.07887
    eqtratio |  -313.3576    88.52597    -3.54   0.001    -490.3185   -136.3967
        turn |  -48.22875    100.7977    -0.48   0.634    -249.7205     153.263
        size |  -20.71982    7.937287    -2.61   0.011    -36.58623    -4.853405
         age |  -.1856572    .1071334    -1.73   0.088    -.3998137     .0284994
        tang |   108.4849    171.0731     0.63   0.528    -233.4854     450.4552
        grow |  -25.02564    6.150652    -4.07   0.000    -37.32062    -12.73066
       _cons |   267.5547    100.3418     2.67   0.010     66.97427     468.1352
-------------------------------------------------------------------------------

. xtreg roe tdratio eqtratio turn size age tang grow, re

Random-effects GLS regression                   Number of obs      =       70
Group variable: bank                            Number of groups   =        7

R-sq:  within  = 0.4487                         Obs per group: min =       10
       between = 0.4594                                        avg =     10.0
       overall = 0.4496                                        max =       10

                                                Wald chi2(7)       =    50.65
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =   0.0000


-------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+-----------------------------------------------------------------
     tdratio |  -5.843017    25.47404    -0.23   0.819    -55.77122     44.08519
    eqtratio |  -313.3576    88.52597    -3.54   0.000    -486.8653   -139.8499
        turn |  -48.22875    100.7977    -0.48   0.632    -245.7886     149.3311
        size |  -20.71982    7.937287    -2.61   0.009    -36.27661    -5.163019
         age |  -.1856572    .1071334    -1.73   0.083    -.3956347     .0243204
        tang |   108.4849    171.0731     0.63   0.526    -226.8123     443.7821
        grow |  -25.02564    6.150652    -4.07   0.000    -37.08069    -12.97058
       _cons |   267.5547    100.3418     2.67   0.008     70.88836     464.2211
-------------+-----------------------------------------------------------------
     sigma_u |          0
     sigma_e |   18.73181
         rho |          0   (fraction of variance due to u_i)
-------------------------------------------------------------------------------

. estimate store random
```

```
. xtreg roe tdratio eqtratio turn size age tang grow, fe

Fixed-effects (within) regression              Number of obs      =        70
Group variable: bank                           Number of groups   =         7

R-sq:  within  = 0.5161                        Obs per group: min =        10
       between = 0.2604                                       avg =      10.0
       overall = 0.0013                                       max =        10

                                               F(7,56)            =      8.53
corr(u_i, Xb)  = -0.9847                        Prob > F           =    0.0000

------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     tdratio |  -18.45995    28.7029    -0.64   0.523    -75.95876    39.03886
    eqtratio |  -392.2904   106.7335    -3.68   0.001    -606.1033   -178.4774
        turn |   54.67985   110.6234     0.49   0.623    -166.9255    276.2852
        size |  -47.73557   14.63624    -3.26   0.002    -77.05549   -18.41566
         age |   4.289303   1.824548     2.35   0.022     .6342932    7.944312
        tang |   254.4365   184.9985     1.38   0.175      -116.16    625.033
        grow |  -19.41468   6.204909    -3.13   0.003    -31.84461   -6.984758
       _cons |   359.8997   116.6529     3.09   0.003      126.216    593.5835
-------------+----------------------------------------------------------------
     sigma_u |  116.76837
     sigma_e |   18.73181
         rho |  .97491153   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(6, 56) =      2.30             Prob > F = 0.0471

. estimate store fixed

. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random        Difference          S.E.
-------------+----------------------------------------------------------------
     tdratio |  -18.45995    -5.843017        -12.61693         13.22609
    eqtratio |  -392.2904    -313.3576        -78.93273         59.62552
        turn |   54.67985    -48.22875         102.9086         45.57806
        size |  -47.73557    -20.71982        -27.01576         12.29712
         age |   4.289303    -.1856572          4.47496           1.8214
        tang |   254.4365     108.4849         145.9516         70.41608
        grow |  -19.41468    -25.02564         5.610954         .8187673
------------------------------------------------------------------------------
                         b = consistent under Ho and Ha; obtained from xtreg
          B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

              chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =         21.12
            Prob>chi2 =        0.3600
            (V_b-V_B is not positive definite)
```

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