Bank Intermediation in Nigeria: Growth, Competition, and Performance of The Banking Industry, 1990 – 2010

CENTRAL BANK OF NIGERIA

Financial Sector Division*

* Contributors:
   Enendu, C. I.; Abba, M. A.; Fagge, A. I.; Nakorji, M.;
   Kure, E. U.; Bewaji, P. N.; Nwosu, C.P.; Ben-Obi, O. A.;
   Adigun, M.A.; Elisha, J.D.; Okoro, A. E
   and Ukeje N. H

ACKNOWLEDGEMENT

CONTENTS   *Pages*

TABLES

Pages

Pages

FIGURES

ABSTRACT

The trend of bank profits in Nigeria since the liberalization of the financial sector and the increased number of new entrants to the industry in the late 1980s and 1990s have led to the thinking in many circles that investment was most worthwhile in the banking industry. However, there are no available statistics either for inter-temporal or group comparisons within the banking industry and much more so for comparison between returns on investment in the banking and the other industries. Some past attempts to assess the performance of the Nigerian banking industry either had the mark of incomplete coverage or were limited in scope in terms of the number of metrics used. Different from past studies which employed majorly aggregate data, this study adopts bank level data for assessment of not just bank performance but also intermediation, growth and competition in the banking sector.

The results of the study indicated that in terms of growth, while the number of bank branches grew from just over 1,000 in 1990 to over 5,000 in 2010, the total assets of the banking sector grew by more than 20,000 per cent between 1990 and 2010. Interrogation of intermediation metrics showed that reform policies improved intermediation efficiency across the different policy periods in this study. Though the Herfindahl-Hirschman Index (HHI), a metric for measuring competition, with respect to assets and deposits increased after the bank consolidation exercise, the industry remained largely competitive, as concentration declined slightly. The results of the financial ratio analysis have provided data, which could serve as benchmarks against which individual bank performance could be measured. With respect to size and performance, the mixed results from the analysis across the different policy periods and sizes, indicated that bigger is not necessarily better, in terms of profitability, cost and managerial efficiency as well as productivity. Econometric analysis (using ex-post balance sheet and profit and loss data) indicated that interest income showed the strongest positive influence on profitability, followed by the level of economic activities. The other macro-level variables, competition and bank reform (consolidation) have the expected signs respectively but were not statistically significant. Also, the strongest bank-level variable that exerted negative influence on profitability was gross expenditure.

Notwithstanding the results, except similar studies are done for the other sectors or comparative studies across sectors and across countries are done, the outcome of this study may not be sufficient to safely and conveniently conclude that the banking industry is more attractive for investments than other segments of the economy. This study may, therefore, have set an agenda for the future.

1.0   INTRODUCTION

Keen interest subsists and debate still rages among analysts on what factors contribute most to bank performance. What is generally not in doubt is that macroeconomic factors, bank level factors, and monetary policy determine performance of banks. Furthermore, empirical studies confirm that all three are important factors in bank performance. In theory, economists generally agree that large-scale businesses use economies of scale for competitive advantages. Most empirical works in support of size as a positive factor for bank performance use aggregate data and econometric analysis. There is also a global trend towards the creation of mega banks that may be "too big to fail" as a sure way to prevent systemic crises in the industry. However, in terms of micro data on individual bank basis, it is necessary to also validate the thesis that bigger banks are better in terms of performance, not only from the point of view of the regulatory authorities who are generally interested in adequate capital and banking system soundness but also from the point of view of the shareholders and potential investors who, ultimately, are interested in the returns on their investments.

Investors in the banking industry, as in the other sectors, always look forward to earning good returns on their investments. In this connection, the decision to invest in a particular sector is guided by perceptions and fore knowledge about indicators of performance such as profitability. The measurement of such indicators falls in the realm of financial statement analysis, which traditionally, is concerned with the analysis of relationships within a set of financial information at a point in time and with trends in these relationships over time (Foster, 1978). There is, therefore, the need for an assessment of operational performance of banks in Nigeria in order to determine and highlight performance metrics.

1.1   Justification for the Study

The trend of bank profits in Nigeria since the liberalization of the financial sector in the Structural Adjustment Programme (SAP) era led to the thinking in many circles that investment was most worthwhile in the banking industry. The increase in the number of new entrants to the industry in the late 1980s and 1990s lent credence to this view. However, there are no available statistics either for inter-temporal or group comparisons within the banking industry and

much more so for comparison between returns on investment in the banking and the other industries.

Some past attempts to assess the performance of the Nigerian banking industry either had the mark of incomplete coverage or were limited in scope in terms of the number of metrics used. Moreover, there is no study that used the actual balance sheet and income statements (audited accounts) data; the micro data. A few studies on performance of banks in Nigeria, for example, Okafor (2012) used aggregate data from Central Bank of Nigeria (CBN) and the Nigeria Deposit Insurance Corporation (NDIC). These are largely call data for offsite examination purposes which, to all intents and purposes, are interim. Indeed, there is no study yet based on 'the gospel according to the banks'.

Traditionally, Return on Assets (ROA) and Return on Capital Employed (ROCE) are the most popular standard metrics of bank performance. However, these are no longer adequate for the assessment of bank performance since they do not satisfactorily meet the needs of interest groups other than shareholders and prospective investors. In recent times, margin measurement and other ratio analysis have become very important tools to banks' management, regulatory authorities and the general public.

In view of the role that the banking industry plays in the economy, the regulatory authorities, policy makers, banks' management, investors and other stakeholders cannot be less interested in the growth and performance statistics of the industry. There is, therefore, a need to have a comprehensive study on the performance of the banking industry, using the framework of financial ratio analysis (FRA) and in the process, build a statistical database.

1.2   Objectives

This Study, therefore, was undertaken to: (i) present a highlight of intermediation and growth of Nigeria's banking industry and analysis of bank performance for the period, 1990 to 2010, within the framework of FRA. It is hoped that the series thus generated will be updated annually; and (ii) empirically examine the factors which affect performance of banks and competition in the industry.

The work is presented in five sections. Following the introduction, section two is the review of conceptual and empirical literature. In section three, the overview of Nigerian banking industry is given. Section four is the analysis of growth, financial intermediation and the performance of Nigerian banks. Section five summarizes and concludes the work

2.0   REVIEW OF LITERATURE

2.1   Theoretical and Conceptual Literature

Babalola (1989) noted that profitability and asset base are the two traditional measures of bank performance in Nigeria. While profitability pleases shareholders, asset base pleases the board of directors. He further stated that, quantity as well as quality of service rendered by banks could also be used to assess the performance of banks. Various factors which affect performance indices include monetary policy measures, rates of interest, exchange rate, provisioning for bad and doubtful loans, prudential requirements, liquidity ratio and open market operations. The two traditional profitability measures are return on assets and return on capital employed. However, these measures, alone, are no longer adequate in measuring bank profitability performance assessment since they do not satisfactorily meet the needs of stakeholders other than the shareholders.

Of increasing importance in the assessment of bank profitability performance is margin analysis. While the net interest margin measures the profitability of employment of interest bearing assets and liabilities, the net non-interest margin specifically measures the profitability of pricing and marketing decisions (Lynn, 1989).

Bank Managements and owners of capital are not the only parties interested in the performance of banks. Regulatory authorities are also interested in so far as they have the statutory responsibility for protecting depositors against losses that may result from possible mismanagement or bank runs. Meanwhile, a current controversy has been raging between bank Managements and the regulatory authorities over bank capital. While bank Managements would want to reduce capital ratios to please the owners of banks, the regulatory authorities, concerned with the stability and soundness of the system would want relatively high capital ratios as cushion against unexpected and other contingent liabilities. Also controversial is the issue of who specifies the level of capital (Oraler and Wolkowite, 1976). In this connection, while bank Managements argue that the market should be allowed to set the level, the regulatory authorities insist that they have that responsibility.

Quantitative measurement of bank performance usually focuses on net income, capital and liquid assets, among others, depending on the purpose

of such an exercise. However, measuring the absolute quantities of balance sheet or income variables in themselves is not very meaningful unless such measurements relate to other balance sheet items, such as bank portfolios. Absolute measurement is also associated with scale problem resulting from size. For example, large banks with large absolute values of such variables may, in fact, not be operating efficiently or profitably, or may even be undercapitalized; hence bank performance measures are usually stated as ratios. The basis for the judgment of the adequacy of these ratios is the comparison with the industry-wide averages. These averages are not regarded as optimal, maxima or minima but as a guide and, may in fact, be an oversimplification of performance in the light of the factors that affect the operations of banks and their environment.

The concept of competition in the banking industry has remained a subject of many scholarly inquiry and empirical research. The motivation stems from the realization that, competitiveness of the banking sector represents a socially optimal target as it reduces the cost of financial intermediation and improves delivery of high quality services (Simpasa, 2013). The concept of competition has evolved over time and assumed different meanings. After the initial classical notions of competition, some of the other approaches to explain the concept include Neuberger (1998), Toolsema (2003) and Northcott (2004), among others. Notably, each approach introduces various aspects of industry dynamics and growth. However, a general definition as given by Stigler (1987) described competition as rivalry between two individuals (or groups or nations) and noted that it arises whenever two or more parties strive for something that all cannot obtain. Vickers (1995) pointed out the following characteristics of this definition:

- The breadth of the definition encompasses all forms, instruments and objects of rivalry.

- It is a behavioral definition of competition as opposed to the analytical concept of perfect competition.

- Identification of competition with rivalry does not mean more competition is an end in itself.

In a similar expose, McNulty (1968) described competition either as a seemingly tranquil equilibrium state in which informed agents treat price

parametrically (perfect competition) or as a force, which assures efficiency in resource allocation within the system through equating prices with marginal costs.

Competition among banks improves firms' access to external financing thereby enhancing economic growth and improving social welfare. While Petersen and Ranjan (1995) showed theoretically that banks having market power usually lend to new firms with opaque credit records, hence leading to high lending rates, Cetorelli and Gamberra (2001) found strong evidence of a general depressing effect on growth associated with banks' exercise of market power and this impacts all sectors and firms. However, ensuring competition in the banking industry continues to be at the centre of policy to ensure efficient delivery of financial services.

Competition has also been defined as a process of rivalry between firms seeking to win customers' business over time (Kocabay, 2009; Whish, 2005). This definition focuses on increasing market share and making higher profits. Firms compete on the prices or quality of the products concerned. According to the traditional industrial organization literature, in a perfectly competitive market, there are many producers, each having a small market share. Concentration in the market is low. Consequently, it is assumed that individual producers cannot singly or collusively influence or dictate the price of the product; so they are price takers. Products are homogenous and non-substitutable within the product line. Moreover, there are no barriers to entry into, or exit from, the industry. Furthermore, there is perfect and free flow of information amongst producers and consumers.

Specifically, bank competition is seen as a stimulus to exert downward pressure on costs, reduce managerial slack and even incentivize technology innovation (Nickell, 1996). Thus, competition may have the desirable effect of stimulating technological research and development. Competition forces producers to innovate constantly in order to produce higher quality products and minimize costs to maintain or increase their market shares and make more profits (Motta, 2004; Whish, 2005). On the other hand, concern about the adverse impact of increased competition on bank risk taking behaviour has motivated the adoption of prudential regulation alongside deregulation. Competition is viewed as the driving force that erodes bank monopoly profits, reduce the opportunity cost of going bankrupt, and increase banks'

incentives to take excessive risk. Although prudential regulation is designed to mitigate excessive risk taking, enforce market discipline and foster stability, it imposes higher regulatory costs and may indeed hamper competition. In general, therefore, such a mixed process of deregulation and prudential regulation may have conflicting effects upon banks'behaviour with respect to competition, risk taking and production efficiency, at least in theory (Zhao and Murinde, 2009).

Nevertheless, competition in the banking industry is also needed for efficiency and maximization of social welfare. However, banking industry has specific features that make it of particular importance to an economy and indeed possesses certain properties that distinguish it from other industries. Banks contribute greatly to economic growth by playing an intermediating role between borrowers and lenders and providing financial resources to other industries, thus facilitating production. The banking system is also important since any instability therein could lead to financial instability and economic crisis. Hence, a well-functioning banking system is regarded as a cornerstone of a market economy. Consequently, policymakers try to ensure that the banking system is stable, besides ensuring that it is competitive and efficient.

Typical structure variables include measures of concentration and the number of sellers. Market power is measured using accounting data on profits and costs. As well, in order to measure a structural variable such as concentration, one must define the relevant product and geographical markets.

The outcome of the traditional Industrial Organisation (**IO)** approach that competition requires many small banks assumes a unitary banking system, which has small independent banks without branches. The inclusion of branch banking can change this result. In a seminal work, Allen and Gale (2000a) showed that a few large banks with extensive branch networks can provide a more competitive outcome than a unitary banking system in an environment with switching costs: a large-branch bank has less of an incentive to exploit the "locked-in" value of clients, because it is always competing for the clients' future business in another product or location.

The use of financial ratios does not have any firm financial theory backing it. What theory does is tell the narrative. Although a financial ratio does not have a maximum, minimum or an optimum value, ratio analysis is useful for

providing insight to a firm's strengths and weaknesses. Financial ratios are standard ways of comparing business outcomes in, for example, banks and the banking industry. The use of ratios scales all firms to the same level for easy analysis, such that banks, for example, are assessed on profitability performance rather than on the size of their assets or deposits. Thus, a ratio such as ROA may show that the smaller of two banks may be operating at a higher level of efficiency than the bigger bank. However, it is not appropriate or valid to reach conclusion on the condition of a firm based on just one ratio.

Financial ratio analysis can be used in two different ways. First, FRA provides the platform to examine the performance of a firm relative to those of the others i.e the competitors. Second, it can be used to compare the performance of a firm and others across time periods. In the context of the above and other uses, FRA can be deployed to: evaluate performance (compared to previous years & peers); set benchmarks or standards for performance; highlight areas needing improvement or offering the most promising future and;enable external parties for example, investors/lenders to assess profitability performance.

2.2.   Review of Empirical Studies

Most of the works on bank profitability measurement have been in the area of effects of policy on commercial bank performance. These works looked at the effects through estimation of models and functional forms of relationships which could be used to forecast future profitability.

Kumbirai and Webb (2010) investigated the performance of South Africa's commercial banking sector for the period 2005-2009. Financial ratios were employed to measure the profitability, liquidity and credit quality performance of five large South African commercial banks. The study found that overall bank performance in terms of profitability, liquidity, and credit quality had been improving since 2005 up to and including 2007. Banks increased the size of their loan portfolios concomitantly while sound and effective credit risk management policies were in place, such that the lending behaviour could be checked, resulting in the downward trend in non-performing loans. However, bank performance deteriorated during 2008-2009 as the banks' operating environment worsened, owing to the global financial crisis and a slowing economy. The analysis also revealed that the illiquidity of

8

the South African commercial banks had reached extreme levels. This was exacerbated by the banks' dependence on wholesale markets and the fact that deposits of less than one year maturity represented about 80.0 per cent of total deposits.

The Study also found significant differences in profitability performance for the periods, 2005-2006 and 2008-2009. The results indicated that profitability deteriorated during the latter period. There might be several reasons for the significant reduction in profitability. One of the reasons advanced by the study was higher bank operating costs and lower incomes amid the global financial crisis. Furthermore in those recessionary years, when corporate and private clients found it hard to service their debts, the provisions for loan losses and bad debts increased. In contrast, no statistically significant differences were observed in bank performance during the two periods in terms of liquidity and credit quality. The comparable performance results, in terms of liquidity and credit quality, between these two periods was because South Africa entered the downturn with a sound macroeconomic/fiscal position, enabling aggressive counter-cyclical fiscal and monetary responses. Notwithstanding the turmoil experienced in international financial markets and the domestic cyclical economic developments during 2008-2009, the South African banking system remained stable; banks were adequately capitalized and profitable.

Joshua (2011) used gross earnings, profit after tax and net assets of the selected banks as indices to determine financial efficiency by comparing the pre-merger and acquisition indices with the post-merger and acquisition indices for the period under review. Three Nigerian banks were selected, using convenience and judgmental sample selection methods. Data were collected from the published annual reports and accounts of the selected banks and were subsequently analyzed applying t-test statistics through the statistical package for social sciences. It was found that the post-merger and acquisition period was more financially efficient than the pre-merger and acquisition period. However, to increase bank financial efficiency, the study recommended that banks should be more aggressive in their profit drive for improved financial position to reap the benefit of post-merger and acquisition initiatives.

Kolapo et al. (2012) carried out an empirical investigation into the quantitative effect of credit risk on the performance of commercial banks in Nigeria over the period of 11 years (2000-2010). Five commercial banking firms were selected on a cross sectional basis for eleven years. The traditional profit theory was employed to formulate profit, measured by Return on Assets (ROA), as a function of the ratio of Non-Performing Loan to Loans and Advances (NPL/LA), ratio of Total Loans & Advances to Total Deposits (LA/TD), and the ratio of loan loss provision to classified loans (LLP/CL) as measures of credit risk. Panel data analysis was used to estimate the determinants of the profit function. The results showed that the effect of credit risk on bank performance measured by the Return on Assets of banks was cross-sectional invariant. In other words, the effect is similar across banks in Nigeria, though the degree to which individual banks are affected is not captured by the method of analysis employed in the study. A 100 percent increase in non-performing loans reduces profitability (ROA) by about 6.2 percent; a 100 percent increase in loan loss provisions also reduces profitability by about 0.65percent while a 100 percent increase in total loans and advances increases profitability by about 9.6 percent. Based on their findings, they recommended that banks in Nigeria should enhance their capacity in credit analysis and loan administration while the regulatory authorities should pay more attention to banks' compliance with the relevant provisions of the Bank and other Financial Institutions Act (1999) and the Prudential Guidelines.

An evaluation of the impact of credit risk on the profitability of Nigerian banks was undertaken by Kargi (2011). He used a sample data collected from the annual reports and accounts of banks from 2004-2008 and employed descriptive, correlation and regression techniques coupled with the use of financial ratios and credit risk profile as measures of evaluating bank performance. The results of the findings suggested that credit risk management impacted significantly on the profitability of Nigerian banks

Epure and Lafuente (2012) in their own work examined bank performance of the Costa-Rican banking industry that was faced with risk during 1998-2007. The results of the study showed that performance improvements tracked regulatory changes and that to a large extent risk explained differences in banks. Furthermore, non-performing loans negatively affected efficiency and return on assets.

Similarly, in his assessment of the effect of credit management on the profitability of banking industry in Kenya, Kithinji (2010) used data on the amount of credit, level of non-performing loans and bank profits for the period, 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, implying that other variables other than credit and non-performing loans impact profits".

Chen and Pan (2012) examined the credit risk efficiency of 34 Taiwanese commercial banks over a three-year period using financial ratios to assess the credit risk which was analyzed using Data Envelopment Analysis (DEA). Three credit risk parameters - credit risk technical efficiency (CR-TE), credit risk allocation efficiency (CR-AE), and credit risk cost efficiency (CR-CE) were examined. The results indicated that "only one bank was efficient in all types of efficiencies over the evaluated periods. And overall, the DEA results showed relatively low average efficiency levels in CR-TE, CR-AE and CR-CE in 2008".

Felix and Claudine (2008) investigated the relationship between bank performance and credit risk management. They 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 loans to total loans of financial institutions, thereby leading to a decline in profitability".

Ahmad and Ariff (2007) examined the key determinants of credit risk of commercial banks in emerging economy banking systems compared with the developed economies. The study found "that regulation was important for banking systems that offered multi-products and services and that management quality was critical in the cases of loan-dominant banks in emerging economies". An increase in loan loss provisions was also considered to be a significant determinant of potential credit risk. The study further highlighted that "credit risk in emerging economy banks was higher than that in developed economies".

In his assessment of the impact of bank-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 over the period 1998-2008, Al-Khouri (2011), using fixed effect regression analysis,

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".

Ben-Naceur and Omran (2008), while examining the influence of bank regulations, concentration, financial and institutional development on commercial banks' margins and profitability in Middle East and North African (MENA) countries from 1989 to 2005, found that "bank capitalization and credit risk had positive and significant impacts on banks' net interest margins, cost efficiency and profitability".

Ahmed, Takeda and Shawn (1998) in their study found that "loan loss provision has a significant positive influence on non-performing loans". Therefore, an increase in loan loss provision indicates an increase in credit risk and deterioration in the quality of loans, thus affecting bank performance adversely.

In Nigeria, a few attempts on the subject had relied only on the two traditional measures; return on assets and return on capital employed. Uchendu (1985) used some statistical inferences to analyze the impact of monetary policy on commercial bank performance. He also raised the issue of oligopolistic nature of commercial banking in Nigeria. Some other attempts narrowed their work to either selected commercial banks or to the big four banks. However, there is, so far, no work that has attempted to comprehensively assess the industry performance, as a whole, using specific indicators and indices.

Okafor (2012) evaluated the performance of Nigerian banks before and after the 2005 consolidation exercise. Capital adequacy, asset quality, liquidity and management efficiency were used to analyze the banks' performance. The period 2004-2005 was designated the pre-consolidation era, while 2006–2009 was deemed the post-consolidation period. The statistical tool applied in testing the hypotheses was the t-test, which helped to ascertain whether there was a significant difference in the performance of banks before and after consolidation. The result showed that consolidation improved the performance of the Nigerian banking industry in terms of asset size, deposit base and capital adequacy. However, the profit efficiency and asset utilization ratios of the banks had deteriorated since the conclusion of the consolidation programme.

Table 1: Review of Literature

	Author/Date/Title/ Publication	Methodology	Key Findings	Range
1	AbdusSamad& M. Kabir Hassan (1999) "The Performance Of Malaysian Islamic Bank During 1984-1997: An Exploratory Study" International Journal of Islamic Financial Services, Vol. 1 No.3 Oct-Dec 1999.	The study evaluates intertemporal and interbank performance of Islamic bank (Bank Islam Malaysia Berhad (BIMB) inprofitability, liquidity, risk and solvency; and community involvement for the period 1984-1997. Financial ratios wereapplied in measuring these performances. T-test and F-test were used in determining their significance.	BIMB is relatively more liquid and less risky compared to a group of 8 conventional banks.	1984-1997
2	RasidahMohd Said and MohdHanafiTumin (March 2011) "Performance and Financial Ratios of Commercial Banks in Malaysia and China". International Review of Business Research Papers, Vol. 7. No. 2. March 2011. Pp. 157-169.	This study uses income statement and balance sheet of commercial banks, the authors employed two measures of profitability, ROAA and ROAE.	Credit ratio, capital ratio and operating ratio do influence performance of banks as measured by ROAA in Malaysia. Also, liquidity and size are not significant factors that contribute towards profitability of banks in Malaysia as well as China.	2001-2007
3.	R.Dhanuskodi A (2007),"Comparative Study On The Profitability Performance Of Commercial Banks In Ethiopia. "Fifth International Conference" – Ethiopian Economic Association - Addis Ababa, Ethiopia.	The study uses the major banking profitability ratios ROE, ROA and ROD. Also this study explores the equity size, asset size and deposit size, its growth and average.	The results of this study imply that it might be necessary for a bank management to take all the required decisions to enhance the financial positions of the bank.	2000-2004

13

4.	Rakhe P.B. (2010), "Profitability of Foreign Banksvis-à-vis Other Bank Groups in India – A Panel Data Analysis". Reserve Bank of India Occasional Papers Vol. 31, No.2, Monsoon 2010.	Sample of 59 banks, from Statistical Tables in India.	Access to low cost of funds and diversification of income are important factors leading to higher profitability of foreign banks vis-a-vis other bank groups in India. Efficiency of fund management is the most important factor determining profitability in the banking system followed by generation of other income	2000-2009
5.	SuvitaJha* and XiaofengHui. (2012) . "A comparison of financial performance of commercial banks: A case study of Nepal"	Financial ratios	Capital adequacy ratio, interest expenses to total loan and net interest margin were significant but had a negative effect on ROA while non-performing loan and credit to deposit ratio did not have any considerable effect on ROA.	2005-2010
6.	Zohra Bi and ShyamLalDevPandey (2011) "Comparison Of Performance Of Microfinance Institutions With Commercial Banks In India" Australian Journal of Business and Management Research Vol.1 No.6 [110-120]	September-2011	Secondary data was analyzed using various statistical tools and techniques such as one way ANOVA.	The net profit margin of microfinance institutions have reported to be higher because of the higher interest rates charged by them.	2002-2010
7.	RehanaKouser and Irum Saba (2012) "Gauging the Financial Performance of Banking Sector using CAMEL Model: Comparison of Conventional, Mixed andPure Islamic Banks in Pakistan" International Research Journal of Finance and Economics	Analysis of variance (ANOVAPearson correlation	UAE Islamic banks are relatively more profitable, less liquid, less risky, and more efficient as compared to the UAE conventional banks.	2006-2010

14

8.	Y. Sree Rama Murthy (2003) " A study on Financial Ratios of Major Commercial Banks"	The study uses the Dupont model to measure profitability as proxied by ROE.	Good performance in the period was due to the profit margins generated by the banks in those years.	1997-2001
9.	AkramAlkhatib (2012) "Financial Performance of Palestinian Commercial Banks"	Financial ratios/ CAMELS	Asset size, operational efficiency and asset management found to be significant and affect ROA	2005-2010
10.	B. Nimalathasan (2008) " A comparative study of financial performance of banking sector in Bangladesh- An application of camels rating system"	CAMELS rating framework	Strong earnings and profitability profile of a bank reflects its ability to support present and future operations	1999-2006
11.	Malcolm Abbott et al. 2010 "The performance of the Australian banking sector since deregulation".	Financial market ratios.	The deregulation of the banking system led to a more competitive financial system and higher levels of productivity and efficiency.	1983-2009
12.	MabweKumbirai and Robert Webb (2010) " "A financial ratio analysis of commercial bank performance in South Africa".	Descriptive financial ratio analysis (ROA,ROE, C/I)	Overall bank performance increased considerably in the first two years of the analysis. Banks performed better in the period 2005-2006 compared to 2008-2009, indicating that the banks significantly progressed in profitability during 2005-2006.	2005-2009
13.	Jagdish R. Raiyani (2010). "Effects of Mergers on efficiency and productivity of Indian banks: A CAMELS analysis"- Asian Journal of Management Research	CAMELS rating framework	The overall profitability of the bank has equally increased after the merger	1999-2008
14.	David Tripe (2007) "Cost to Income Ratios in Australasian Banking"- Centre for Banking Studies, Massey University	Cost to Income ratios	Costs to income ratios are important tools for bank analysis	1986-1995

15

15.	Oladele, P.O et al.(2012) "Determinants Of Bank Performance In Nigeria"*International Journal of Business and Management Tomorrow Vol. 2 No. 2*	Panel regression	Operating expense, cost to income ratio and equity to total assets size of the bank based on its total asset and cost to income ratio significantly influenced the performance of the banking sector in Nigeria	2005-2010
16.	Anne W. Kamau(2011) " Intermediation Efficiency and Productivity of theBnaking Sector in Kenya" IJRB Vol1, Issue 9(pp12-26) Sept-Oct. 2011	Non- parametric Data Envelopment Analysis (DEA)	Though banks were not fully efficient, they performed fairly well during the review period.	1997-2009
17.	Rakesh Mohan (2005)"Reforms, productivity, and Efficiency in Banking: The Indian Experience". The Pakistan Development Review 44:4 2005	Financial ratios	Countries undertaking financial sector reforms must examine closely the fact that the efficiency of a financial system relates to the way it perform its intrinsic function.	1992-2004
18	Enendu, C.I 2003 "Determinants of Commercial Bank Interest Rate Spread In aLiberalizedFincncial System: Empirical Evidence from Nigeria"	Panel Regression	Using ex-ante spread, most important determinants were CRR, MRR, Risk Premium financial deepening etc, while TB rate, GDP, inflation 3-month deposit rates among others were negative determinants.	1989-2000

3.0   AN OVERVIEW OF THE NIGERIAN BANKING INDUSTRY

The development of banking institutions in Nigeria dates back to the 19th century when the African Banking Corporation opened a branch in 1894. The British Bank for West Africa (BBWA), now First Bank of Nigeria PLC, later absorbed it in the same year. The indigenous banking boom of the 1930s and 1940s heralded the emergence of Nigerian owned banks and interests of indigenous entrepreneurs in bank ownership. There were, however, massive failures ofindigenous banks in the late 1940s and 1950s. This development prompted the colonial administration to enact the first banking ordinance of 1952. Prior to that date, banking regulation in Nigeria was non-existent. The early 1950s also witnessed the initial moves by the Nationalists for the establishment of a central bank in Nigeria. These moves culminated in the enactment of the Central Bank of Nigeria Act of 1958, establishing the Central Bank of Nigeria (CBN), which began business in July 1959.

With the establishment of the CBN, the regulatory and supervisory roles expected of such an institution could not easily be realized because the required instruments were non-existent. Thus, the CBN started by developing the required capital and money market instruments that would develop the market. It is pertinent to note that the CBN played the pioneering role in the establishment of the Lagos Stock Exchange (now Nigerian Stock Exchange) and the Capital Issues Commission (now Securities and Exchange Commission). Since then, the CBN has been working to create and sustain an enabling environment for the operation of banks.

Between 1960 and 1986, the development and growth of both merchant and commercial banks were modest. For instance, there were only 12 commercial banks in 1960. This rose to 19 in 1977 and 29 in 1986. There was no merchant bank in operation in 1960 but by 1969, the first merchant bank commenced operations. The growth in the number of merchant banks was slow as the number rose to only 4 by 1977. However, by the end of 1986, the number of merchant banks in operation in Nigeria had risen to 12. Available data showed that this category of banks witnessed far more growth during the period 1986 –1994 than in any other period.

3.1   Structure of Banking Institutions and Changes Since 1986

The period, between 1986 and 1994, witnessed an unprecedented growth in the number of banking institutions in Nigeria due to the liberalization policy within the Structural Adjustment Program (SAP) menu of 1986. Moreover, new deposit taking institutions namely: The Peoples Bank; Community banks; and primary mortgage institutions were established in order to expand the available depository outlets for small savers. This period witnessed the increase in the number of banks and other financial institutions than in any other period in Nigeria since 1960. For instance, the number of commercial banks and merchant banks were 19 and 5 respectively, in 1977. The number rose to 29 and 12 respectively in 1986. However, by 1990, these figures had risen significantly to as many as 58 commercial banks and 49 merchant banks. By the end of 1994, the numbers had surged further to a total of 65 deposit money banks and 51 merchant banks in operation. (see figure 3.1)

Figure 1: Number of Banks (1980-2010)
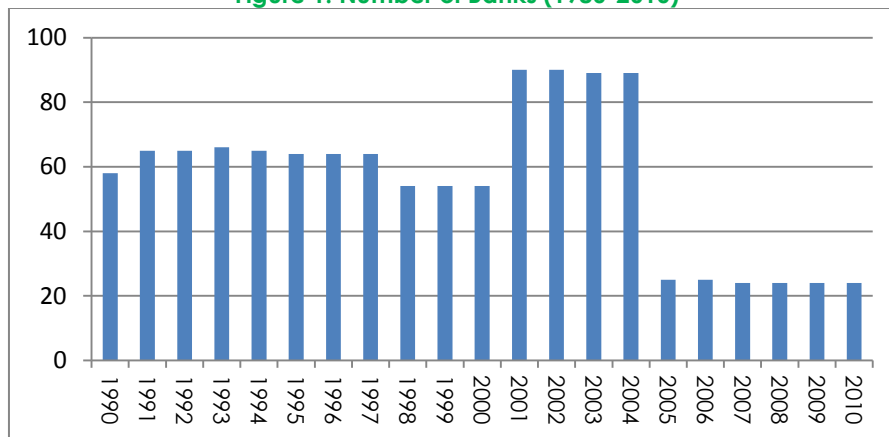
A number of factors were responsible for the phenomenal growth in banking institutions during the period, 1986-1994. The period coincided with the adoption and implementation of the Structural Adjustment Programme in the country. The aim of the Programme was mainly to restructure the Nigerian economy and reduce, if not eliminate, the inherent distortions that had remained a key feature of the financial system since Independence. The Adjustment Programme involved the deliberate policy of encouraging private sector participation in the ownership of banks as well as liberalization of

18

licensing procedures for new banks. The deregulation of the exchange rate enhanced the attractiveness of the banking environment and so also was the gradual deregulation of interest rates with effect from August, 1987. The merchant-banking sub-sector attracted greater interest in terms of applications for, and grant of, new banking licenses during the period. The percentage increase in the number of merchant banks in operation between 1986 and 1994 was 325 per cent compared with 124 per cent for commercial banks.

Investors' perception of the sub-sector in terms of the benefits of wholesale operations and the profitability of merchant banking most probably contributed to the growth. The liberalization of the exchange rate and the accompanying vast opportunities for growth, which were some of the key elements of the reforms, facilitated the growth of merchant banks.

In an effort to promote the banking habit and consolidate the gains of the rural banking scheme, which had been in operation since 1977, new institutions, which were directed at small savers and micro borrowers, were established. The Peoples' Bank was established in 1989 with the objective of encouraging savings at the grass root level. Lending activities of the bank focused on the low-income earners and self-employed individuals within the informal sector of the economy. The bank's branch network rose steadily from 20 in 1989 to 275 in 1994. The branches were located in all the states of the Federation in order to spread the activities of the bank to all parts of the country. In the same vein, the community banks were established in 1990 to replace the erstwhile rural banking scheme, which had made it mandatory for banks to establish rural branches in order to encourage savings in the rural areas. Community banks, unlike rural branches of banks, were unit banks, which were owned and managed by the members of community where the banks were located. The growth rate of community banks was impressive from inception in 1990. For instance, there was only one community bank in 1990. By 1992, the number had risen to 401 and at the end of 1994, 970 community banks had been established. However, the Community banks were upgraded to Microfinance banks (MFBs) in 2005. The Microfinance banks focused mainly on low–income clients and the active poor that were denied effective service delivery in the formal banking sub-sector. The number of MFBs had grown over the years to 866, including 121 with provisional approvals, as at end – December 2010. The guidelines for the microfinance banks provided for an

initial unit banking institution in the local community but would graduate to state licensed or national licensed bank with multi-branches.

The structure of banking institutions since 1986 reflected increased number and emergence of new institutions to complement the savings mobilization efforts of commercial and merchant banks and break the oligopolistic tendencies of the regular banks in the provision of banking services.

3.2   Legislative and Regulatory Changes since 1986

By 1986, the 1969 Banking Act (as amended) and the CBN Act (1958) with its amendments were the subsisting legislations for the regulation of banking institutions in Nigeria. However, with the increased activities and complexities in the banking system, there was the need to strengthen the legal framework to enable it cope with the emerging challenges. The Banks and Other Financial Institutions (BOFI) and the CBN Acts of 1991 were enacted for that purpose. The BOFI Act gave the Central Bank of Nigeria enormous powers to regulate and license banks, for the first time, without recourse to the Minister of Finance. The autonomy granted the Bank increased its supervisory and regulatory roles and powers over banks. Furthermore, the BOFI Act redefined the activities that banks could engage in and specified other operational requirements for banks and other financial institutions. The Act provided a comprehensive coverage of the business of banking and limitations and areas of authority of the regulatory institutions. Penalties for contraventions of the legislation were also spelt out in the Act.

The other complementary institutions that were established, following the 1986 liberalization measures, were also guided by enabling legislations, including the NDIC Act of 1988 and the Community Banks Act of 1992. For instance, the Community Banks Act provides for the issuance of provisional licenses for the operation of community banks and for the Central Bank to grant the final license after the banks must have operated for a minimum of two years. The NDIC Act established the Corporation as an insurer of banks' deposit liabilities. The NDIC complements the Central Bank in its supervisory efforts. Its operations have also contributed to the stability of the financial system since bank depositors are guaranteed repayment of the whole or part of their deposits in the event of bank failure.

3.3   Highlights of Nigeria's Recent Banking Reforms.

The financial services sector has been undergoing rapid transformation in many jurisdictions, triggered in particular by deregulation, need for macro-prudential measures and technological improvements. These changes have led to consolidation, increased cross-border capital flows, greater commercial presence, and more financial integration. Nigeria embarked on SAP in 1986, a key element of which was the deregulation of the banking industry. The overriding objective was to enhance bank efficiency in savings mobilization and financial intermediation, through increased competition. Deregulation was also intended to promote the use of the market mechanism in the determination of interest rates and credit allocation. Thus, the restrictions on foreign exchange transactions and capital movements were relaxed (CBN, 2008; Zhao and Murinde, 2009). However, the banking reforms during the period, 1986 to 1993 were, in several cases, not sustainable and suffered reversals. In this connection, it has been argued that the new entrants were attracted by the potential gains from trading in foreign exchange rather than intermediation, as evidenced by the co-existence of the increase in the number of market participants and increased disintermediation (Beck et al. 2005). The combination of inadequate risk management capacity (e.g. credit scoring, risk assessment etc.), ethical issues and poor corporate governance (e.g. corruption, insider lending and other abuses) contributed to the deterioration of the banks' loan portfolios (Brown-bridge, 1998; CBN, 2008). Furthermore, the dramatic increase in the number of banks over-stretched the regulatory/supervisory capacity. The poor performance of banks had been accumulating, but was well disguised owing to the absence of prudential supervision; perhaps, it persisted because of regulatory failure and forbearance. It was eventually brought to light with the new guidelines for the classification of loans under the 1991 Prudential Regulation (Lewis and Stein, 1997).

New reform measures were introduced post-1993. The mandatory minimum capital requirement was increased to N500 million, while the statutory minimum risk-weighted capital adequacy ratio remained at 8 per cent in 1997. The period, 1996-2004 witnessed aggressive re-deregulation. Interest rate deregulation was re-implemented in 1997 and entry restriction was again relaxed in 1999. Universal banking was adopted in 2001, whereby banks were allowed to undertake various financial service activities which encompassed

both money and capital market businesses, as well as insurance, and without any geographical restriction. The adoption of universal banking in Nigeria made it imperative for the Central Bank of Nigeria (CBN) to take measures towards strengthening the regulatory and supervisory framework. Thus, the minimum capital requirement was increased to N2 billion in 2002, while the risk-weighted capital ratio was raised to 10 per cent.

To strengthen the economy, specifically the banking industry, the CBN announced a new 13-point reform agenda in July, 2004. In general, the new reform agenda was intended to promote the soundness, stability and efficiency of the Nigerian banking system and to enhance its international competitiveness. The major item on the 13-Point Agenda, was the directive that all commercial banks (i.e. universal banks) should raise their minimum capital base to N25 billion, with a compliance deadline of approximately 18 months (i.e. latest by December 2005). When the new reform agenda was announced, 5-10 out of the 89 banks operating in the country, already had capital bases above the N25 billion; 11 - 30 banks had capital bases between N10 and N20 billion; while the remaining 50 to 60 banks had capital base of well below the N10 billion capital. The efforts of banks to meet the new minimum capital base triggered mergers and acquisitions (M&A) in the industry. The banks raised capital funds from the domestic capital market and through foreign direct investment. This resulted in the increase in the share of the Nigerian banking industry's capitalization as a percentage of stock market capitalization from 24% in 2004 to 38% by 2006, directly contributing to the growth of total market capitalization and the market's liquidity during the period, 2005-2006. At the end of the 18-month deadline given by the CBN, only 25 out of 89 banks were standing. Thus, by 2006, there were 21 private publicly-quoted banks, 4 foreign banks, and there was no government-owned bank (CBN, 2008; Zhao and Murinde, 2009).

Bank consolidation brought about changes in the size, structure and operational characteristics of the Nigerian banking system. Another aspect of the reforms which is seldom mentioned relate to the changes in policy approach at the CBN. Beginning from December 2006, the Bank introduced a loose interest rate based framework and made the monetary policy rate (MPR) the operating target. The new framework has enabled the Bank to be proactive in countering inflationary pressures. Also, in the use of the framework, upper and lower limits to the monetary policy rate were set,

coinciding with the rate for the standing lending facility and standing deposit facility, respectively. The corridor regime has helped to check wide fluctuations in inter-bank rates and also engendered the orderly development of the money market segment (Sanusi, 2011).

In spite of these positive developments, a new set of problems emerged and threatened the financial system from 2008, coinciding with the global financial crisis. The surge in capital funds encouraged high risk investments by banks. Consequently, when the capital market bubble burst, the balance sheets of banks were significantly eroded to the extent that many of them relied unduly on the CBN discount window. Furthermore, inter-bank rates spiked as some banks had to borrow at abnormally high rates in order to remain afloat; the size of non-performing loans enlarged; customer confidence was badly shaken; and unethical practices by the Managements of some banks were revealed. It was this worrisome state of affairs that set the stage for further reforms.

The first part of the reform focused on ensuring that the nine banks, the examination of which had revealed that they were in poor financial condition, were rescued. The actions taken by the CBN included the reduction of cash and liquidity ratio requirements and expanded discount window operations, the latter of which enabled the banks to borrow for up to 360 days from the Bank. It also admitted non-traditional instruments, such as commercial papers, promissory notes and bankers' acceptances in the discount window. Inter-bank lending was also guaranteed to encourage banks to lend among themselves. Furthermore, the sum of N620 billion was injected into eight of the weak banks as direct rescue packages, while corporate governance was enhanced in the affected banks with the appointment of new management teams. Over all, the system was restored to the path of stability.

The second aspect of the reforms was hinged on some medium- to long-term objectives. Under this component, financial sector stability is emphasized alongside the need to position the banks to provide funding for the development of the real sector of the economy. The four cardinal pillars of the reform were: enhancing the quality of banks, establishing financial stability, enabling healthy financial sector evolution, and ensuring that the financial sector contributes to the real economy.

The Bank recently introduced a new policy; the "Cash less Policy", as part of ongoing reforms to address currency management challenges in Nigeria, as well as enhance the national payments system. Nigerian economy is heavily cash-oriented in the transaction of goods and services. This increases the operational costs of the banking sector, which are passed on to the customers in the form of higher service charges and high lending rates. These operational costs are significant owing to the high cost incurred in cash management, currency sorting, cash movements and regular printing of currency notes.

The reforms have brought about a new mindset to the industry as banks are putting in place best practices in the areas of corporate governance and risk management. Also, transparency and public disclosure of transactions have remarkably improved. A number of banks have returned to profitability and improved their balance sheets positions. Also, banks are gradually resuming lending to the private sector with the additional liquidity of more than N1.7 trillion injected into the banking system through the issuance of AMCON bonds, and significant progress in re-directing credit to the power sector and SMEs at single digit interest rates. These initiatives have saved and helped create thousands of jobs in the economy (Sanusi, 2012).

Nigerian banks are now key players in the global financial market with many of them falling within the Top 20 banks in Africa and among Top 1000 Banks in the world. The reforms have culminated in moderating the spread between the lending and deposit rates, a development which has contributed to the existing macroeconomic stability in the economy. Above all, the reforms have largely restored confidence in the banking system with the removal of distressed banks and the adoption of a strict code of corporate governance (CBN, 2004).

3.4   The State of the Banking Industry:

Before the advent of the reforms of 1986, the financial sector in Nigeria was highly repressed. Interest rate administration, selective credit controls, ceilings on credit expansion, use of reserve requirements and other direct monetary control instruments were typical features of the banking regime. Semi-public or government agencies owned majority of the financial institutions that dominated the financial services industry, such as banks and insurance

companies. The neo-liberal era witnessed the dismantling of the regime of economic and financial controls in 1986 to make way for increased reliance on market forces and private initiatives, in line with the general philosophy of economic management under the Structural Adjustment Programme (SAP).

 In 1993, Discount Houses (DHs) were established to serve as financial intermediaries between the CBN and the licensed banks. They mobilize funds for investment in securities by providing discounting/rediscounting facilities in government short-term securities. The DHs in Nigeria were expected to facilitate trading and play the role of market makers in government securities, thereby promoting the efficiency and effectiveness of the money market. The number of DHs in existence has remained unchanged at five.

To achieve increased savings, community banks and the Peoples' Bank were established. The two types of institutions were established to enable rural dwellers and the poor save and have access to credit facilities. All these structural changes were aimed at funding rigidities and enthroning a market-oriented financial system for effective mobilization of savings and efficient resource allocation in the economy. The liberalization of the financial services sector encouraged the establishment of many financial institutions, particularly banks. For instance, the number of operating banks almost doubled within three years of the reform (from 54 in 1987 to 76 in 1989) and tripled by the fifth year (112 in 1991). It took the official re-imposition of embargo on bank licensing in 1991 to halt this rapid growth. Access to credit and foreign exchange was among the major motives for bank ownership. The competition that resulted from the entry of new banks and the liberalization of interest rates rather than bring down the lending rates brought about a sharp rise in nominal deposit and lending rates, although the deposit rates increased substantially in line with the theory.

The financial environment that emerged from the 1986 reforms was unstable, inefficient, riskier, illiquid, unsustainable and generated lower returns on assets relative to the pre-reform period (Sobodu and Akiode, 1994). The incidence of fraud and non-performing loans also increased with the reforms as revealed by a CBN/NDIC study on "Distress in the Financial Services Industry" (1996). The quality of management, which is a major determinant of banks' long-term survival, Siems (1992); Pentalone and Platt (1987) and the dearth of qualified personnel to meet the challenges of sudden growth in the industry

contributed to the poor health of the banking industry (Ikhide and Alawode 1994).

The late 1980s and early 1990s witnessed rising non-performing credit portfolios in banks and these significantly contributed to the financial distress in the banking industry. There were also predatory debtors in the banking industry whose mode of operation involved the abandonment of their debt obligations in some banks only to contract new debts in other banks. Despite the fear of the systemic weakness, many banks continued to extend fresh facilities to customers who already had huge and un-serviced debts with other banks and financial institutions.

One of the prudential measures introduced by the CBN to strengthen the banking system was the risk-weighted capital adequacy ratio under the auspices of the Basel Capital Accord recommended by the Basle Committee on Banking Supervision, based at the Bank for International Settlements in 1990. Before then, capital adequacy was measured by the ratio of adjusted capital to total loans and advances outstanding. In recognition of the fact that well-capitalized banks would strengthen the banking system for effective monetary management, the minimum paid-up capital requirement of commercial and merchant banks was increased in February 1990 to N50 million and N40 million , from N10 million and N6 million, respectively, in October, 1988. Distressed banks whose capital fell below new requirements were directed to comply or face liquidation.

The minimum paid-up capital requirement for merchant and commercial banks was further raised to a uniform level of N500 million with effect from 1st January, 1997, with a deadline of December 1998 for compliance by all existing banks (110 banks). In 2001, when the universal banking model was adopted in principle, the minimum paid-up capital requirement was raised to N1 billion for all existing banks and N2 billion for new banks. This policy shift increased the number of banks that were rated by the CBN as marginal and unsound between the periods, 2001-2004 as shown in table 2. As evidenced in table 3.1, very few banks were rated as sound during the period when compared with those rated as satisfactory. Again, in July 2004, the CBN announced that all banks were to increase their capital base to N25 billion, with a deadline of December 2005 for compliance. The consolidation agenda initiated in 2005 by the regulatory authority was an attempt to prevent

systemic crisis. All the 25 banks that emerged from the consolidation process were classified as sound, as at end-December 2005.

Table 2: State of the Banking Industry (2001 - 2010)

Category	2001	2002	2003	2004	2005	2006	2007	2008	2009 /1	2010 /1
Sound	10	13	11	10	25	10	na	na	13	15
Satisfactory	63	54	53	51	0	5	na	na	Nil	Nil
Marginal	8	13	14	16	0	5	na	na	1	6
Unsound	9	10	9	10	0	5	na	na	10	3
Source: NDIC Annual Reports /1 combines sound /satisfactory na – not available										

The 2009 banking reforms by the CBN led to an improvement in the level of soundness as the number of banks rated unsound fell to 3 in 2010 from 10 recorded in the preceding year. When compared with the previous years, the available statistics shows that the banking sector benefitted from the stringent measures and restructuring efforts that were embarked upon by the CBN.

3.5 Trends of Developments in the Nigerian Banking Industry

The banking industry of the Nigerian economy has been among the fastest growing sub-sectors since the adoption of the Structural Adjustment Programme (SAP) in 1986. This section reviews and appraises the banking industry performance, starting from two years before consolidation in 2005. Banks have recorded unprecedented growth in assets over the years increasing significantly from N3, 047.9 million in 2003 to N17, 331.6 million at the end of 2010. Various factors contributed to the rapid expansion. Prominent among these were bank consolidation, stable macroeconomic environment, robust economic growth and improved risk management practices, thereby facilitating access to and improvement in the quality of services rendered by banks. However, there was an urgent need for effective regulation and supervision of the industry in order to ensure financial soundness, given the increased risks and vulnerabilities of the system.

The 2004 bank consolidation programme altered the nature of competition in the industry, as there were no longer marginal players in the system. Available statistics from the CBN show that, prior to 2003, less than 10 banks out of the over 89 existing banks, controlled the entire banking industry. Nevertheless, the trend had not changed since consolidation. For instance, of the twenty four banks in existence as at December 2008 and 2009, ten banks accounted for 72.05% and 71.83% of the total deposits, respectively. However, the share further declined slightly to70.66 % in 2010.

The ratio of credit to the private sector to GDP (CP/GDP), a metric for bank financing of the economy stood at 13.9 and 13.8 per cent at end-December 2003 and 2005, respectively (table 3). It rose significantly to 40.5 and 59.8 per cent at end-December 2009 and 2010, respectively, indicating that the banking system had increased its financing to the real sector of the economy. Similarly, the intermediation efficiency indicator, i.e. the ratio of currency outside banks to broad money supply, which stood at 20.76 per cent at end-December 2003, fell to 12.7 per cent at end-December 2007. The ratio further fell to 9.4 per cent at end-December 2010, reflecting the improvements in the payments system, particularly the increased use of electronic forms of payment, such as the automated teller machines (ATMs), point of sales (POS) terminals and other e-card products.

An analysis of sectoral distribution of credit is provided in Table 4 and 5. The available information showed that banks have continued to have preference for the less preferred sectors of the economy to the priority sectors, such as agriculture and exports, which over the years had always received far less bank credit. For instance only 5.1 per cent and 2.9 per cent of the total loans and advances were given to agriculture and exports, respectively, in 2003. This further declined to 1.7 per cent and 0.6 per cent, respectively in 2010. Nevertheless, the volume of the total loans and advances had grown over the years.

The banking sector gross loans and advances increased from N1, 210.0 billion in 2003 to N7, 706.4 billion in 2010, translating to a growth of 536.9 per cent. The growth was attributed to the increased lending to agriculture, solid minerals and manufacturing sectors during the review period.

Table 3: Key Financial Sector Aggregates and Ratios (2003 -2010)

Aggrgates/Ratios	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Currency in Circulation (Nbillion)	310.5	403.5	463.2	502.25	545.80	642.39	779.25	960.77	1,155.33	1,181.54	1,378.12
Demand deposit (Nbillion)	345.0	448.0	503.9	813.40	872.07	1,162.16	1,629.71	2,401.07	4,006.26	4,089.88	4,488.97
Total deposit (Nbillion)	701.1	947.2	1,157.1	1,573.04	1,805.0	2,251.61	3,376.96	5,094.62	8,315.78	9,853.39	10,443.24
Rural deposit	NA	NA	NA	20.55	64.49	18.46	3.12	3.08	3.41	3.29	0.02
DMB's total Assets (Nbillion)	1,568.8	2,247.0	2,766.9	3,047.9	3,753.3	4,515.1	7,172.9	10,981.7	15,919.6	17,522.8	17,331.6
COB (N billion)	274.0	338.7	386.7	412.15	458.59	563.23	650.94	737.87	892.68	927.24	1,082.29
GDP at current mkt prices (N billion)*	**6,713.6**	**6,895.2**	**7,795.8**	**7,191.05**	**8,563.3**	**14,572.24**	**18,222.8**	**22,907.31**	**23,842.1**	**25,4874**	**54,204.8**
M2/GDP(%)	15.4	19.1	20.5	27.6	26.43	19.1	21.5	27.7	37.2	42.7	21.3
CP/GDP(%)	8.9	12.4	12.3	13.91	13.4	13.8	14.2	24.4	32.7	40.5	32.0
COB/M2(%)	26.4	25.7	24.2	20.76	20.3	20	16.2	12.7	9.7	8.6	9.4
Assets/ GDP(%)	23.4	32.6	35.5	42.38	32.9	31	38.3	52.4	64.5	69.5	32.0
Ratio of Total deposits to GDP	10.5	13.7	14.8	21.87	21.08	15.45	18.53	22.24	34.88	38.66	18.1
No. of Banks	54	90	90	87	87	25	25	24	24	24	24

Source: Annual Reports of NDIC and the CBN(various issues). * Data relating to GDP for 2010 was from the rebased GDP figures

Analysis of DMBs' deposit liabilities showed that short-term deposits of below one year constituted 95.8 per cent and 96.9 per cent of the total deposits as at end-December 2009 and 2010, respectively. This is in contrast with long-term deposits of more than three (3) years which constituted only 0.2 per cent and 1.1 per cent, respectively.

Table 4: Sectoral Distribution of Deposit Money Banks' Loans and Advances (N'Million)

Period	Agric, Forestry & Fishery	Manufac-turing	Mining &Quarying	Real Estate & Constr	Exports	Imports	Others	Total
2003	62,102.8	294,309.6	95,976.4	-	34,467.4	-	723,176.90	1,210,033.1
2004	67,738.6	332,113.7	131,055.6	-	31,347.0	-	956,987.8	1,519,242.7
2005	48,561.5	352,038.3	172,532.1	-	26,427.3		1,377,152.0	1,976,711.2
2006	49,393.4	445,792.6	251,477.1	-	52,686.3	-	1,724,948.5	2,524,297.9
2007	149,578.9	487,576.0	490,712.9	-	66,551.1	-	3,619,069.9	4,813,488.8
2008	106,353.8	932,799.5	846,942.8	466,800.7	75,192.3	144,881.2	5,226,429.7	7,799,400.1
2009	135,701.3	993,457.0	1,190,731.6	778,140.4	45,870.5	1,199,208.2	4,569,034.1	8,912,143.1
2010	128,406.0	987,641.0	1,178,098.6	670,304.8	44,806.7	898,382.7	3,798,790.7	7,706,430.5

Table5: % Share in Total Outstanding Credit

Period	Agric, Forestry & Fishery	Manufac-turing	Mining &Quarying	Real Estate & Constr	Exports	Imports	Others	Total
2003	5.13	24.32	7.93	-	2.85	-	59.77	100.00
2004	4.46	21.86	8.63	-	2.06	-	62.99	100.00
2005	2.46	17.81	8.73	-	1.34	-	69.67	100.00
2006	1.96	17.66	9.96	-	2.09	-	68.33	100.00
2007	3.11	10.13	10.19	-	1.38	-	75.19	100.00
2008	1.36	11.96	10.86	5.99	0.96	1.86	67.01	100.00
2009	1.52	11.15	13.36	8.73	0.51	13.46	51.27	100.00
2010	1.67	12.82	15.29	8.70	0.58	11.66	49.29	100.00

Source: Computed from Deposit Money Banks' Returns

Similarly, analysis of the structure of DMBs outstanding credit indicated that short-term maturity had remained dominant in the credit market. Outstanding loans and advances maturing one year and below accounted for 78.02 per cent and 75.83 per cent of the total, as at end-December 2006 and 2008, respectively, compared with the long-(3yrs and above) term maturities which were 13.67 and 10.70 per cent, respectively, during the same period (table 6).

Table 6: Maturity Structure of Loans and Advances and Deposit Liability

	Maturity of DMBs Loans and Advances				
	2006	**2007**	**2008**	**2009**	**2010**
0-30 days	54.38	49.20	46.65	50.15	46.06
31-90 days	11.02	11.29	13.41	6.35	9.96
91-181 days	6.26	5.84	7.81	7.35	3.93
181-365 days	6.35	9.51	7.52	6.50	5.32
Short term(<1yr)	**78.02**	**75.83**	**75.40**	**70.34**	**65.28**
Medium-term - (Above 1 year and Below 3 years)	**8.32**	**13.47**	**14.50**	**14.35**	**14.64**
Long-Term (3 Years and Above)	**13.67**	**10.70**	**10.10**	**15.31**	**20.08**
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
Maturity of DMBs Deposit Liability					
0-30 days	66.63	74.10	72.75	73.33	76.30
31-90 days	16.59	12.27	13.11	15.01	14.37
91-181 days	3.51	4.34	6.22	4.71	3.36
181-365 days	1.38	2.62	2.73	2.70	2.84
Short term (<1yr)	**88.11**	**93.34**	**94.81**	**95.75**	**96.87**
Medium-term - (Above 1 year and Below 3 Years)	**5.40**	**3.30**	**5.16**	**4.11**	**2.06**
Long-Term (3 Years and Above)	**6.49**	**3.34**	**0.03**	**0.15**	**1.07**
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
Source: CBN Annual Report (2010)					

Loans and advances maturing one year and below fell to 65.28 per cent and in 2010 remained dominant, compared with the long-(3yrs and above) term maturities which accounted for 20.08 per cent. The observed dominance of short-term banks' loans and advances has adverse long-term implications for the growth of both the SMEs and the economy. However, the above situation is not surprising, given the predominance of short-term deposits and the dearth of long-term funds to support long-term lending.

Table 7: Asset Quality and Liquidity Ratios of Insured Banks

	2003	2004	2005	2006	2007	2008	2009	2010
Total loans and advances(TLA) N Billion	1,210.03	1,519.24	1,976.71	2,524.29	4,813.49	7,799.40	8,912.14	7,706.43
Non-performing loans (NPL) (N'Billion)	260.19	350.82	368.76	225.08	387.99	463.49	2,922.80	1,077.66
Shareholders' funds(SF)	290.08	333.17	768.21	1000.04	1712	2,802	448.9	312.36
Ratio of NPL To TL (%)	21.50	23.09	18.66	8.92	8.06	5.94	32.80	13.98
Ratio of NPL to SF (%)	89.70	105.30	48.00	22.51	22.66	16.54	651.10	345.01
Ratio of TLA to deposit	76.92	84.17	87.79	74.75	94.48	93.79	90.45	73.79
Average liquidity ratio	47.4	50.44	61.11	62.19	64.83	44.17	44.45	51.77
Source: NDIC/ CBN Annual Reports (various issues)								

The impact of the 2008 - 2009 global financial crises and the bearish nature of the stock market manifested in the lower rate of growth recorded in total loans of deposit money banks. The total loans granted by banks increased by N6.5 trillion from N1.2 trillion in 2003 to N7.7 trillion in 2010. However, the banking industry witnessed a substantial deterioration in the quality of its assets as non-performing loans rose significantly by N2.66 trillion from N260.19 billion as at end December 2003 to N2.9 trillion as at end December 2009. Consequently, the average ratio of non-performing loans to total loans of the industry increased to 32.8 per cent in 2009 from 21.5 per cent in 2003.

The banking industry recorded a substantial improvement in the quality of assets in 2010 as shown in table 7. The non-performing loans fell drastically from 2009 value to N1, 077.66 billion. Consequently, the average ratio of non-performing loans to total credit improved to 13.98 per cent as at end-December 2010. This could be attributed to some of the measures taken sequel to the reforms in the industry, such as the purchase of toxic assets and margin loans in the first phase of transactions by AMCON.

3.6   Emerging Issues and Challenges facing the Financial Services Sector:

A number of issues and challenges have emerged from the various reforms in the financial services sector since 1986, particularly the 2009 reform efforts of the CBN. New strategies would have to be conceptualized and articulated to address the increasingly complex issues in the sector. The banking industry, in particular, has continued to grapple with the challenges posed by the aftermath of the global financial crisis, including the increased cautious approach by banks to lending. The other issues and challenges facing the sector include the following:

Building Capacity in the Sector: It is a well-known fact that real strategic change can take place only with a competent and committed workforce that is constantly exposed to training and retraining for overall development. Indeed, capacity building in the financial sector will make it more transparent, better regulated and more competitive. However, banks will generally have the challenge of retaining some good staff who have better offers elsewhere. Thus, the welfare of the workers should not be neglected as that would be detrimental to the affected institutions. The staffing and competency levels achieved with the existing training programmes are still below what are required. Banks need to develop industry-specific guidance on diagnosing capacity needs and evaluating organizational capacity building efforts. Also, capacity-building institutions are constrained by limited human and financial resources and this affects the quality of their training programmes in terms of producing adequate and competent staff. These shortcomings will need to be addressed.

Widening Banks' Lending Scope: The new CBN policy, directing banks to divest from their non-core banking and concentrate on commercial banking poses a big challenge to them. The new policy regime will compel banks to lend to sectors that had been neglected previously, owing to   the perceived complexity or riskiness of those sectors. Thus, it is imperative that banks design

the appropriate framework for identifying and managing those risks in order to survive.

Increased Customer Trust: For Banks to remain relevant as financial intermediaries, they must be sensitive to customer needs for greater efficiency and convenience. Customers' expectations have risen in the new financial landscape and their satisfaction should be paramount to financial service providers. Ensuring that financial products are personalized and customized to meet the needs of individual, corporate and retail clients is critical for the survival of the industry. Similarly, the need to ensure effective and adequate consumer education and protection against unfair business practices has become imperative.

Weak financial infrastructure: Inadequate financial information infrastructure impedes bank lending and leads to poor asset quality. Banks are unable to lend due to poor cash-flow analysis and lack of adequate clients' financial information. Thus, they are compelled to lend against collateral, such as real estate as the primary source of repayment guarantee, but this is often compromised by the lack of infrastructure for secured transactions.

Sound Ethical Banking Practices: Sound corporate governance and robust risk management have become key elements of successful institutions all over the world. Specifically, the adoption of best practices, such as a sound corporate governance code, risk-based supervision, consolidated supervision, international financial reporting standards, and common accounting year end, among others, would be beneficial not only to the industry but also to the country

High Operating Costs: Long-term savings are virtually nonexistent as most of the bank deposits are on demand. This may be attributed to the savers' fear of unstable and high inflation in the future. Thus, banks are unwilling to grant term loans at fixed interest rates because of concerns over interest rate volatility that might increase the cost of funds as well as asset-liability mismatch.

Legal Reforms and improved Regulatory Framework: In line with the prevailing financial environment and international best practice, the CBN reviews its guidelines continuously in order to strengthen its supervisory effectiveness and ensure stability in the industry. However, there is still the challenge of diligent

enforcement of the existing laws relating to the financial system in order to engender confidence in the system. In addition, there should be greater coordination and cooperation among the regulators, the legislature and the judiciary to ensure improved enforcement.

Security: With the renewed call for foreign investment in the economy, the issue of security of life and property, including property rights and rule of law, cannot be overemphasized. There is the need for improved business environment in the country in general in order to sustain the gains of the financial sector reforms for the development of the economy.

While measures aimed at restoring growth and financial stability are important, these must be complemented by measures to minimize the potential negative social impact of global financial crises in developing countries, such as Nigeria. Giving priority to social protection and pro-poor expenditure is important in this regard.

4.0   ANALYSIS OF GROWTH, INTERMEDIATION AND PERFORMANCE OF THE NIGERIA'S BANKING INDUSRTY

4.1   Data and Methodology

4.1.1   Data

The data for this work were secondary data (balance sheet and income statements), obtained from audited and published annual reports and accounts of banks for the various years and the various editions of the CBN's statistical bulletin and Annual Reports. The data covered the period 1990-2010.

4.1.2   Methodology

The analysis was done in five parts. The framework for analysis is given in each of the five parts.

PART ONE: INTERMEDIATION

4.2.   Bank Intermediation in Nigeria

4.2.1.   THEORETICAL FRAMEWORK

The traditional theory of resource allocation, the Arrow-Debreu model held that economic agents interact through markets and there is no role for financial intermediaries and hence intermediation. However, a number of theories have argued against this traditional dogma to explain the role of financial intermediation such as the theories of asymmetric information (imperfect information) and agency, all of which lead to market imperfections and thus transactions costs. The rationale for the existence of intermediaries such as banks is that they can reduce information and transactions costs that arise from information asymmetry between lenders and borrowers. The modern theory of financial intermediation is hinged on two arguments namely; intermediaries' (such as banks) ability to provide liquidity and their ability to transform the risk characteristics of assets.

Thus, banks for example are able to act as coalitions of depositors that provide households with insurance against idiosyncratic shocks that adversely affect their liquidity positions, Diamond and Dybvig (1983). The agency

argument for the role of intermediaries' activities is in the creation of value arising from the qualitative asset transformation; in a situation where the supply and demand for, credit for example, cannot be fully met in the market.

Analysis in this section was done based on aggregate data sourced from the Central Bank of Nigeria and not bank level data. We employed simple ratios to highlight the effectiveness and efficiency of bank intermediation in Nigeria. Data on demand for bank funds was not available.

4.2.2. LOAN TODEPOSIT RATIO

Deposit-taking and lending by banks are closely related. Both activities reflect the liquidity transformation function of banks and share a similar overhead (Kashyap et al., 2002). Hence it is useful to analyze loans and deposits in tandem, as is done through the loan to deposit ratio. It is a core indicator for liquidity mismatch.

The Loan to Deposit ratio measures the coverage of loans with stable funding, usually deposit from household and non-financial companies. When loans exceed the deposit base, banks face funding gap for which they have to access financial markets. So a high funding gap implies a high dependence on market funding which can be more volatile and expensive than retail funding.

Figure 2: Loan to Deposit Ratio (LDR) (1990 - 2010)
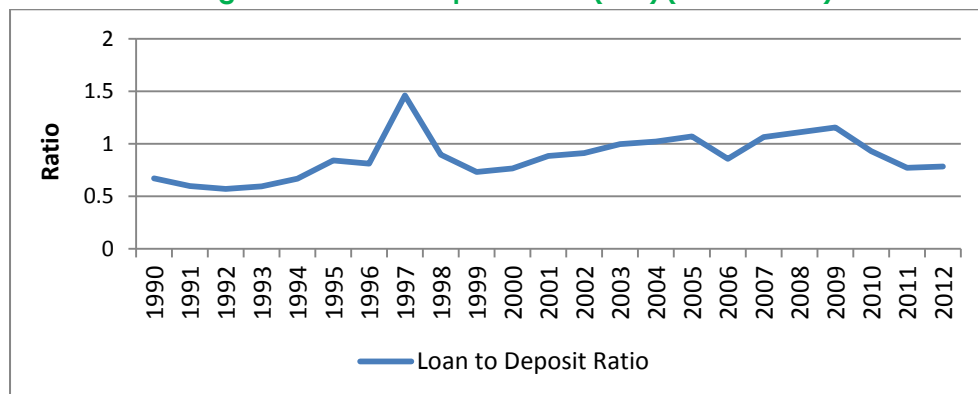
The ratio of banking sector loans and advances to total deposit declined from 0.67 in 1990 to 0.60 in 1991, showing a fall in intermediation. By the early 1990s, financial sector reforms included interest rate liberalization and the removal of ceilings and other controls on credit allocation. The reforms aimed at addressing the problems of financial repression impacted on savings mobilization and credit disbursement. Following the abolition of sectoral credit allocation in 1996 and increase in capital requirement in 1997, the ratio surged from 0.81 in the same year to 1.46 in 1997 and trended downward to 0.89 in 1998. Efficiency in intermediation did not improve in 1999 as the ratio declined to 0.73. Between 2001 and 2005, in the universal banking period, the ratio trended upward from 0.88 to 1.06. On period average basis, the ratio showed increasing trend across the policy regimes, the pre-universal banking, the UB and post consolidation periods. The period averages stood at 0.78, 0.98 and 1.02 for 1990-2000, 2001-2005 and 2006-2010, respectively. The improvement in the intermediation metric could be attributed to the policy of; increased capital requirement, universal banking and bank consolidation, which engendered inflow of new funds into the banks that induced substantial decline in interest rate, thereby stimulating increased lending.

4.2.3. COB/M2 RATIO

Another indicator of intermediation efficiency measured by the ratio of currency outside banks to broad money supply, trended from 0.21 in 1990 to 0.33 in 1994. However, between 1996 and 2010, the ratio improved from 0.31 to 0.09, indicating significant improvement in intermediation efficiency (chart 3). This was attributed to the liberalization of interest rates in 1996 and introduction and adoption of card and electronic methods of payments in the 2000's which have significantly affected the demand for currency. On period average basis, this metric fell from 0.29 in 1990-2000 to 0.11 in 2006-2010. Indeed it fell further to less than 0.1 in 2010.

Figure 3: COB/M2 Ratio (1990 - 2010)
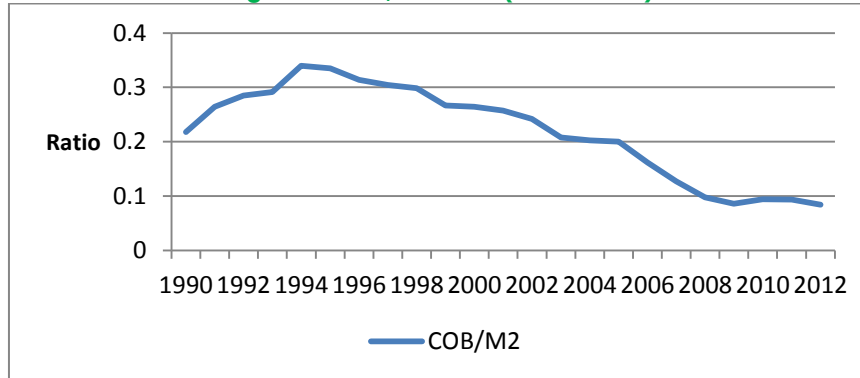
4.2.4. M2/GDP RATIO

Financial deepening as measured by M2/GDP ratio, at 0.15 in 1990 increased marginally to 0.16 in 1991 but declined in 1992. However, from 1997 to 1999 the ratio trended upward from 0.10 to 0.15 and further to 0.2 in 2002. Between 2002 and 2004, the ratio remained relatively flat at 0.19. However, from 2005, the ratio rose sharply to 0.43 at end-2009 reflecting the increased financing of economic activities. The development could be attributed to the consolidation exercise which led to increased capital base of banks. It could thus be concluded that financial deepening increased most in the periods immediately after each increase in capital requirement at end-1997 and 2005, respectively.

Figure 4: M2/GDP (1990 -2010)

39
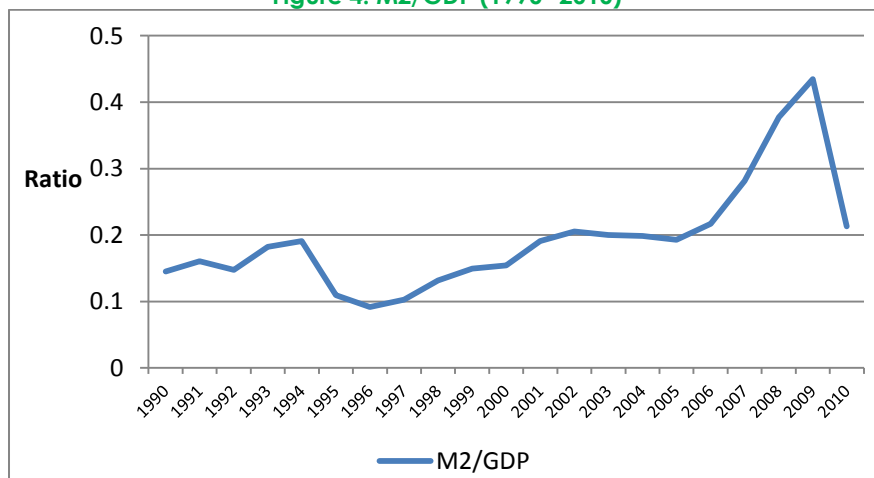
4.2.5. CP/GDP RATIO

The ratio of private sector credit to GDP has become an increasingly popular benchmark for the sustainable levels of credit. Most recently, the Basel Committee on Banking Supervision (2010) has issued a proposal to incorporate this approach into the regulatory framework by using the deviation from long-run trend of the CP/GDP ratio (the 'credit gap') to calibrate a countercyclical capital buffer. Perhaps, the most predominant method in many respects is the signaling approach, which is used in Kaminsky (1999), Borio and Lowe (2002), Hilbers et al. (2005), Borio and Drehman (2009) and Alessi and Detken (2009). This method uses the ratio of credit to GDP, thus allowing credit to grow naturally in line with overall economic activity. The series is then de-trended using a Hodrick-Prescott (HP) filter, and a threshold level is then set, which weights in some way the relevant importance of Type I (failing to give a signal when a crisis occurs) and Type II errors (giving a positive signal when no crisis happens).

The evolution of credit to private sector in the review period shows some significant improvement in 1993 but the ratio trended downwards in 1995. Following the Central Bank reform policies, the ratio trended upward marginally in 2000. In 2007 to 2009 the ratio rose sharply. The supportive policy measures of the CBN contributed to the observed surge in the ratio.

Figure 5: CP/GDP (1990 -2010)
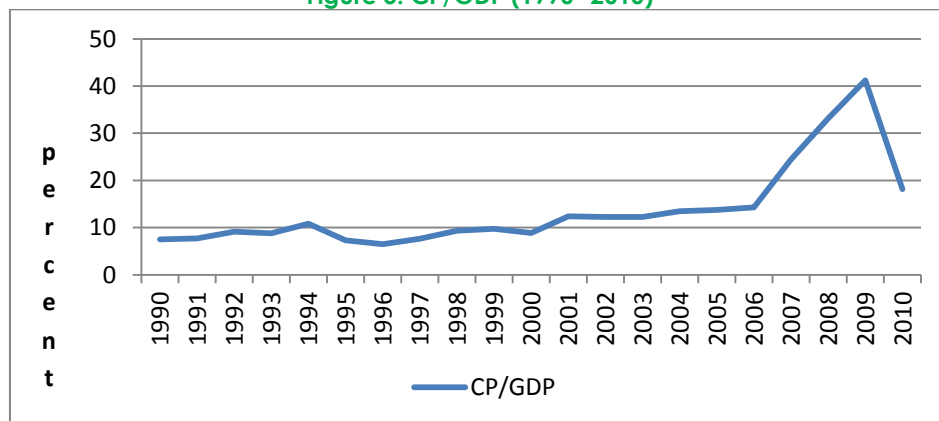
4.2.6. CP/TD (ADJUSTED – LESS CRR) RATIO

The ratio of private sector credit to total deposit is another indicator of financial intermediation. The value of cash reserve requirement was deducted from total deposit so as to isolate the actual fund available to banks for lending. The ratio trended upward to 0.8 in 1992 and declined steadily up to 1995. In 2009 and 2010, the ratio rose slightly thereby mimicking the trend in CP/GDP. This ratio trended downward on period average basis. It stood at 0.40, 0.20 and 0.17 in the 1990-2000, 2001-2005 and 2006-2010 periods. The development could be attributed to banks preference for investment alternatives with lower risk and higher returns such as foreign exchange trading and risk-free government securities as well as the cautious approach to bank lending in the aftermath of the 2007-2009 global financial crisis.

Figure 6: CP/TD* (1990 - 2010)
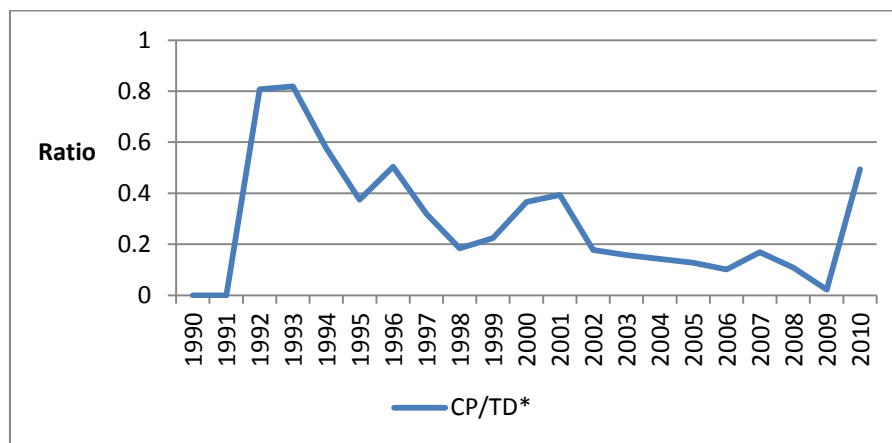
PART TWO: GROWTH OF BANKING INDUSTRY

4.3.   GROWTH OF BANKING INDUSTRY IN NIGERIA

Nigerian banks have grown appreciably in number and branch network. At end-December 1990 the total number of banks stood at 58 with 1,939 branches spread all over the country, an average of 33 branches per bank.

Figure 7: No of Banks
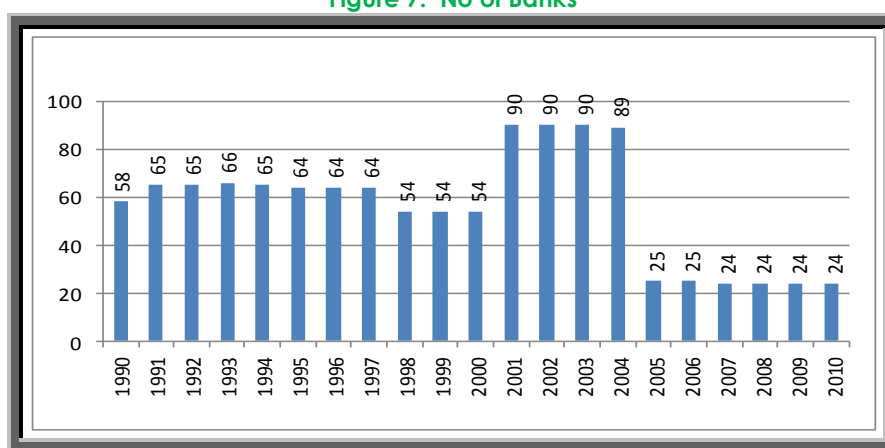
The effect of the 1986 liberalization reflected in the increase in the number of banks to 65 in 1994 with 2,403 branches, though this number fell to 54 banks and 2,193 branches in 2000, following the re-tightening of regulation including an increase of mandatory minimum capital requirement and liquidation of ailing banks by the NDIC.

Figure 8: Growth Rate of Banks
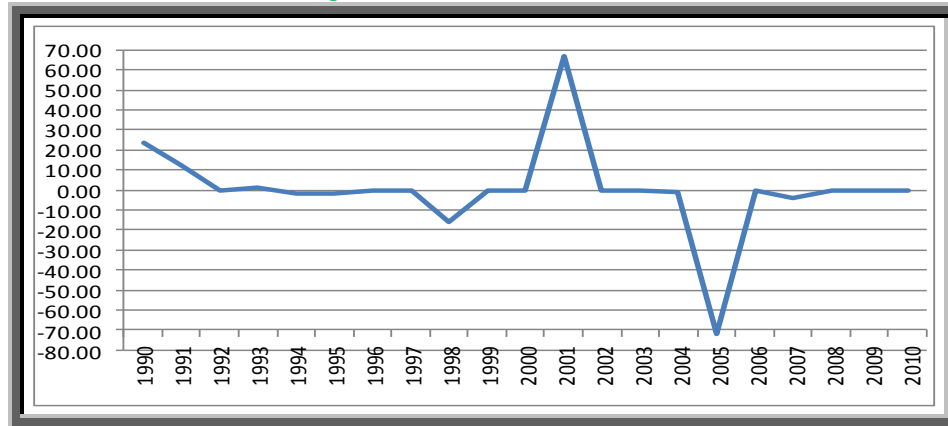
However, the number of banks stood at 90 between 2001 and 2003, with total of 3,247 branches at the end of 2003, following the re-implementation of deregulation in 1997 and Universal Banking in 2001. The consolidation policy in 2004/2005, subsequent mergers and acquisitions and strengthening of the regulatory/supervisory policy framework saw the number of banks at 25 in 2006 and 24 in 2010. The number of branches, which had risen to 3,468 in 2006 and 4,579 in 2007 stood at 5,809 by the end-December 2010 (Charts 8 and 9).

Figure 9: Number of Bank Branches
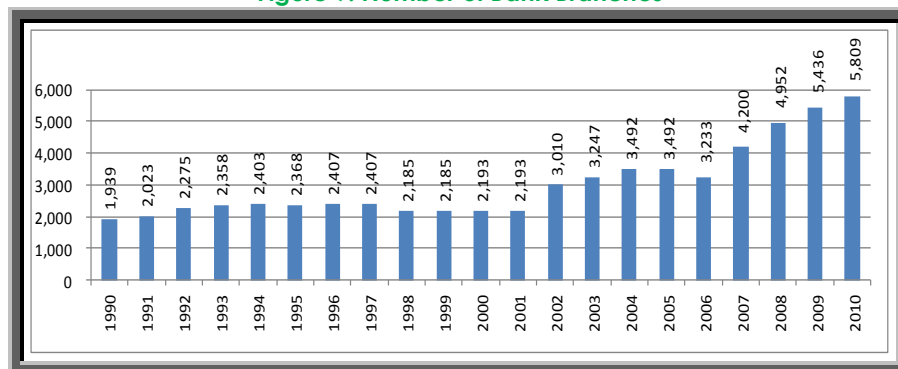
In the process of carrying out intermediation function over the years, Nigerian banks have built up enormous amount of assets and deposits base. The growth in the total asset of the banks showed an upward trend over the study period. From N82.95 billion in 1990, the total assets of the banks grew by over 70 per cent to N694.6 billion at end-December 1998, and rose substantially to N10,106.4 billion in 2007, representing a growth of 1,354.9 per cent between

43

1998 and 2007. Following the relative stability in the sector the total asset grew by 71.5 per cent between 2007 and 2010 to reach N17, 331.6 billion at end-December 2010.

Figure 10: Total Asset
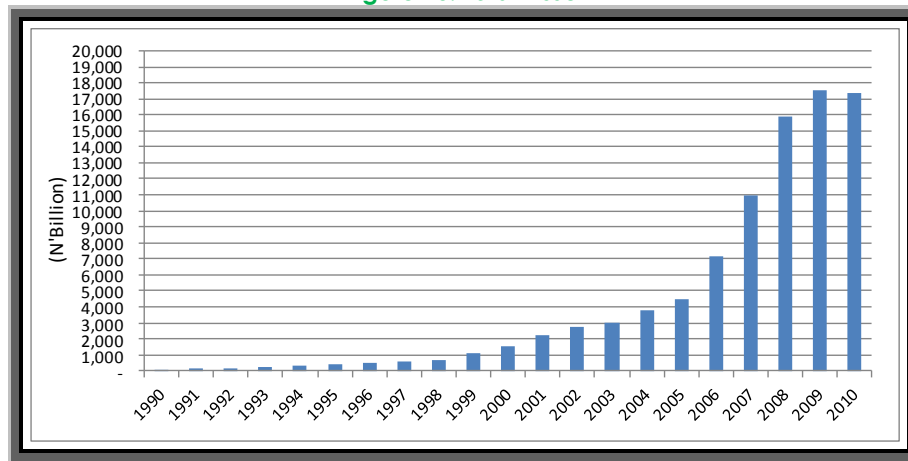
Similarly, banks' deposit continued on an upward trend since 1990. At ₦947.2 billion in 2000 the total deposit mobilized by the banks showed an increase of over 2,000.0 per cent above its level at the end of 1990. The huge increase in the level of deposit mobilization by the banks continued through the major reform programmes of Universal Banking and Consolidation, with the total deposit increasing from ₦1,157.1 billion in 2000 to ₦9,784.5 billion in 2010 indicating an increase of 745.6 per cent over the 10 year period. Along with this development, the savings to GDP ratio, which stood at 5.3 and 19.4 per cent in 2001 and 2005, respectively, was 12.0 per cent in 2007.

Figure 11: Total Deposit
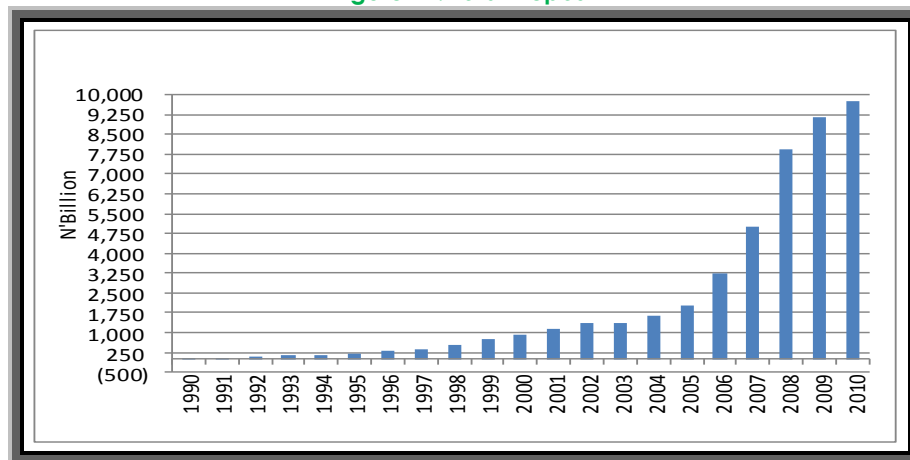
Figure 12: Growth of Deposits
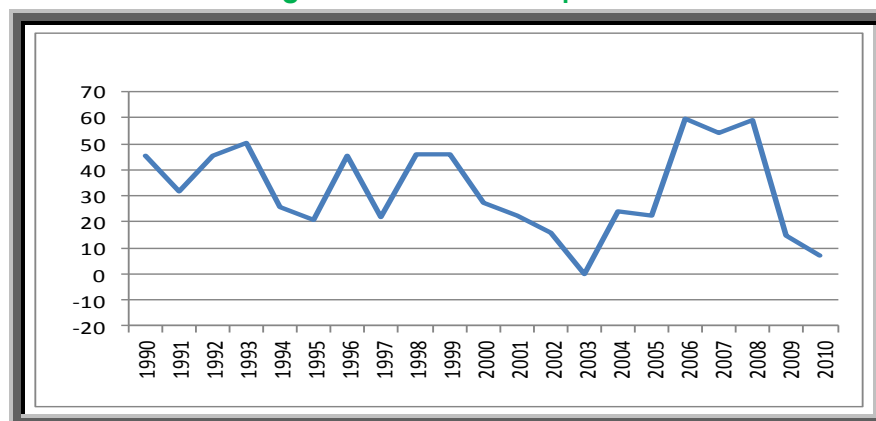
PART THREE: COMPETITION IN THE BANKING INDUSTRY

4.4.   Measures of Competition

4.4.1.   Market share and Herfindhal Index

The measures of competition in the banking sector have been largely categorized by Sanya and Gaertner(2012) into three (table 8).

Table 8: Measures of Competition

S/N	Description	Methods
1.	Market Structure and Performance Indicators (Structural)	• Concentration ratios • Bank spreads (lending – deposit rate) • Bank profitability • Return on asset/equity
2.	Regulatory Indicators of Formal Barriers to Entry into the Industry and Extent of Restrictions on bank Activities.	• Low/high entry barrier • Restriction on bank activities or product segmentation.
3.	Empirical Measures of Competition (non-structural)	• Lerner index • Panzer Rosse H-statistic • Bresnahan-Lau model

4.4.2.   Framework for Analyzing Competition in Banks

Our methodological framework for analyzing competition in banks draws from standard theory of industrial organization (IO). A competitive industry is characterized by a large number of small firms and, for banking industry, a large number of small banks. The potential benefits of competition in banking cut across other industries (e.g., Freixas and Rochet, 1997). A distinct feature of a perfectly competitive banking market is that banks are profit-maximizing price-takers such that costs and prices are minimized. For example, banks can supply the highest volume of products such as credit at the lowest price, and this, has a welfare maximizing impact. However, this is not the case in a concentrated market (with the existence of market power) where a bank can reduce supply of credit and is still able to charge a price above marginal cost for profit.

"The traditional approach to competition has been to associate more firms with more price competition and fewer firms with less-competitive behaviour. This comes from a classic IO argument, called the structure-conduct-performance (SCP) paradigm, which assumes there is a causal relationship running from the structure of the market (e.g., firm concentration) to the firm's pricing behavior, the firm's profits and degree of market power. That is, a higher number of firms cause firms to price competitively, which minimizes the degree of market power that any one firm can exert." (Northcott 2004, p. 18) Therefore, within the SCP framework, we elected to employ the concentration-competition relationship to compute two metrics namely the k bank concentration ratio (CR$_k$) – and Herfindahl- Hirschman Index (HHI). We chose the use of these two metrics because of simplicity and data requirement. Furthermore, in the theoretical literature, the HHI is widely used as the full information index since it captures features of the entire distribution of bank sizes. Moreover, it serves as a benchmark for the evaluation of other indices (Bikker and Haaf, 2002).

The *k* bank concentration ratio summed over k largest banks is of the form;

$$CR_k = \sum_{i=1}^{k} si = \sum_{i=1}^{k} 1/n = k/n \ldots \ldots \ldots \qquad (1)$$

Where k is the number of largest banks (arbitrarily chosen) and n is the total number of banks in the industry. The HHI takes the form of:

$$HHI = \sum_{i=1}^{k} s_i^2 \ldots \ldots \ldots \ldots \ldots \ldots \qquad (2)$$

This is the sum of the squares of the market share of the banks.

The banking industry in the Nigerian economy has been among the fastest growing sub-sector since the adoption of SAP in 1986. Banks have recorded unprecedented growth in assets over the years, increasing significantly from N1, 568.8 billion in 2000 to N3, 753.3 billion by the end of 2004. Banks assets grew further to N17, 331.6 billion by 2010. Various factors contributed to the rapid expansion. Prominent among these were bank consolidation, stable macroeconomic environment, robust economic growth and improved risk management practices, thereby facilitating access to and improvement in the quality of services rendered by banks. However, expansion in banks without appropriate measures to regulate activities of operators generated a financial system that was risky and inefficient with few returns on capital. Thus, the 2004 bank consolidation programme, aimed at strengthening banks in order to enable them finance large ticket projects while enhancing their operational efficiency.

Prior to 2003, the banking sector could be characterized as oligopolistic with a quarter of the banks controlling over sixty percent of the market share in both assets and deposits markets. As indicated in table 9, between 2001 and 2004, the concentration ratio of 22 banks (a quarter of existing banks (CR22)) averaged 67.7 and 67.3 per cent with respect to deposits and assets. Similarly, the share of the largest bank in the deposits and assets markets averaged 13.1 and 12.6 per cent, respectively. The degree of competitiveness, measured by the Herfindahl-Hirschman Index (HHI) however showed the absence of dominance of any bank in the industry during this period. Indeed, the respective Herfindahl-Hirschman Index (HHI) with respect to deposits and assets averaged 508.6 and 506.0 between 2001 and 2004. However, with the successful completion of the bank consolidation exercise and the drastic reduction in the number of operating banks from 89 to 25 as at December 2005, the oligopoly market structure observed in the banking industry in the prior period moderated, with respective average concentration ratios of a quarter of existing banks (CR5) at 58.7 and 58.6 per cent, with respect to deposit and assets. Similarly, the average HHI, at 658.6 and 665.5 for deposits and assets between 2005 and 2010 revealed that the banking industry remained competitive as the HHI with respect to deposits and assets were below 1,000 on a scale of 10,000 (the closer the HHI to 10,000, the more concentrated the banking structure and the less competitive market and vice versa). One benefit of the 2004/2005 bank consolidation exercise and other complementary reforms delivered to the banking industry is a slightly less concentrated market, which is expected to raise efficiency and profitability.

Table 9: Nigeria Deposit Money Banks Market Share in Deposits and Asset (2001-2010)

	2001	2002	2003	2004	2001-2004	2005	2006	2007	2008	2009	2010	2005-2010
CRD	67.89	68.96	66.76	67.35	**67.7**	80.96	55.8	54.58	54.76	53.76	52.36	**58.7**
CRA	67.43	68.41	65.6	67.56	**67.3**	80.12	59.09	52.79	51.28	54.5	53.9	**58.6**
HHID	543.6	541.62	470.96	478.09	**508.6**	611.29	703.4	669.7	676.4	637.1	655.1	**658.8**
HHIA	513.2	524.16	486.95	499.89	**506.0**	594.6	808.88	635.81	627.65	665.41	660.79	**665.5**
CR large (D)	13.47	14.18	12.64	12.19	**13.1**	12.04	14.44	12.33	12.93	12.48	12.06	**12.7**
CR large (A)	12.13	12.82	12.6	12.95	**12.6**	11.85	18.86	10.71	11.08	12.23	12.72	**12.9**

PART FOUR: ANALYSIS OF PERFORMANCE IN THE BANKING INDUSTRY

4.5.   Financial Ratio Analysis

In this section, we used the financial ratio analysis (FRA) to examine the performance of Nigerian banks by reference to indicators (ratios), which describe industry-wide trends against which the performance of individual institutions and or sub-sectors may be compared, using 'the story by banks'.

4.5.1.   The framework for Financial Ratio Analysis

Financial statement analysis has a fairly long history dating back to the close of the previous century (Horrigan, 1968). There are several themes of FRA in the financial literature among which the major three include; the functional form of the financial ratios, i.e. the proportionality discussion, distributional characteristics of financial ratios and, classification of financial ratios. Theoretical approaches have also been developed, but not always in close interaction with the empirical research.

The basic assumption in FRA framework is that firms in an industry are of different sizes in many respects. This is true even at variable level. Thus, traditionally, the basis for using financial data in the ratio form is to be able to make inter-firm and inter-temporal comparability by controlling for size. The usually stated requirement in controlling for size is that the numerator and the denominator of a financial ratio are proportional (Salmi and Martikainen, 1994).

Technically, a financial ratio is of the form

$$R = X/Y; \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{(3)}$$

Where, R is ratio and, X and Y are variables (numbers) which are derived from financial statements or other sources of financial information.

Financial ratios are classified on the basis of source of the Xs and Ys {Foster, 1978, pp. 36-37), and Salmi et al. (1990, pp. 10-11)}. In FRA generally, the Xs and the Ys are sourced from financial statements. If either X or Y or both are sourced from income statement, the ratio is said to be dynamic while it is said to be static if both come from the balance sheet. This is because balance sheet numbers are stock (snapshot at a point in time).

The FRA methodology in bank performance analysis features widely in the literature on the subject. The use of FRA is important because comparing performance of banks, using absolute numbers, is not very meaningful. This is because: banks operate in different environments; are of different sizes; and have unique characteristics which make the use of absolute numbers irrelevant. Thus, FRA provides a standardized approach that removes the effects of the above-named institutional differences while providing a good basis for comparing the ratios obtained from such an exercise since all institutions are placed on the same level playing field.

The Study covered three periods, representing three policy regimes namely: the pre-universal banking, pre-consolidation and post-consolidation periods. This was done for two reasons. First, it helped in the determination of the impact of the policy regimes on the performance of banks. Second, it made it easier to do inter-temporal analysis and comparisons, since doing so on an annual basis for a period as long as 21 years, would have been practically impossible. Furthermore, the banks were divided into three categories namely: the biggest four commercial banks (the Biggest 4); the industry; and the other DMBs. This approach made it easier for us to compare performance across the categories and establish an average for each category.

To examine the performance of the banks on industry-wide basis, we converted the data into annual averages for the industry or categories using simple averages. This was done for two reasons: first, to even out the effect of unequal samples in the years since our intention was not to analyze individual banks; and second, to mask the effect of size and have annual averages that could be used for the industry and the categories. Moreover, to introduce dynamism into the work, the average of the opening and closing balances of balance sheet items were used to approximate the stock items that generated period flows.

In order to make deductions on the outcomes of the FRA, we employed the analysis of variance (ANOVA) to test equality of means.
Our hypothesis for the FRA was stated as follows:

H_0: There is no significant difference between the means of the ratios for the banks' categories and between the means of the ratios for the years.

H₁: There is significant difference between the means of the ratios for the banks' categories and between the means of the ratios for the years.

Table 10: List of Financial Ratios Used

S/No.	Ratio	Definition
1	Return on Asset (ROA)	Ratio of Profit After Tax (PAT) / Average Total Assets(AVTASS)
2	Net Interest Margin (NIM)	Net Interest Income / Average Total Assets
3	Burden	Non-Interest Expenses minus Non-Interest Income
4	Burden Efficiency Ratio	(Non-interest operating expenditures – non-interest operating income)/Average Total Assets
5	Earning Power Ratio	Gross Income /Average Total Assets
6	Cost to Income Ratio	Total Costs/Gross Income
7	Wage Bill to Total Expenses	Remuneration/(Interest Expenses + Non-Interest Expenses)
8	Wage Bill to Total Income	Remuneration/(Interest Income + Non-Interest Income)
9	Wage Bill to Operating Expenses	Remuneration/ Non-Interest Expenses
10	Intermediation Cost Ratio	Operating Cost/Total Assets
11	Non-Interest Income Ratio	Non-Interest Income/ Average Total Assets
12	Incomes Ratio	Interest Income /Non-interest Income
13	Efficiency Ratio	Non-Interest Expenses/Gross Income
14	Profit Expense Ratio	Profit Before Tax/Total Expenses
15	Operating Self-Sufficiency (OSS) Ratio	Gross Income/Total Expenses
16	Reliance Ratio	Largest Type of Income/Total Income
17	Overhead Burden Ratio	(Non-Interest Expenses –Non-Interest Income /(Interest Income –Interest Expenses)
18	Average Income Generated per Employee	Gross Income/ No. of Employees
19	Average Profit generated per Employee	Profit After Tax/ No. of Employees
20	Average Business Generated per Employee	(Total Deposits + Gross Loans & Advances) / No. of Employees

21	Break-Even Volume of Incremental Cost per Employee	Remuneration per Employee*(Average Total Assets/ Net Interest Income)
22	Interest Expense Ratio Income	Interest Expenses / Interest Income
23	Texas Ratio	Bad loans / (Tangible Equity Capital + Loan Loss Reserves).
24	Net Interest Margin to Earning Assets	Net interest Income / Earning Assets
25	ROCE	Profit After Tax / Capital Employed

4.5.2   Financial Ratio Analysis

4.5.2.1. Return on Assets (ROA)

Return on assets is a standard measure of bank performance obtained by dividing profits by total assets. The numerator can be either before- or after-tax profits. It gives management and shareholders a sense of how well the available resources are being employed. This ratio ranged from 0.1 to 3.2 per cent between 1990 and 2000, with an 11-year average ratio of 1.7 per cent for the banking industry. For the biggest four commercial banks, the ratio was lower than for the industry, in both range and period average. The range was from 0.04 to 2.6 per cent and the 11-year average was 1.3 per cent. Other commercial banks had the highest ratio, both in range and the period average. The ratio ranged from 2.2 to 7.4 per cent and averaged 4.9 per cent for the 11-year period. For the merchant banks, the ratio ranged from minus 1.7 to 5.8 per cent and averaged 3.2 per cent for the 11-year period.

In the 5-year period (2001-2005) pre-consolidation, the ROA was higher than in the preceding 11-year period. It ranged from 1.9 to 6.7 per cent, with an average of 3.3 per cent, for the industry. The biggest four commercial banks recorded a lower performance, with a 5-year average ratio of 2.0 per cent. The other commercial banks' performance was higher than those of the industry and the biggest four, with the 5-year average of 5.5 per cent.
In the post-consolidation period, 2006 to 2010, performance of banks in terms of profitability was generally lower than in the pre-consolidation period. The ROA ranged from 1.4 to 2.8 per cent; -0.4 to 2.9 per cent and; -5.2 to 4.1 per cent for the industry, the four biggest banks and other commercial banks, respectively. The respective 5-year averages were 1.7; 1.7 and 0.5 per cent. The lower performance in profitability in the post-consolidation period was,

obviously, generally due to the impact of the global financial crisis (GFC) in the period, 2007 to 2009, as well as the regulatory actions requiring banks to provide for non-performing loans (NPLs) in their portfolio. However, in each of the three years 2006 – 2008, the biggest four commercial banks (by asset size) posted ROA greater than the 5-year average preceding the consolidation. The impact of the GFC masked the outcome such that it is difficult to isolate the effects of consolidation on the performance of banks in the country.

Table 11: ANOVA Test for Equality of Means - Return on Assets

Source of Variation	Sum of Squares	df	Mean Square	F	P-value	Remark	
Period (1990-2000)	69.02176	10	6.90217	4.53274	0.00061	Reject	*
Group	85.60409	3	28.53469	18.73908	4.87080	Accept	
Period (2001-2010)	75.17194	9	8.352437	1.76535	0.14567	Accept	
Group	6.03792	2	3.018963	0.63808	0.53984	Accept	
Period (2001-2005) & (2006-2010)	85.05	1	85.04542	7.59632	0.11029	Accept	
Group	38.24	2	19.12218	1.70800	0.36928	Accept	
Period (2001-2005), (2006-2010) & (1990-2000)	96.80540	2	48.4027	3.443	0.14000	Accept	
Group	11.99040	2	5.99520	0.426	0.68000	Accept	
Period (2001-2010) & (1990-2000)	0.054	1	0.05358	0.04791	0.84704	Accept	
Group	5.954	2	2.97701	2.66203	0.27307	Accept	
Period (1990-2000) & (2001-2005)	1.388166	1	1.38816	10.06	0.09000	Reject	***
Group	13.34017	2	6.67008	48.36	0.02000	Reject	**
* Significant at 1 per cent level, ** Significant at 5 per cent level, *** Significant at 10 per cent level							

4.5.2.2   Net Interest Margin (NIM)

This measure indicates how well interest-bearing assets are being employed relative to interest bearing liabilities. In other words, it is the difference between what a bank receives and what it pays out as interests divided by interest earning assets.   Although banks and regulatory authorities are concerned about this measure, they should also monitor its variability over

time. The stability of this measure, in an otherwise volatile interest rate regime, shows that interest sensitivity of assets and liabilities is matched.

The 11-year (1990-2000) average NIM for the biggest four commercial banks and the other DMBs were better than the industry average. NIM was 8.7 and 11.3 per cent, respectively, for the two categories of banks, while the industry average was 7.6 per cent. The 5-year average NIM for the three categories in the universal banking era (2001-2005) was 8.9, 11.3 and 12.4 per cent, respectively. However, the average NIM for the biggest four banks was lower than those of the industry and the other banks. In the post consolidation years (2006-2010) the 5-year average NIMs for the three categories were10.0, 9.3 and 9.5 per cent, respectively, showing a better performance than for the other two categories.

Figure 13: Net Interest Margin
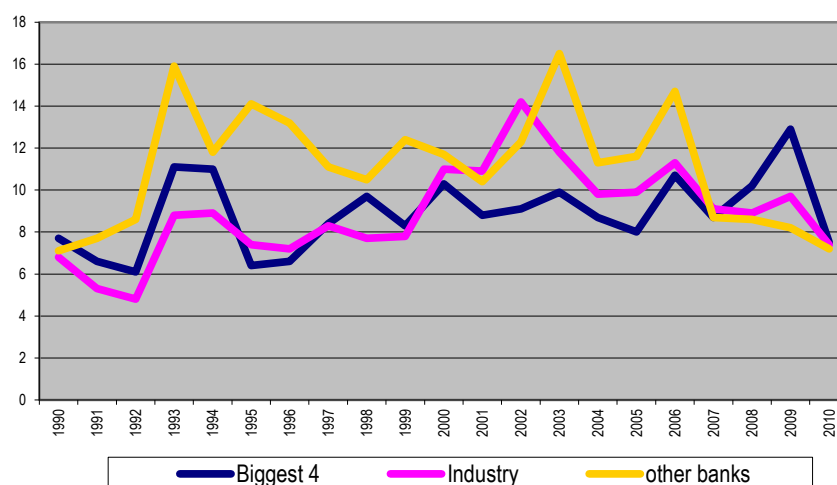
The ANOVA test for equality of means showed that the mean ratios across the years were significantly different for the period 1990-2000 while there was no significant difference in the mean ratio across the bank categories. In the post-UB period 1990-2000, the mean ratios of the categories were significantly different at the 5 per cent level. Comparing the mean ratios in the pre- and post-consolidation periods, the ANOVA test showed that there was no significant difference between the mean ratios both across the years and bank categories.

Table 12: ANOVA Test for Equality of Means - Net Interest Margin (%)

Source of Variation	Sum of Squares	df	Mean Square	F	P- value	Remark	
Period (1990-2000)	85.74789	10	8.574789	5.347591	0.000721	Reject	*
Group	4.255206	2	2.127603	1.326861	0.287677	Accept	
Period (2001-2010)	50.42699	9	5.602999	0.608927	0.77399	Accept	
Group	71.45294	2	35.72647	3.882712	0.039638	Reject	**
Period (2001-2005) &(2006-2010)	0.246443	1	0.246443	0.103681	0.777996	Accept	
Group	14.29059	2	7.145294	3.006104	0.249619	Accept	
Period (2001-2005), (2006-2010) & (1990-2000)	2.69077	2	1.345385	0.504646	0.637628	Accept	
Group	8.767298	2	4.383649	1.644282	0.301187	Accept	
Period (2001-2010) & (1990-2000)	1.833246	1	1.833246	0.827166	0.459095	Accept	
Group	3.099535	2	1.549768	0.69926	0.588492	Accept	
Period (1990-2000) & (2001-2005)	1.222703	1	1.222703	0.510156	0.549182	Accept	
Group	2.105591	2	1.052796	0.439264	0.694799	Accept	

* Significant at 1 per cent level, ** Significant at 5 per cent level, *** Significant at 10 per cent level

4.5.2.3. Average Profit Per Employee (APPE)

Profit generated per employee was ₦0.161million, ₦0.144million, ₦0.410million and ₦0.246 million, respectively, for the biggest four, industry, merchant bank and other DMBs, on average, for the 11-year period 1990-2000. The merchant banks had the highest income per employee. In the 5-year universal banking era, prior to the consolidation ended 2005, average profit generated per employee generally increased significantly above the average levels in the preceding 11-year period. The average profit generated per employee in this period was ₦1.40million, ₦0.93million and ₦1.64million, respectively for the biggest four, industry and other DMBs. The development resulted from higher

55

level of economic activities and higher levels of gross income for banks. The post consolidation 5-year period recorded even higher levels of APPE except for the other DMBs which posted a negative ratio, owing to the losses posted by most of the banks in 2008-2009. The APPE for the biggest four, industry and other DMBs was ₦3.33 million, ₦2.4 million and negative ₦0.66 million, respectively.

Figure 14: APPE (N million)
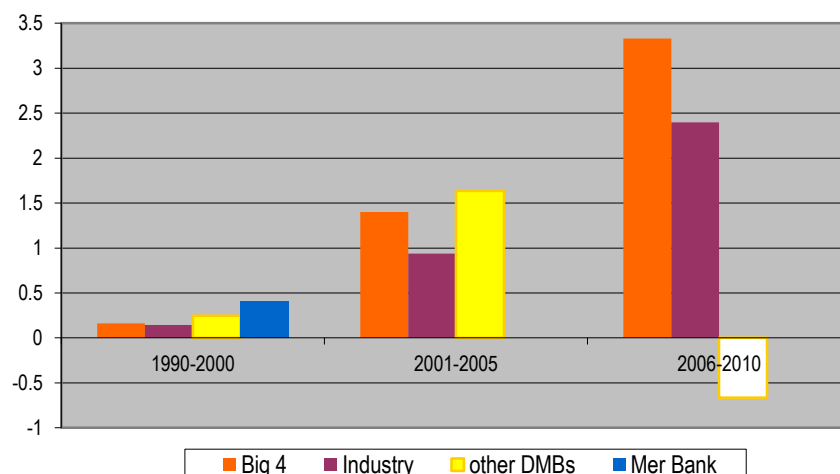
4.5.2.4 Break-Even Volume of Incremental Cost Per Employee (BVICPE)

This is the incremental or marginal cost per employee of generating an additional 1.0 percentage point net interest margin, employing all available assets. This increased steadily between 1990 and 2000, with an 11-year average of N2.9 million for the biggest four commercial banks. The marginal cost for the industry and the other commercial banks was N2.8 million apiece for the 11-year period. In the post-UB era, the average BVICPE was much higher for the industry and the other categories. In the pre- and post-consolidation periods, the BVICPE for the biggest four DMBs, Industry and Other DMBs stood at N17.5 million, N19.1 million and N21.6 million, respectively, during the period, 2001-2005 and N61.4 million, N95.0 million and N86.8 million, respectively, in the 2006-2010 period.

Figure 15: BVICPE (N Million)

Legend: Biggest 4, Industry, other banks
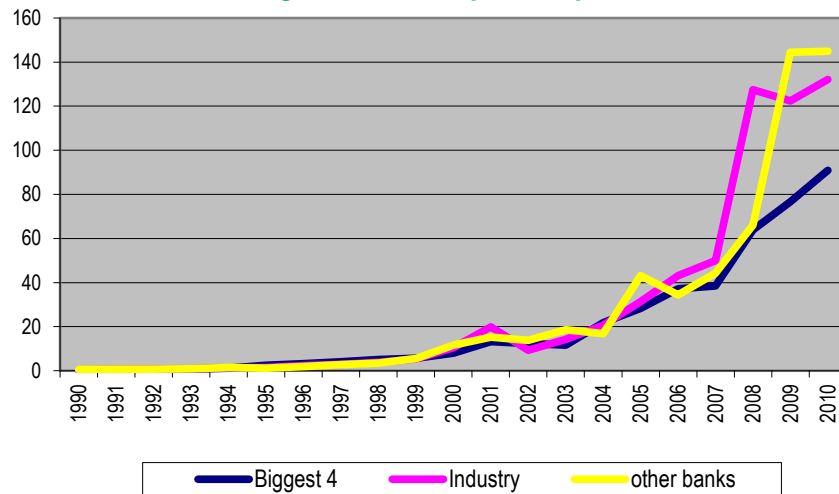
Table 13: ANOVA Test for Equality of Means - Break-Even Volume of Incremental Cost Per Employee

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	247.9043	10	24.79043	43.80251	2.15E-11	**Reject**	*
Group	0.077552	2	0.038776	0.068513	0.933999	**Accept**	
Period (2001-2010)	47667.77	9	5296.419	18.63767	2.22E-07	**Reject**	*
Group	1785.992	2	892.9962	3.142381	0.067522	**Reject**	***
Period (2001-2005) & (2006-2010)	5710.212	1	5710.212	43.15367	0.022397	**Reject**	**
Group	357.1985	2	178.5992	1.349724	0.425582	**Accept**	
Period (2001-005), (2006-2010) & (1990-200)	10199.97	2	5099.985	52.96167	0.001324	**Reject**	*
Group	236.668	2	118.334	1.22886	0.383673	**Accept**	
Period (2001-2010) & (1990-2000)	3367.318	1	3367.318	74.49557	0.013159	**Reject**	**
Group	88.20311	2	44.10155	0.975664	0.506159	**Accept**	
Period (1990-2000) & (2001-2005)	409.8854	1	409.8854	185.2618	0.005354	**Reject**	*
Group	4.019615	2	2.009807	0.908402	0.523999	**Accept**	
* Significant at 1 per cent level, ** Significant at 5 per cent level, *** Significant at 10 per cent level							

4.5.2.5.   Overhead Burden Efficiency Ratio (OBER)

A bank should strive to earn more income from non-interest sources than it spends on non-interest operations. If the income and expenses match, there is no burden on the bank's interest income. However, if non-interest expense is higher than the income from non-interest sources, then the bank has to resort to other income sources, certainly interest income, from where it will pay the excess expenditure. Indeed this places the burden on interest income. Thus, a lower ratio is desirable for banks as it shows that the burden on interest income is small. It measures the proportion of a naira net interest income that is used to offset excess operating expenses (thus reducing profit by the same proportion).

The average overhead burden efficiency ratio for the 11-year period before the introduction of the universal banking system was quite high for the biggest four commercial banks and the merchant banks. The ratio for the biggest four banks was the highest at 52.1 per cent, while the ratio for the other banks and the industry stood at 14.0 and 22.7 per cent, respectively. This implies that for every naira profit on interest bearing assets, 52 kobo, 14 kobo and 23 kobo was lost to operating expenses for the respective categories. The average OBER for the merchant banks stood at 34.2 per cent. The performance of the merchant banks was contrary to expectation, given that MBs were largely one-shop banks (in some cases with only a few branches) that should have lower overheads than the commercial banks with far more branches and much higher overheads.

The 5-year average OBER prior to the consolidation was highest for the other deposit money banks while it was lowest for the industry. In the post consolidation period, the biggest four commercial banks was more burden efficient than the industry and the other DMBs. The 5-year average OBER for the biggest four was 46.5 per cent, which was lower than the 5-year average OBER of 50.9 and 54.0 per cent, respectively, for the industry and the other DMBs.

Figure 16: OBER 1990-2010 (%)
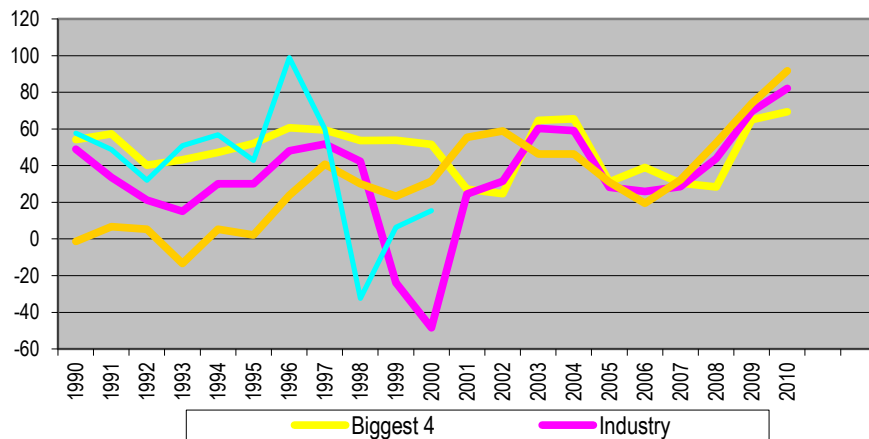
The differences in the performances of the three bank categories with respect to OBER were confirmed by the result of test of equality of the group means, using ANOVA. The ANOVA showed that the means of the bank groups were significantly different at the 1.0 per cent level of significance (p- value= 0.00307), in the period 1990-2000. During the universal banking period, 2001-2010, there was no significant difference in the performance of groups, although there were significant differences in means across the years (p-value = 0.000082). However, the pre and post consolidation ratios were statistically different from each other at the 10.0 per cent level of significance (p-value = 0.053589).

Table 14: Summary of ANOVA Test for Equality of Means AOBER

Source of Variation	Sum of Squares	df	Mean Square	F	P - value	Remarks	
Period (1990-2000)	8207.46	10	820.746	1.4765	0.19666	Accept	
Group	9621.152	3	3207.051	5.7695	**0.00307**	Reject	*
Period (2001-2010)	9062.594	9	1006.954	8.2878	**0.00008**	Reject	*
Group	230.086	2	115.043	0.9468	0.40644	Accept	
Period (2001-2005) & (2006-2010)	62.752	1	62.752	17.1743	**0.05358**	Reject	**
Group	46.017	2	23.008	6.2970	0.13704	Accept	
Period (2001-2010) & (1990-2000)	449.505	1	449.504	1.7510	0.31676	Accept	
Group	308.35	2	154.175	0.6005	0.62477	Accept	
* Significant at 1 per cent level, ** Significant at 5 per cent level							

4.5.2.6 Earning Power Ratio (EPR)

This ratio measures the income earned per naira asset employed in business by a bank. This is akin to the productivity of a naira asset employed in the business. The average EPR showed a downward trend in the period covered by the analysis. The average income per naira asset in the 11-year period preceding the UB regime was higher than in the 5-year periods pre- and post-the 2005 consolidation.

Figure 17: EPR 1990-2010 (%)
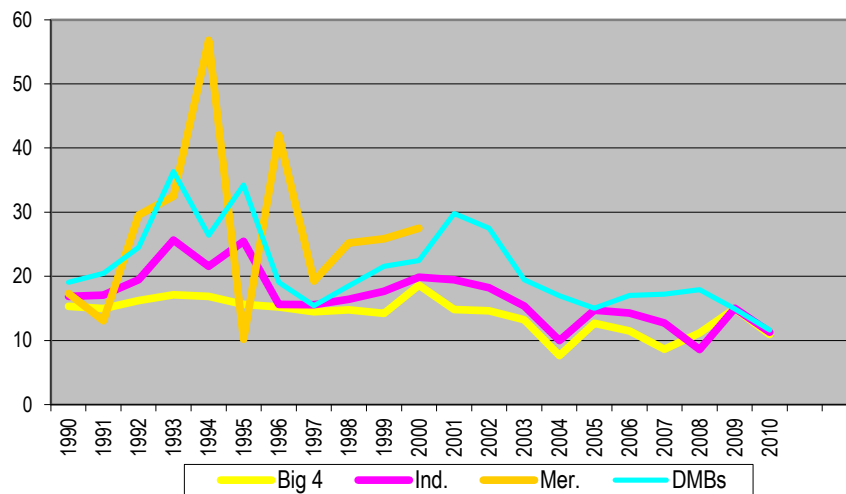
For the biggest four commercial banks, the average EPR stood at 15.8 per cent(15.8 kobo/naira), 12.6 per cent (12.6 kobo/naira) and 11.4 per cent (11.4 kobo/naira) in the period 1990-2000, 2001-2005, and 2006-2010, respectively. The observed downward trend in EPR was due to the introduction of the UB in 2001 which increased competition in the industry. In general it can be deduced that the earning power of assets in the industry has been declining since 2000.

The ANOVA test for equality of means for this ratio showed that in the pre-UB era the mean ratios for the bank categories were significantly different from each other (P-value 0.0046) while across the years, there was no significant difference in performance (p-value 0.1494). The merchant banks out-performed the industry and the commercial banks perhaps due to the fact that MBs had minimal overhead costs and higher portfolio volume. However, in the UB era, divided into pre- and post-consolidation, there was no statistically significant difference in the mean ratios between the categories and across the years, reflecting the effect of the introduction of the UB which ushered in a level playing field. When the mean ratios were tested for the two periods, 1990-2000 and 2001-2010, the analysis showed statistically significant difference in the means among the categories and across time. Also, analysis comparing the pre-UB and the immediate 5-year post-UB ratios confirmed that the mean of the categories and across the years were statistically

different from each other (table 15). The conclusion here is that regime shift to UB had an impact on the income earned per naira asset in banks.

Table 15: ANOVA Test for Equality of Means - Earning Power Ratio

Source of Variation	Sum of Squares	df	Mean Square	F	P - value	Remark	
Period (1990-2000)	828.926	10	82.8926	1.61709	0.149495	Accept	
Group	816.9857	3	272.3286	5.31264	0.004668	Reject	*
Period (2001-2010)	315.2305	9	35.02561	4.65715	0.002697	Reject	*
Group	239.6027	2	119.8014	15.9293	0.000104	Reject	*
Period (2001-2005) & (2006-2010)	17.84685	1	17.84685	6.02061	0.133604	Accept	
Group	47.92055	2	23.96027	8.08298	0.110096	Accept	
Period (2001-2010) & (1990-2000)	31.29911	1	31.29911	112.2821	0.008789	Reject	*
Group	52.97188	2	26.48594	95.01538	0.010415	Reject	**
Period (1990-2000) & (2001-2005)	12.1263	1	12.1263	23.68519	0.039722	Reject	**
Group	72.15278	2	36.07639	70.4647	0.013993	Reject	**

* Significant at 1 per cent level, ** Significant at 5 per cent level

4.5.2.7 Cost to Income Ratio (CIR)

This ratio measures how much a bank pays out to earn a naira income. A lower ratio is obviously more desirable for a bank as it indicates that incomes are higher compared to expenses. A higher number should be a matter of concern to the Management. The CIR remained relatively high and almost flat throughout the period covered by the study. Except for the merchant banks, the ratio generally was above 50.0 per cent for most of the period. The 11-year (1990-2000) period average prior to the UB era stood at 79.9, 80.3 and 67.3 per cent for the biggest four banks, the industry and the other commercial banks, respectively. The 5-year average CIR in the pre and post consolidation periods stood at 71.2, 78.2 and 79.0 per cent and 76.7, 78.0 and 78.2 per cent for the respective categories.

Figure 18: CIR 1990-2010 (%)
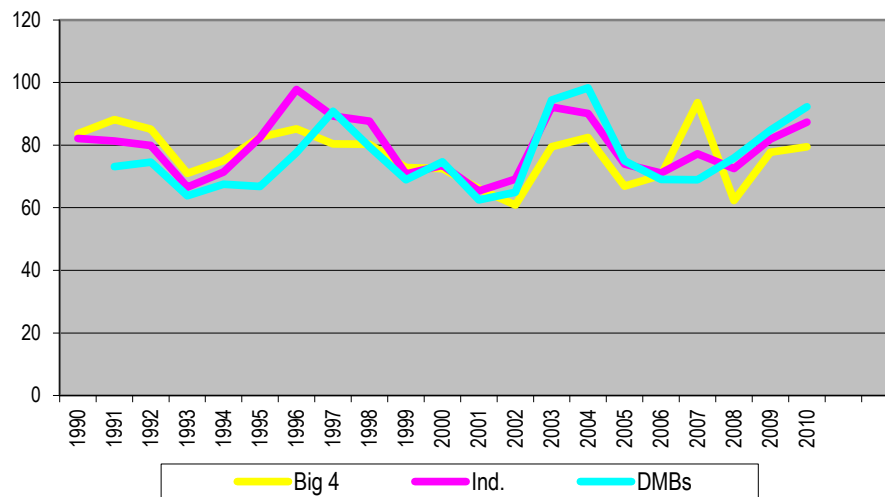
In the ANOVA test conducted for this ratio, the result showed that mean ratios across the bank categories were significantly different in the UB period, although weakly, at the 10 per cent level. Also, the means across the years in the period 2001-2010 were significantly different at the 1 per cent level (table 16).

Table 16: ANOVA Test for Equality of Means - Cost Income Ratio

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	2523.209	10	252.3209	1.325903	0.2827	Accept H$_0$	
Group	1187.627	2	593.8137	3.120389	0.0662	Reject H$_0$	***
Period (2001-2010)	2528.408	9	280.9343	6.949633	0.0003	Reject H$_0$	*
Group	132.6228	2	66.31142	1.640384	0.2216	Accept H$_0$	
Period (2001-2005) & (2006-2010)	3.417131	1	3.417131	0.560472	0.5321	Accept H$_0$	
Group	26.52457	2	13.26228	2.175256	0.3149	Accept H$_0$	
Period (2001-2005), (2006-2010) & (1990-2000)	5.878372	2	2.939186	0.097175	0.9095	Accept H$_0$	
Group	25.69944	2	12.84972	0.424837	0.6803	Accept H$_0$	
Period (2001-2010) & (1990-2000)	1.845931	1	1.845931	0.045247	0.8513	Accept H$_0$	
Group	39.63497	2	19.81748	0.485762	0.6731	Accept H$_0$	
Period (1990-2000) & (2001-2005)	0.188683	1	0.188683	0.0035	0.9582	Accept H$_0$	
Group	37.50581	2	18.7529	0.347908	0.7419	Accept H$_0$	

* Significant at 1 per cent level, ** Significant at 5 per cent level

However, for the rest of results of the ANOVA test, we accepted the null (H0) that there is no significant difference between the category and period means.

4.5.2.8. Burden Efficiency Ratio (BER) or Net Non-interest Margin (NNIM)

This is a margin metric that focuses on the efficiency of a bank's operations, pricing and marketing decisions, given by the ratio of the difference between non-interest expenses and non-interest income to average total assets. NNIM indicates when to make adjustments in personnel and operating costs, streamline operations and respond to pricing and marketing signals. It is common practice to report NNIM as a positive number. This is because, generally, non-interest expenses exceed non-interest income. In this study,

NNIM in parenthesis shows the situation where non-interest expenses lag other income. This is a desirable performance. The smaller the positive number, ceteris paribus, the better the performance and, the bigger the number (in parenthesis), the better the performance. This ratio can also indicate the capacity of a bank to bear burden when it is referred to as BER.

The NNIM for the 11-year period before the introduction of the universal banking system was very low for the merchant banks. The ratio for the biggest four banks was the highest at 3.46 per cent, while the ratios for the other banks and the industry stood at 1.4 and 2.2 per cent, respectively. The performance of the merchant banks was understandable, given that they were largely one-shop banks (in some cases with a few branches) with little overhead payments in contrast with commercial banks with large number of branches and high overheads.

Figure 19: BER 1990-2010 (%)
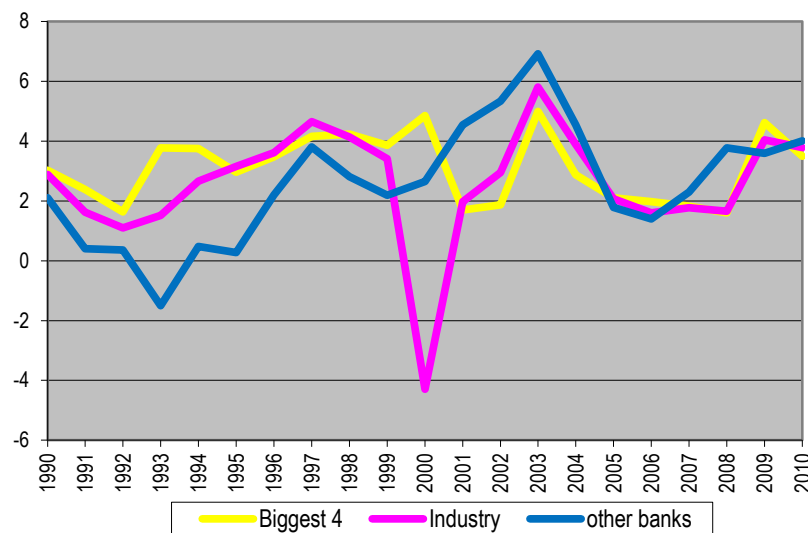
The 5-year average NNIM prior to the consolidation was highest for the other deposit money banks while it was lowest for the biggest four. In the post-consolidation period, the industry showed a better performance than the biggest four commercial banks and the other DMBs. Generally, the performances of the bank categories were better, on average, in the post-consolidation than in the pre-consolidation period. The 5-year average BER for the biggest four banks was 2.71 per cent, same as in the pre-consolidation era

but was lower than the 5-year average BER of 2.57 and 3.01 per cent, respectively, for the industry and the other DMBs.

Table 17: NNIM (%)

Period/Category	11-Year Period Average 1990-2000	5-Year Period Average 2001-2005	5-Year Period Average 2006-2010
B4	3.46	2.71	2.71
Industry	2.22	3.34	2.57
Other DMBs	1.43	4.62	3.01

The differences in the performances of the three groups with respect to BER was confirmed by the result of test of equality of means, using ANOVA which showed that the means of the groups and the means of the pre- and post-consolidation ratios were statistically different from each other at the 5.0 per cent level of significance.

**Table 18: ANOVA Test for Equality of Means - Burden Efficiency Ratio or NNIM**

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remarks	
Period (1990-2000)	859.3828	10	85.93828	0.766206	0.659147	Accept	
Group	49.44802	3	16.48267	0.146956	0.93083	Accept	
Period (2001-2010)	45.26263	9	5.029181	7.666474	0.000137	Reject	*
Group	6.828327	2	3.414163	5.204544	0.016456	Reject	**
Period (2001-2005) &	0.945654	1	0.945654	2.916939	0.229777	Accept	
Group	1.365665	2	0.682833	2.106247	0.321932	Accept	
Period (2001-2005)& (2006-2010) (1990-2000)	2.187064	2	1.093532	1.107846	0.414134	Accept	
Group	0.162813	2	0.081407	0.082472	0.922362	Accept	
Period (2001-2010) &	0.931058	1	0.931058	0.752386	0.477164	Accept	
Group	0.304963	2	0.152482	0.12322	0.890298	Accept	
Period (1990-2000)	2.105799	1	2.105799	1.07885	0.408048	Accept	
Group	0.103074	2	0.051537	0.026404	0.974275	Accept	

*   Significant at 1 per cent level, ** Significant at 5 per cent level

4.5.2.9   Average Business Generated Per Employee (ABGPE)

The average business generated per employee is given by the ratio of the sum of total advances and total deposits to the number of employees. This is a measure of staff productivity. The ABGPE increased steadily between 1999 and 2010. It increased from ₦1.0 million in 1990 to ₦18.96 million in 2000 with an 11-year average of ₦5.9 million for the biggest four commercial banks. The industry ABGPE increased from ₦1.0million to ₦21.5 million during the same period, with an 11-year average of ₦6.6 million. For the merchant banks, it increased from ₦4.5 million in 1990 to ₦28.2 million in 2000 with an 11-year average of ₦8.9 million. The performance of merchant banks in this respect was due to the fact that, being wholesale banks dealing largely with corporates, they generated large volumes of business with relatively small number of staff.

In the period of the introduction of UB in 2001 up to the end of consolidation ended in 2005, ABGPE increased further for all the categories of banks. The trend continued in the post-consolidation period, 2006-2010, both for the annual and the 5-year averages as shown in the tables below:

Table 19: ABGPE (N Million)

Period/Category	2001	2005	5-year Avg.
B4	22.9	56.8	35.5
Industry	20.5	57.0	35.6
Other DMBs	28.1	63.2	43.2

Table 20: ABGPE (N Million)

Period/Category	2006	2010	5-year Avg.
B4	70.2	217.6	130.9
Industry	71.5	197.3	122.0
Other DMBs	63.4	204.6	120.4

The Biggest Four's 5-year average for the period was the best performance compared with the industry and other DMB averages.

Figure 20: ABGPE 1990-2010 (N million)
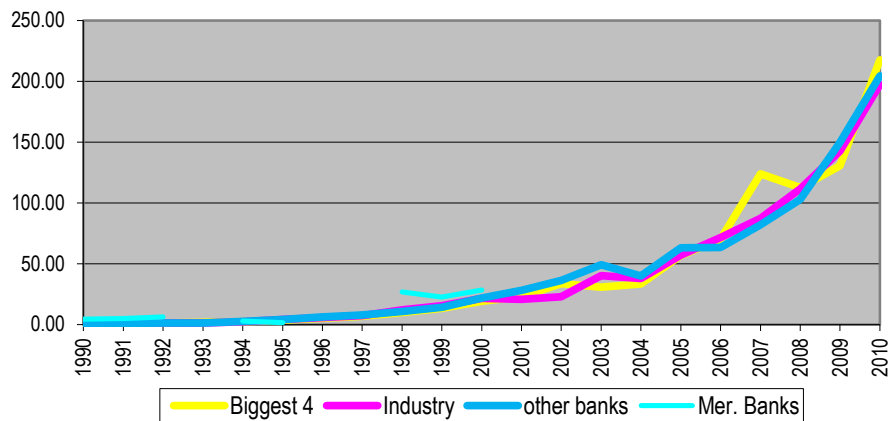
The ANOVA test for equality of means showed that the mean ratio was statistically different from each other across the bank categories and across the years. The result confirmed that bank performance was better in the UB than in the pre-UB era. In the period 2001-2010, the analysis showed difference in means across the years while the group means were not significantly different from each other. Comparing the performance in the pre- and post-consolidation eras, the period mean ratios were significantly different at the 1 per cent level. However, the means for the groups were not significantly different. It may, therefore, be concluded that the various policy shifts affected this ratio across time and not the categories.

Table 21: ANOVA Test for Equality of Means - Average Business Generated Per Employee

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	1.25561E+15	10	1.25561E+14	363.55144	2.3582E-20	Reject	*
Group	3.46356E+12	2	1.73178E+12	5.01423	0.0172	Reject	**
Period (2001-2010)	9.13478E+16	9	1.01498E+16	102.49830	1.3140E-14	Reject	*
Group	1.02534E+14	2	5.12668E+13	0.51772	0.6045	Accept	
Period (2001-2005) &(2006-2010)	1.11892E+16	1	1.11892E+16	268.07172	0.0037	Reject	*
Group	2.05067E+13	2	1.02534E+13	0.24565	0.8028	Accept	
Period (2001-2005), (2006-2010) & (1990-200)	2.24198E+16	2	1.12099E+16	484.47958	1.6901E-06	Reject	*
Group	1.17484E+13	2	5.87418E+12	0.25388	0.7874	Accept	
Period (2001-2010) & (1990-2000)	8.42297E+15	1	8.42297E+15	2475.5553	0.0004	Reject	*
Group	3.76331E+12	2	1.88166E+12	0.55303	0.6439	Accept	
Period (1990-2000) & (2001-2005)	1.51223E+15	1	1.51223E+15	160.04590	0.0062	Reject	*
Group	2.13395E+13	2	1.06697E+13	1.129227	0.4697	Accept	
* Significant at 1 per cent level, ** Significant at 5 per cent level, *** significant at 10 per cent level							

4.5.2.10.   Average Profit Generated Per Employee (APGPE)

The average profit per employee showed an upward trend in the study period, increasing from an annual average of ₦ 619 to ₦0.161 million in 2000 and further to ₦3.9 million in 2010, for the industry. A similar trend was observed on period-average basis. The biggest four banks' performance was better than the industry and the other banks' performance in all three periods (table 23).

Table 22: APGPE (N million)

Period/Category	11-Year Period Average 1990-2000	5-Year Period Average 2001-2005	5-Year Period Average 2006-2010
B4	0.161	1.40	3.33
Industry	0.144	0.937	2.40
Other DMBs	0.12	1.64	3.19

The performance of banks with respect to AAPGPE was better in the post-consolidation period than either in the pre-consolidation or the pre-UB period. The ANOVA showed that the means of the ratio across the years and categories were significantly different in the pre-UB period. The contrary was the case in the UB era. However, comparing the performance in the 5-year pre- and post-consolidation periods, the means are significantly different from each other, although at the 10 per cent level for the group mean. It may, thus, be concluded that there were inter-temporal significant differences in the mean ratio in the various policy era.

Table 23: ANOVA Test for Equality of Means - Average Profit Generated Per Employee

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	1.79E+12	10	1.78879E+11	35.16925	1.6666E10	Reject	*
Group	6.65E+10	2	33269393608	6.54106	0.00652	Reject	*
Period (2001-2010)	2.83038E+13	9	3.14487E+12	0.90208	0.54347	Accept	
Group	3.50124E+12	2	1.75062E+12	0.50215	0.61346	Accept	
Period (2001-2005) & (2006-2010)	4.07644E+12	1	4.0764E+12	131.66489	0.00750	Reject	*
Group	7.00248E+11	2	3.5012E+11	11.30866	0.08124	Reject	***
Period (2001-2005), (2006-2010) & (1990-200)	1.18E+13	2	5.89998E+12	91.35689	0.00046	Reject	*
Group	5.09892E+11	2	2.54946E+11	3.94765	0.11308	Accept	
Period (2001-2010) & (1990-2000)	5.7926E+12	1	5.79E+12	78.64884	0.01248	Reject	**
Group	2.0887E+11	2	1.04E+11	1.417948	0.41357	Accept	
Period (1990-2000) & (2001-2005)	1.95239E+12	1	1.95239E+12	40.62179	0.02374	Reject	**
Group	1.62382E+11	2	81191085933	1.68927	0.37184	Accept	
* Significant at 1 per cent level, ** Significant at 5 per cent level, *** significant at 10 per cent level							

4.5.2.11.   Texas Ratio

The Texas ratio (TR), an 'informal' metric, is credited to Gerard Cassidy and his colleagues at the RBC Capital Markets, designed as a tool to analyze (predict probable bank performance of) Texas banks during their 1980s turmoil. It is the ratio of a bank's non-performing loans to the sum of its tangible equity capital and loan loss reserves. The higher this ratio is, the stronger the negative perception, about the state of the bank. A ratio of 1:1 (100%) is a benchmark indicating that the bank is likely to be in trouble. However, it should be that regulatory authorities do not publish this ratio. Thus, this ratio was developed perhaps to give private investors and the public some fairly reasonable guide for prediction. In this study, we used capital employed as a proxy for the denominator as defined above. However, there is an ongoing debate on the merits of the use of TR as a sole indicator in predicting the health of a bank. One such debate is the article by Joe Brannen and Christopher Marinac[1], as highlighted below:

---

[1] "For nearly three decades, industry analysts have used the Texas ratio to measure a bank's credit vulnerabilities. It is calculated by dividing a bank's bad debt by how much capital it has to absorb the bad debt. A high Texas ratio may indicate trouble. Some bankers say this metric is outdated. Should the Texas ratio be modified to better gauge banks' financial health?

Yes

Joe Brannen, president and CEO, Georgia Bankers Association

It's high time people stop using the Texas ratio as a general indicator of a bank's health. The primary reasons? It is not an actual regulatory measure and it does not include important variables. Imagine a doctor giving you six months to live based only on your cholesterol levels. The ratio doesn't measure a bank's liquidity, collateral values securing loans or capital raised since a bank reported its information, among other things. Also, different analysts use slightly different measures to define their Texas ratio lists. For example, some analysts exclude loans that have been renegotiated with the borrower and are being paid on time. A bank should not be penalized in the court of public opinion for working with customers to avoid default or foreclosure. Using --- and publishing --- such incomplete measures causes unnecessary anxiety for bank customers who have never lost a penny of Federal Deposit Insurance Corp. insured deposits.

No

Christopher Marinac, managing principal and research analyst, FIG Partners

The Texas ratio should remain a key statistic for all bank constituents to monitor. It is comprised of nonperforming loans, foreclosed properties and 90-day past-due loans as a percentage of capital and loan-loss reserves. While this is one way to inform bank customers and investors on a bank's problem level, it should not be seen as a "silver bullet" determinant on any bank's health. We still focus on liquidity or banks' access to cash for deposit obligations. Numerous banks in Georgia with high Texas ratios also enjoy strong liquidity and are in no imminent danger of failing. The Texas ratio is one measure, but it is not the only way to assess a bank as "healthy" or "unhealthy." Many factors determine the relative health and stability of a financial institution. This is still an important measure, but only if used in conjunction with deeper analysis to assess a bank's quality".Published under the Headline: 'How to take institution's pulse' in: The Atlanta Journal-Constitution, Main Edition , July 4, 2010,Section Name: Business, Letter & Page: D2.

'*However, we join the proponents and opponents in the current debate to caution that since TR is not an official regulatory statistics in public domain but the calculation of researchers and there are many other factors that in concert determine the health of a bank, readers should be 'masters of their perception'*. Notwithstanding that opponents of TR do not agree that it should be used as a metric for predicting a bank's ability to come out of a downturn, they cannot but acknowledge that TR and its size is quite important as "a red flag".

The Texas ratio generally trended downwards during the period covered by this analysis. On period average basis, the performance of the banks was best in the post-consolidation period 2006-2010. The TR was generally above 1.0 up to 2003 but in 2004 the ratio fell below 1.0 and has remained low since then, owing to the substantial capital raised by banks during the consolidation exercise. Indeed, the 5-year average for the bank categories was 0.5, 0.4 and 0.3 respectively, for the biggest four, industry and other DMBs in the post-consolidation era. This is an indication that banks in Nigeria have remained relatively strong after the consolidation.

Figure 21: Texas Ratio (1990-2010)
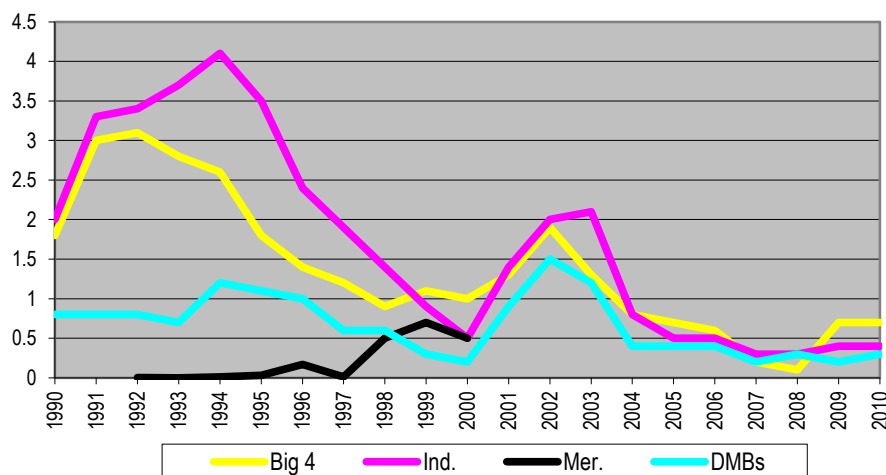
Table 24: Texas Ratio

Period/Category	11-Year Period Average 1990-2000	5-Year Period Average 2001-2005	5-Year Period Average 2006-2010
B4	1.9	1.2	0.5
Industry	2.5	1.4	0.4
Other DMBs	0.7		
Mer. banks	0.2	0.9	0.3

The ANOVA test for equality of means showed that there was significant difference in mean across time and bank categories for the periods, 1990-2000 and 2001-2010, at the 1 per cent level so the H_0 was rejected. Also, the results showed that there were significant differences in means, across time only, when pre-and post-consolidation periods were compared. Furthermore, the null could not be rejected when the pre-UB and post-UB periods were taken together. In addition, the results showed that when the three periods were taken together, we could only reject the null for the difference in mean across time. Thus, it may be deduced that the performances of banks were actually better in the post-consolidation period while the performances of the bank categories were not significantly different.

Table 25: ANOVA Test for Equality of Means -Texas Ratio

Source of Variation	Sum of Squares	Df	Mean Square	F	P value	Remark	
Period (1990-2000)	16.43879	10	1.643879	5.067065	0.00101	Reject	*
Group	16.99152	2	8.495758	26.18718	2.6E-06	Reject	*
Period (2001-2010)	8.245333	9	0.916148	23.80751	3.17E-08	Reject	*
Group	0.494	2	0.247	6.418672	0.007866	Reject	*
Period (2001-2005) & (2006-2010)	0.897067	1	0.897067	48.57762	0.019971	Reject	**
Group	0.0988	2	0.0494	2.67509	0.272102	Accept	
Period (2001-2005), (2006-2010) & (1990-2000)	2.641552	2	1.320776	7.144998	0.047829	Reject	**
Group	0.941003	2	0.470502	2.545272	0.193616	Accept	
Period (2001-2010) &(1990-2000)	1.308364	1	1.308364	4.96665	0.155655	Accept	
Group	1.067223	2	0.533612	2.025631	0.33051	Accept	
Period (1990-2000) & (2001-2005)	0.449261	1	0.449261	2.232358	0.273742	Accept	
Group	1.261651	2	0.630825	3.134542	0.241865	Accept	

* Significant at 1 per cent level, ** Significant at 5 per cent level, *** significant at 10 per cent level

4.5.2.12. Reliance Ratio (RR)

Reliance ratio is a measure of financial efficiency. It is the ratio of the largest source of income to gross income. It creates awareness of the risk of a major reduction in income if this source declines. Usually interest income is the largest source of income to banks. The 11-year pre-UB average RR for the biggest four banks, the industry, merchant banks and other commercial banks were 70.4; 72.4; 63.2; and 62.2 per cent, respectively. In the 5-year pre-consolidation period, average RR was 67.5; 76.0 and 68.9 per cent,

respectively, for the biggest four, industry and other DMBs. The 5-year post-consolidation averages stood at 75.7; 72.1 and 69.3 per cent, respectively

Figure 22: Reliance Ratio 1990-2010 (%)
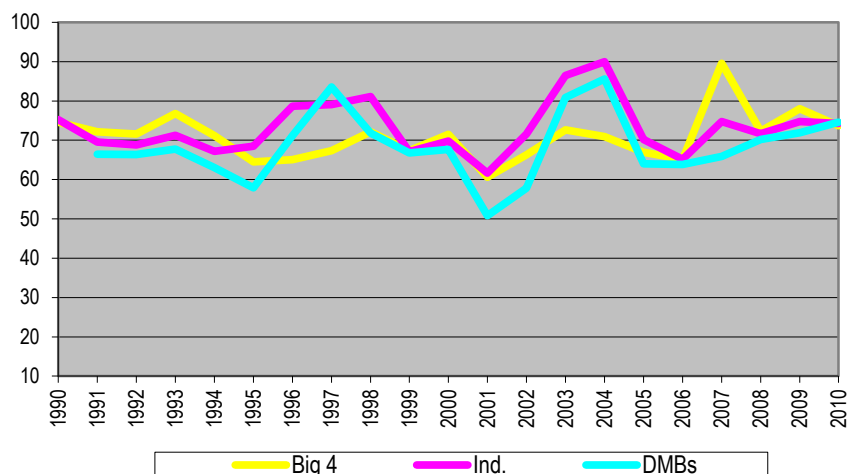
The result of the ANOVA test of equality of means showed that there was significant difference in mean across the year while we could not reject the null for the mean of the bank categories in the period 2001-2010. It may, therefore, be deduced that there was no significant difference in the performance across the bank categories. There was little difference in operating self-sufficiency.

Table 26: ANOVA Test for Equality of Means -Reliance Ratio

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	1438.675	10	143.8675	0.855925	0.585177	Accept H_0	
Group	638.4848	2	319.2424	1.899302	0.175705	Accept H_0	
Period (2001-2010)	1582.48	9	175.8311	4.944148	0.001944	Reject H_0	*
Group	151.069	2	75.53452	2.123935	0.148545	Accept H_0	
Period (2001-2005) &(2006-2010)	5.746731	1	5.746731	0.311195	0.633058	Accept H_0	
Group	30.21381	2	15.1069	0.818063	0.550036	Accept H_0	
Period (2001-2005), (2006-2010) & (1990-200)	24.55042	2	12.27521	1.029714	0.435769	Accept H_0	
Group	77.5073	2	38.75365	3.250877	0.145076	Accept H_0	
Period (2001-2010) &(1990-2000)	14.10276	1	14.10276	3.498169	0.202352	Accept H_0	
Group	65.08804	2	32.54402	8.072495	0.110223	Accept H_0	
Period (1990-2000) & (2001-2005)	6.536959	1	6.536959	0.659243	0.502098	Accept H_0	
Group	84.49348	2	42.24674	4.260527	0.190095	Accept H_0	
* Significant at 1 per cent level, ** Significant at 5 per cent level, *** significant at 10 per cent level							

4.5.2.13: Operating Self-Sufficiency Ratio (OSSR)

The Operating Self-Sufficiency Ratio measures the degree to which operating income covers operating expenses or the ability to cover cost of operations from internally generated funds. It is given by the ratio of operating Income/Total Operating Costs. The OSSR was generally above 100.0 per cent, except in 1999 and 2003 when it dropped to below 70.0 per cent for the industry and other DMBs. Furthermore, on period average basis, banks were generally self-sufficient during the period covered by the study as the OSSRs were above 100 per cent (table 27).

Figure 23: OSSR 1990-2010 (%)
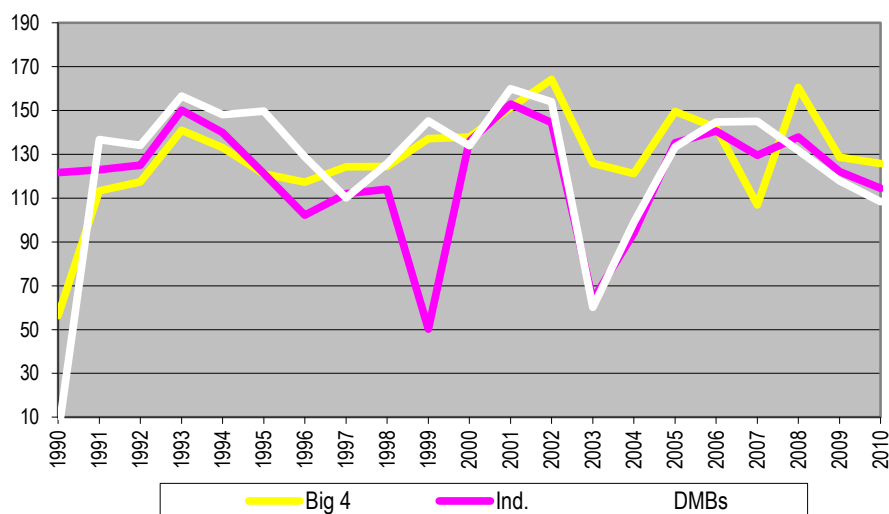
Table 27: OSSR (%)

Period/Category	11-Year Period Average 1990-2000	5-Year Period Average 2001-2005	5-Year Period Average 2006-2010
B4	120.3	142.4	132.8
Industry	117.8	118.0	128.9
Other DMBs	124.7	121.3	129.6
Mer. Banks	141.0		

The ANOVA test for equality of mean showed that in the pre-UB period 1990-2000, the mean ratios for the years were significantly different from each other as we could not accept the null H_0. For the bank categories, the mean ratios were not significantly different as we could not reject the null. In the period 2001-2010, the mean ratios across the years and bank categories were significantly different from each other as we could not accept the null. For all other comparisons across time and categories, we could not reject the null.

77

Table 28: ANOVA Test for Equality of Means -Operating Self Sufficiency

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	16192.48	10	1619.248	2.27698	0.05626	Reject H_0	*
Group	264.7975	2	132.3988	0.18617	0.83154	Accept H_0	
Period (2001-2010)	14059.92	9	1562.213	7.41190	0.00017	Reject H_0	*
Group	1174.266	2	587.133	2.78564	0.08830	Reject H_0	***
Period (2001-2005) & (2006-2010)	15.18769	1	15.18769	0.24352	0.67054	Accept H_0	
Group	234.8532	2	117.4266	1.88283	0.34688	Accept H_0	
Period (2001-2005), (2006-2010) & (1990-200)	140.9642	2	70.48211	1.27832	0.37218	Accept H_0	
Group	163.1153	2	81.55763	1.47920	0.33044	Accept H_0	
Period (2001-2010) &(1990-2000)	94.3324	1	94.3324	2.62552	0.24659	Accept H_0	
Group	69.64127	2	34.82063	0.96915	0.50783	Accept H_0	
Period (1990-2000) & (2001-2005)	60.27842	1	60.27842	0.63500	0.50909	Accept H_0	
Group	185.16	2	92.57998	0.97529	0.50625	Accept H_0	
* Significant at 1 per cent level, ** Significant at 5 per cent level, *** significant at 10 per cent level							

4.5.2.14.   Efficiency Ratio(ER)

This ratio is obtained by dividing non-interest expenses by the sum of net interest income and non-interest income. It is a productivity measure that shows how much a bank spends out of every naira it earns and how much it keeps. The benchmark for this ratio is generally less than or equal to 40 per cent for a very efficient bank and equal to or greater than 75 per cent for a very inefficient bank.

The efficiency ratios of banks were relatively high for the industry and the other DMBs during the period covered by the study. In the 11-year pre-UB period, merchant banks' performance was the best followed by the biggest

four, other DMBs and industry in that order. In the post-consolidation period, 2006-2010, the 5-year average ER for the biggest four, industry and other DMBs stood at 51.0, 69.4, and 69.5 per cent, respectively, showing that the banks were more efficient than during the 5-year pre consolidation period (table 30 and chart 24).

Figure 24: Efficiency Ratio 1990-2010 (%)
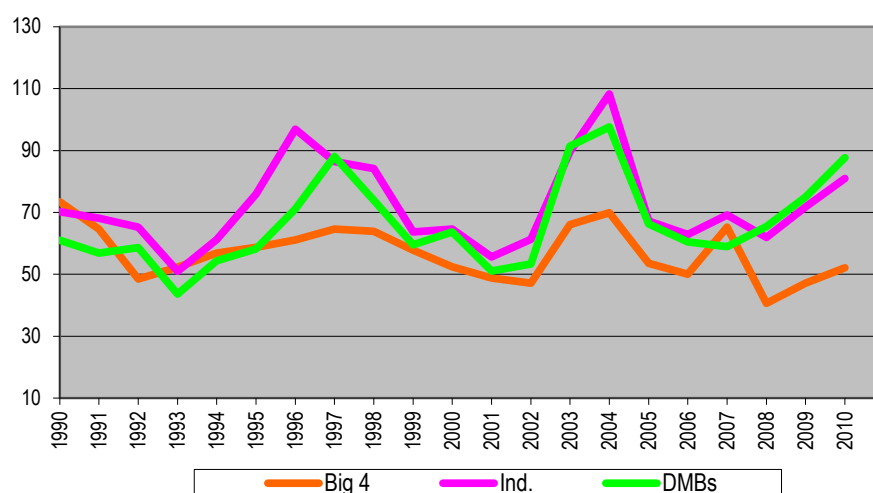
Table 29: Efficiency Ratio

Period/Category	11-Year Period Average 1990-2000	5-Year Period Average 2001-2005	5-Year Period Average 2006-2010
B4	59.5	57.1	51.0
Industry	71.6	76.4	69.4
Other DMBs	62.6	71.9	69.5
Mer. Banks	48.3	-	-

In the pre-UB period, in terms of naira and kobo, analysis of the ratio showed that for the biggest four, they had to spend on average, 59.5kobo to earn a naira income and kept 40.5kobo. The amount they had to spend to earn N1.00 fell to 57.1kobo and 51kobo in the pre- and post-consolidation periods.

The industry average showed that banks were relatively expensive to operate during the three periods. The same trend was observed for the other DMBs.

The result of the ANOVA test for equality of means showed that we could not accept the null hypothesis that there is no difference in mean both across the time periods and across the bank categories (Table 30) in all but one case. We could deduce that although the banks were relatively expensive to operate on the basis of this ratio, their efficiency, however, improved relatively in the post consolidation period.

Table 30: ANOVA Test for Equality of Means – Efficiency Ratio

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	3146.928	10	314.6928	22.45901	9.82E-09	Reject H_0	*
Group	296.1365	2	148.0683	10.56734	0.000738	Reject H_0	*
Period (2001-2010)	2642.539	9	293.6154	14.8304	1.29E-06	Reject H_0	*
Group	111.6416	2	55.82082	2.819489	0.086059	Reject H_0	***
Period (2001-2005) & (2006-2010)	68.19533	1	68.19533	13.04883	0.068818	Reject H_0	***
Group	22.32833	2	11.16416	2.136206	0.318857	Accept H_0	**
Period (2001-2005), (2006-2010) & (1990-2000)	95.23376	2	47.61688	13.87969	0.015863	Reject H_0	**
Group	45.97941	2	22.98971	6.701195	0.052833	Reject H_0	***
Period (2001-2010) & (1990-2000)	20.27882	1	20.27882	16.53514	0.055491	Reject H_0	***
Group	35.63285	2	17.81643	14.52733	0.064403	Reject H_0	***
Period (1990-2000) & (2001-2005)	74.5153	1	74.5153	32.77391	0.029183	Reject H_0	**
Group	50.24617	2	25.12309	11.04983	0.082989	Reject H_0	***

* Significant at 1 per cent level, ** Significant at 5 per cent level, *** significant at 10 per cent level

4.5.2.15.   Profit Expense Ratio (PER)

The profit expense ratio indicates whether or not a bank is making profit with a given expense. It also indicates whether or not a bank is cost efficient. Thus, a higher PER is better for a bank.

Figure 25: Profit Expense Ratio 1990-2010 (%)
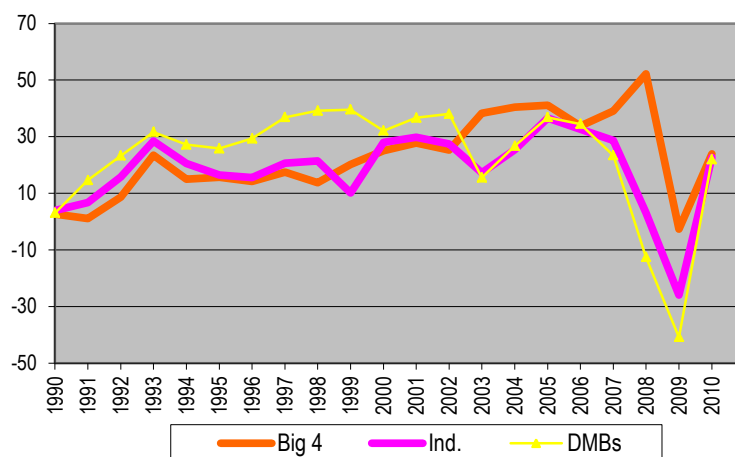
Generally, the banks were relatively cost efficient for most of the study period, except between 2007-2009 when the ratio fell to the lowest levels across the categories. The development was obviously due to the impact of the 2007-2008 global financial crisis which depressed profits in most financial institutions. While the other DMBs performed better than the other categories, on the average, in the pre-UB period, the biggest four performed better in the 5-year pre-consolidation period. During the post-consolidation period, the biggest four banks also held the lead (table 31)

Table 31: Profit Expense Ratio

Period/Category	11-Year Period Average 1990-2000	5-Year Period Average 2001-2005	5-Year Period Average 2006-2010
B4	14.3	34.5	29.3
Industry	17.1	27.3	12.2
Other DMBs	27.5	30.8	5.3
Mer. banks	14.7		

81

Based on period averages, the banks were more cost efficient in the pre-consolidation than in both the pre-UB and post consolidation periods.

The ANOVA results showed that during the periods, 1990-2000 and 2001-2010, the mean PER ratio were significantly different from each other across both the years and the bank categories as we could not accept the null that the mean ratios were not significantly different. However, we could not reject the null in the other comparisons (table 32.) It may, however, be deduced that the ratios for the biggest four were better than those for the industry and the other DMBs.

Table 32: ANOVA Test for Equality of Means – Profit Expense Ratio

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	1935.207	10	193.5207	8.185655	3.89E-05	Reject H_0	*
Group	1069.123	2	534.5614	22.6112	7.35E-06	Reject H_0	*
Period (2001-2010)	8362.401	9	929.1557	6.390134	0.000434	Reject H_0	*
Group	1147.08	2	573.5401	3.944439	0.037969	Reject H_0	**
Period (2001-2005) & (2006-2010)	349.8815	1	349.8815	6.867938	0.119961	Accept H_0	
Group	229.416	2	114.708	2.251641	0.307537	Accept H_0	
Period (2001-2005), (2006-2010) & (1990-2000)	375.8212	2	187.9106	2.160072	0.231131	Accept H_0	
Group	80.52637	2	40.26318	0.462834	0.659462	Accept H_0	
Period (2001-2010) & (1990-2000)	19.45473	1	19.45473	0.210821	0.691198	Accept H_0	
Group	27.33901	2	13.66951	0.148129	0.870982	Accept H_0	
Period (1990-2000) & (2001-2005)	189.4287	1	189.4287	5.166621	0.150925	Accept H_0	
Group	50.44048	2	25.22024	0.687876	0.592461	Accept H_0	
* Significant at 1 per cent level, ** Significant at 5 per cent level, *** significant at 10 per cent level							

4.5.2.16.   Wage Bill to Operating Expense Ratio (WBOER)

Operating expenses are costs associated with the operation and maintenance of the business to generate income. The wage bill to operating expense ratio (WBOER) shows the percentage of the total operating expense used to meet personnel costs. In other words, it indicates the proportion of each naira of operating expense that is spent on wages and salaries. The ratio is important because it indicates if the wage bill is excessive. On period average basis, the average WBOER steadied at about 40.0 per cent of total operating expense for the biggest four banks during the period covered by the study. The ratio increased marginally for the biggest four banks in the post-consolidation period, while the industry average also experienced an increase during same period.

Figure 26: WBOER 1990-2010 (%)
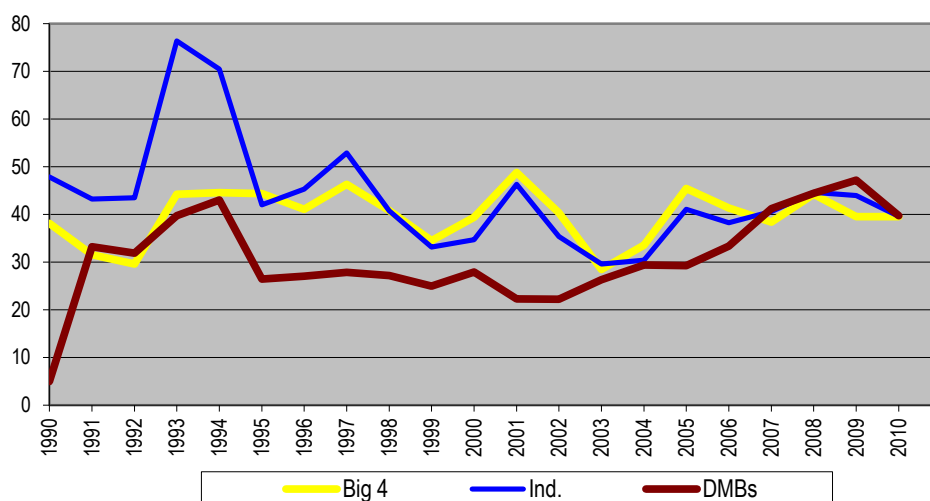
The industry average fell significantly between the pre-UB and the 5-year pre-consolidation periods before increasing marginally in the post-consolidation period.

Table 33: Wage Bill to Operating Expenses

Periods/Category	11-year Period Average 1990-2000	5- Period Average 2001-2005	5-year Period Average 2006-2010
Big 4	39.49	39.30	40.58
Ind.	48.19	36.53	41.41
Other DMBs	28.55	25.87	41.17

The other DMBs experienced a significant spike in the ratio. In naira terms, the biggest four banks paid 40.6kobo in remunerating their personnel out of every naira operating cost while the industry and the other DMBs paid 41.4 kobo and 41.2 kobo, respectively, in the post-consolidation period. This development could be a reflection of either increase in personnel, reduction in other operating costs, or salary inflation.

The ANOVA test for equality of means indicated that the mean ratios were significantly different across categories when the pre-UB and the UB periods were taken separately. However, the results for the other periods showed that the means of the ratios were not significantly different as we could not reject the null hypothesis. Thus, the mean ratios across the years and categories were not significantly different in the pre- and post-consolidation periods.

Table 34: ANOVA Test for Equality of Means – Wage Bill to Operating Expense

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	1828.314	10	182.8314	2.814102	0.023444	Reject Ho	**
Group	2131.294	2	1065.647	16.4022	6.08E-05	Reject Ho	*
Period (2001-2010)	757.5858	9	84.17619	2.584185	0.041305	Reject Ho	**
Group	239.6312	2	119.8156	3.678305	0.045775	Reject Ho	**
Period (2001-2005) & (2006-2010)	76.65515	1	76.65515	2.893049	0.231068	Accept Ho	
Group	47.92625	2	23.96312	0.904394	0.525101	Accept Ho	
Period (2001-2005), (2006-2010) & (1990-2000)	79.86634	2	39.93317	1.297693	0.367824	Accept Ho	
Group	171.5831	2	85.79157	2.787936	0.174487	Accept Ho	
Period (2001-2010) &(1990-2000)	2.408394	1	2.408394	0.091621	0.790706	Accept Ho	
Group	165.1443	2	82.57214	3.141249	0.241473	Accept Ho	
Period (1990-2000) & (2001-2005)	35.15952	1	35.15952	1.931068	0.299120	Accept Ho	
Group	257.8972	2	128.9486	7.082247	0.123728	Accept Ho	
*significant at 1 percent level, ** significant at 5 percent level, *** significant at 10 percent							

4.5.2.17.   Wage Bill to Total Expense (WBTE)

Analysis of average WBTE ratio across the bank categories, in percentage terms, showed that it was generally lower than 50.0 per cent in the pre-UB period, lower than 40.0 per cent in the pre-consolidation and converged below 30.0 per cent in the post-consolidation period. In naira terms, the industry spent 28.3 kobo, 23.3 kobo and 26.0 kobo, respectively, out of every naira total cost, on workers remunerations, in the pre-UB period, and the pre- and post-consolidation periods. For the biggest four banks, the WBTE was 26.0 kobo, 29.3 kobo and 26.8 kobo, respectively. The other DMBs performed better than the biggest four and the industry with 17.2 kobo, 15.2 kobo and 25.1 kobo, per naira total cost, respectively. A lower ratio is better for a bank as it indicates lower cost and most likely increased profit.

Figure 27: WBTE 1990-2010 (kobo per Naira)
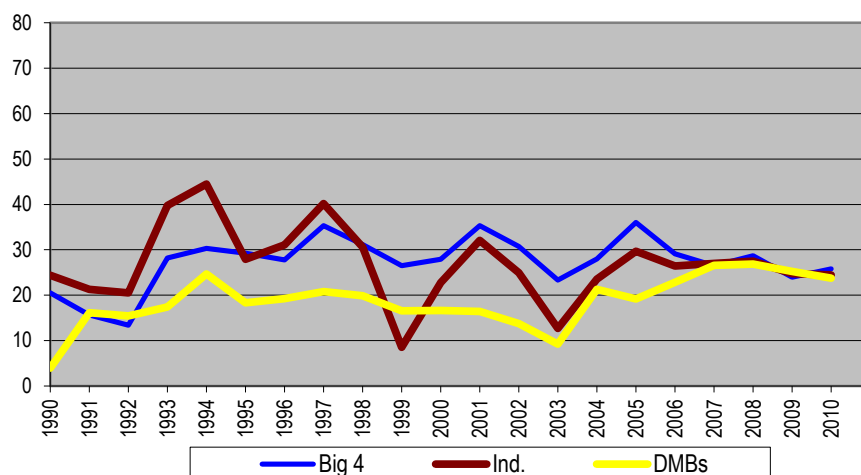
Table 35: Wage Bill to Total Expenses

Periods/ Category	11 years Period Average 1990-2000	5 years Period Average 2001-2005	5 years Period Average 2006-2010
Big 4	26.00	29.33	26.83
Ind.	28.32	23.29	26.02
Other DMBs	17.17	15.16	25.05

The ANOVA test results showed that significantly different mean ratios across categories and years were confirmed only for the pre-UB period, 1990-2000, and the UB period, 2001– 2010, since we could not accept the null hypothesis in both cases. In all the other tests for the pre- and post-consolidation periods, we fail to accept the null Hypothesis that the period means were not significantly different. We can thus, deduce that since the periods means were not significantly different from each other, consolidation did not affect the performance of the banks in respect to this ratio and hence the convergence observed in the movement of the bank categories data series.

Table 36: ANOVA Test for Equality of Means – Wage Bill to Total Expense

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	1170.096	10	117.0096	3.672812	0.006405	Reject Ho	*
Group	760.715	2	380.3575	11.93904	0.000387	Reject Ho	*
Period (2001-2010)	400.1541	9	44.46157	2.573805	0.041946	Reject Ho	**
Group	342.5921	2	171.2961	9.916038	0.001249	Reject Ho	*
Period (2001-2005) & (2006-2010)	7.490603	1	7.490603	0.35508	0.611706	Accept Ho	
Group	68.51843	2	34.25921	1.624005	0.381097	Accept Ho	
Period (2001-2005), (2006-2010) & (1990-2000)	9.579323	2	4.789661	0.326559	0.738979	Accept Ho	
Group	121.1971	2	60.59856	4.131609	0.106393	Accept Ho	
Period (2001-2010) & (1990-2000)	1.56654	1	1.56654	0.253528	0.664586	Accept Ho	
Group	91.05721	2	45.52861	7.368334	0.119498	Accept Ho	
Period (1990-2000) & (2001-2005)	0.01365	1	0.01365	0.001464	0.972954	Accept Ho	
Group	159.6271	2	79.81354	8.560667	0.104595	Accept Ho	

*significant at 1 percent level, ** significant at 5 percent level, *** significant at 10 percent

4.5.2.18.   Wage Bill to Income Ratio (WBIR)

This metric indicates the proportion of a bank's income taken up by the wage bill. Analysis of average WBIR showed that in naira terms, the industry expended 22 kobo on personnel costs to earn a naira income in the period preceding the UB, compared with the 21 kobo and 12 kobo, respectively, expended by the Big 4 and other DMBs in the same period. In the pre-consolidation period, the wage bill per naira income stood at 21 kobo, 18.5 kobo and 13.6 kobo, respectively for the biggest four, industry and the other

DMBs. In the post-consolidation period, 2006-2010, the cost per naira income converged around 20 kobo for the three categories.

Figure 28: WBIR 1990-2010 (kobo per Naira)
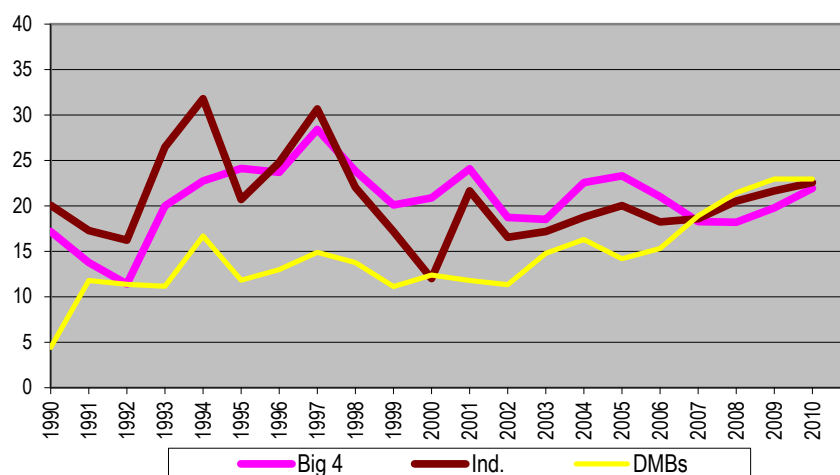
Analysis of variance indicated that the means of the ratio across categories and years were significantly different in the period, 1990-2000, at 1 per cent level. For the period, 2001-2010, the mean ratios were not significantly different from each other but were significantly different across the categories. The means of the ratios were significantly different across the categories, although at 10 per cent level. In the other comparisons, we could not reject the null hypothesis of equal means.

Table 37: Wage Bill to Total Income

Periods/Category	11 years Period Average 1990-2000	5 years Period Average 2001-2005	5 years Period Average 2006-2010
Big 4	20.56	21.0	19.8
Ind.	21.74	18.5	20.3
Other DMBs	12.04	13.6	20.3

Table 38: ANOVA Test for Equality of Means-Wage Bill to Total Income

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	469.8273	10	46.98273	3.795191	0.005379	Reject Ho	*
Group	616.9978	2	308.4989	24.92005	3.71E-06	Reject Ho	*
Period (2001-2010)	110.583	9	12.287	1.568869	0.198714	Accept H₁	
Group	70.0281	2	35.01403	4.470776	0.026525	Reject Ho	**
Period (2001-2005) &(2006-2010)	7.0460	1	7.046001	0.812729	0.462462	Accept H₁	
Group	14.0056	2	7.002806	0.807747	0.553175	Accept H₁	
Period (2001-2005), (2006-2010) & (1990-2000)	8.8749	2	4.437458	0.50619	0.636842	Accept H₁	
Group	52.3699	2	26.18495	2.986974	0.160837	Accept H₁	
Period (2001-2010) &(1990-2000)	1.3717	1	1.371686	0.206349	0.694181	Accept H₁	
Group	49.7987	2	24.89935	3.745723	0.210716	Accept H₁	
Period (1990-2000) & (2001-2005)	0.0243	1	0.024344	0.008216	0.936037	Accept H₁	
Group	81.3591	2	40.67953	13.72941	0.067891	Reject Ho	***
*significant at 1 percent level, ** significant at 5 percent level, *** significant at 10 percent							

4.5.2.19.   Intermediation Cost Ratio (ICR)

The intermediation cost to total asset ratio (ICR) is an efficiency metric which expresses the operating cost as a proportion of the assets employed and maintained by a bank. Lower ratios imply lower operating costs and indicate a more efficient process of intermediation. The ICR showed a gradual decline from the pre-UB period to the post-consolidation period.

Analysis of the dynamics of the ratio indicated that banks were generally efficient, as the average ratio was under 15.0 per cent for all the bank categories, during the period covered by the study. On period-average basis, the biggest four banks maintained a higher efficiency ratio than the industry and the other DMBs across the three policy regimes. The development implied that the biggest four, as a category, were more cost-efficient than the industry and other DMBs as the ratio is usually pulled down by larger average assets.

Figure 29: ICR: 1990-2010 (%)
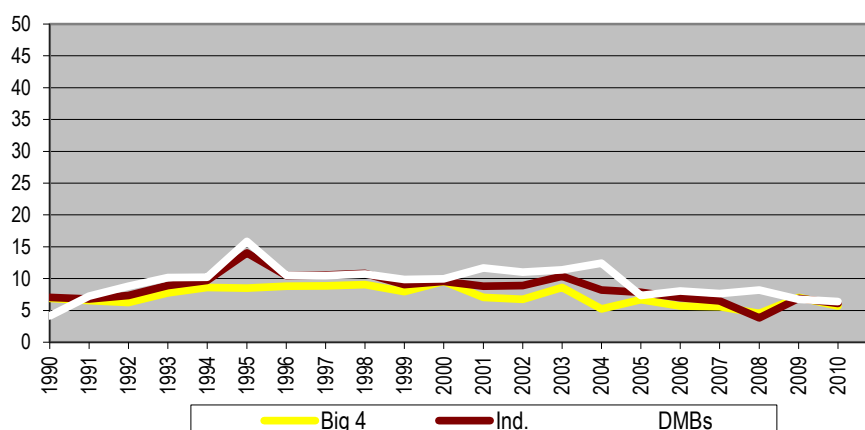
Table 39: Intermediation Cost/Total Assets

Periods/Category	11-year Period Average (1990-2000)	5-year Period Average (2001-2005)	5-year Period Average (2006-2010)
Big 4	8.08	6.90	5.70
Ind.	9.49	8.80	6.10
Other DMBs	9.82	10.80	7.40

Analysis of variance indicated that the means of the ratio were significantly different across the years and categories for the periods, 1990-2000 and 2001-2010, taken separately. The results further showed that the three period means were significantly different across the periods and categories as we could not accept the null hypothesis of equal means. Comparing the pre-UB and the 5-year pre-consolidation means, the ANOVA test showed that they were significantly different, although at 10 per cent level. Thus, it may be deduced that the performance of the biggest four banks during the periods was better than the industry and the other DMBs.

Table 40: ANOVA Test for Equality of Means – Wage Bill to Total Income

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	101.80700	10	10.18070	6.510692	0.000197	Reject H$_O$	*
Group	18.77641	2	9.388203	6.003879	0.009073	Reject H$_O$	*
Period (2001-2010)	60.91527	9	6.768363	4.521862	0.003159	Reject H$_O$	*
Group	39.59691	2	19.79845	13.22711	0.000293	Reject H$_O$	*
Period (2001-2005) & (2006-2010)	8.857350	1	8.857350	14.10694	0.064142	Reject H$_O$	***
Group	7.919381	2	3.959691	6.306525	0.136864	Accept H$_O$	
Period (2001-2005), (2006-2010) & (1990-2000)	13.44082	2	6.720412	14.11542	0.015402	Reject H$_O$	**
Group	8.977654	2	4.488827	9.428242	0.030627	Reject H$_O$	**
Period (2001-2010) & (1990-2000)	0.133966	1	0.133966	0.214895	0.688516	Accept H$_O$	
Group	8.002873	2	4.001437	6.418714	0.134794	Accept H$_O$	
Period (1990-2000) & (2001-2005)	3.437606	1	3.437606	14.13184	0.064040	Reject H$_O$	***
Group	5.180132	2	2.590066	10.64764	0.085854	Reject H$_O$	***
*significant at 1 percent level, ** significant at 5 percent level, *** significant at 10 percent							

4.5.2.20.   Return on Capital Employed (ROCE)

Return on Capital Employed is another standard measure of bank performance. It indicates to shareholders, how well management is utilizing their investment and long term commitments on book value basis to grow their wealth.

The analysis of the ROCE dynamics showed that generally, it trended downwards during the period covered by the study for all the bank categories. On period-average basis, all the categories recorded their lowest average ROCE, attributed largely to the negative impacts of the 2007-2008 global financial crisis on bank earnings. The best period average was posted by the other DMBs (45.6 per cent) in the pre-UB, industry (30.6 per cent) in the

pre-consolidation and the biggest four banks (15.2 per cent) in the post consolidation periods.

Table 41: ROCE (%)

Periods/Category	11-year Period Average (1990-2000)	5-year Period Average (2001-2005)	5-year Period Average (2006-2010)
Big 4	21.2	26.9	15.2
Ind.	29.1	30.6	9.4
Other DMBs	45.6	32.9	0.0
Mer. Banks	17.1		

Figure 30: ROCE (1990-2010) %
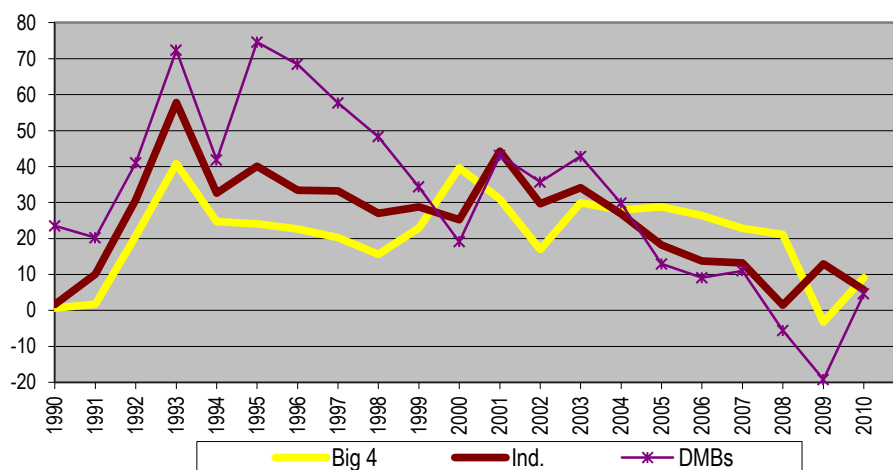
Figure 31: ROCE: 1990-2010 (%)
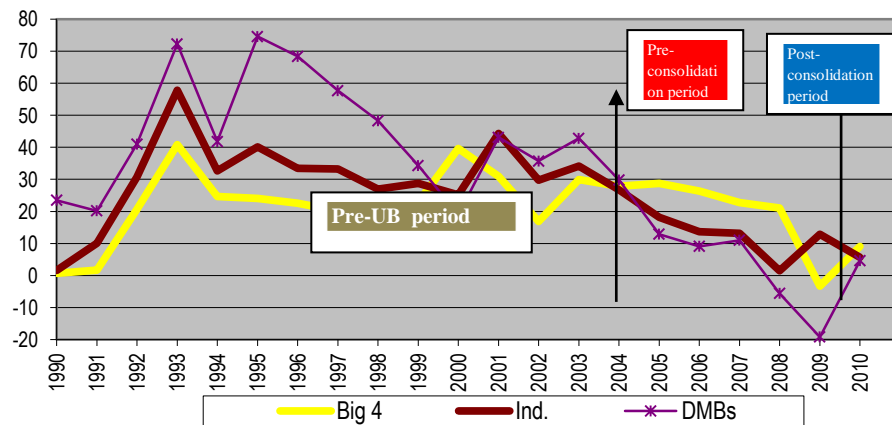
Table 42: ANOVA Test for Equality of Means - ROCE

Source of Variation	Sum of Squares	df	Mean Square	F	P value	Remark	
Period (1990-2000)	4.7526	1	4.7526	3.377857	0.2075	Accept	
Group	11.08997	2	5.544987	3.941037	0.2024	Accept	
Period (2001-2010)	5083.445	9	564.8273	6.573429	0.0004	Reject	*
Group	118.022	2	59.011	0.686767	0.5156	Accept	
Period (2001-2005) & (2006-2010)	720.7296	1	720.7296	12.7631	0.0702	Reject	***
Group	23.6044	2	11.8022	0.2090	0.8271	Accept	
Period (2001-2005), (2006-2010) & (1990-200)	1049.372	2	524.6861	5.168284	0.0778	Reject	***
Group	38.48968	2	19.24484	0.189566	0.8343	Accept	
Period (2001-2010) & (1990-2000)	246.482	1	246.482	2.242209	0.2730	Accept	
Group	99.97295	2	49.98648	0.454719	0.6874	Accept	
Period (1990-2000) & (2001-2005)	5.182639	1	5.182639	0.112015	0.7697	Accept	
Group	233.7479	2	116.874	2.526064	0.2836	Accept	

The ANOVA test for equality of means showed that the mean ratio was significantly different across the years in the UB period at 1 per cent level. Also, the period means were significantly different from each other comparing the

pre-UB, pre- and post-consolidation periods, although at 10 per cent level of significance. However, for the bank categories, we failed to reject the null hypothesis that the means were not significantly different from each other. Thus it may be deduced that the return to owners' capital in banks was at its lowest in the post consolidation period, owing to the effect of the 2007-2008 global financial crisis.

Part Five: Panel Data Econometric Approach

4.6.   The Framework for Panel Data Econometric Approach.

We employed a panel data econometric approach for the analysis of deposit money banks' performance in Nigeria. A static model was used to complement the ratio analysis contained in Part 1. The choice of panel data mirrors different studies on banks' performance globally and in Nigeria in particular, reflecting the importance of bank characteristics in the determination of performance. The analysis is conducted on data that covered ten existing deposit money banks[2], which were chosen on the basis of their systemic importance and data availability. Available data indicated that the ten banks collectively had a concentration ratio of 65 per cent in total bank assets and 59 per cent in total deposit liabilities in the market as at end-December 2010, implying that they were dominant players in the market. The period of research covered 1990-2010, so chosen because it spanned well-defined episodes of financial reforms in Nigeria and also covered the period of major global financial crises that should impact the performance of banks.

4.6.1.   Determinants of Bank Performance

The literature recognizes that both returns on equity and assets are sensitive to internal conditions of banks as well as external factors (Suffin, 2010). Internal determinants involved actions of management that are aimed to grow banks assets in a competitive environment and to minimize cost, including decisions on liquidity ratios, credit and investments, provisioning, capital adequacy, expenses management, banks size and leveraging. External determinants on the other hand reflect external economic and legal conditions under which

---

[2] These banks are: Zenith Bank, First Bank of Nigeria, Union Bank of Nigeria, United Bank for Africa, Oceanic Bank, Wema Bank, Fidelity Bank, Citi Bank, Afri Bank and Diamond Bank,

the banks and indeed the entire financial system operate. While the risks of banking are affected by the macroeconomic environment, changes in banking legislations are particularly important in shaping bank behavior, capacity and growth. We employed relevant sets of banks' micro-level and external variables which affect banks' ability to compete and make profit.

4.6.2. Internal Determinants

A major source of volatility in bank profit in Nigeria, as in most sub-Saharan countries, is credit risk, defined as the risk of default on loans. Credit risk is measured by bad loans (BADLNS) and provision for bad loans (LLP). Provisioning is a major item in banks' balance sheet under condition of economic uncertainty. Large provisioning for bad debts indicates the riskiness of the credit market, which has the tendency to reduce net profit. However, to the extent that credit risk provides a forward-looking measure of bank exposure to default and asset quality deterioration, it could be modeled as a predetermined variable in which case, a positive association of profits and credit risk would be expected.

Banks that have a large share of the market are expected to be more profitable through scale economies. Such banks can influence pricing activities in the market to their advantage; they can attract deposits at lower cost than marginal players and are better placed to reduce their operating costs. The size variable, represented by the average total assets (AVTASS) of banks and the concentration ratio (CR) are also expected to positively influence the performance of banks. However, the size of a bank may not necessarily mean it is efficient, and efficiency in the delivery of financial services is necessary for sustaining profit. The Herfindahl-Hirschman Index (HHI) was considered appropriate to capture how market structure and competition affect performance of the banking system. We expect a positive relationship between this variable and the performance of banks in Nigeria ceteris paribus.

Interest income (INTY) remains a major source of earnings for banks and thus a factor of profitability while interest expense (INXP) works in the opposite way. Thus, the net interest margin, NIM (size of interest income divided by average total assets) used as proxy for the relationship between interest income and profit is expected to impact banks performance positively. Also, non-interest

95

income (NITY) is a major source of revenue for banks and reflects the advantage of income diversification. Accordingly, the higher the proportion of non-interest income to gross earnings, the more diversified bank services are and the larger would be the expected size of profit. The shift towards non-interest income is justified on the need to reduce volatility in earnings since non-interest income may be less dependent on overall business conditions than traditional interest income would. In Nigeria, income from bank charges has become a major source of revenue for banks, especially following the increased credit risk aversion that has characterized the post 2007-2008 financial crisis.

Overhead expenditure does not only reflect the possible effects of cost on bank profitability, but also constitutes a good measure of managerial efficiency. In Nigeria, where overheads are an important element of banks' cost of funds, it is to be expected that large overhead costs would reduce bank earnings. Accordingly, two measures of costs are represented in the model, namely, gross expenditure (GRSEXP) and remuneration to employees (REM). Indeed, higher total expenditure would have the effect of reducing bank profits. Other internal factors affecting banks' performance included decisions on liquidity ratios, loans, deposit mobilization and capital adequacy ratios among others. We used the ratio of capital employed to assets (CADEQUACY) as a proxy for all other constraints to capital. The choice of this proxy was informed by the greater emphasis placed on it in the Basel Capital Accord for banking stability. It was expected that there would be a negative relationship between the capital adequacy ratio and bank performance to the extent that banks were constrained from leveraging assets through high capital adequacy ratios. Also, the size of loans (LOANS) and deposits (TOTLDEP) were expected to improve bank performance.

4.6.3. External Determinants

External influences on bank performance encompass macroeconomic conditions, economic policies as well as the laws and regulations guiding the operation of banks. Demand for credit increases with economic growth prospects, and banks would be more inclined to purchase financial assets

when economic conditions improve and vice versa. The output gap[3] (YGAP) was used as a control variable for cyclical output effects on banks performance. The effects of inflation (INF) on bank profitability depends on whether future movements in inflation are fully anticipated by banks in their credit decisions. Where the price inflation rate is fully anticipated, banks easily increase profits by appropriately adjusting the size of risk premium in interest rates in order to shield their returns from the effects of inflation. An unexpected change could raise costs owing to imperfect interest rate adjustment; banks may be adjusting to inflation pressures with a lag as found in Enendu (2003). Thus, the effect of inflation on bank performance could be positive or negative.

Monetary policy was captured by the reserve requirements and the monetary policy rate. As is common, required reserves constrain banks' ability to lend and make profit whereas the central bank's policy interest rate is expected to affect banks profitability through its effects on credit growth overall the stance of policy on the performance of banks was represented by the monetary policy rate (POLR) with a negative expected relationship with bank's performance.

Finally, banking reforms were to facilitate bank growth and reposition them for effective performance. Between 1990 and 2010, Nigerian banking system witnessed major reforms, the most notable being the bank consolidation exercise of 2004. The reform specified a new capital structure that led to a drastic reduction in the number of banks from 89 to 25 relatively well capitalized banks by end-2005. The banks were expected to be able to undertake large ticket lending and increase profits. A dummy variable was therefore, included in the model to test the hypothesis that banking reform of 2004 had impacted positively on the banks performance over time.

However, it should be noted that the micro-level data used in this work have some mark of non-uniformity in terms of inter-temporal comparison. This was because banks had financial year-ends in different quarters of each year.

---

[3]The output gap is calculated through the Hodrick Prescott filter.

4.7.   Regression Analysis

4.7.1. The Model

The model is adopted from Batalgi (2005) and takes the following form:

$$\mathbf{Y_{it}} = \boldsymbol{\alpha} + \boldsymbol{X'}_{it}\,\boldsymbol{\beta} + \boldsymbol{U}_{it} \qquad\qquad\qquad ;$$
$$i = 1,\ldots,N;\; t = 1,\ldots,T \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..\ldots\ldots\ldots \mathbf{4}$$

It is a fixed, cross effect, one way error component model with i denoting banks and t denoting time. The i subscript, therefore, represents the cross-section dimension of the variables whereas t stands for the time-series dimension. The α is a scalar and stands for the Least Square Dummy Variables (LSDM), capturing the differential impact of the individual cross-sectional units in the model. For instance, in a model with 10 cross sectional units, with cross fixed effects, the LSDM will take the value of 1 for a referenced bank and 0 for all other banks in the model, β is K × 1 vector of coefficients and X_{it} is the ith observation on K explanatory variables. $\mathbf{Y_{it}}$ is the dependent variable, and $U_{it} = v_i + \varepsilon_{it}$ is the disturbance term, with v_i representing the unobserved bank-specific effects on the dependent variable, and ε_{it} the idiosyncratic error term which is assumed to be white noise.

4.7.2.   The variables

We used return on assets (ROA) as the dependent variable. It is calculated as a ratio of profit over assets and gives Management and shareholders a sense of how well the available resources are being employed. All the variables used and their apriori expectations are listed on table 43. Most of the variables are in log form except for the interest rates and the rate of inflation.

Table 43: List of Variables and Apriori Sign

Independent	Definition of terms	Apriori expectation
ROA	Return on Assets	Dependent
nim	Net interest margin	+
avtass	Average total assets	+
GDPgap	Gross Domestic product	+
ninty	Non-interest income	+
rem	Remuneration	-
llp	Loan loss provisioning	-
inf	Rate of Inflation	+ -
polr	Policy rate	-
bdloans	loans	-
inty	Interest income	+
DuMref	Dummy variable for banking sector reforms	+
loans	Stock of loans	+
CR	Concentration ratio	+
HHI	Measure of competition among banks	+
cadequacy	Capital adequacy ratio	-
intxp	Interest expense	-
totldep	Total deposit	+
Grexp	Gross Expense	-
TOtLDep	Total Deposit	+

4.7.3.   Empirical Analysis

Table 44 presents summary statistics for the variables used and table 45 presents some cross correlation among the variables. The panel unit root test results are presented in table 46 and in 47 we report results of the empirical estimates. Econometric Views version 7. 2, was used for the estimation; it produced robust estimates that rival other standard statistical packages.

The summary statistics showed that most of the variables used failed the test for normality, which is generally expected in large panel data samples. The correlation of inflation, GDP, interest income, capital employed, loans and average total assets was positive with return on assets as expected.Also a positive correlation of our measure of competition with the dependent variable is established as expected.

Table 44: Descriptive Statistics

	LROA	LAVTASS	LHHI	LNIM	LINTY	LINEXP	LCAEMP	LLEVRAGE	LTLOANS	LGDP	LGRSEXP	LPROV	PR	INF
Mean	0.45	10.48	7.55	7.45	8.31	3.61	8.44	2.15	2.21	15.21	8.43	7.81	14.14	21.07
Median	0.69	10.66	7.52	7.50	8.51	3.59	8.50	2.26	2.26	15.34	8.50	8.19	13.50	13.01
Maximum	1.90	14.44	11.55	10.47	12.13	4.12	12.77	6.00	2.65	17.19	12.13	13.48	26.00	72.84
Minimum	-2.30	3.00	0.59	3.77	2.49	3.28	2.94	-4.61	1.17	12.50	3.18	-1.20	6.13	5.38
Std. Dev.	0.94	2.22	1.89	1.95	1.98	0.26	2.35	1.23	0.27	1.44	1.90	2.45	4.24	19.13
Skewness	-1.56	-0.48	-0.12	-0.20	-0.31	0.46	-0.13	-2.15	-1.26	-0.37	-0.23	-0.60	0.56	1.54
Kurtosis	5.11	2.93	3.22	1.80	2.70	2.16	2.21	14.67	4.88	2.02	2.65	4.00	4.21	4.00
Jarque-Bera	124.35	8.23	0.94	13.99	4.15	13.64	6.10	1352.95	86.69	13.04	2.99	21.38	23.65	91.22
Probability	0.00	0.02	0.63	0.00	0.13	0.00	0.05	0.00	0.00	0.00	0.22	0.00	0.00	0.00
Sum	95.49	2200.12	1584.95	1564.40	1746.09	757.98	1772.90	452.47	464.25	3193.54	1770.40	1639.39	2969.00	4424.40
Sum Sq. Dev.	184.69	1032.03	746.58	797.70	820.54	13.63	1152.34	318.61	15.46	435.11	756.21	1252.46	3765.84	76519.87
Observations	210	210	210	210	210	210	210	210	210	210	210	210	210	210

Table 45: Cross Correlations

	LROA	LAVTASS	LHHI	LNIM	LINTY	LINEXP	LCAEMP	LLEVRAGE	LTLOANS	LGDP	LGRSEXP	LPROV	PR	INF
LROA	1.00	0.14	0.08	0.55	0.19	-0.41	0.16	-0.04	0.22	0.30	0.20	0.13	0.02	0.20
LAVTASS	0.138	1.00	0.59	-0.25	0.92	-0.30	0.82	0.09	0.78	0.78	0.92	0.67	-0.52	-0.42
LHHI	0.079	0.59	1.00	-0.23	0.58	-0.08	0.60	-0.07	0.69	0.52	0.63	0.75	-0.41	-0.22
LNIM	0.550	-0.25	-0.23	1.00	-0.20	-0.52	-0.25	0.12	-0.14	-0.21	-0.21	-0.17	0.50	0.37
LINTY	0.191	0.92	0.58	-0.20	1.00	-0.31	0.84	-0.13	0.79	0.79	0.97	0.70	-0.50	-0.38
LINEXP	-0.406	-0.30	-0.08	-0.52	-0.31	1.00	-0.26	-0.07	-0.30	-0.49	-0.32	-0.14	-0.01	0.32
LCAEMP	0.159	0.82	0.60	-0.25	0.84	-0.26	1.00	-0.30	0.85	0.76	0.83	0.68	-0.53	-0.35
LLEVRAGE	-0.035	0.09	-0.07	0.12	-0.13	-0.07	-0.30	1.00	-0.19	-0.08	-0.05	-0.05	0.06	0.01
LTLOANS	0.218	0.78	0.69	-0.14	0.79	-0.30	0.85	-0.19	1.00	0.70	0.75	0.81	-0.43	-0.27
LGDP	0.302	0.78	0.52	-0.21	0.79	-0.49	0.76	-0.08	0.70	1.00	0.80	0.54	-0.64	-0.44
LGRSEXP	0.196	0.92	0.63	-0.21	0.97	-0.32	0.83	-0.05	0.75	0.80	1.00	0.70	-0.53	-0.39
LPROV	0.126	0.67	0.75	-0.17	0.70	-0.14	0.68	-0.05	0.81	0.54	0.70	1.00	-0.37	-0.22
PR	0.021	-0.52	-0.41	0.50	-0.50	-0.01	-0.53	0.06	-0.43	-0.64	-0.53	-0.37	1.00	0.34
INF	0.195	-0.42	-0.22	0.37	-0.38	0.32	-0.35	0.01	-0.27	-0.44	-0.39	-0.22	0.34	1.00

The panel unit root test was based on the LLC (Levin, Lin & Chu, 2002) test statistics, under the null hypothesis that each group series contains a unit root. Based on a user-specified lag of 1 and an ADF and Phillips–Perron type individual unit root tests, results suggest that the null hypothesis of a common unit root is rejected on all the variables and the variables are stationary at level, enabling the consideration of the variables at their levels in the model. Similarly both Kao and Pedroni (Engel- Granger based) test for co-integration returned no long run co-integrating relationship among the variables.

Table 46: Unit Root Test Levin, Lin & Chu

Variable	Statistic	Prob	No. Cross sections	Obs	Order of InT
LROA	-4.11512	0.0000	10	190	I(0)
LPROV	-5.25569	0.0000	10	180	I(0)
LCRERISK	-3.24203	0.0006	10	190	I(0)
LAVTASS	-2.90944	0.0018	10	190	I(0)
LCR	-6.48169	0.0000	10	190	I(0)
LHHI	-2.11717	0.0171	10	190	I(0)
LINEXP	-3.71258	0.0001	10	190	I(0)
LINTY	-3.79475	0.0001	10	190	I(0)
LTLOANS	-3.80637	0.0001	10	190	I(0)
LGRSEXP	-4.59816	0.0000	10	190	I(0)
LCAEMP	-4.43257	0.0000	10	180	I(0)
LGDP	-7.48244	0.0000	10	190	I(0)
INF	-8.58973	0.0000	10	180	I(0)

Equation 1 was estimated and the empirical results are presented in tables 47 and 49. Reported on a general to specific basis, only the model with the most robust statistics was presented and discussed. The pooled OLS regression (table 47) produced estimates that generally failed both theoretical and statistical expectations. A test for the cross and inter-temporal characteristics of the model, reported in table 48, suggests that the cross-fixed effects model was suitable for analysis of determinants of banks' performance in Nigeria based on the Chi-square statistic of 2.42 and the associated p-values.

Table 47: Dependent Variable: Empirical Estimates (Pool)

Total panel (balanced) observations: 210

Variable	Coefficient	t-Stat	Prob.	
C	-29.11123	-8.800006	0.0000	
LAVTASS	0.545786	1.435138	0.1529	
LHHI	-0.025499	-0.675174	0.5004	
LNIM	0.4263	10.43537	0.0000	*
LGRSEXP	0.119186	1.007471	0.3150	
LCAEMP	-0.06997	-1.433242	0.1534	
LLEVRAGE	-0.127465	-2.394293	0.0176	**
LTLOANS	0.235481	0.542997	0.5878	
LGDP	0.776525	9.913093	0.0000	*
LCR	1.276255	3.104164	0.0022	*
LCRERISK	0.482583	1.313626	0.1905	
LPROV	-0.472546	-1.294115	0.1972	
PR	3.19E-05	0.001947	0.9984	
INF	0.001638	0.53186	0.5954	
DUM2	-1.154106	-5.681933	0.0000	*

R-squared	0.647151	Mean dependent var		0.454705
Adjusted R-squar	0.6179	S.D. dependent var		0.940038
S.E. of regression	0.581078	Akaike info criterion		1.829623
Sum squared resi	65.1667	Schwarz criterion		2.100579
Log likelihood	-175.1104	Hannan-Quinn criter.		1.93916
F-statistic	22.12354	Durbin-Watson stat		2.229919
Prob(F-statistic)	0.0000			

*significant at 1 per cent   ** significant at 5 per cent

Table 48: Redundant Fixed Effects Tests

Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.422164	-9,186	0.0027
Cross-section fixed effects test equation:			
Cross-sections included: 10			
Total panel (balanced) observations: 210			

Column two of table 49 reports results from the parsimonious fixed effect model, estimated with cross-section (SUR) setting to allow for correction of heteroskedasticity and contemporaneous correlation among cross-sections. The overall performance of the model was robust on the basis of adjusted R^2 of

72.13 per cent. Similarly, the coefficient confidence Interval Test (see appendix 2) confirmed the robustness of the estimates at 90, 95 and 99 per cent confidence intervals. Moreover, the coefficient restriction test (or the Wald Test), carried with the null hypothesis of zero expected coefficients, rejected the null on the strength of both the respective F- and chi square statistics of 8.45 and 143.80 and their probability values.

The estimated coefficient of the size variable, measured by the average total assets was negatively signed and also statistically significant. This is consistent with the findings in Enendu (2003) but contradicts our apriori expectation that bank size is an advantage for banks to increase their profit through scale economies. However, sometimes, the perception of "big size" by such banks might breed pricing inefficiency which could depress profit. The result also suggests that for banks in Nigeria, size is not a guarantee for better performance and that the past values of the variable could have a positive impact on profitability. This result also showed that for Nigerian banks, the advantage of size is only a necessary but not sufficient condition for profitability. What is, perhaps, critical is the level of efficiency in the delivery of bank services, which is expected to be promoted under a competitive market structure. Invariably, a highly competitive market structure is expected to produce banks that can grow, compete and make more profit efficiently. Our measure of competitiveness in the banking industry, the HH Index was negatively related with returns on assets, suggesting that competition for funds could increase the cost of deposit mobilization and depress non-interest income, thereby squeezing margins and profitability. The coefficients of the net interest margin is positive as expected and statistically significant. Provision for bad loans and capital adequacy ratios all depress banks profitability as expected.

Table 49: Empirical Estimates (FE)

Method: Panel EGLS (Cross-section SUR)
Total panel (balanced) observations: 210

Variable	Coefficient	t-Statistic	Prob.	
C	-27.3243	-6.4050	0.0000	
LAVTASS	-0.1351	-2.0001	0.0470	**
LHHI	-0.0033	-0.5659	0.5721	
LNIM	0.4349	7.7176	0.0000	*
LGRSEXP	0.0357	2.1226	0.0351	**
LCAEMP	-0.0188	-1.6771	0.0952	***
LLEVRAGE	-0.0321	-2.5958	0.0102	**
LTLOANS	0.1061	2.0370	0.0431	**
LGDP	0.7084	7.4259	0.0000	*
LCR	1.1621	2.1453	0.0332	**
LCRERISK	0.1323	2.0843	0.0385	**
LINEXP	-2.5502	-4.7609	0.0000	*
LPROV	-0.1314	-2.0737	0.0395	**
PR	-0.0158	-2.4013	0.0173	**
INF	-0.0004	-0.0984	0.9218	
DUMref	-1.1255	-4.0881	0.0001	*
R-squared	0.7547	Mean dependent var	0.3420	
Adjusted R-squar	0.7213	S.D. dependent var	1.2357	
S.E. of regression	0.6091	Sum squared resid	68.2721	
F-statistic	22.6389	Durbin-Watson stat	2.0559	
Prob(F-statistic)	0.0000			

*significant at 1 per cent   ** significant at 5 per cent

Also, the relationship between the size of total loans and bank performance was positive. This could be explained from the supply side perspective in which a higher level of loans translates to more interest income. However, given the high cost of deposit mobilization in the country, high interest cost could depress profits and overall performance. The negative consequences of high interest expense on bank performance were revealed by the elasticity coefficient. Gross expense indicator, however turned up with a counter-intuitive evidence given its positive and statistically significant coefficient. The coefficient of credit risk was consistent with apriori expectation suggesting the probability of profits associated with risk-taking activities.

Measures of macroeconomic performance (GDP and inflation) produced expected and robust statistics except for the rate of inflation whose coefficient was not significant. Nevertheless, they validated the fact that as demand for banks' services improves with economic growth, and banks

respond with increased loans, their profit would increase. This is further buttressed by the positive and highly statistically significant coefficients of the LLOANS variable in the model.

The effect of Central Bank's Policy Rate on bank profitability was hypothesized to be positive or negative. In this model, a negative effect was expected, given that high interest rate policy could constrain the capacity of banks to raise funds for investments. The estimated coefficient was consistent with *apriori*expectation and the statistical evidence also indicated that the effect was strong. Typically, a tight monetary policy stance, involving a rise in required reserves ratio, an increase in the policy rate or both could reduce bank reserves and trigger other negative changes, such as increase in interbank rates or deposit rates both of which could raise banks' costs and constrain credit growth and investments. Banks respond to this by increasing their risk premium in interest rates (since higher rates could mean that default risk could increase) and other charges in order to increase their margin.

The banking sector reforms in the mid-2000s were aimed at enhancing the growth of Nigerian banks and repositioning them for effective performance. To determine the impact of the reforms, a dummy variable (DUMREF) was introduced and assigned the value of 1 for the period, 2005 to 2010, and 0 in any other year. Accordingly, it was expected that the variable would produce a positive effect on the performance of banks. The empirical result showed that the reforms had a negative impact on profitability   contrary to expectation. This situation however could change when post-consolidation challenges are resolved.

5.0   SUMMARY AND CONCLUSION

5.1   Summary of Major Findings

In terms of growth, the number of bank branches has grown over time from 1.939 in 1990 to 5,809 in 2010. Also, the total assets of the industry has grown significantly over the study period, from ₦82.9 billion in 1990 to ₦17,331.6 billion in 2012, showing an increase of over 20,000 per cent. Analysis of competition showed that market concentration declined slightly after the bank consolidation exercise of 2004/2005. Notwithstanding that the HHI increased with respect to asset and deposits after bank consolidation, the industry remained largely competitive as the metric was under 1,000 on a scale of 10,000.

Analysis of intermediation metrics showed that the loan to deposit ratio of the industry trended upward across the pre and post UB, and in the post consolidation period as well. Also, intermediation efficiency measured by the ratio of currency outside banks to broad money supply (cob/m$_2$) improved significantly as it trended downwards due to reform policies, particularly payment system reforms, which have significantly reduced the ratio to below 0.1 in 2010. However, the ratio of credit to private sector to total adjusted deposit trended downwards due to reasons earlier stated.

The results of financial ratio analysis have provided data which could serve as benchmarks against which individual bank performance could be measured. However, we do caution that the ratios were strictly the authors' computations and do not represent any regulatory or supervisory opinion. The results showed mixed developments. While the biggest four banks performed better than the industry average in some ratios, the industry and other DMBs outperformed them in other ratios. It may be concluded from the results that, bigger is not necessarily better, in terms of profitability, cost and managerial efficiency as well as productivity. Moreover, comparison of bank performance during the different policy regimes also produced mixed results.

The result of the econometric analysis (using ex-post profit data) to determine factors of profitability showed that the strongest positive influence on profitability was interest income, with a coefficient of 0.51, which was significant at I per cent level. This was followed by the level of economic

106

activities, with a coefficient of 0.46 at 1 per cent level of significance. The other macro-level variables, competition and bank reform (consolidation) have the expected signs respectively, but were not statistically significant, even at the 10 per cent level.

The strongest bank-level variable that exerted negative influence on profitability was gross expenditure which had the expected sign and was statistically significant at 1 per cent level. The results validated some of the findings in Enendu (2003) but contradicted others. This might be because of the differences in the periods covered and the fact that the dependent variable was different for each of the works; one using ex-ante spread and the other ex-post data.

5.2   Conclusion

This study has presented a series on performance indicators, using FRA, for the banking industry. In absolute terms, the annual average bank balance sheets and income statement items increased over the years examined. The results of the performance indicators, using ratios, did in some cases show some trends but in some others particular trends were not observed. The analysis has provided ratios against which banks can benchmark themselves to improve their performance. From both the FRA and econometric analyses, it may be suggested that banks should focus more on efficiency in the deployment of assets, pricing decisions and increasing the productivity of both human and material resources.

It cannot be safely and conveniently stated, with this study, that the banking industry is more attractive for investments than other segments of the economy unless similar studies are done for the other sectors or comparative studies across sectors and across countries are done. Perhaps, such studies are the future agenda that this work has set.

Bibliography:

Abdus S. and Kabir M. H. (1999). "The Performance of Malaysian Islamic Bank During 1984-1997: An Exploratory Study". *International Journal of Islamic Financial Services* Vol. 1 No.3.

Adegbaju A. A. and Olokoyo F. O. (2008)."Recapitalization and Banks' Performance: ACase Study of Nigerian Banks".*African Economic and Business Review* Vol. 6 No. 1.

Adeoye, B. W (2007)**.** "Financial Sector development and Economic Growth: the Nigerian Experience". A paper presented at the 50th Annual conference of the Nigerian Economic Society (NES) (Abuja).

Adesegun A. A. (2003).**"**Comparative Experience in Confronting Banking Sector Problems in the Sub-Saharan African Region".

Ahmad, N.H. and Ariff, M. (2007). "Multi-country Study of Bank Credit Risk Determinants", *International Journal of Banking and Finance*, 5(1), pp 135-152.

Ahmed, A.S., Takeda, C. and Shawn, T. (1998)."Bank Loan Loss Provision: A Reexamination of Capital Management and Signaling Effects", *Working Paper, Department of Accounting, Syracuse University*, pp. 1-37.

Akram A. (2012). "Financial Performance of Palestinian Commercial Banks".*International Journal of Business and Social Science* Vol. 3 No. 3.

Al-Khouri, R. (2011). "Assessing the Risk and Performance of the GCC Banking Sector", *International Journal of Finance and Economics*, ISSN 1450-2887, Issue65, 72-8.

Allen F. and D. Gale (2000), "Financial Contagion," Journal of Political Economy, 108.

Babalola, Y. A. (2012). "The Determinants of Bank's Profitability in Nigeria", *Journal of Money, Investment and Banking,* Issue 24.

Babalola, F. Afolabi (1989) Assessment of Bank Performance in Nigeria: Comparative Situation. Presented at Bank Directors Seminar on Banking Industry in the 1990's Challenges and Prospects

Badi H. Batalgi. (2005): *Econometric Analysis of Panel Data*; John Wiley and Sons Ltd. Third Edition.

Barr, R and T. Siems (1994) "Predicting Bank Failure using DEA to quantify management quality" Federal Reserve Bank of Dallas, Financial Industry Studies working paper.pp1-94.

Barry, M. Lynn (1988) District Bank Performance in 1987: Bigger is not necessarily   better. Federal Reserve Bank of St Louis Review, March/April 1988

Barry, M. Lynn (1988) Eight District Banks: Back in the Black. Federal Reserve of St. Louis Review Vol. 71 No 3 May/June 1989.

Beck, T., Cull, R., Jerome, A., (2005). "Bank Privatization and Performance: Empirical Evidence from Nigeria". *Journal of Banking and Finance* 29, pp 2355 – 2379.

Ben-Naceur and Omran (2008)

Bikker, A. Jacob and Katharina Haaf (2002): "Competition, Concentration and their Relationship: An Empirical Analysis of the Banking Industry, *Journal of Banking & Finance no. 1748.*

Brownbridge, M. (1998). "Financial Distress in Local Banks in Kenya, Nigeria, Uganda and Zambia: Causes and Implications for Regulatory Policy". *Development Policy Review* 16, pp 173-188.

CBN (various issues) The Central Bank of Nigeria, Annual Report and Statement of Accounts; various years.

CBN, (2008).*50-Years of Central Banking in Nigeria*, 1958 – 2008.

CBN/NDIC, (1996)."Distress in the Financial Services Industry", *Special Report.*

Cetorelli, N. and Gamberra, M. (2001), "Banking market structure, financial dependence and growth: international evidence from industry data", Journal of Finance, 56.

Chen, K. and Pan, C. (2012). "An Empirical Study of Credit Risk Efficiency of Banking Industry in Taiwan", *Web Journal of Chinese Management Review*, 15(1), pp 1-16.

Chetty, K. (2011). Bank Disintermediation – South Africa, Being a Thesis submitted in fulfillment of the requirements for the degree of Master of Management in Finance & Investment in the Faculty of Commerce   Law and Management, Wit Business School, University of the Witwatersrand.

Cowry Research Desk (2009):Nigerian Banking Report.

Dhanuskodi R.A. (2007). *Comparative Study on the Profitability Performance Of Commercial Banks In Ethiopia*. Fifth International Conference, Ethiopian Economic Association, Addis Ababa, Ethiopia.

Diamond, D. W. and Philip H. Dybvig."Bank Runs, Deposit Insurance, and Liquidity".The Journal of Political Economy, Vol. 91, No. 3.(Jun., 1983), pp. 401-419.

Enendu, C. I. (2003). **"**Determinants of Commercial Banks' Interest Rate Spread in a liberalized financial System: Empirical Evidence from Nigeria (1989-2000)". *Central Bank of Nigeria Economic and Financial Review*, Vol.41, No.1.

Epure, M. and Lafuente, I. (2012)."Monitoring Bank Performance in the Presence of Risk", *Barcelona GSE Working Paper,* Series No.61.

FadzlanSufian (2011)."Profitability of the Korean Banking Sector: panel evidence on bank-specific and macroeconomic determinants", *Journal of Economic and management* Vol. 7 No 1 pp 43-72.

Franklin Allen et al – (2001). "Competition Among Banks: Introduction and Conference Overview". *European Finance Review* 5: pp 1-11.

Freixas, X. and Jean-Charles Rochet (1997): Microeconomics of Banking, ISBN 0-262-06193-7

Felix, A.T and Claudine, T.N (2008). "Bank Performance and Credit Risk Management", Unpublished Masters Dissertation in Finance, University of Skovde .

George, Foster (1978) Financial Statement Analysis. Prenticehall

Global Financial Stability Report (2008). "Containing Systemic Risks and Restoring Financial Soundness", *International Monetary Fund*, Washington DC.

Horrigan, J. 0 (1965): "Some Empirical Bases of Financial Ratio Analysis" The Accounting Review, n. 40(3), pp. 558-568.

Horrigan, J. 0 (1966): "The Determination of Long-term Credit Standing With Financial Ratios" Journal of Accounting Research, n, 4, Empirical Research in Accounting: Selected Studies, 44-62.

Horrigan, J. 0 (1968): "A Short History of Financial Ratio Analysis" The Accounting Review n. 43(2), 284-294.

Iganiga B. O. (2010).**"**Evaluation of the Nigerian Financial Sector Reforms using Behavioral Model".*J Economics 1(2): 65-75.*

Ikhide, S. and Alawode, A (1994): "Financial Reforms, Macroeconomic Stability and the order of Economic Liberalization: The Evidence from Nigeria," Research Report presented at the African Economic Consortium Workshop, Nairobi, Kenya, December 4-9.

Jagdish R. R. "Effects of Mergers on efficiency and productivity of Indian banks: A CAMELS analysis". *Asian Journal of Management Research.*

Joshua, O. (2011). Comparative analysis of the impact of mergers and acquisitions on financial efficiency of banks in Nigeria. Journal of Accounting and Taxation , P. 13.

Kargi, H.S. (2011). "Credit Risk and the Performance of Nigerian Banks", Ahmadu Bello University, Zaria.

Kashyap, Anil K., Raghuram G. Rajan, and Jeremy C. Stein, 2002, Banks as liquidity providers: an explanation for the coexistence of lending and deposit taking, Journal of Finance 57: 33-73.

Kithinji, A.M. (2010). "Credit Risk Management and Profitability of Commercial Banks in Kenya", *School of Business,* University of Nairobi, Nairobi.

Kocabay, S.K (2009). "Bank Competition and Banking System Stability: Evidence from Turkey" (Unpublished thesis submitted to Graduate School).Middle East Technical University.

Kolapo, T. F. and Ayeni, R. K. (2012). "Credit Risk and Commercial Banks' Performance in Nigeria: A Panel Model Approach"; *Australian Journal of Business and Management Research* Vol.2 No.02 [31-38].

Kumbirai, M., Webb, R. (2010). "A financial ratio analysis of commercial bank performance in South Africa", *African Review of Economics and Finance*, 2 (1): pp 30-53.

Lemo, T. (2005).*Regulatory Oversight and Stakeholder Protection*. A Paper Presented at the BGL Mergers and Acquisitions Interactive Seminar, held at Eko Hotels & Suites. V.I., on June 24.

Levin, A., C.-F.Lin, and C.-S. J. Chu. (2002).:Unit root tests in panel data: Asymptotic and finite-sample properties. Journal of Econometrics 108: 1–24.

Lewis, P., Stein, H., (1997). "Shifting Fortunes: The Political Economy of FinancialLiberalization in Nigeria".*World Development* 25, 5-22.

Mabwe K. and Robert W. (2010). "A financial Ratio Analysis of Commercial Bank Performance in South Africa". *African Review of Economics and Finance* Vol. 2 No1.

Mahamadu B. and Owusu-Danso T. (2008). "Ghana's Reforms Transform its Financial Sector". *IMF Survey Nbr. 37*

Malcolm Abbott et al ; "The performance of the Australian banking sector since deregulation". *Swinburne University of Technology Melbourne, Australia.*Retrieved available http://apebhconference.files.wordpress.com/2009/08/abott1.pdf

McNulty, P.J. (1968) Economic Theory and The Meaning of Competition, Quarterly Journal of Economics, 82(4).

Motta, M. (2004).*Competition Policy: Theory and Practice*. Cambridge University Press, New York.

NDIC (Various issues).*The Nigerian Deposit Insurance Corporation*, Annual Report and Statement of Accounts; various years.

Neuberger, Doris (1998) Structure, Conduct and Performance in Banking Markets. Working Paper, University of Rostock, Faculty of Economics and Social Sciences.

Nickell, S. (1996)."Competition and corporate performance".*Journal of Political Economy* 104, pp 724–746.

Nimalathasan B. (2008). "A comparative study of financial performance of banking sector in Bangladesh- *An application of CAMELS rating/Annals of University of Bucharest", Economic and Administrative Series, Nr. 2 (2008) 141-152*

Northcott, Carol Ann (2004) Competition in Banking: A Review of the Literature. Bank of Canada, Working Paper, N.24., Ottawa.

Okafor R. G. (2012)**. "**Performance Evaluation of Nigerian Commercial Banks: Before and After Consolidation".*IJEMR*Vol 2 Issue 2.

Okpanachi Joshua (2011) "Comparative Analysis of the Impact of Mergers and Acquisition on Financial Efficiency of Banks in Nigeria" *Journal of Accounting and Taxation* Vol.3 (1), pp. 1–7.

Orgler, Y. E. &Wolkowitz, B. (1976), *Bank capital / Yair E. Orgler, Benjamin Wolkowitz* VanNostrand Reinhold Co New York.

Petersen, M. M. and Raghuram G. Rajan, (1995), "The Effect of Credit Market Competition on Lending Relationships",NBER Working Paper No. 4921

Pentalone and Platt (1987) "Predicting Commercial Bank Failure Since Deregulation" New England Economic Review.

Rakhe P.B. (2010). "Profitability of Foreign Banks vis-à-vis Other Bank Groups in India – A Panel Data Analysis".*Reserve Bank of India Occasional Papers* Vol. 31, No.2, Monsoon 2010

Rasidah M. S. and Mohd H. T. (2011, March). "Performance and Financial Ratios of Commercial Banks in Malaysia and China".*International Review of Business Research Papers* Vol. 7.No. 2. Pp. 157-169

RehanaKouser and Irum Saba (2012)."Gauging the Financial Performance of Banking Sector using CAMEL Model: Comparison of Conventional, Mixed and Pure Islamic Banks in Pakistan".*International Research Journal of Finance and Economics* ISSN 1450-2887 Issue 82.

Salmi, T and TeppoMartikainen (1994): A Review of the Theoretical and Empirical Basis of Financial Ratio Analysis, Published in the Finnish Journal of Business Economics 4/94, 426-448.

Sam Mensah, Ph.D (2005, January).*Challenges and opportunities facing the financial services industry in a stable macroeconomic environment*. Keynote Speech Delivered at the 8th National Banking Conference of the Chartered Institute of Bankers (Ghana).

Sanusi, L. S., (2011): "Banking Reforms and Economic Development in Nigeria". Lecture delivered at the University of Warwick's Economic Summit, Warwick, 17 February 2012

Sanusi, L. S., (2012): "Banking Reform and Its Impact on the Nigerian Economy". Paper presented at a Retreat for Members of the Revenue

Mobilization Allocation and Fiscal Commission on Thursday 17th February, 2011 at Le Meridien Hotel, Uyo, AkwaIbom State.

Sanya, S. and Matthew Gaertner (2012): Assessing Bank Competition within the East African Community, *International Monetary Fund WP/12/32.*

Siems, T. F. (1992). "Quantifying Management's Role in Bank Survival, Federal Reserve Bank of Dallas, Economic Review 29 – 41.

Simpasa (2013), Increased Foreign Bank Presence, Privatization and Competition in the Zambian Banking Sector. Managerial Finance, 39(8), 787-808

Sobodu, O. Olubenga and Philip OlakunleAkiode (1998)." Bank performance and supervision in Nigeria: Analysing the transition to a deregulated economy" Research Papers no. 71, African Economic Research Consortium.

Soludo, C. (2004, July).*Consolidating the Nigerian Banking Industry to Meet the Development Challenges of the 21st Century*. Being an address delivered to the Special Meeting of the Bankers' Committee, held on July 6, at the CBN Headquarter, Abuja.

Stijn, Claessens (2009). "Competition in the Financial Sector: Overview of Competition Policies". *IMF working paper* (WP/09/45)

Stigler, G. Joseph (1987) "The Theory Competitive Price". New York: Macmillan, 5th Edition, Journal of the History of Economic Thought, ISBN 00294667099780029466704

SuvitaJha and XiaofengHui (2012, June). "A comparison of financial performance of commercial banks: A case study of Nepal". *African Journal of Business Management* Vol. 6(25), pp7601-7611

Toolsema (2003) On Competition and Banking. Thesis RijksUniversitet, Groningen

Uchendu, O. A. (2005). "Banking Sector Reforms & Bank Consolidation: The Malaysian Experience". *Central Bank of Nigeria Bullion*, 29 (2).

ValentinaFlamini, Calvin McDonald, and Liliana Schumacher (2009): "The Determinants of Commercial Bank Profitability in Sub-Saharan Africa". *IMF Working Paper* WP/09/15.

Vickers, (1995) Concepts of competition, Oxford Economic Papers, 47(1).

West African Economic and Monetary Union (2011). "Regional Consultation on Economic Issues and Policies", 2011 *IMF Country Report* No. 11/8.

Whish, R. (2005). *Competition Law* Oxford University Press, Inc., New York.

William R. Keeton and Lyle Matsunaga(1985). "Profits of commercial banks in Tenth District States" *Economic Review*. Retrieved from http:papers.ssrn.com

Y. Sree Rama Murthy (2003**)**.*A study on Financial Ratios of Major Commercial Banks*.Working Paper Series.SultanQaboos University, College of Commerce and Economics, Department of Economics and Finance.

Zhao, T., Murinde V. (2009). "Bank competition, risk taking and productive efficiency: Evidence from Nigeria's banking reform experiments".*Stirling Economics Discussion Paper-23*. Retrieved from http:hdl.handle.net/1893/1902.

Zohra B. and Shyam L. D. Pandey (2011)."Comparison of Performance of Microfinance Institutions with Commercial Banks in India".*Australian Journal of Business and Management Research* Vol.1 No.6 [110-120].Levin, A., C.-F.Lin, and C.-S. J. Chu. 2002.:Unit root tests in panel data: Asymptotic and finite-sample properties. Journal of Econometrics 108: 1–24.

Appendix 1 Annual Average Ratios

	Ratio	Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1	ROA	Big 4	0.04	0.09	0.96	1.97	1.26	1.51	1.60	1.57	1.25	1.57
		Ind.	0.1	0.6	1.7	3.1	1.8	2.0	1.6	2.0	2.4	0.6
		Mer.	-1.67	-0.14	2.43	5.23	7.04	0.46	5.04	5.78	4.35	1.75
		DMBs	2.60	2.19	4.25	7.35	4.85	5.90	4.34	5.17	5.76	5.88
2	NIM	Big 4	7.65	6.57	6.06	11.11	11.01	6.43	6.58	8.44	9.71	8.34
		Ind.	5.90	4.82	5.17	10.09	8.81	10.47	7.50	8.98	9.76	8.40
		Mer.	6.30	4.95	13.14	27.08	19.25	0.78	4.18		9.18	13.27
		DMBs	6.37	5.90	6.84	11.59	9.05	12.79	9.28	9.35	9.32	9.40
3	Burden	Big 4	228.29	220.67	219.58	732.79	962.90	1170.18	1848.40	2586.80	3250.98	3946.38
		Ind.	59.40	32.51	26.82	53.62	138.30	236.09	498.82	767.56	736.43	868.61
		Mer.	123.63	107.15	206.40	1309.40	727.80	13.50	11.0	-626.0	-41.17	17.34
		DMBs	15.35	3.56	4.14	-26.28	11.43	8.40	116.95	253.60	210.57	253.06

117

Appendix 1   Annual Average Ratios (Contd.)

	Ratio	Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1	ROA	Big 4	2.64	2.00	1.55	2.34	1.58	2.74	2.27	2.34	2.86	-0.43	1.50
		Ind.	3.2	2.9	2.5	6.7	1.9	2.5	2.1	2.2	0.2	2.8	1.4
		Mer.	4.42										
		DMBs	5.38	6.82	6.79	5.02	4.59	4.15	4.05	2.78	-1.71	-5.17	2.36
3	NIM	Big 4	10.28	8.83	9.13	9.94	8.73	8.05	10.72	8.66	10.20	12.95	7.49
		Ind.	8.85	8.38	9.34	9.48	6.60	7.32	6.17	6.21	3.77	5.81	4.61
		Mer.	13.43										
		DMBs	8.41	8.19	9.06	-5.20	9.79	5.74	7.18	7.13	7.19	4.84	4.37
4	Burden	Big 4	6094.58	2670.85	3540.00	11059.25	10851.25	6403.75	9936.00	13836.25	15615.75	64912.00	51325.50
		Ind.	-1275.56	1020.58	1669.10	3739.64	5370.42	2448.95	2995.44	5423.75	14146.47	27481.40	25536.86
		Mer.	58.16										
		DMBs	377.35	741.39	1043.69	1891.42	2837.67	1349.60	1540.20	4468.16	13754.67	18123.75	19806.06

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
4	Burden Efficiency Ratio	Big 4	3.02	2.38	1.63	3.77	3.75	2.96	3.47	4.16	4.23	3.86
		Ind.	2.89	1.62	1.10	1.52	2.66	3.15	3.61	4.65	4.14	3.41
		Mer.	3.63	2.41	4.20	22.58	17.92	0.33	11.32	-55.92	-2.97	0.84
		DMBs	2.10	0.40	0.36	-1.54	0.48	0.27	2.20	3.81	2.81	2.19
5	Earning Power Ratio	Big 4	15.34	14.99	16.22	17.11	16.88	15.65	15.24	14.49	14.79	14.23
		Ind.	16.86	17.09	19.49	25.67	21.56	25.43	15.64	15.57	16.43	17.65
		Mer.	17.34	13.06	29.53	32.47	56.78	10.21	42.04	19.25	25.19	25.84
		DMBs	19.06	20.46	24.50	36.35	26.38	34.24	19.05	15.45	18.50	21.55
6	Cost Income Ratio	Big 4	83.68	88.20	85.10	70.95	75.11	82.56	85.24	80.42	80.32	72.88
		Ind.	82.18	81.27	79.93	66.62	71.44	82.48	97.82	89.29	87.61	70.77
		Mer.	0.54	0.76	0.63		0.80	8.49	23.99		14.77	9.05
		DMBs	2.79	73.11	74.56	63.88	67.53	66.78	77.59	90.83	79.48	68.90

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
4	Burden Efficiency Ratio	Big 4	4.85	1.70	1.87	4.99	2.87	2.10	1.98	1.83	1.60	4.62	3.50
		Ind.	-4.29	1.98	2.95	5.81	3.89	2.07	1.60	1.77	1.65	4.04	3.78
		Mer.	2.08										
		DMBs	2.65	4.54	5.34	6.92	4.54	1.78	1.40	2.30	3.77	3.59	4.01
5	Earning Power Ratio	Big 4	18.64	14.81	14.61	13.24	7.65	12.68	11.48	8.65	11.18	14.96	10.93
		Ind.	19.88	19.47	18.24	15.38	9.98	14.75	14.28	12.72	8.59	15.03	11.28
		Mer.	27.50										
		DMBs	22.47	29.79	27.49	19.46	16.99	15.02	17.03	17.22	17.91	14.91	11.65
6	Cost Income Ratio	Big 4	72.55	66.08	60.91	79.44	82.44	66.88	70.35	93.54	62.29	77.70	79.48
		Ind.	73.56	65.41	69.19	92.15	90.12	73.96	71.08	77.20	72.53	81.90	87.35
		Mer.	10.58										
		DMBs	74.65	62.49	64.95	94.46	98.29	74.95	69.07	68.96	75.86	84.83	92.22

Appendix 1   Annual Average Ratios (Contd.)

	Ratio	Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
7	Wage bill to total expenses	Big 4	20.52	15.62	13.41	28.21	30.28	29.23	27.80	35.34	31.16	26.53
		Ind.	24.41	21.26	20.48	39.75	44.48	27.93	31.08	40.18	30.61	8.54
		Mer.	0.64	0.62	0.97		0.82	30.61	26.80		17.02	20.01
		DMBs	3.93	16.13	15.42	17.43	24.69	18.31	19.22	20.75	19.86	16.53
8	Wage bill to total income	Big 4	17.17	13.77	11.41	20.01	22.75	24.13	23.70	28.43	23.85	20.10
		Ind.	20.06	17.27	16.23	26.48	31.78	20.7	24.77	30.65	22.02	17.17
		Mer.	0.54	0.76	0.63		0.66	8.49	23.99		14.77	9.05
		DMBs	4.44	11.80	11.38	11.14	16.67	11.83	12.99	14.88	13.76	11.13
9	Wage bill to operating expenses	Big 4	38.11	31.50	29.61	44.25	44.56	44.33	41.06	46.33	40.77	34.50
		Ind.	47.88	43.24	43.46	76.36	70.45	42.0	45.29	52.88	40.70	33.16
		Mer.	1.24	1.22	1.64		1.18	62.59	31.30		31.12	39.93
		DMBs	4.91	33.23	31.85	39.75	42.99	26.44	27.03	27.82	27.19	24.92

Appendix 1   Annual Average Ratios (Contd.)

	Ratio	Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
7	Wage bill to total expenses	Big 4	27.88	35.31	30.73	23.32	27.97	36.01	29.12	26.53	28.71	23.99	25.82
		Ind.	22.77	32.04	24.93	12.65	23.54	29.68	26.43	26.98	27.47	24.76	24.46
		Mer.	19.70										
		DMBs	16.63	16.44	13.71	9.24	21.26	19.18	22.86	26.58	26.83	25.25	23.74
8	Wage bill to total income	Big 4	20.88	24.08	18.74	18.52	22.57	23.29	21.02	18.28	18.18	19.78	21.92
		Ind.	12.00	21.66	16.55	17.18	18.76	20.03	18.22	18.58	20.51	21.65	22.57
		Mer.	10.58										
		DMBs	12.37	11.8	11.34	14.79	16.28	14.19	15.32	18.89	21.44	22.96	22.97
9	Wage bill to operating expenses	Big 4	39.39	48.77	40.34	28.47	33.52	45.42	41.31	38.35	44.22	39.54	39.49
		Ind.	34.71	46.30	35.34	29.59	30.36	41.08	38.23	40.61	44.60	43.98	39.62
		Mer.	37.50										
		DMBs	27.93	22.26	22.22	26.26	29.38	29.25	33.31	41.19	44.45	47.19	39.70

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
10	Intermediation cost/total assets	Big 4	6.91	6.55	6.25	7.74	8.61	8.52	8.80	8.89	9.08	7.98
		Ind.	7.06	6.83	7.34	8.90	9.72	14.02	10.50	10.57	10.83	9.05
		Mer.	7.59	8.11	11.44	38.52	38.62	1.38	7.63		11.96	5.86
		DMBs	4.12	7.26	8.84	10.18	10.23	15.84	10.51	10.47	10.74	9.85
11	NINTY/AVTASS	Big 4	3.90	4.17	4.62	3.97	4.87	5.56	5.33	4.73	4.85	4.11
		Ind.	4.17	5.20	6.24	7.38	7.07	10.88	6.89	5.91	6.69	5.64
		Mer.	3.96	5.70	7.24	15.94	20.70	1.05	20.91	55.92	14.93	5.01
		DMBs	5.59	6.86	8.48	11.73	9.75	15.57	8.31	6.67	7.93	7.67
12	INTY/NINTY	Big 4	2.94	2.59	2.51	3.31	2.47	1.82	1.86	2.06	2.20	2.33
		Ind.	3.04	2.28	2.15	2.48	2.05	1.60	1.79	2.08	1.99	2.10
		Mer.	3.38	2.25	2.90	2.58	1.73	2.12	1.45	0.00	1.28	3.81
		DMBs	2.94	1.98	1.92	2.10	1.71	1.27	1.63	1.94	1.68	1.88

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
10	Intermediation cost/total assets	Big 4	9.57	7.08	6.78	8.61	5.26	6.72	5.69	5.60	4.52	7.05	5.68
		Ind.	9.59	8.81	8.90	10.35	8.23	7.88	7.01	6.52	3.84	6.93	6.08
		Mer.	7.76										
		DMBs	9.99	11.67	11.01	11.38	12.43	7.38	8.07	7.66	8.20	6.77	6.42
11	NINTY/AVTASS	Big 4	4.73	5.38	4.91	3.62	2.39	4.62	3.71	3.99	2.92	2.43	2.18
		Ind.	13.88	6.83	5.95	4.54	4.33	5.81	5.42	4.75	2.19	2.89	2.30
		Mer.	5.67										
		DMBs	7.34	7.13	5.67	4.46	7.89	5.60	6.67	5.37	4.43	3.18	2.41
12	INTY/NINTY	Big 4	2.82	1.67	1.97	2.65	2.27	1.84	2.02	1.94	2.77	4.79	3.70
		Ind.	1.00	1.76	2.19	2.93	2.07	1.78	1.72	2.00	2.82	3.87	3.64
		Mer.	3.60										
		DMBs	2.07	2.12	2.80	3.53	1.84	1.72	1.63	2.11	2.84	3.37	3.61

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
13	Efficiency Ratio	Big 4	73.4	64.6	48.5	52.3	56.9	58.7	61.1	64.6	63.9	57.8
		Ind.	70.2	68.1	65.2	51.0	61.2	75.9	96.9	86.4	84.2	63.7
		Mer.	43.75	62.10	38.75	93.75	55.90	13.56	76.66		47.48	22.66
		DMBs	60.97	56.90	58.66	43.68	54.43	58.20	71.11	88.08	73.88	59.51
14	Profit Expense Ratio	Big 4	2.69	1.15	8.63	23.48	14.95	15.66	14.19	17.47	13.78	20.20
		Ind.	3.94	6.73	15.83	28.49	20.56	16.52	15.56	20.71	21.49	10.09
		Mer.	-10.09	-0.62	13.98	15.70	19.94	20.09	16.94		25.93	24.95
		DMBs	3.07	14.66	23.29	31.66	27.20	25.82	29.33	36.84	39.19	39.57
15	Operating self-sufficiency (OSS) Ratio	Big 4	56.34	113.38	117.51	140.95	133.14	121.12	117.32	124.34	124.50	137.21
		Ind.	121.69	123.05	125.11	150.12	139.98	121.24	102.22	111.99	114.14	50.23
		Mer.	118.26	81.71	152.90	78.18	125.04	360.70	111.68	110.10	115.24	221.17
		DMBs	2.01	136.78	134.12	156.55	148.08	149.75	128.88	110.10	125.82	145.14

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
13	Efficiency Ratio	Big 4	52.4	48.8	47.2	66.1	69.9	53.6	50.0	65.2	40.6	47.2	52.1
		Ind.	64.6	55.6	61.3	89.6	108.2	67.2	62.9	69.2	61.9	71.8	81.0
		Mer.	28.21										
		DMBs	63.68	51.09	53.34	91.35	97.62	66.24	60.51	58.91	65.48	74.95	87.64
14	Profit Expense Ratio	Big 4	25.07	27.80	25.25	38.24	40.48	41.08	33.81	39.10	52.17	-2.60	23.89
		Ind.	27.99	29.82	27.42	17.21	25.37	36.59	32.69	28.64	3.17	-25.94	22.64
		Mer.	35.26										
		DMBs	32.10	36.66	38.04	15.52	26.71	36.88	34.46	23.38	-12.57	-40.84	21.98
15	Operating self-sufficiency (OSS) Ratio	Big 4	137.83	151.34	164.16	125.88	121.31	149.53	142.14	106.91	160.54	128.69	125.81
		Ind.	135.94	152.88	144.54	63.49	94.11	135.20	140.70	129.53	137.87	122.09	114.48
		Mer.	186.24										
		DMBs	133.96	160.02	153.97	60.21	98.90	133.43	144.78	145.02	131.83	117.88	108.43

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
16	Reliance Ratio	Big 4	74.61	72.16	71.55	76.81	71.16	64.48	65.07	67.37	72.16	67.33
		Ind.	75.26	69.54	68.80	71.25	67.22	68.52	78.69	79.09	81.11	67.08
		Mer.	77.18	69.23	74.36	72.06	63.41	67.92	44.81		56.09	79.20
		DMBs	2.05	66.46	66.36	67.74	63.04	57.88	71.15	83.55	71.80	66.80
17	Equity Multiplier	Big 4	0.01	0.02	0.21	0.41	0.25	0.24	0.23	0.20	0.16	0.23
		Ind.										
		Mer.	-0.19	-0.02	0.17	0.25	0.17	0.02	0.26	0.38	0.19	0.08
		DMBs	2.25									
18	Overhead burden ratio	Big 4	54.16	57.38	40.32	43.13	47.15	52.04	60.69	59.48	53.73	53.77
		Ind.	49.03	33.63	21.25	15.09	30.14	30.05	48.12	51.83	42.42	-23.91
		Mer.	57.65	48.74	31.99	50.94	56.79	42.86	97.87		-32.41	6.34
		DMBs	-1.30	6.80	5.28	-13.32	5.31	2.11	23.75	40.73	30.15	23.27

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
16	Reliance Ratio	Big 4	71.54	60.56	66.28	72.64	70.92	66.93	65.14	89.57	72.29	77.98	73.69
		Ind.	69.81	61.66	71.61	86.46	89.96	70.18	65.16	74.74	71.70	74.73	74.26
		Mer.	78.27										
		DMBs	67.64	50.82	57.86	80.89	85.57	64.01	63.83	65.85	70.22	71.94	74.61
17	Equity Multiplier	Big 4	0.40	0.31	0.17	0.30	0.28	0.29	0.26	0.23	0.21	-0.03	0.09
		Ind.											
		Mer.	0.20										
		DMBs											
18	Overhead burden ratio	Big 4	51.63	27.16	24.68	64.72	65.58	31.20	38.94	30.54	28.45	65.11	69.37
		Ind.	-48.46	24.53	31.55	60.4	59.02	28.27	25.90	28.48	43.85	69.52	82.11
		Mer.	15.51										
		DMBs	31.45	55.44	58.92	46.32	46.39	31.02	19.46	32.22	52.44	74.01	91.82

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
19	Average Income generated per Employee (₦)	Big 4	131,457	158,469	253,399	385,492	487,725	690,068	929,638	1,122,303	1,721,930	2,838,882
		Ind.	107,182	125,620	191,247	281,010	329,681	644,288	672,763	804,282	1,208,961	2,466,601
		Mer.	14.76	7.63	19.09		16.90	2.57			4.47	6.47
		DMBs	140,448	208,938	327,969	587,886	519,154	1,029,973	1,004,546	981,682	1,640,475	3,296,583
20	Average Profit (PAT) generated per Employee (₦)	Big 4	2,959	1,609	18,601	64,205	54,760	89,215	112,452	157,644	190,631	336,149
		Ind.	619	4,156	16,427	33,608	26,916	55,624	75,139	113,275	174,775	401,639
		Mer.	(1.42)	(0.08)	1.57		1.72	0.12			0.77	0.44
		DMBs	12,232	13,639	35,922	70,934	46,151	96,531	146,907	249,681	393,363	750,500
21	Average Business generated per Employee (₦)	Big 4	1,036,313	1,176,416	1,285,582	1,684,381	2,203,991	3,536,836	5,170,834	6,771,883	9,913,564	13,313,316
		Ind.	1,010,620	1,096,152	1,286,612	1,305,713	2,417,311	4,269,205	5,667,797	7,343,377	12,012,890	15,375,411
		Mer.	4.50	4.85	6.32		2.71	1.58			26.84	23
		DMBs	964,673	1,032,239	1,289,372	1,282,929	2,626,914	4,037,507	6,202,699	7,651,135	10,710,395	14,234,952

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
19	Average Income generated per Employee (₦)	Big 4	4,101,609	4,893,875	5,170,710	5,088,405	4,944,311	7,724,209	11,612,884	10,920,959	19,850,185	26,016,956	20,976,307
		Ind.	4,328,052	5,270,045	5,257,027	5,316,455	4,493,796	8,142,990	11,709,829	13,066,587	19,800,510	25,493,205	22,383,351
		Mer.	8.37										
		DMBs	4,908,404	9,063,889	11,346,163	9,505,658	5,630,999	11,416,309	12,467,590	15,488,770	20,328,774	25,721,771	23,891,247
20	Average Profit (PAT) generated per Employee (₦)	Big 4	746,098	898,994	795,279	1,545,829	1,649,957	2,122,291	2,762,470	3,993,891	6,450,723	(526,401)	3,983,146
		Ind.	686,266	796,179	727,073	930,037	853,883	1,380,357	1,746,797	2,269,817	394,830	4,783,235	2,787,382
		Mer.	1.35										
		DMBs	900,884	1,702,116	2,133,953	1,796,232	1,018,114	1,526,240	1,501,413	2,025,708	1,472,705	8,169,161	2,789,493
21	Average Business generated per Employee (₦)	Big 4	18,964,180	22,876,990	33,495,754	30,776,689	33,440,890	56,827,291	70,245,002	123,934,474	112,648,812	130,351,465	217,613
		Ind.	21,502,660	20,569,300	22,884,408	40,348,153	37,088,474	57,060,429	71,458,719	87,323,297	111,445,800	142,510,157	197,348,144
		Mer.	28.26										
		DMBs	21,658,329	28,141,306	36,118,088	49,135,379	39,770,663	63,208,052	63,394,829	82,038,092	102,655,164	149,741,987	204,553,240

Appendix 1   Annual Average Ratios (Contd.)

	Ratio	Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
22	Break-Even Volume of Incremental Cost per Employee	Big 4	0.38	0.53	0.68	0.79	1.18	2.45	3.27	4.12	5.03	5.63
		Ind.	0.51	0.75	0.90	0.89	1.38	1.46	2.41	2.97	3.72	5.38
		Mer.					0.4	16.0			6.7	4.4
		DMBs	0.54	0.69	0.77	0.87	1.47	1.24	1.92	2.75	3.44	5.59
23	Interest Exps/Interest Income	Big 4	51.8	61.6	65.1	33.5	33.8	43.6	42.3	28.3	26.2	25.0
		Ind.	53.5	59.4	61.4	44.8	39.2	39.9	39.0	27.1	26.8	29.1
		Mer.	52.9	61.4	37.5	24.1	34.5	65.0	31.9		51.8	30.5
		DMBs	56.0	56.6	58.0	52.9	45.6	35.5	31.5	27.6	29.8	34.7
24	Texas Ratio	Big 4	1.8	3.0	3.1	2.8	2.6	1.8	1.4	1.2	0.9	1.1
		Ind.	2.0	3.3	3.4	3.7	4.1	3.5	2.4	1.9	1.4	0.9
		Mer.			0.0014	0.0004	0.01	0.03	0.17	0.012	0.5	0.7
		DMBs	0.8	0.8	0.8	0.7	1.2	1.1	1.0	0.6	0.6	0.3

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
22	Break-Even Volume of Incremental Cost per Employee	Big 4	7.95	13.23	12.34	11.69	21.74	28.32	37.19	38.49	63.85	76.67	90.85
		Ind.	10.54	19.90	9.29	14.28	20.69	31.37	43.09	49.89	127.54	122.33	132.1
		Mer.	6.8										
		DMBs	11.57	15.28	13.79	18.67	16.85	43.14	34.36	44.26	66.03	144.5	144.9
23	Interest Exp./Interest Income	Big 4	29.6	30.1	21.9	19.8	19.3	20.7	31.9	32.2	30.2	39.2	37.4
		Ind.	36.3	32.4	28.5	28.7	26.5	29.3	33.7	34.7	38.9	48.1	45.0
		Mer.	34.3										
		DMBs	44.7	45.9	43.0	44.5	32.7	40.3	33.9	37.1	42.8	54.8	49.7
24	Texas Ratio	Big 4	1.0	1.3	1.9	1.3	0.8	0.7	0.6	0.2	0.1	0.7	0.7
		Ind.	0.5	1.4	2.0	2.1	0.8	0.5	0.5	0.3	0.3	0.4	0.4
		Mer.	0.5										
		DMBs	0.2	0.9	1.5	1.2	0.4	0.4	0.4	0.2	0.3	0.2	0.3

Appendix 1 Annual Average Ratios (Contd.)

	Ratio	Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
25	NIM(EA)	Big 4	7.7	6.6	6.1	11.1	11.0	6.4	6.6	8.4	9.7	8.3
		Ind.	6.8	5.3	4.8	8.8	8.9	7.4	7.2	8.3	7.7	7.8
		Mer.	7.4	5.8	15.5	31.8	22.6	0.9	1.24	0.01	10.79	16.5
		DMBs	7.1	7.7	8.6	15.9	11.8	14.1	13.2	11.1	10.5	12.4
26	ROE	Big 4	0.7	1.7	20.7	40.8	24.7	24.1	22.6	20.2	15.6	22.9
		Ind.	1.6	10.1	30.7	57.8	32.6	40.1	33.4	33.2	27.0	28.8
		Mer.	-1.61	16.93	24.76	17.21	2.04	26.03	37.8	19.2	8.3	20.3
		DMBs	23.5	20.2	41.0	72.3	41.8	74.6	68.4	57.7	48.3	34.3

Appendix 1 Annual Average Ration (Contd.)

	Ratio	Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
25	NIM(EA)	Big 4	10.3	8.8	9.1	9.9	8.7	8.0	10.7	8.7	10.2	12.9	7.5
		Ind.	11.0	10.9	14.2	11.8	9.8	9.9	11.3	9.1	8.9	9.7	7.4
		Mer.	14.9										
		DMBs	11.7	10.4	12.3	16.5	11.3	11.6	14.7	8.7	8.6	8.2	7.2
26	ROE	Big 4	39.6	30.9	16.9	29.9	27.9	28.8	26.4	22.8	21.1	-3.3	9.1
		Ind.	25.2	44.3	29.7	34.1	26.8	18.2	13.7	13.2	1.5	12.9	5.7
		Mer.											
		DMBs	19.1	43.1	35.7	42.8	29.8	12.9	9.1	11.0	-5.6	-19.2	4.6

Appendix 2: Coefficient Confidence Intervals : Sample 1990-2010

Variable	Coefficient	90% CI		95% CI		99% CI	
		Low	High	Low	High	Low	High
C	-27.32	-34.38	-20.27	-35.74	-18.91	-38.43	-16.22
LAVTASS	0.14	0.02	0.25	0.00	0.27	-0.04	0.31
LHHI	0.00	-0.01	0.01	-0.01	0.01	-0.02	0.01
LNIM	0.43	0.34	0.53	0.32	0.55	0.29	0.58
LINTY	-0.05	-0.08	-0.02	-0.08	-0.01	-0.09	0.00
LGRSEXP	0.04	0.01	0.06	0.00	0.07	-0.01	0.08
LCAEMP	-0.02	-0.04	0.00	-0.04	0.00	-0.05	0.01
LLEVRAGE	-0.03	-0.05	-0.01	-0.06	-0.01	-0.06	0.00
LINEXP	2.55	1.66	3.44	1.49	3.61	1.16	3.94
LTLOANS	0.11	0.02	0.19	0.00	0.21	-0.03	0.24
LGDP	0.71	0.55	0.87	0.52	0.90	0.46	0.96
LCR	1.16	0.27	2.06	0.09	2.23	-0.25	2.57
LCRERISK	0.13	0.03	0.24	0.01	0.26	-0.03	0.30
LPROV	-0.13	-0.24	-0.03	-0.26	-0.01	-0.30	0.03
PR	-0.02	-0.03	0.00	-0.03	0.00	-0.03	0.00
INF	0.00	-0.01	0.01	-0.01	0.01	-0.01	0.01
DUM2	-1.13	-1.58	-0.67	-1.67	-0.58	-1.84	-0.41