

**DETERMINANTS OF FINANCIAL PERFORMANCE OF LISTED
MEGA BANKS IN NIGERIA**

BY

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MSc/Admin/23528/2012-2013**

**BEING A DISSERTATION SUBMITTED TO THE SCHOOL OF
POSTGRADUATE STUDIES, IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTERS OF SCIENCE
DEGREE (MSc) IN ACCOUNTING AND FINANCE, AHMADU BELLO
UNIVERSITY, ZARIA**

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AUGUST, 2015

DECLARATION

I hereby declare that the work titled ‘ ‘ DETERMINANTS OFFINANCIAL PERFORMANCE OF LISTED MEGA BANKS IN NIGERIA’’ written under the supervision of Dr. H.S Kargi and Dr. S.U Hassan of the Departments of Accounting,Ahmadu Bello University, Zaria and Kaduna state University respectively is a product of my humble research work. The information obtained from literatures has been duly acknowledged in the text and a list of reference provided. No part of this dissertation was presented elsewhere for award of any certificate.

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Signature

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Date

DEDICATION

This dissertation is dedicated to my late father, Alhaji Musa Muhammad (May the almighty Allah have mercy on him and reward him with a place of entertainment in Jannatul- Firdaus, Ameen).

ACKNOWLEDGEMENTS

All praise is due to Allah, the cherisher and sustainer of the worlds, the Omniscient and Omnipotent being for sparing my life up to this moment. And may peace and blessing of Allah be upon the seal of the prophet (S.A.W), his family and all his companions.

First, I would like to express my heartfelt gratitude and indebtedness to my supervisors Dr. H.S Kargi and Dr. ShehuUsman Hassan for their constructive criticism, corrections, guidance and encouragement which have contributed in no small way to the success of this thesis.

My profound gratitude is specifically to my parent Late Alhaji Musa Muhammad and HajiyaRuqayya Musa for their love, prayers, kindness, encouragement and for having undertaken all my responsibilities from childhood to date. May the Almighty Allah in His infinite mercy reward them abundantly and grant them JannatulFirdaus *(RabbirharhumakamaRabbayaaneeSagiran)*.

Needful of mentioning are Dr. A.B. Dogarawa, Dr. SalisuAbubakar, Dr. Hassan Ibrahim, Dr. SalisuMamman, Dr. AuwalHaruna, Dr. HabibuSabari, Dr. Ahmad Bello, Dr. I.L. Chechet, Mal.M.D. Tahir, Mal.UmarAbubakar, Mal. JibrilYero, Mal.Abubakar Ahmad, Mal.AliyuGemu, Mrs Aisha Nuhu, Mal. Lawal Mohammed, Mal. Aliyu Ahmed, Mal.Ibrahim Yusuf, and the lecturers whose names were not mentioned for their wonderful contributions.

I wish to express my deepest appreciation and gratitude to my dear wifeMariya Mohammed and children Mus'ab, Rufaidha, Bilal and little Muhammad Murtalafor their understanding, support and prayers.

Lastly, I wish to express my greatest appreciation to all my brothers, sisters and friends for their everlasting love and support.

ABSTRACT

The performance of any business firm not only plays the role to improve the market value of that specific firm but also leads towards the growth of the whole sector which ultimately leads towards the overall prosperity of the economy. Assessing the determinants of the performance of organizations has gained importance in the corporate finance literature; however, this study examines the determinants of financial performance listed mega banks in Nigeria for a period of seven years. The population of this study comprises the 11 listed mega banks in Nigeria as at 31 December, 2013. A total of 8 banks that meet the criteria were duly selected as sample for the study. The audited annual reports (Balance sheet and Profit/Loss account) were obtained from Central Bank of Nigeria (CBN) and from selected mega banks' annual publication reports. The result of random effect regression provides evidence that capital adequacy, bank size, cost income ratio and income diversification have significant impact on financial performance of the banks under study. Based on the findings, the study recommends among others that a policy that will encourage banks to engage in non-interest income activities should be put in place since non-interest income has positive impact on financial performance.

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CHAPTER ONE INTRODUCTION

1.1 Background to the study

As a key component of the financial system, banks play an important role in the operation of an economy. They channel funds from savers to borrowers for investment which increases economic growth rate and development of a country. The Central bank of Nigerian's resolve to carry out reforms in the banking sector was borne out of the past of the nation's banking industry. Between 1994 and 2003 due to insolvency problem, no fewer than 36 banks were closed. In 1995 and 1998, 4 and 26 banks were closed down respectively. Also in 2000, three ill banks were closed. In 2002 and 2003 at least one bank collapsed. The failed banks had two things in common – small size and unethical practices. Of the 89 banks that were in existence as at July 2004, when the banking sector reforms were announced, no fewer than 11 of them were in a state of distress. According to the CBN, between 69 and 79 of the banks were marginal or fringe players (Soludo, 2004).

The decade 1995 to 2005 were particularly traumatic for the Nigerian banking industry; with the magnitude of distress reaching an unprecedented level, thereby making it an issue of concern not only to the regulatory institutions but also to the policy analysts and the general public. Thus the need for a drastic overhaul of the industry was quite apparent. In furtherance of this general overhauling of the financial system, the Central Bank of Nigeria introduced major reform programmes that changed the banking landscape of the country in 2004. The main thrust of the reform agenda was the prescription of minimum shareholders' funds of 25 billion for Nigerian Deposit money bank not later than December 31, 2005. In view of the low financial base of these banks, they were encouraged to merge. Out of the 89 banks that were in operation before the reform, more than 80 percent (75) of them merged into 25 banks while 14 that could

not finalize their consolidation before the expiration of the deadline were liquidated (Elumilade,2010; Afolabi, 2004).

Following the increase in minimum capital requirements from 2 billion Naira (\$17 million) to 25 billion Naira (\$210 million), the Nigerian banking system consolidated and the number of banks dropped from 89 in 2003 to 24 by December, 2013. The total assets of the banking sector increased from NGN 2,767 billion (\$23 billion) in 2003 to NGN 14,932 billion (\$127 billion) in 2008. By the end of 2008, more than half of the 20 domestically owned Nigerian banks had subsidiaries in at least one other African country, compared to only two in 2002 (Alade, 2014).

However, an assessment of the level of capitalization of an average bank prior to consolidation exercise indicates an equity base (Net worth) of N7.71 billion (US\$0.06168 billion) rising to N38.83 billion (US\$0.31064 billion) in2006, indicating a growth rate of 404 percent. The leverage ratio measured in terms of equity to total asset also declined from 18.28 per cent in 2004 to 14.52 per cent in 2006 for an average bank. This ratio compares favorably with the CBN minimum level of 10 per cent. The post consolidation ratio is also better in term of its distribution among the banks compared with the pre-consolidation ratio where more than 70 per cent of the equity and assets were concentrated in (the largest five banks) less than 5 percent of the existing banks. However, the intermediation activities of an average bank improved significantly by about 1,690 per cent from an average deposit base of N10.48 billion (US\$0.08384) in 2004 to N188.48 billion (US\$1.50784) in 2006 (Somoye, 2008).

As part of its ongoing banking industry reforms, the CBN reviewed the universal banking model which permitted banks to act as financial supermarkets. The implementation of the universal banking model was characterized by a number of worrisome features, including the following:

inadequate capital and capacity to manage the wide range of business and products; excessive risk appetite and exposure, particularly to affiliate transactions (contagion risk); weak group corporate governance; complexity and opaque structures and processes; and inadequate regulatory/ supervisory capacity. The new banking model which is aimed at addressing these weaknesses categorized deposit money banks license to operate as regional, national or international (Mega) bank; their minimum capital requirements were specified as N10 billion, N25 billion and N50 billion for regional, national and international respectively.

The regional banks are entitled to carry on banking operations within a minimum of 6 and maximum of 12 contiguous states, lying within not more than 2 geo-political zones of the federation and the Federal Capital Territory; national banks are authorized to carry on banking operations within every states of the federation, including the Federal Capital Territory while the international banks are permitted to carry on banking operations in all the states of the federation, as well as establishing offshore subsidiaries. A Mega bank (MB) is a bank that meet a minimum capital requirement of N50 billion and with a commercial presence outside its home country, by way of at least one branch or subsidiary.

The failure of some DMBs to meet up with anticipated financial performance after consolidation requires a rethink to evaluate their performance thus this study is designed to evaluate the performance of Mega banks (MBs) using financial measures.

According to Hifza Malik, (2011), profitability is one of the most important objectives of financial management since one goal of financial management is to maximize the owners' wealth, and profitability is very important determinant of performance. A business that is not profitable cannot survive. Conversely, a business that is highly profitable has the ability to reward its owners with a large return on their investment. Hence, the ultimate goal of a business

entity is to earn profit in order to make sure the sustainability of the business in prevailing market conditions.

The determinants of banks profitability have attracted the interest of academic researchers, bank management, financial markets as well as bank regulators. There have been several studies on determinants of bank profitability which started with the early work by Short (1979). While the study of Smirlock (1985), Berger (1995), Kosmidou, Tanna, & pasiouras (2005), Dietrich and Wanzenried (2009) centered on individual countries, the works of Molyneux and Thornton (1992), Goddard, Molyneux, & Wilson (2004), Al Hashimi (2007), Demirguc – Kunt and Huizinga (2000) and Heffernan and Fu (2008) focused on panel of countries. According to their studies, the factors determining the profitability of banks fall into two main groups. First, there is a group of determinants of profitability that is specific to each bank and that in many cases, are the direct result of managerial decisions (asset structure, asset quality, capitalization, financial structure, efficiency, size, and revenue diversification). The second group of determinants includes factors relating profitability to the industry structure and to the macroeconomic environment within which the banking system operates, such as industry concentration, economic growth, inflation, and interest rates (Almumani, 2013). Even though different studies were conducted on the determinants of banks performance, their results is not conclusive as far as the impacts of the factors are concerned.

In Nigeria, different studies were conducted on the determinants of deposit money banks (DMBs) performance such as Ani, Ugwunta, Ezeudu and Ugwuanyi (2012), Aremu, Ekpo and Moustapha (2013), and Aminu (2013) but the authors did not include important variables like income diversification. This study examines the determinants of MBs financial performance in Nigeria, taking into cognizance income diversification, this is due to the fact that the profitability

of banks which depends solely on interest income may be highly affected by interest fluctuation and loan default risk. But, banks which diversify their income source can increase their profit since non-interest income may not be affected by interest fluctuation and loan default.

In view of the aforementioned and ongoing performance determinants debate around the globe, a study on the performance determinants on MBs in Nigeria is desirable. This study dwells on Internal factors that affect MBs financial performance because our purpose is to test the impact of capital adequacy, credit risk, bank size, cost income ratio, and income diversification on MBs financial performance.

1.2 Statement of the Problems

The banking sector in particular is part of immune and repair system of an economy and successful operation of the industry can set energy for other industries and the development of an entire economy. To do so the banking industry is expected to be financially solvent and strong through being profitable in operation. Hence, not only measuring the financial performance of banks but also clear insight about determinants of profitability in the sector is then the problem to be investigated.

Over the years, the wellbeing, growth and successful operation of banks has attracted the interest of different academic researchers, managers, economists and other professionals. This is cardinal since identifying the key success factors of MBs financial performance allows for designing well- informed policies that may significantly improve the overall performance of the sector. A number of studies have examined the determinants of banks' performance in many countries around the globe. For instance, Almazari (2013), Almunani (2013), *Ani, et.al*(2012), *Aremu, et.al* (2013) among others. Although a lot of studies and literatures which examines the determinants of banks financial performance exist, these studies show different and even

contradictory results. For instance, the impact of capital on profitability is seriously being debated among researchers. This is because while positive relationship had been found by studies of Gilchris (2013), Ramalan (2011), and Ommeren (2011), other studies found a negative relationship between capital and profitability Saona, (2011), Ali, Akhtar, & Ahmed (2011).

The capital adequacy risk poses great challenges to DMBs in Nigeria. This is because the first and second round stress test conducted by CBN discovered that ten capitalized banks were in serious risk problem due to inability of their balance sheet to absorb shocks associated with intermediary functions they play in the economy. In line with the mixed findings on the relationship between capital adequacy and profitability and the stated problem, this study is set to fill the gap by examining capital adequacy and profitability of MBs in Nigeria by extending the period to 2013, this raises a question whether capital adequacy is among the determinants of the financial performance of MBs in Nigeria.

Despite the fact that there are many risks that affect financial performance of banks, but for the purpose of this study credit risk was considered most significant risks taking cognizance of banks intermediation activities in which income generated from it is expected to significantly contribute to the profitability of banks. By effective management of credit risk exposure banks not only support the viability and profitability of their own business but also contribute to systemic stability and to an efficient allocation of capital in the economy (Psillaki, Tsolas, and Margaritis, 2010). Credit risk management has a significant impact on the profitability of Nigerian banks (Kargi, 2011, Bashir and Hassan, 2003). Miller and Noulas (1997), Ramlall (2009), Vong and Chan (2009) and Sinha and Sharma (2014) found a negative relationship between credit risk and profitability. While Sufian (2011) found a positive significant relationship between credit risk and profitability. The mixed findings could be attributable to

different techniques of analysis adopted by the researchers, difference in the period, policies and environments within which the studies is conducted. Therefore, the question still remain that to what extent does credit risk predicts financial performance of MBs in Nigeria.?

Inefficiency of banks manifest in multifarious forms with adverse implications for the growth prospect of the banking system, ranging from inability to effectively perform the intermediation role, high cost of transactions and resultant inability for private investors to access loanable funds, financial crisis and the eventual loss of confidence in the banks due to financial distress. All these will negatively affect financial performance of MBs in Nigeria. Studies on the cost income ratio and profitability of banks are observed to be conducted in both developed and developing economies. The studies of Flamini, McDonald & Schumacher(2009), Hager, & Wael (2011)) found positive correlation between cost income ratio and profitability. On the other hand, studies of Syafri (2012), Zeitun (2012) and Almazari (2013), found negative effect of cost income ratio on profitability and most of the studies on the cost income ratio and profitability stopped at 2010. This study therefore fills the gap by widening and extending the period up to 2013.

The literatures on the relationship between income diversification and financial performance are also conflicting. For instance Chiorazzo, Milani, & Salvini, (2008) and Elsas, Hackethal, Holzhauser (2010) concluded that revenue diversification enhances bank profitability via higher margins from non-interest businesses. On the contrary studies of DeYoung & Rice (2004), Morgan & Katherine (2003), Stiroh (2004), Stiroh & Rumble (2006) among others proved that greater diversification of the banking business does not necessarily translate into an improvement of the bank's profitability but it may be detrimental to it.

In Nigeria, Ani *et al.* (2012), Aremu *et al.* (2013), Soyemi *et al.* (2013) studied the determinants of DMBs profitability and did not include income diversification as an important variable that affect financial performance. Studies have shown that more diversification can yield better profits (Jiang *et al.*, 2001). Banks that are able to effectively and efficiently utilize their sources of income other than interest income would have a competitive advantage in the industry and thus make superior profits. This therefore triggers the need in the Nigerian context to include such a variable in order to ascertain its behavior as one of the financial performance determinants.

In light of the above, the result from previous studies have not been consistent in all respect and findings were mixed in some cases. It is on this premise that a research carried out to the existing body of knowledge by empirically examining the extent to which determinants significantly affects financial performance of MBs in Nigeria.

1.3 Resaerch Questions

The following research questions are set;

- i. Does capital adequacy has significant effect on financial performance of MBs in Nigeria ?
- ii. Does credit risk has significant influence on financial performance of MBs in Nigeria ?
- iii. Does bank size has significant impact on financial performance of MBs in Nigeria ?
- iv. Does cost income ratio has significant effect on financial performance of MBs in Nigeria ?

- v. Does income diversification has significant impact on financial performance of MBs in Nigeria ?

1.4 Objectives of the study

The general objective of this study is to examine the determinants of financial performance of MBs in Nigeria. Specifically, it seeks to:

- i. assess the effect of capital adequacy on financial performance of Mega banks in Nigeria,
- ii. examine the effect of credit risk on financial performance of Mega banks in Nigeria,
- iii. evaluate the impact of bank size on financial performance of Mega banks in Nigeria,
- iv. determine the effect of bank efficiency on financial performance of Mega banks in Nigeria,
- v. assess the influence of income diversification on financial performance of Mega banks in Nigeria.

1.5 Hypotheses of the study

On the basis of the above background and in line with the objectives of the study the following hypotheses have been formulated in null form for the study.

H_{01} Capital adequacy has no significant effect on financial performance of Mega banks in Nigeria,

H_{02} Credit risk has no significant effect on financial performance Mega banks in Nigeria,

H_{03} Bank size has no significant effect on financial performance of Mega banks in Nigeria,

H_{04} Bank efficiency has no significant effect on financial performance of Mega banks in Nigeria,

H_{05} Income diversification has no significant effect on financial performance of Mega banks in Nigeria.

1.6 Scope of the study

This study focused only on the determinants of financial performance of Mega banks in Nigeria. It also the scope of the study confined merely on the quantitative measure of determinants of MBs profitability in Nigeria without any overall performance measurement tool.

The study focused on the determinants of MBs financial performance in Nigeria and is restricted to the relationship between return on asset and its determinants for a period of seven years from (2007 to 2013) that is post consolidation period which was characterized by the heat of the global financial crises. The ROA reflects the ability of a bank's management to generate profits from the bank's assets. It shows the profits earned per Naira of assets and indicates how effectively the bank's assets are managed to generate revenues, although it might be biased due to off-balance-sheet activities. This is probably the most important single ratio in comparing the efficiency and operating performance of banks as it indicates the returns generated from the assets that bank owns (Tan *et al.* 2012). ROA is the most comprehensive accounting measure of a bank's overall performance (Birhanu 2012). Because of this, the bulk of studies employed ROA as performance measure, for instance, (Mohana *et al.* 2012, Li Yuqi 2006, Sufian 2011, syafri 2012).

This study is limited to internal factors such as capital adequacy, credit risk, efficiency, bank size and income diversification that determine the financial performance of MBs in Nigeria. The choice of explanatory variables is based on their theoretical relationship with the dependent

variable. Generally speaking, the chosen explanatory variables are expected to partly explain the variation of the dependent variable.

1.7 Significance of the study

A study to establish the underlying factors responsible for financial performance of MBs in Nigerian is of paramount importance. The findings of this study is expected to contribute practically and theoretically to various stakeholders as well as provide a basis for policy formulation. Specifically, this study will fill the gap and potentially serve as a stepping stone for further research in the area. It will help policy makers in the banking sector to ascertain the adequacy of financial performance in order to take a prompt action where necessary. The result of the study will assist the regulatory agencies like central bank of Nigeria (CBN) and Nigerian Deposit Insurance Corporation (NDIC) in formulating policies and ensuring safety and soundness of the entire financial system in line with the best practice of banks around the globe. The result of this work will provide employees and shareholders with the information they need concerning variables that can affect their organization's financial performances.

Practically, practitioners including bank managers, accountants, financial analysts, consultants, financial advisers, stock brokers and other professionals will find this work useful by providing them with an insight on internal determinants of financial performance which will serve as a guide when carrying out their consulting/ advisory services to their respective clients, prospective investors and other interested parties and the results of this study will serve as a guide to the members of board of directors in setting business goals and objectives.

CHAPTER TWO LITERATURE REVIEW

2.1 Introduction

This chapter reviews related theoretical and empirical literature, and provides the theoretical framework that underpins the study. The aim is to acknowledge the contributions of previous researchers as well as identifying gaps within the literature with a view to filling them. The chapter begins by explaining the concept of profitability and how it is measure and then discusses bank specific variables and their measurements. It also provides a review of empirical literature on the relationship between each of the bank specific variables used in the study and proxies of profitability. In addition, the section provides a review of relevant theories that are related to the variables of the study.

2.2 Conceptualization

The conceptual framework provides a skeletal guide for a detail exposition of the dependent and independent variables and the likely interrelationship between and among variables. A conceptual framework is used in this research to outline possible courses of action or to present a preferred approach to an idea or thought.

2.2.1 Profitability

Profitability connotes a situation where the income generated during a given period exceeds the expenses incurred over the same length of time for the sole purpose of generating income (Banwo, 1997 in Sanni, 2006). The fundamental requirements here are that the income and the

expenses must occur during the same period of time (Matching Concept) and the income must be a direct consequence of the expenses.

The measurement of bank performance particularly deposit money banks is well researched and has received increased attention over years (Seiford and Zhu, 1999). There have been a large number of empirical studies on commercial bank performance around the world (Yeh, 1996; Webb, 2003; Lacewell, 2003; Halkos and Salamouris, 2004; Tarawneh, 2006). However, little has been done on MBs performance in Nigeria. However, with the deteriorating health of the banking institutions and the recent surge of bank failures as a result of the global financial crisis, it is justified that bank performance receives increased investigation from both scholars and industry specialists.

There are two broad approaches used to measure bank performance, the accounting approach, which makes use of financial ratios and econometric techniques. Traditionally accounting methods primarily based on the use of financial ratios have been employed for assessing bank performance (Ncube, 2009). However, the limitations of this method coupled with advances in management sciences have led to the development of alternate methods such as non-parametric DEA and parametric Stochastic Frontier Approach (PSFA) (Berger and Humphrey, 1997).

Berger & Humphrey (1997) assert that the whole idea of measuring bank performance is to separate banks that are performing well from those which are doing poorly. They further indicated that, “evaluating the performance of financial institution can inform government policy by assessing the effects of deregulation, mergers and market structure on efficiency”. Bank regulators screen banks by evaluating banks’ liquidity, solvency and overall performance to enable them to intervene when there is need and to gauge the potential for problems (Casu,

Molyneux, and Girardone 2006). On a micro-level, bank performance measurement can also help improve managerial performance by identifying best and worst practices associated with high and low measured efficiency.

2.2.2 Profit and Profitability

Sometimes, the people used the term Profit and Profitability interchangeably. But in real sense, there is a difference between the two. Profit is an absolute term, whereas, the profitability is a relative concept or meaning. However, they are closely related and mutually interdependent, having distinct roles in business. Profit refers to the total income earned by the firm during the specified period of time, while profitability refers to the operating efficiency of the firm. It is the ability of the firm to make profit on sales. It is the ability of firm to get sufficient return on the capital and employees used in the business operation (Harward & Upton, 1961). According to Weston and Brigham, (1972) rightly notes “to the financial management profit is the test of efficiency and a measure of control, to the owners a measure of the worth of their investment, to the creditors the margin of safety, to the government a measure of taxable capacity and a basis of legislative action and to the country profit is an index of economic progress, national income generated and the rise in the standard of living”, while profitability is an outcome of profit. In other words, no profit drives towards profitability (Weston and Brigham, 1972).

A MBs remains in operation because it expects to make profits. Once that expectation is confirmed unattainable, the most rational decision is to exit the business. Three indicators, namely: Net Interest Margin (NIM), Return on Assets (ROA) and Return on Equity (ROE) were identified by Ahmed (2003) to be widely employed in the literature to measure profitability. However, there are divergent views among scholars on the superiority of one indicator over the others as a good measure of profitability. For instance, Goudrean and Whitehead (1989) and

Uchendu (1995) believed that the three indicators are all good. Hancock (1989) used only ROE to measure profitability in her study. Odufulu (1994) used only the gross profit margin in measuring profitability. Profitability measures, according to Akinola (2008) includes Profit before Tax (PBT), Profit after Tax (PAT), ROE, Rate of Return on Capital (ROC) and ROA. Sanni (2009) used Earnings per Share (EPS). For this study, we shall limit profitability to return on Asset (ROA). Studies have shown that return on asset assesses how efficiently a bank is managing its revenue and expenses, and also reflects the ability of the bank management to generate profits by using the available financial and real assets (Jahan, 2012).

2.2.3 Mega bank

A Mega bank (MB) is a bank that meets the minimum capital requirement of N50 billion and with a commercial presence outside its home country, by way of at least one branch or subsidiary, (Beck, Fuchs, Singer, and Witte 2014). MB play an important role in the process of banking integration. “They enhance competition, they promote convergence towards more efficient, lower-cost banking practices.” (European Central Bank, 2007). The cross-border expansion of Nigerian banks is due to many factors, but the pursuit of business opportunities abroad, normally led by the banks’ larger corporate clients, is generally the dominant driver. Economists distinguished between pull factors and push factors when assessing the drivers for cross-border business expansion. Push factors are circumstances in the home country that explains why banks decide to move beyond the borders of their home countries. Among them are declining opportunities in the home jurisdiction and regulatory requirements. In contrast, pull factors are opportunities in host countries that necessitates a bank to enter the new market. In other words, pull factors are the expected benefits that banks hope to reap by venturing into a particular foreign market. One of the most powerful push factors propelling banks to expand

beyond their home markets are (perceived) declining or smaller profit opportunities in the home economy, especially relative to opportunities in potential host markets.

2.2.4 Capital Adequacy

The concept of capital adequacy emerged in the mid 1970's due to the expansion of lending by banks without parallel increase in their capital. This has forced regulators to define several control procedures and issued new reforms in order to avoid insolvency in the financial sector.

Bank capital is those fund attributed to the proprietors as published in the balance sheet (Nwankwo, 1991). These funds perform a number of functions but a consensus exists that the fundamental and overriding function is to provide a cushion against losses not covered by current earnings and to protect depositors and other creditors against loss in the event of liquidation. Capital consists of strong base of permanent shareholder's equity and disclosed reserves, supplemented by other form of qualifying capital (for example undisclosed reserves, revaluation reserves, general provision for loan losses, hybrid instruments, and subordinated debt).

Capital refers to the amount of own funds available to support a bank's business and therefore, bank capital acts as a safety net in the case of adverse development (Athanasoglou *et al.*, 2005). Capital is calculated as the ratio of equity to total assets. The ratio measures how much of the banks' assets are funded with owners' fund and is a proxy for capital adequacy of a bank by estimating the ability to absorb losses (Ommeren, 2011).

Opinion differs among experts in banking and finance as to what constitutes adequate capital but they all agree that it is an age long issue for which there do not seem to be any consensus insight. Thus, as noted by Nwankwo (1991), the issue of what constitutes an adequate capital for banks has a long history. It is in fact, almost as old as banking itself. Nwankwo (1991)

states that adequate capital is that quantum of funds which a bank should have or plan to maintain in order to conduct its business in a prudent manner.

The international standards for minimum capital and for assessment and measurement of capital adequacy are set by the Basel accord (Basel II), which defines three tiers of capital. The first two tiers cover credit risk related to on- and off-balance sheet activities, derivatives, and operational risks. The third tier partially covers market risk. Basel II set the total capital adequacy ratio at no lower than 8%. The capital ratio is calculated using the definition of regulatory capital and risk weighted assets. The 8% ratio must be seen as a minimum. In transitional or volatile environment, risk weighted capital adequacy requirement of substantially more than 8% would be more appropriate. Capital adequacy ratio is measured by the ratio of total capital to total risk-weighted assets. The higher the capital adequacy ratio, the higher the level of soundness of bank.

A high capital adequacy ratio means a bank could absorb losses without becoming insolvent (Mpuga 2002). Applying minimum capital adequacy ratios serves to protect depositors and promote the stability and efficiency of the financial system. Two types of capital are measured. Tier one capital which can absorb losses without a bank being required to cease trading, for example ordinary share capital, and tier two capital which can absorb losses in the event of a winding-up and so provides a lesser degree of protection to depositors, for example subordinated debt.

Literature treats the capital adequacy issue using defining concepts like regulatory capital and economic capital. Regulatory capital refers to minimal capital requirement which banks must own according to the regulations made by national supervision authorities. The establishment of capital requirements has the main objective to assure the stability and the viability of national

banking system. Economic capital has to act like a pad of protection against all the risks that may put in danger the solvency of the bank. It is a recent notion used in the financial theory and financial practice which is defined as being the level of capital required for the amortization of normal loss (beyond those expected) generated by the clients' inobservance of paying their obligations which had been established by the means of a previous contract. Saunders and Schumacher (2000) observed that bank might hold high capital to hedge against both the expected and unexpected credit risk. The capital adequacy has long been a valuable tool for assessing safety and soundness of banks.

2.2.5 Credit risk

Credit risk is an internal determinant of bank performance and the higher the exposure of a bank to credit risk, the higher the tendency of the bank to experience financial crises and vice-versa. A credit facility is said to be performing if payment of both principal and interest are up to date in accordance with agreed repayment terms. Credit or counterparty risk is the chance that a debtor or issuer of financial instrument- whether an individual, a company, or a country- will not repay principal and other related cash flows according to the terms specified in a credit agreement. Inherent to banking, credit risk means that payments may be delayed or not made at all, which can cause cash flow problems and affect a bank's liquidity. The Basel Committee on Banking Supervision (2001) defined credit risk as the possibility of losing the outstanding loan partially or totally, due to credit events (default risk).

A bank exists not only to accept deposits but also to grant credit facilities, therefore inevitably exposed to credit risk. Credit risk is by far the most significant risk faced by banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risks (Giesecke, 2004). Credit introduces the amount of

money that will be paid in the future, and credit risk exists because the expected payments may not be paid. Therefore, by credit risk we mean potential losses received by the customer of credit, but repayment has encountered refusal by the customer or there has been no financial capability of complete or timely repayment. Delayed repayments lead to reduction of banks' assets and provision of total assets is also decreased. As a result, ROA and ROE will be reduced. Thus, there is a reverse relationship between credit risk and ROE (Rudra, 2009).

Credit risk is a major problem that faces the Nigerian deposit money banks. This was mainly due to many factors such as severe corruption associated with the lending activity, weak supervision by CBN, lack of financial innovation, poor quality of governance structure and poor asset quality. In addition, Unfavorable lending terms was another significant problem facing the Nigerian banking sector. Banks prefer to over-collateralize rather than making their credit decision on cash-flows. This approach affects the Nigerian credit market negatively and increases the lending costs. In the same line, banks in Nigeria are suffering from inadequate and insufficient credit information about their clients' creditworthiness and sector –related statistics.

2.2.6 Bank Size

Bank size is another notable determinant of capital adequacy. Size according to Demirgur- Kunt and Huizinga (2000) larger banks are better placed than smaller banks in harnessing economies of scale in transactions to the main effect that they will tend to enjoy higher level of profit.

Furthermore, Short (1979) argued that size is closely related to the capital adequacy of a bank since relatively large banks tend to raise less expensive capital and hence, appear more profitable. The underlying argument on this is that larger institutions tend to become more efficient and consequently providing services at lower cost *ceteris paribus*. (Haron, 1996) suggested that larger banks generally generate their outputs or services more cheaply and

efficiently than small banks because of the economies of scale that they benefit as such, there is tendency for them to generate higher profits. However, there are other schools of thought that argued that little cost saving can be achieved by increasing the size of a bank. Berger, *et al.* (1987) suggests that eventually very large banks could face diseconomy of scale. Akhavein, *et al.* (1997) and Smirlock (1985) found a positive and significant relationship between size and bank profitability. The studies of Bikker and Hu (2002) and Goddard, *et al.* (2004) supported the position of Akhavein *et al.* (1997) that there is an inverse relationship between size and profitability as reported by Boyd and Runkel (1993). Similarly, Miller and Noulas (1997) in the USA, Naceur (2003) in Tunisia and Jiang, *et al.*, (2003) in Hong Kong made similar conclusion from their respective reports.

2.2.7 Bank Efficiency

Bank efficiency defined by operating expenses divided by operating income, can be used for benchmarking by the bank when reviewing its operational efficiency. Efficiency Management shows how banks are able to manage their cost in order to boost their profits. The commonly held notion claims that a high CIR is equivalent to low productivity and efficiency of banks and vice versa.

The cost income ratio put expenses (administrative costs) and earnings (operating income) of a bank in a relation to each other. The CIR shows how many Naira were needed in a given period of time to generate one Naira in revenue. Consequently, the CIR measures the output of a bank in relation to its utilized inputs. The cost to income ratio is a ratio affected not only by banks' costs, but also by income variation. For any given level of cost relative to a bank's assets, a reduction in income will cause an increase in the cost to income ratio. This might be a reflection of a change in competitive conditions reducing the margins available for banks. A

downturn in income might also reflect an economic downturn reducing banks' opportunities to undertake profitable business from which to earn more interest and fees (Tripe, 1998).

2.2.8 Income Diversification

It should be noted that banks around the world have diversified away from traditional financial intermediation activities in the off-balance sheet and fees and commissions generating activities. Thus, it may be inappropriate to focus exclusively on traditional remunerative assets and neglect an important part of modern banking operations. Therefore, several recent studies have included additional output variables to capture the non-traditional activities and operations of banks. In the literature, two types of measures were used to capture these non-traditional activities one measure is in flow terms (the non-interest income), and other measures are expressed in terms of stocks (off-balance sheet items in nominal or weighted for risk values).

Income diversification as an important variable reflect the ability of bank to generate income other than the traditional interest income and it is measured by the total non-interest income divided by total assets. Banks have moved away from their traditional activities, towards offering more diversified services as they face more competition within the banking sector as well from non-banking companies and the capital markets. As a consequence, the sources of income generation have shifted from non-fund based activities to more fee and fund based activities. Studies have shown that more diversification can yield better profits (Jiang *et.al* 2001).However, fee based income can actually exert a negative impact on profitability since non-interest income, such as trade in derivatives etc. are subject to more intense competition than those traditional income activities (Gisher and Jutner, 2001).Nevertheless, a higher revenue stemming from non-traditional activities, increases the share of non-interest income thereby increasing profitability.

Income diversification is another alternative means of income other than earning from loans. It includes fees earned from offering unit trust services, services charges on deposit accounts, and charges for other bank services (Birhanu, 2012). Income diversification is measured as the percentage of income other than interest income to total assets. This ratio reflects how well the CBB has diversified its source of revenue. A high ratio means that the CBB is performing better in terms of diversifying its activities to increase its revenue and thereby affect the profitability of the CBB favorably (Mohana *et al.*, 2012). According to Birhanu (2012), the profitability of banks which depends on only interest income is highly affected by interest fluctuation and loan default risk. But banks which diversify their income source can increase their profit since non-interest income never affected by interest fluctuation and loan default.

Different studies undertaken on the performance of banks suggest that banks performance is affected by both internal and external factors (Soyemi *et al.* 2013; Okoth *et al.* 2013; Frederick, 2015) and these factors affect the performance of banks positively or negatively. Soyemi *et al.* (2013) stated that some of the factors that affect the performance of the bank could be under the control of banks management and the others could be beyond management's Control. Those factors which could be under the control of the management are called micro, internal or bank specific factors. According to Mohana *et al.* (2012) they are so called bank specific factors because they are determinants that can be influenced by management decision. The major internal factors that affect performance of banks include: capital adequacy, asset quality, management efficiency, earning quality, liquidity, bank size, technology, capital, loan performance, and income diversification among others.

Moreover, those factors which are beyond the management's control are referred as external or macroeconomic factors and these factors are related to the industry and macroeconomic

factors. These factors include: bank concentration, inflation, real GDP growth, effective tax rate, interest rate, among others.

2.3 General Literature Review

2.3.1 Capital Adequacy and Financial Performance

The effect of capital adequacy on banks performance cannot be underestimated since adequate capital directly influences the amount of funds available for loans, which invariably affects the level and degree of risk absorption. Gardner (1991), stressed that, despite its many roles and diverse functions, it is clear that bank capital is acting as protective cushion against losses precipitated by certain kinds of uncertainties. This view looks at capital as a constraint to avoid default and capital also acts as a cushion to protect depositors and other creditors against losses at the operating and liquidation stage. Graham (1989) affirmed that management discipline has an effect on capital. In this view capital constraint helps to avoid over-trading and curbs malpractices by management. Graham (1989) is of the view that prudent guideline of capital adequacy system has an important effect on bank capital, profitability and costs.

2.3.2 Credit Risk and Financial Performance

Banks are exposed to various risks such as credit, market and operational risk. Although all these risks militate against the performance of banks in several ways, Chijoriga (1997) argues that the size and the level of loss caused by credit risk as compared to others were severe to collapse a Bank. This is so owing to the fact that the basic essence of the banks is tied to the success or failure of their credit policies; in as much as the banks revenues are largely sourced from credit

creation. In order to minimize loan losses as well as credit risk, it is crucial for banks to have an effective credit risk management systems in place (Santomera 1997, Basel 1999). As a result of asymmetric information that exists between banks and borrowers, banks must have a system in place to ensure that they can do analysis and evaluate default risk that is hidden from them. While it is expected that banks would bear some bad loans and losses in their lending activities, one of the key objectives of the bank is to minimize such losses (Casu *et al*, 2006). Credit performance evaluates the risks associated with the bank's asset portfolio that is the quality of loans issued by the bank.

2.3.3 Bank Size and Financial Performance

Bank size accounts for the existence of economies or diseconomies of scale (Naceur & Goaid, 2008). The variable is measured as the natural log of total assets (Saona, 2011). Economic theory suggests that market structure affects firm performance (Haron, 1996) and that if an industry is subject to economies of scale, larger institutions would be more efficient and could provide service at a lower cost (Rasiah, 2010a). Not only that, the theory of the banking firm asserts that a firm enjoys economies of scale up to a certain level, beyond which diseconomies of scale set in. This implies that profitability increases with increase in size, and decreases as soon as there are diseconomies of scale. Thus, literature has shown that the relationship between the bank size and profitability can be positive or negative (Staikouras & Wood, 2004; Athanoglou *et al.*, 2005; Flamini *et al.*, 2009; Dietrich & Wanzenrid, 2009; Naceur & Omran, 2011).

The size of bank as one of the independent variable could create economies of scale which lower the average cost and positively impact on bank profits. Gul, Irshad and Zaman (2011) found a direct relationship between the size of banks and profitability. Ani, *et.al* (2012) Study found that bank size does not increase the profit of any commercial banks in Nigeria

2.3.4 Bank Efficiency and Financial Performance

Expenses management relates to the idea of efficient management of banks' resources. For this study, the variable cost to income ratio, defined by operating expenses divided by operating income, can be used for benchmarking by the bank when reviewing its operational efficiency. Hess and Francis (2004), observed that there is an inverse relationship between cost income ratio and bank's profitability. Ghosh & Narain (2003) also found negative relation between efficiency and cost-income. As Athanasoglou *et al.* (2005) observed negative relationship is expected between expenses management and profitability, since improved management of the expenses will increase efficiency and hence raise profits.

The limitations of the CIR have been discussed in numerous articles. For instance Osborne (1995) found no clear correlation between the CIR and return on equity for a sample of US Banks. Tripe (1998) identified factors such as interest levels, the state of the economy and balance sheet structure impact on this ratio. Bekier (1998) found substantial differences with regard to cost efficiency between countries. In particular, those OECD countries where cheques are widely used for non-cash payments (USA, Canada, Australia, and the UK) tend to have more costly banking systems than European countries that rely more on electronic transaction methods. Davidson (1997), noted that there is a timing problem in that unfavorable efficiency ratios might reflect investments, for example, into technology which, in the long run, could well lead to an improved cost position. In contrast, an artificially low CIR, might cost a bank dearly in the long-term if it has laid off so many staff that a subsequent loss of market share bites into revenues.

2.4 Empirical Review

An overview of previous studies indicates various ways by which profitability was examined. Some studies were country specific and few of them considered panel of countries while reviewing the determinants of profitability. Empirical studies on bank profitability that focused mainly on specific countries include those of the US (Berger, 1995) Greece (Kosmidou, 2005); Australia (Pasiouras, Kosmidou, & Gaganis, 2005), Malaysia (Guru et al., 1999); Colombia (Barajas, Steiner, & Salazar, 1999) and Tunisia (Naceur, 2003). Molyneux and Thornton (1992) were the first to investigate a multicountry setting by examining the determinants of bank profitability for a panel of European countries. This was followed by the study of Abreu and Mendes (2000), Staikouras and Wood (2003), & Pasiouras et al. (2005). Other multi-country studies include those of Hassan and Bashir (2003), who examined profitability for a sample of Islamic banks from 21 countries and Demircuc-Kunt and Huizinga (2000) who considered a comprehensive set of bank specific characteristics, as well as macroeconomic conditions, taxation, regulations, financial structure and legal indicators to examine the determinants of bank net interest margins in over 80 countries. The main conclusion emerging from these studies is that internal factors determine a large proportion of banks profitability.

Miller and Noulas (1997) found a negative relationship between credit risk and profitability implying that banks will encounter difficulties in their quest to maximize profit.

The profitability of European banks during the 1990s was investigated by Goddard *et al.* (2004) using cross sectional, pooled cross-sectional time-series and dynamic panel models. Their model for the determinant of profitability incorporates size, diversification, risk and ownership type, as well as dynamic effects. They found out that despite intensifying competition there was significant persistence of abnormal profit from year to year.

In Asia, Sufian (2011) investigated the profitability of 251 Korean banks from 1992 to 2003. The study used panel data, multiple regression models and SPSS statistical package. The regression results indicate that credit risk, had significant positive effect on profitability while capital had insignificant positive effect on profitability. Overhead expenses had significant negative effects on the profitability (ROA) of banks in Korea.

Ramlall (2009) analyzed the determinants of profitability for the Taiwanese banking system using bank-specific, industry-specific and macroeconomic factors, under a quarterly dataset, for the period 2002 to 2007. The results showed that while credit risk triggers a negative impact on profitability, capital tends to consolidate profits. Overall, the results suggested that Taiwanese banking system is well-diversified. The implication of the findings is that it may be difficult to mitigate the pro-cyclicality of banks' profitability in Taiwan subject to a non-concentrated banking system.

Vong and Chan (2009) examined the impact of bank characteristics as well as macroeconomic and financial structure variables on the performance of the Macau banking industry. The study used five cross-sectional units involving 15 years data. The regression results estimated by the fixed effect model showed that capital strength of a bank is of paramount importance in affecting its profitability. More so, asset quality, as measured by loan-loss provisions, affects the performance of banks adversely. With regard to macroeconomic variables, only the rate of inflation exhibits a significant relationship with banks' performance.

Ali *et al.* (2011) examined the bank specific and macroeconomic indicators of 22 public and private sector commercial banks profitability from 2006 to 2009 in Pakistan. The research made use of multiple regression models and panel data estimation. The findings showed that bank size, operating efficiency, asset management and GDP had positive effect on banks'

profitability. However, capital and credit risk had negative effect on banks profitability in Pakistan.

Deger and Adem (2011), examined the bank-specific and macroeconomic determinants of the banks' profitability in Turkey over the period from 2002 to 2010 using balanced panel dataset, the results show that asset size and non-interest income have positive and significant effect on bank profitability. However, size of credit portfolio and loans under follow-up has a negative and significant impact on bank profitability.

Gul, Irshad & Zaman (2011) also studied the factors affecting samples of 15 commercial banks profitability from 2005 to 2009 in Pakistan. The study employed panel data estimation and Pooled Ordinary Least Square (POLS) method of computation with the aid of an econometric package. The econometric result indicated that both internal and external factors such as bank size, loan, deposit, GDP, inflation and market capitalization had significant positive influence on banks profitability measured by Return on Assets (ROA).

Sinha & Sharma, (2014) studied the impact of bank specific, industry specific and macroeconomic factors affecting profitability of Indian Banks using Generalized Method of Moments (GMM) .The panel data for the study was obtained from 42 Indian Scheduled Commercial banks from 2000 to 2013 the lag of bank profits variable ROA was found to be significantly indicating moderate degree of persistence of profits in Indian Banking Industry. This shows that the product markets of Indian Banks are moderately competitive, and less opaque due to asymmetry in information. The bank specific variables like capital to assets ratio, operating efficiency and diversification were found to be significantly and positively affecting the bank profits. Credit risk, measured by provisions for bad debts, negatively impacted the bank profitability.

Gilchrist (2013) examined the influence of bank specific and macroeconomic factors on samples of 25 commercial banks profitability from 2007 to 2011 in Pakistan. The regression results indicated that bank size, net interest margin, had positive and significant impact on the profitability (ROA and ROE). Non- performing loan to total advances had negative and significant impact on ROA while Capital ratio has positive significant impact on ROE.

Saidu and Tumin (2011), investigated the performance and financial ratios on samples of four Malaysian and nine Chinese commercial banks from 2001 to 2007. The regression results showed that credit, capital and operating ratios had influence on the performance of banks in China which is not true for Malaysia. Liquidity and size of the banks do not influence the performance of the banks in both countries.

Hasan *et al.* (2013) studied impact of macroeconomic and bank specific components on the Return on Equity (ROE) of a Malaysian bank from 2004 to 2012. The estimation result revealed that the operating efficiency ratio were inversely affecting the bank profitability in Malaysia.

Sufian (2008) studied the profitability of the banks in Philippines from 1990-2005. The outcome revealed that all factors studied had significant impact on bank profitability. The study also suggested that, if the expense related behavior and credit risk increases the profitability of the banks operating in Philippines decreases and the non-interest income and capitalization both have positive relationship with bank's profitability.

Boukhari (2012) analyzed the internal and external factors that affects the profitability of 11 commercial banks operating in Pakistan from 2005 to 2009. The study used the regression analysis to implicate the result with the hypothesis. The findings of the study revealed that

internal factors impacted the profitability of the commercial banks whereas external factors do not have any impact on the profitability of commercial banks in Pakistan.

Ali *et al* (2011) analyzed factors impacting on the profitability of 22 commercial banks both public and private working in Pakistan from 2006 to 2009. The study used the descriptive statistics, correlation and regression analysis. Return on assets (ROA) and return on equity (ROE) were used as dependent variables. On the other hand internal and external factors were used as independent variables. The results showed that when economic growth increased the profitability increased, and when the credit risk increases the profitability decreases.

In middle-east, Almumani (2013) analyzed the internal factors that impact on the profitability of the commercial banks listed in Amman Stock Exchange in Jordan from 2005-2011. The study proved that the cost-income ratio had a significant impact on the profitability of commercial banks in Jordan.

Ramadan *et.al* (2011) studied the determinants of profitability of 10 Jordan banks from 2001-2010. They have used return on equity (ROE) and return on assets (ROA) as dependent variables. Internal and external factors were used as independent variables and the type of data of Jordan banks is panel data. Results indicated that profitability of the Jordan banks depend upon the well capitalized banks, high loaning activities, less credit risk and cost management efficiency. The findings also expressed that size does not increase profitability of Jordan banks.

Al-Khoury (2011) assessed the impact of bank's specific risk characteristics, and the overall banking environment on the performance of 43 commercial banks operating in 6 of the Gulf Cooperation Council (GCC) countries from 1998-2008. The study used fixed effect regression analysis and the results showed that credit risk, liquidity risk and capital risk were the major factors that affected bank performance when profitability was measured by return on

assets while the only risk that affected profitability when measured by return on equity was liquidity risk.

Alkhatib (2012) empirically examined the financial performance of five Palestinian commercial banks listed on Palestine Securities Exchange (PEX). The study developed 3 models each of which consisted of one dependent variable and 4 identical independent variables. ROA was used as internal financial performance indicator, the Tobin's Q model (price/book) as a market financial performance indicator and the economic value added (EVA) as an economic financial performance indicator. Bank size, credit risk, operational efficiency and asset management were used as independent variables. The study employed the correlation and multiple regression analysis of annual time series data from 2005-2010. The result of the research revealed that, bank size and asset management were positively related with ROA but credit risk and operational efficiency were negatively correlated with ROA under the first model. In the second model, both bank size and asset management were positively correlated whereas credit risk and operational efficiency was negatively correlated with the market performance of banks measured by Tobin's Q. In the third model, that is the model which use economic performance of banks measured by EVA, except operational efficiency, bank size, credit risk and asset management ratio were positively correlated with EVA.

Samadi, (2012) investigated the impact of operating risk and capital structure on profitability of banking industry. The study included 17 commercial banks, which were active from 2006 to 2010 in Iran. The results of the study indicated that although there was a positive relationship between capital structure and profitability, there was no meaningful relationship between operating risk and capital structure.

Almazari (2013) studied capital adequacy, cost income ratio and performance of Saudi banks. The study on the implementation of OLS established that the Cost-income ratio (CIR) had a negative relationship with ROA. Poor expenses management was the main contributors to poor profitability (Sufian and Chong 2008). Hess and Francis (2004) arrived at the same findings. Ghosh *et al.* (2003) also found that the expected negative relation between efficiency and the cost-income ratio. Although the relationship between expenditure and profits appeared straightforward, implying that higher expenses means lower profits or the opposite but this may not always be the case. The reason is that higher amounts of expenses may be associated with higher volume of banking activities and therefore higher revenues. In relatively uncompetitive markets where banks enjoy market power, costs are passed on to customers. As such, there would be a positive correlation between overheads costs and profitability (Flamini *et al.*, 2009).

Neceur (2003), found a positive and significant impact of overheads costs to profitability indicating that such cost are passed on to depositors and lenders in terms of lower deposits rates/or higher lending rates.

In Africa, Madishetti *et.al* (2013) analyzed the profitability determinants of Tanzania commercial banks from 2006-2012. Internal determinants used variables like liquidity risk, credit risk, operating efficiency, business assets and capital adequacy while external determinants used GDP growth rate and inflation rate as variables. All these variables are independent. The study found that internal variables determined the bank's profitability whereas external factors do not influence the profitability of commercial banks.

Abuzar (2013) studied the determinants of profitability of Islamic banks operating in Sudan. The study found out that only the internal factors had the substantial impact on the profitability of the commercial banks. Cost, liquidity and the size of the banks had positive

relationship with the bank profitability. Macroeconomic or external factors had no substantial impact on profitability.

In a study on the determinants of the Tunisian banking industry's profitability for 10 banks in Tunisia from 1980 to 2000. Naceur (2003) observed that high net interest margin and profitability were likely to be associated with banks with high amount of capital and large overheads. The study further noted that other determinants such as loans had positive impact on profitability while bank size had negative impact on profitability.

Naceur and Goaid (2001) investigated the impact of banks' characteristics, financial structure and macro-economic indicators on banks' net interest margins and profitability in the Tunisian banking industry from 1980 to 2000. Individual bank characteristics explained a substantial part of the within-country variation in bank interest margins and net profitability. High net interest margin and profitability tend to be associated with banks that held a relatively high amount of capital, and large overheads. Size was found to impact negatively on profitability, which implied that Tunisian banks were operating above their optimum level.

Kithinji (2010) assessed the effect of credit risk management on the profitability of commercial banks in Kenya. Data on the amount of credit, level of non-performing loans and profits were collected from 2004 to 2008. The findings revealed that the bulk of the profits of commercial banks were not influenced by the amount of credit and non-performing loans. The study therefore suggested that other variables and not credit and non-performing loans impacts on profitability.

Felix and Claudine (2008) investigated the relationship between bank performance and credit risk management. It could be inferred from their findings that return on equity (ROE) and return on assets (ROA) both measuring profitability were inversely related to the ratio of non-

performing loan to total loans of financial institutions thereby leading to a decline in profitability.

Epure and Lafuente (2012) examined bank performance in the presence of risk for Costa-Rican banking industry during 1998-2007. The results showed that performance improvements followed regulatory changes and that risk explains differences in banks and non-performing loans negatively affect efficiency and return on assets while the capital adequacy ratio has a positive impact on the net interest margin.

Naceur and Omran (2008) in attempt to examine the influence of bank regulations, concentration, financial and institutional development on commercial banks' margin and profitability in Middle East and North Africa (MENA) countries from 1989-2005 found that bank capitalization and credit risk had positive and significant impact on banks' net interest margin, cost efficiency and profitability. An increase in the value of the provision for loan losses relative to total loans is an indication that bank's assets are becoming more difficult to collect.

Studies by Bashir and Hassan (2003), and Staikouras and Wood (2003) showed that a higher loan ratio actually impacts profits negatively. Staikouras & Wood (2003) noted that banks with more non-loan earnings assets are more profitable than those that rely heavily on loans. Ahmed, Takeda and Shawn (1998) in their study discovered that loan loss provision had a significant positive influence on non-performing loans. Therefore, increase in loan loss provision indicates increase in credit risk and deterioration in the quality of loans, thereby affecting bank performance adversely.

In Nigeria, Aminu (2013) examined determinants on samples of 7 banks' profitability from 2005 to 2011. The regression result revealed that only management efficiency was the driving force determining bank profitability (ROA and ROE). Liquidity had insignificant

positive impact on profitability while capital adequacy and asset quality have insignificant negative impact on profitability.

Ani *et al.*, (2012) studied internal determinants on samples of 15 banks' profitability from 2001 to 2010. The regression result showed that bank size had insignificant negative relationship with profitability and capital had significant negative relationship with profitability. Besides, bank composition has significant positive relationship with profitability in Nigeria. This study used data before and after bank recapitalization policy of 2004. After the recapitalization policy, banks assets were more than doubled and it is unjust to include data before the year 2005 in determining banks profitability in Nigeria.

Aremu *et al.*, (2013) studied determinants of a bank profitability from 1980 to 2010 in Nigeria. The results of the econometric model indicated that liquidity, credit risk and capital adequacy were significant drivers of bank profitability. Only bank size and cost efficiency that were insignificant in determining bank profitability. Though, the study used pre and post consolidation data ranging from 1980 to 2010, and only First Bank Nigeria PLC was sampled for the study.

Babalola (2012) investigated the determinants of banks' profitability in Nigeria. Factors which were macroeconomic, financial and bank-specific in nature were employed and their significant impacts on return on assets were considered. The findings showed that capital adequacy ratio was actually the determining factor for banks' profitability in the short run analysis, Size and tangibility of the banks were the determining factors of performance in the long run relationship.

Bosede *et al.*, (2013) examined return on investment (ROI) of 24 DMBs from 1977 to 2010 in Nigeria. The econometric model results indicated that returns and profitability of

commercial banks were significantly affected by macroeconomic variables (inflation, output growth, lending rate) and other bank characteristic factors such liquidity. Nevertheless, the study utilized pre and post consolidation data ranging from 1977 to 2010, and all sampled banks were not quoted in Nigerian Stock Exchange (NSE).

John and Oke (2013), investigated capital adequacy before and after banks recapitalization policy of 2004 in Nigeria. The study sampled 6 banks covering the period of 2003 to 2007. The ordinary least squares (OLS) estimation technique result indicates that capital adequacy influenced bank performance (EPS and PAT). The study recommended that CBN should not rely solely on the capitalization of banks as a determinant of bank performance but also should concentrate on efficient and effective bank supervision and risk management.

Kargi (2011) evaluated the impact of credit risk on the profitability of Nigerian banks. Financial ratios as measures of bank performance and credit risk were collected from the annual reports and accounts of sampled banks from 2004-2008 and analyzed using descriptive, correlation and regression techniques. The findings revealed that credit risk management has a significant impact on the profitability of Nigerian banks. It concluded that banks' profitability is inversely influenced by the levels of loans and advances, non-performing loans and deposits thereby exposing them to great risk of illiquidity and distress.

Obamuyi (2013) examined the determinants of Bank's profitability in Nigeria. The study investigated the effects of bank capital, bank size, expense management, interest income and the economic condition on banks' profitability in Nigeria. The fixed effects regression model was employed on a panel data obtained from the financial statements of 20 banks from 2006 to 2012. The results indicated that improved bank capital and interest income, as well as efficient

expenses management and favorable economic condition, contribute to higher banks' performance and growth in Nigeria.

Onaolapo and Olufemi (2012) examined the effects of capital adequacy conditionality on the performance of selected banks within the Nigerian banking sector. The study hypothesized no significant relationship between Capital Adequacy Ratio (CAR) (Statutorily mandated) and five bank performance variables. Ordinary Least Square (OLS) estimation was adapted to analyze relationship between the variables. The findings of the study revealed that all the performance indicators tested such as returns on assets (ROA), returns on capital employed (ROCE) and efficiency ratios (ER) among others do not reflect much on Capital Adequacy Ratio (CAR) of the Nigerian banking sector.

Soyemi, Akinpelu & Ogunleye (2013) investigated the determinants on samples of 10 DMBs profitability from 2006 to 2010 in Nigeria. The linear regression result indicate that bank size and capital adequacy had significant negative relationship with banks profitability while management expenses and deposits had insignificant positive relationship with banks profitability.

2.5 Theoretical framework

The determinants of financial performance of MBs are analyzed in light of portfolio theory and efficient structure theory and this is supplemented by risk return theory, the portfolio theory approach is the most important and plays a great role in bank performance studies. As per the Portfolio balance model of asset diversification, the best possible holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated

with the ownership of each financial assets and the size of the portfolio (Athanasoglou *et al*, 2006). The portfolio theory further explained that portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets. Portfolio theory largely supposes that bank performance is influenced by internal efficiencies and managerial decisions (Athanasoglou *et al*, 2006).

According to the efficient structure hypothesis, on the other hand posits that banks earn high profits because they are more efficient than others. There are also two distinct approaches within the Efficient Structure; the X-efficiency and Scale-efficiency hypothesis. According to the X-efficiency approach, more efficient firms are more profitable because of their lower costs. Such firms inclined to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability (Athanasoglou *et al*, 2006). The scale approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can gain lower unit cost and higher profits through economies of scale. This make possible to large firms to acquire market shares, which may manifest in higher concentration and then profitability. The ES like the Portfolio theory largely assume that bank performance is influenced by internal efficiencies and managerial decisions (Athanasoglou *et al*, 2006).

The risk return theory explain the relationship between credit risk and financial performance. The theory posits that the higher the risk the higher the return and vice versa implying that firm performance is a function of risk taken.

CHAPTER THREE RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology of the research. It discusses the research design, population and sample of the study, sources and method of data collection, model specification and technique of data analysis. The chapter also specifies the variables of the study and their measurement.

3.2 Research Design

The methodology of this study is structured along historical and correlational designs. Historical design has enriched the study with a good understanding of the previous empirical evidence on the study variables, from which the study was able to build its theoretical foundation, it also provided the historical data which were used for hypotheses testing in chapter four. Correlational research design aided in describing, analyzing and interpreting the data collected from historical records of the study population. Besides, this study used quantitative research approach to

examine a stated objective. Because quantitative research is the systematic and scientific investigation of quantitative properties and phenomena and their relationships (Abiy, 2009),

Under this study, panel data from the year 2007- 2013 was used. This is because panel data has the advantage of giving more informative data as it consists of both the cross sectional information, which captures individual variability, and the time series information, that captures dynamic adjustment.

The study chose Mega banks owing to the fact that this category of banks have the strongest capital base with international banking license and their data is easily accessible and that the data for the study variables are peculiar to banks' financials.

3.3 Population and sample of the study

The population of this study is made up of all the listed Mega banks in Nigeria. Within the period of the study (2007-2013), a total of eleven (11) banks had appeared on the CBN's list of MBs. In view of the overall objective of the study a filter were employed in arriving at the adjusted population. The filter applied was that, all the banks to be selected must not fall among banks bailed out by the CBN during the period of the study in order to have a clear picture of their performance without CBN intervention.

A total of eight (8) banks representing 73% of the population that meet the criteria were duly selected for this study to enable easy management of the research during data collection and the eight banks seems appropriate. Not only that, the Central limit theorem suggested, 30% or more is a good representation of the population.

3.4 Sources and Method of Data collection

The data of this study were collected through the instrument of documentation. The study used the panel data extracted from the financial statements of the sampled banks over the period of the study.

3.5 Model Specification

$$ROA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 CRISK_{it} + \beta_3 LTA_{it} + \beta_4 CIR_{it} + \beta_5 INDV_{it} + \mu_{it}$$

Where:

ROA = Return on Assets

CAR = Capital adequacy ratio

CRISK = Credit risk

LTA = Bank size

CIR = Cost income ratio

INDV = Income diversification

β_1 - β_5 = Coefficient of regressors

β_0 = Constant

i = bank

t = time

u_i = error term

The choice of the variables is considered appropriate given the objective of the study. The variables were preferred in view of their importance in the determination of banks financial performance.

3.6 Variables Measurement

Table 3.3.3: Variable measurement

Variables of the study are measured with the aid of the following table

Variable	Ratio /Symbol	Proxies/Definition	Source
Profitability	Return on Asset : ROA	$\frac{Net\ income}{Total\ asset}$	Flamini <i>et al.</i> (2009), Gul <i>et al.</i> (2009)
Capital Adequacy Ratio	Total equity to total assets : CAR	$\frac{Total\ equity}{Total\ assets}$	Almazari (2013)
Credit Risk	Non-performing loan to Total loan: CRRISK	$\frac{Non - Performing\ loans}{Total\ loans}$	Kargi, (2011)

Bank Size	Logarithm of Tot Asset : BSIZE	Natural Log of Total assets	Bodla &Verma(2009), Saona (2011)
Bank efficiency	Cost to Income Ratio: CIR	$\frac{\text{Operating Expenses}}{\text{Operating Income}}$	Almazari (2011)
Income diversification	Non- interest income to Total assets	$\frac{\text{Non – interest income}}{\text{Total assets}}$	Akbas (2012), Adina (2013)

3.7 Technique of Data analysis

For the purpose of this research work, a panel Ordinary Least Square (OLS) in form of multiple regression analysis was applied. using STATA11, statistical package. Regression is adopted as a tool for hypotheses tests, owing to the fact that it is an appropriate parametric tool that estimates the impact of one or more variables on another, especially when that data are of parametric nature. Also, where the data are abnormal, the use of GLS could mitigate the possible effect of data abnormality in biasing the regression estimates (Gujarati, 2004).

Two sets of regression were run controlling for fixed effect (FE) at one time and random effect (RE) at the other time on the Generalised Least Square (GLS) method. Other relevant tests that include Hausman specification, Multicollinearity, and Breusch-pagan Langrange Multiplier (LM) were conducted.

3.8 Diagnostic Tests

The diagnostic tests was carried out to ensure that the data fits the basic assumption of the classical linear regression model in order to ascertain the reliability and validity of the result, the following robustness checks were carried out:

- i. Multi-co-linearity test (using Variance Inflation Factor)
- ii. Heteroskedasticity test (using Breusch-Pagan/ Cooks-Weisberg)
- iii. Hausman specification test

3.8.1 Multicollinearity Tests

Multicollinearity refers to the existence of a perfect or exact linear relationship among some or all explanatory variables (Gujurati, 2004). The researcher conducted this test in order to ascertain the relationship which exist between the explanatory variables which will be detrimental to the outcome of the study. As noted in Gujurati (2004) if multicollinearity is perfect, the regression coefficients of explanatory variables are indeterminate and their standard error are infinite. If multicollinearity is less than perfect, the regression coefficients although determinate, possess large standard errors (in relation to the coefficients themselves), which means the coefficients cannot be estimated with great precision or accuracy.

The study tested for the existence of multicollinearity, using variance inflation factor (VIF) and the tolerance value. The rule of thumb is that if the variables have VIF above 10 and tolerance values less than 0.10, there is a strong indication of the existence of excessive multicollinearity, (Gujurati, 2004) and VIF and Tolerance values of less than 10 and 1 respectively proves the absence of multicollinearity.

3.8.2 Heteroskedasticity test

The homoskedasticity is one of the assumptions of the CLRM which states that the variance of the errors must be constant. If the errors do not have a constant variance, they are said to be heteroskedastic (Brooks, 2008). As noted in Woolridge (1999) Homoskedasticity fails whenever the variance of the unobservable changes across different segments of the population, which are

Determined by the different values of the explanatory variables. The Breusch-pagan\cook-weisberg test for heteroskedasticity was used to test the presence of the heteroskedasticity.

3.8.3 Hausman specification test

This tested the efficiency and consistent between the FE and RE estimators. Although the econometric theory recommends RE estimation for unbalanced panels, a confirmatory test using Hausman specification test is desirable. In this test a rejection of the null hypothesis is when $Prob > chi2 = \alpha$, confirms the efficiency and consistency of the RE is estimating the model.

CHAPTER FOUR DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter deals with the analysis and presentation of the results of the study. The data were analyzed using stata 11 software. The descriptive statistics and the correlation analysis were discussed which were followed by the diagnostic test, which is important to fulfill the assumption of the classical linear regression model (CLRM), after which, the econometric analysis and discussion of the main finding of the study were presented. Finally, the results of the regression analysis were discussed by supporting empirical evidence.

4.2 Descriptive Statistics

This section presents the descriptive statistics of dependent and independent variables used in the study for the sampled MBs. The dependent variable is ROA while the independent variables are capital adequacy, credit risk, bank size, bank efficiency and income diversification. Thus, the total observation for each dependent and explanatory variables are 56 (panel data of 8 MBs for 7 years). Table 4.1 demonstrates the mean, standard deviation, minimum, maximum and skewness values for the dependent and independent variables for sample MBs from 2007 to 2013.

Descriptive statistics was used to explore the data collected and to summarize and describe those data. The summary of the descriptive statistics of variables used for the study is given as follows:

Table 4.1 Summary of Descriptive Statistics

<u>Variable</u>	<u>Mean</u>	<u>Std.Dev.</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Skewness</u>
ROA	0.02522	0.03427	-0.0378	0.24646	0.0000
CAR	0.15761	0.05339	0.0654	0.2916	0.0113
CRISK	0.06996	0.05575	0.00643	0.30203	0.0000
LTA	12.0138	0.27206	11.4197	12.5033	0.0332
CIR	0.60833	0.13232	0.39786	0.93303	0.4333
<u>INDV</u>	<u>0.02768</u>	<u>0.02805</u>	<u>0.00959</u>	<u>0.22652</u>	<u>0.0000</u>

Source: Output generated using stata 11

The data set indicated above contained a total of 56 observations for 8 MBs in Nigeria over the study period. Five independent variables were measured against one dependent variable. The dependent variable is the return on asset measured as the ratio of net income to total assets. The mean of the ROA is 0.02522. This showed that, the sample MBs on average earned a net income (NI) of 2.52 percent of the total assets. Since ROA indicates the efficiency of the management of a bank in generating NI from all the resources of the institution, the higher the

ROA the more efficient is the bank in utilizing its resources. The maximum value of ROA was 0.24646 and minimum value of -0.0378. This signifies that, the most profitable bank among the sampled MBs earned 24.64 percent of NI for single Naira invested in the assets of the firm. On the other hand, the least profitable bank of the sampled MBs incurred 3.78 percent loss for each of single Naira investment in the assets of the firm. This loss may be due to lack of efficiency in expense management or high operating cost, which resulted in poor performance. This also implies that higher cost of operation negatively affects bank performance.

Capital adequacy ratio was measured by shareholders fund divided by total assets has a mean value of 0.15761 with a standard deviation of 0.05339, while the maximum and minimum value of 0.2916 and 0.0654 were recorded respectively. This implies that the capitalization of MBs is 15.76 percent on average, which is largely in accordance with the key international prudential regulation of Basel II. However, this ratio differs among the MBs. For instance, the most capitalized bank in the sample has a capital ratio of 29.16 percent.

Credit risk has a mean value of 0.06861 with a standard deviation, maximum and minimum value of 0.05596, 0.302 and 0.00643 respectively. This implies that the MB's average ratio of non-performing loan to total loan representing the credit risk is 6.861 percent. This is to say that 6.861 percent of the total loans provided to customers by the MBs are actually not performing. Moreover, there is much deviation on firm by firm basis from this average figure, as the corresponding standard deviation is 5.596 percent, which indicates different risk pressure borne by the banks.

Bank size which is measured by the natural logarithm of total assets (LTA) has a mean value of 12.014 with a maximum and minimum value of 12.5033 and 11.4197 respectively and

the standard deviation of 0.2721. This implies that within the study period the sampled MBs have a small variation in their total assets.

Bank efficiency which provides information on the efficiency of management regarding expenses relative to income which is measured by the total cost divided by the total revenue has a mean value of 0.60833 with standard deviation, maximum and minimum values of 0.13232, 0.93303 and 0.39786 respectively. This result showed that on average the sampled MBs incurred cost of 60.83 percent of the total revenue. Moreover, the standard deviation of 13.23 shows that there was a higher variation among the sampled MBs in their operating cost.

Income diversification measured by non-interest income divided by total income has a mean value of 0.02767 with a standard deviation of 0.2805 including the maximum and minimum value of 0.2265 and 0.00959 respectively. This signifies that within the study period the sampled MBs have higher variation in diversification of their source of income.

The skewness test carried out indicated that the data were normally distributed over the study period and thus, enhanced the validity of the regression result.

4.3 Correlation analysis

In this section the correlation analysis between the dependent variable and independent variables are presented. A Pearson correlation analysis was then performed on all the variables to check the degree of relationship among them. The summary is presented as follows, while the full result is attached as appendix X

Table 4.2 Correlation Matrix

	Roa	Car	Crisk	lta	Cir	indv
ROA	1					
CAR	-0.0067	1				
CRISK	-0.1283	0.1043	1			

CIR	-0.1609	-0.1347	-0.2889	1		
LTA	-0.1814	-0.1785	0.2648	-0.0395	1	
INDV	0.8458	-0.1359	0.0223	-0.3449	0.024	1

Source: Output generated using stata 11

Table 4.2 indicates that the dependent variable ROA is positively correlated with INDV this implies that an increase in INDV will result to an increase in ROA of the MBs. However, ROA has a negative relationship with CAR, CRISK, LTA, and CIR. The CIR was the most negatively correlated variable with ROA. This correlation clearly shows that as the operating cost increases, the performance of the sampled MBs moves to the opposite direction. This means that the more efficient a CBB is the higher is its profitability. The result also reveals that CAR, CRISK, and LTA are also negatively correlated with the performance measures (ROA) meaning that as CAR, CRISK and LTA increased, ROA decreases.

Table 4.3 Test for Multicollinearity

Variable	VIF	1/VIF
Lta	1.28	0.778212
Crisk	1.2	0.83494
Indv	1.19	0.84253
Cir	1.13	0.886637
Car	1.11	0.900238
Mean Vif	1.18	

Source: Output generated Using Stata 11

Table 4.3 above shows the summary of multicollinearity test which proved the absence of multicollinearity. The mean VIF of 1.18 reveals that the interacting variables are of harmless colinearity relations.

The Breusch-pagan\ cook-weisberg test for heteroskedasticity was used to test the presence of the heteroskedasticity. Accordingly, table 4.4 shows the p-value is greater than 5%. This shows that there is no evidence for the presence of the heteroskedasticity.

Table 4.4 Test for Heteroskedasticity

Ho:	Constant variance
Variables:	Fitted values of ROA
Chi square (1)	=0.01
Prob> chi square	=0.9409

Source:Output generated using stata 11

4.4 Presentation and Analysis of Regression Results

Table 4.5 shows the regression results for all the sampled banks. Estimation is by applying the random effects (RE) technique. Econometrics recommends the random effects (RE) method as an efficient estimator for unbalanced panel models (Baltagi 1999). This was confirmed by the Hausman specification test which evaluates the efficiency between the random effects (RE) and fixed effects (FE) estimators for the panel regressions.

This is consistent with theory that random effects estimator is expected to generate more efficient results after controlling for possible endogeneity and autocorrelation effects associated fixed effects models (Arrellano and Bover 1995) and Blundell and Bond (2000).

The summary of Generalized Least Square regression (GLS) is presented below.

Table 4.5 Summary of GLS Regression Result

Variable	Coefficient	Z-Values	Probability
C	-0.20449	-1.78	0.075*
CAR	0.0752792	1.72	0.086*
CRISK	-0.048146	-1.11	0.268
LTA	0.0178755	1.93	0.054*
CIR	-0.040409	-2.26	0.024**
INDV	1.119446	12.96	0.000***
Overall			0.7896

R- Square	
Wald-chi 2	187.68
Sig-F	0.0000***

Source: Outcome generated using Stata

***, **, * represent probability significance at 1%, 5% and 10% respectively

Table 4.5 contains the summary of the GLS regression output. From the above table the estimated regression relationship for ROA model is:

$$ROA = -0.21 + 0.075CAR - 0.05CRISK + 0.02LTA - 0.04CIR + 1.12INDV$$

The result as depicted by table 4.6 clearly revealed that the overall R-squared value, which is the multiple co-efficient of determination. The proportion of total variation in the dependent variable measured by return on assets as revealed by the independent variables jointly is 0.7896. This signifies that about 78.96% of the systematic variation in the selected MB's return on assets are jointly explained by changes in the MBs level of capital adequacy ratio, credit risk, bank size, bank efficiency and income diversification. This also means that the explanatory power of the model used in the study stands at 78.96%. On the other hand, other factors that have not been captured in the study explains the remaining 21.04%.

The wald chi2-statistics value of 187.68 shows that the model is statistically significant at the level of 0.0000, signifying the applicability of the overall model. The results above indicated that the relationship amongst the variables was not due to mere coincidence.

The result showed a negative coefficient values for CRISK (-0.0481456) and CIR (-0.0404091) with P-values of 0.273 and 0.024 respectively This implies a negative relationship between these variables and the dependent variable that is, return on assets (ROA) of the selected MBs. CAR, LTA and INDV returned coefficient of 0.0752792, 0.017876, 1.119446 and P-values of 0.086, 0.054 and 0.000 respectively. The coefficients and p-values obtained from

the result showed that CAR, LTA, CIR and INDV are statistically significant variables that influenced the MBs financial performance.

The result provided a basis for rejecting all the null hypothesis except the one linking the dependent variable (ROA) to credit risk (CRISK). This means that going by the GLS regression result, capital adequacy ratio (CAR), bank size (LTA), bank efficiency (CIR) and income diversification (INDV) have significant impact on MBs financial performance in Nigeria. It also shows that MBs that maintained their capital adequacy, increase their size, efficiently manage their cost and diversified their sources of income stand a better chance to increase their financial performance.

The coefficient of the variable representing capital adequacy (equity to total assets) is positive and statistically significant as expected at 10 percent levels. The result suggested that a higher capital ratio leads to or predicts higher profitability, this implies that, well capitalized banks experience higher returns and the relaxation of perfect capital markets allows capital to raise expected earnings by reducing the expected costs of bankruptcy financial distress in general. The positive impact of the variable to bank financial performance in MBs reveals some levels of increased capitalization of the banks following the recent reforms in the financial sectors. This variable also measures the bank ability to withstand losses.

This finding supports the studies of Sin & Shirma (2014), Aremu (2013), Obamuyi (2013), John & Oke (2013), Babalola (2012), Samadi (2012), and Sufian (2008). It however contradicts the studies of Ani *et al.* (2012), Aminu (2013), Soyemi *et al.* (2013), Anthanasoglou *et al.* (2006) and Berger *et.al.* (1995). The implication of the results from Nigerian MBs' perspective is that, MBs in Nigeria operated cautiously to attain over and above the regulatory capital level, thus utilizing the potential profitable opportunities over the period.

The coefficient of the variable representing credit risk (non-performing loans to total loans) is negative but surprisingly insignificant at all levels with coefficient and P-value of -0.0481523 and 0.273 respectively. In order to obtain a robust result, other measurements for credit risk like ratio of loan-loss provision to total loan and total loan to total deposit were used but still the results were insignificant. The insignificant results could have possibly be attributed to omitted variables that were supposed to be taken into consideration in order to make the results significant.

Similar studies conducted in both developed and developing countries pointed out a negative or positive and significant effect of this variable on financial performance which is consistent with the theory which posits that the higher the credit risk the higher the financial performance. Higher ratios may be an indicative of poor credit risk management which often results to loans default. This finding is inconsistent with the studies of Sin & Shirma (2014), Gilchris (2013), Epure & Lafuente (2012), Kargi (2011), Bashir & Hassan (2003), Staikouras & Wood (2003), Ahmad, Takeda & Shawn (1998) and Miller & Noulas (1997) who found significant negative relationship and the findings of Naceur and Omran (2008) who found significant positive relationship between credit risk and financial performance.

From the theoretical framework, we know that CRISK is a financial indicator that demonstrates the quality of bank loans. MBs usually expose themselves to the risk of default or late payment from loan borrowers. The core activity of the banks is to make loans. Banks make money from a series of activities of borrowing and deposit. CRISK is considered as losses when happens. Higher CRISK means higher losses, which adversely influence banks' available capital for further borrowing. As such, the efficiency of banks' investment is affected by further influencing the financial performance. On the contrary, lower CRISK is related with the lower

risk and deposit rate, meaning a positive impact on banks' operations. Consequently, higher non-performing loan ratio plays a negative role on MBs' profitability.

The result of the third hypothesis that linked financial performance to bank size revealed that bank size has significant impact on MBs financial performance signifying a direct relationship between bank size and financial performance of MBs, the result reveals that larger banks perform better than smaller banks. The result is consistent with the previous studies of Gilchris,(2013), Abuzar, (2013), Ehi-osio, (2013), Alkhatib, 2012, Deger & Adem, (2011), Gul *et al.*(2011), , Sufian *et al.* (2009), Athanasoglou *et al.* (2006) revealed that large banks may benefited from economies of scale. In contrast, Soyemi (2013), Ezra (2013), Ani *et.al* (2012), Ramadan *et al.*, (2011) Dietrich *et.al* (2009) and Naceur & Goaid (2001) found negative relationship between bank size and performance suggesting that the smaller the bank, the more efficient the bank will be. Therefore, this finding shows that in the Nigerian banking industry, banks with large size or bigger banks perform better than the smaller banks due to the existence of economies of scale. As such, this study rejected the hypothesis which states that there is no significant relationship between MBs size and financial performance in Nigeria.

Furthermore, CIR provides information on the efficiency of management regarding expenses relative to income. The result revealed that a decrease in expenses increases the financial performance of the MBs in Nigeria. This indicates that MBs in Nigeria have much to profit if they are able to exercise efficient cost management practices. The result showed significant negative relationship between CIR and financial performance of MBs in Nigeria. This finding is consistent with the studies of Almazari (2013), Almumami (2013), Ezra (2013), Hassan *et al.*, (2013), Sufian (2011) Dietrich *et al.* (2009), Hess & Francis (2004), and Ghosh *et al.* (2003). It is however, inconsistent with the findings of Sin & Shirma (2014), Tan & Floras

(2012) and Ali *et al.* (2011) who found positive and significant relationship between the CIR and financial performance. Therefore, the study rejected the hypothesis which states that bank efficiency has no significant effect of MBs financial performance.

Finally, the study also revealed that income diversification had significant positive relationship with ROA, having coefficient and probability of 1.119446 and 0.0000 suggesting that revenues generated from sources other than interest have significant contribution to improve financial performance of the MBs in Nigeria. This suggests that non-interest income adds income to banks even though these services generate lesser profits when compared to loans. If a bank shifts from interest income service to non-interest income service their performance decrease. This finding is in line with the studies of Sim & Shirma (2014), Deger & Adem (2011), Ramlall (2009), Sufian (2009), Jiang *et al.* (2003), Kosmidou *et al.* (2006) and Kabir *et al.* (2003) who also found significant positive relationship between income diversification and financial performance. On the contrary, Abebe (2014) found an inverse relationship between income diversification and financial performance. The negative relationship of income diversification with performance of the bank implies that if the bank fee based income is very low, their performance will be negatively affected. As such the study rejects the null hypothesis which states that there is no significant relationship between income diversification and financial performance of MBs in Nigeria.

4.5 Policy Implication of the Research Findings

The rationale behind this study is to guide bank's executives and other stakeholders to a better understanding of the variables that affect the financial performance of the Mega banks in Nigerian. MBs executives and Board of Directors will need to effectively maintain the level of their capital since capital adequacy provides a greater cushion with which banks absorb losses,

thereby lessening the likelihood of failure. Invariably via more capital, a bank can easily adhere to regulatory capital requirements so that excess capital can be provided as loans.

The poor quality of loans (credit risk) leads to increased loan loss provisions, thus reducing the financial performance. Nigerian banks are likely to suffer financial losses if they fail to adopt virile credit risk management system as their risk asset quality will deteriorate. More so, from the finding as regards to the impact of CIR on ROA, it can be logically explained that, effective and efficient cost management is a prerequisite to improving financial performance of MBs in Nigeria. The findings from the study revealed INDV has a significant impact on performance of banks in Nigeria.

CHAPTER FIVE SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of findings

This chapter capture the summary, conclusion and recommendations to the study. The findings of the research were discussed in detail, the objectives of the study were linked to the current findings of the research. The study investigates determinants of financial performance of listed Mega banks in Nigeria for the period of 2007-2013 for a sample of 8 listed MBs. The study focused on five explanatory variables (capital adequacy ratio, credit risk, bank size, bank

efficiency and income diversification) as proxies for the determinants and one dependent variable which is financial performance (ROA)

The study employed a panel Generalized Least Square (GLS) in form of multiple regression for the purpose of explaining the impact of the determinants on the financial performance of Mega banks in Nigeria. Furthermore, robustness tests were also conducted to ascertain reliability and validity of the result. They include multicollinearity test (using variance inflation factor and the tolerance value), Heteroskedasticity test (using Breusch-Pagan/ Cooks-Weisberg).

The regression results were discussed with GLS test results. The outcome result revealed that three of the explanatory variables (capital adequacy ratio, bank size and income diversification) have positive and significant relationship with financial performance of Mega banks in Nigeria, while bank efficiency proxy by cost income ratio has negative and significant impact on financial performance of MBs in Nigeria.

5.2 Conclusion

The main objective of this study was to examine the determinants of financial performance of MBs in Nigeria. According to previous studies performance is affected by both internal and external factors. Internal factors are factors that are mainly influenced by bank's management. It is also called bank specific factors. Those factors include capital adequacy, credit risk, bank size, bank efficiency, income diversification, among others. External factors represent events outside

the influence of the banks they are also called macroeconomic factors these includes real GDP growth, inflation rate, and effective tax rate and interest rate among others.

Using internal factors such as capital adequacy, credit risk, bank size, banking efficiency, and income diversification, this study examined the determinants of financial performance of MBs in Nigeria from 2007-2013. Panel data for eight banks for seven years were used for the analysis. Data for the bank specific factors were obtained from the financial statements of the sampled banks. Before making regression analysis, diagnostic tests were made for the classical linear regression model by using STATA version software11.

Based on correlation analysis, income diversification is positively correlated with ROA. These correlations clearly showed that, as the income diversification increases, ROA also increase. On the other hand, the capital adequacy ratio, credit risk, bank size and efficiency were negatively correlated with ROA. This clearly showed that, as the capital adequacy ratio, credit risk, bank size and efficiency increased, ROA moved in opposite direction.

5.3 Recommendations

Based on the result from the analysis and research hypotheses, the following recommendations were made and should be given consideration by the regulatory authorities and management of MBs in Nigeria in order to improve financial performance:

- I. The regulatory authorities should couple adequate capital requirements for banks with early corrective measures in order to prevent capital from falling below specified levels. Supervision and constant field examination of banks should be intensified in

- order to ensure that banks hold the requisite amount of capital and do not engage in excessively risky or illegal activities.
- II. Existing policies for the management and measurement of credit risk should be reviewed from time to time by CBN to ensure that they conform to regulatory requirements and the bank's overall objectives to further reduce the level of credit risk exposure.
 - III. Banks management should institute cost effective and efficient strategies as part of their strategic decisions.
 - IV. A policy on diversification should be formulated to avoid over-reliance on traditional banking activities. As such, a policy that will encourages commercial banks to engage in Non-interest income activities is necessary since non-interest income has a positive impact on bank performance. However, the regulatory authority should come in and homogenize prices of such activities in order to protect bank clients from exploitation.

5.4 Limitations of the study

The following are the limitation associated with the study;

- I. The study was only limited to Mega banks in Nigeria. Therefore, findings and recommendations will only be applicable to the category.
- II. The variables used in the study have alternative methods of measurement which may give rise to different result.

- III. The study only focused on one dependent variable and five internal determinants of financial performance of MBs. There are still other variables which the study does not capture, e.g. Liquidity risk, deposit growth. etc

5.5 Areas for Further Researches

Based on our findings, we want to draw several suggestions for further research.

The model of the current study had a relatively high R-square judging from MBs data in Nigeria. This proved that the model had a satisfying overall fit. Nonetheless, a study that will improve on the current model and include more variables could be conducted to see if the same findings will still be arrive at.

The current study used only 8 MBs in Nigeria. A study should be conducted using all 11 MBs in Nigeria and expanded or extended to cover for instance, the whole banking industry.

This work focused on internal determinants and financial performance of MBs. Further research should be conducted on both the internal and external factors of financial performance in MBs.

This research focused only on MBs while many of them are also National and regional banks. A Further research should be conducted with focus on the financial performance determinants of both National and regional banks in Nigeria.

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APPENDIX I: DESCRIPTIVE STATISTICS

```
. tsset id year, yearly
      panel variable: id (strongly balanced)
      time variable: year, 2007 to 2013
      delta: 1 year
```

```
. summarize roa car crisk lta cir indiv
```

variable	Obs	Mean	Std. Dev.	Min	Max
roa	56	.0252217	.0342714	-.03776	.24646
car	56	.1576074	.0533905	.0654	.2916
crisk	56	.0686095	.0559643	.00643	.30203
lta	56	12.01377	.2720597	11.41969	12.50326
cir	56	.6083343	.1323176	.39786	.93303
indv	56	.027675	.0280477	.0095927	.2265186

APPENDIX II: CORRELATION MATRIX

```
. correlate roa car crisk lta cir indiv  
(obs=56)
```

	roa	car	crisk	lta	cir	indv
roa	1.0000					
car	-0.0067	1.0000				
crisk	-0.1283	0.1043	1.0000			
lta	-0.1609	-0.1347	-0.2889	1.0000		
cir	-0.1814	-0.1785	0.2648	-0.0395	1.0000	
indv	0.8458	-0.1359	0.0223	-0.3448	0.0240	1.0000

APPENDIX III: HETEROSKEDASTICITY TEST

```
. hettest
```

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
```

```
Ho: Constant variance
```

```
Variables: fitted values of roa
```

```
chi2(1) = 0.01
```

```
Prob > chi2 = 0.9409
```

APPENDIX IV: FIXED EFFECT REGRESSION RESULT

```
. xtreg roa car crisk lta cir indiv, fe
```

```
Fixed-effects (within) regression      Number of obs   =      56
Group variable: id                    Number of groups =       8

R-sq:  within = 0.8081                Obs per group:  min =       7
      between = 0.5612                  avg =      7.0
      overall  = 0.7658                  max =       7

corr(u_i, Xb) = 0.0041                F(5,43)         =     36.22
                                      Prob > F         =     0.0000
```

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
car	.0761179	.0475612	1.60	0.117	-.0197984	.1720342
crisk	-.1117533	.050989	-2.19	0.034	-.2145825	-.0089241
lta	-.0009515	.0148723	-0.06	0.949	-.0309443	.0290413
cir	-.0214552	.0202724	-1.06	0.296	-.0623384	.0194281
indv	1.048801	.1097909	9.55	0.000	.8273868	1.270216
_cons	.0163499	.1815448	0.09	0.929	-.3497701	.3824699
sigma_u	.00995426					
sigma_e	.01545629					
rho	.29317143	(fraction of variance due to u_i)				

```
F test that all u_i=0:      F(7, 43) =      1.98          Prob > F = 0.0796
```

```
. est store fixed
```

APPENDIX V: RANDOM EFFECT REGRESSION RESULT

```
. xtreg roa car crisk lta cir indiv, re
```

```
Random-effects GLS regression           Number of obs   =       56
Group variable: id                     Number of groups =        8

R-sq:  within = 0.7974                  Obs per group:  min =        7
        between = 0.7547                  avg =       7.0
        overall = 0.7896                  max =        7

corr(u_i, X) = 0 (assumed)              Wald chi2(5)    =    187.68
                                           Prob > chi2     =     0.0000
```

roa	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
car	.0752792	.0438828	1.72	0.086	-.0107296	.1612879
crisk	-.0481456	.043471	-1.11	0.268	-.1333473	.037056
lta	.0178755	.0092624	1.93	0.054	-.0002785	.0360295
cir	-.0404091	.0178422	-2.26	0.024	-.0753792	-.0054391
indv	1.119446	.0863468	12.96	0.000	.9502092	1.288682
_cons	-.2044903	.1148397	-1.78	0.075	-.4295721	.0205914
sigma_u	0					
sigma_e	.01545629					
rho	0	(fraction of variance due to u_i)				

```
. est store random
```

APPENDIX VI: HAUSMAN SPECIFICATION TEST RESULT

```
. hausman fixed random
```

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
car	.0761179	.0752792	.0008388	.0183402
crisk	-.1117533	-.0481456	-.0636077	.0266487
lta	-.0009515	.0178755	-.018827	.0116358
cir	-.0214552	-.0404091	.018954	.0096243
indv	1.048801	1.119446	-.0706445	.0678106

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(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 3.05
 Prob>chi2 = 0.6919
 (V_b-V_B is not positive definite)

APPENDIX VI I OLS REGRESSION RESULT

. reg roa car crisk lta cir indv

Source	SS	df	MS			
Model	.051009355	5	.010201871	Number of obs =	56	
Residual	.013589692	50	.000271794	F(5, 50) =	37.54	
Total	.064599047	55	.001174528	Prob > F =	0.0000	
				R-squared =	0.7896	
				Adj R-squared =	0.7686	
				Root MSE =	.01649	

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
car	.0752792	.0438828	1.72	0.092	-.0128621	.1634204
crisk	-.0481456	.043471	-1.11	0.273	-.1354598	.0391685
lta	.0178755	.0092624	1.93	0.059	-.0007286	.0364796
cir	-.0404091	.0178422	-2.26	0.028	-.0762462	-.004572
indv	1.119446	.0863468	12.96	0.000	.9460132	1.292879
_cons	-.2044903	.1148397	-1.78	0.081	-.4351527	.026172

APPENDIX VIII: MULTICOLINEARITY TEST

. vif

Variable	VIF	1/VIF
lta	1.28	0.778218
crisk	1.20	0.834938
indv	1.19	0.842540
cir	1.13	0.886637
car	1.11	0.900244
Mean VIF	1.18	

APPENDIX IX: NORMALITY TEST

```
. sktest roa car crisk lta cir indiv
```

variable	Skewness/Kurtosis tests for Normality				
	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
roa	56	0.0000	0.0000	63.58	0.0000
car	56	0.0113	0.5778	6.25	0.0440
crisk	56	0.0000	0.0004	25.70	0.0000
lta	56	0.4333	0.1640	2.68	0.2619
cir	56	0.0332	0.9277	4.58	0.1011
indv	56	0.0000	0.0000	.	0.0000

APPENDIX X: BREUSCH-PAGAN LANGRANGIAN MULTIPLIER TEST

```

. xttest0
Breusch and Pagan Lagrangian multiplier test for random effects
roa[id,t] = Xb + u[id] + e[id,t]
Estimated results:

```

	Var	sd = sqrt(Var)
roa	.0011745	.0342714
e	.0002389	.0154564
u	0	0

```

Test:  Var(u) = 0
      chi2(1) = 0.78
      Prob > chi2 = 0.3763

```

APPENDIX XI: NORMALITY TEST FOR RESIDUAL

. predict e, resid

. swilk e

Shapiro-wilk w test for normal data

Variable	Obs	w	V	z	Prob>z
e	56	0.91950	4.141	3.051	0.00114

APPENDIX XII POPULATION OF THE STUDY

S/NO	Banks
1	Access Bank Plc
2	Mainstreet Bank Plc

3	Diamond Bank Plc
4	FCMB Plc
5	First Bank of Nig. Plc
6	Guaranty Trust Bank Plc
7	Keystone Bank
8	Skye Bank Plc
9	United Bank for Africa Plc
10	Union Bank Plc
11	Zenith Bank Plc

Source: CBN Bank Supervision Reports (2014)

APPENDIX XIII ADJUSTED POPULATION OF THE STUDY

S/NO	Banks
1	Access Bank Plc
2	Diamond Bank Plc
3	FCMB Plc
4	First Bank of Nig. Plc
5	Guaranty Trust Bank Plc
6	Skye Bank Plc
7	United Bank for Africa Plc
8	Zenith Bank Plc

Source: Author (2014)