AN EMPIRICAL ANALYSIS OF FINANCIAL DEEPENING AND ECONOMIC GROWTH IN NIGERIA: (1986 – 2010)

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MAY 2012

DECLARATION

I hereby declare that the thesis titled, "AN EMPIRICAL ANALYSIS OF FINANCIAL DEEPENING AND ECONOMIC GROWTH IN NIGERIA (1986-2010)" is the result of a research work carried out by, ONYEMACHI CHUKWUKA in the Department of Economics under the supervision of PROF. (MRS) P. S. AKU and DR NJIFORTI PETER.

The information derived from the literature has been dully acknowledged in the text and a list of references provided. No part of this thesis was presented previously for another degree or diploma at any university.

…….. …….. …….....

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CERTFICATION

This is to certify that the thesis titled, "AN EMPIRICAL ANALYSIS OF FINANCIAL DEEPENING AND ECONOMIC GROWTH IN NIGERIA (1986-2010)" written by Onyemachi Chukwuka meets the requirements and regulations governing the award of Masters of Science Degree (Economics) in the Department of Economics of Ahmadu Bello University, Zaria and is hereby approved for its contribution to knowledge and literary presentations.

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DEDICATION

This thesis is dedicated to God Almighty. It is dedicated to my parents Mr. Christopher U. Onyemachi and Mrs. Justina N. Onyemachi; to my siblings, Adanma, Chinyere, Udobi, Ibeabuchi, and Ozioma and fiancée Uzonwanne Okezie.

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ABSTRACT

Economists have long recognized that the financial system plays a decisive role in the process of economic development (Stiglitz, 1998), some have argued that financial intermediaries mobilize, pool and channel domestic savings into productive capital, and by doing so they contribute to economic growth (supply leading), while others argue, that financial development is a consequence, and not a cause of economic growth. In this view, economic growth increases demand for sophisticated financial instruments, which in turn leads to growth in the financial sector (demand following). This study examines the causal relationship between financial deepening and economic growth in Nigeria for the period 1986 to 2010 using the Vector Auto Regressive model. From the results of the analysis, we found out that; financial deepening does not impact or influence economic growth in the short run. However, in the long run there is a significant effect of financial deepening on economic growth, lending credence to the supply leading hypothesis that financial deepening causes economic growth. It was also observed that GDP had a positive and significant impact on Deposit Money Bank Asset, Money supply and private sector credit, thereby laying credence to the demand following hypothesis. It was recommended that monetary authorities should continue with the policy reforms to consolidate the emerging confidence in the financial system.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Financial deepening implies the ability of financial institutions to effectively mobilize savings for investment purposes. The growth of domestic savings provides the real structure for the creation of diversified financial claims. Financial deepening generally entails an increased ratio of money supply to Gross Domestic Product (Popiel, 1990), Nnanna and Dogo, 1999) and Nzott, 2004). The sum of all the measures of financial assets gives us the approximate size of financial deepening. That means that the widest range of such assets as broad money, liabilities of non-bank financial intermediaries, treasury bills, value of shares in the stock market, money market funds, etc, will have to be included in the measure of financial deepening.

Indicators of financial deepening differ in economies and between the countries. It is also possible that, different financial markets have different levels of financial deepening, for example, the countries that have efficient financial systems have higher financial deepening ratios. The share of assets in GNP of developed countries' financial markets is greater than that of the developing countries (Jovanovic, 1990).

The financial system has been acknowledged globally to play a catalytic role in the economic development of nations (Sanusi, 2009). It plays a key role in the mobilization and allocations of savings for productive use, provides structures for monetary management, the basis for managing liquidity in the system. It also assists in the reduction of risks faced by firms and businesses in their productive processes, improvement of portfolio diversification and the insulation of the economy from the vicissitudes of international economic changes.

The increasing deepening and expansion of the financial system is expected to lead to increased variety of financial instruments not only in the banking subsector but also in the

capital market. Greater availability of varieties of financial institutions and instruments is expected to deepen the financial system. Financial deepening can be measured using several kinds of indices, a few of these are: the ratio of the growth rate of broad money (M_2) to that of the gross domestic product; ratio of Total banking assets to GDP, Gross Savings in the economy to GDP as well as Gross Domestic Investment to GDP as well as the Interest Rate Spread (i.e the difference between lending rate and deposit rate). The more deepened the financial system the more expanded the level of output and the rate of growth of output are supposed to be.

Goldsmith (1969) motivated his path breaking study of finance and growth as follows: "One of the most important problems in the field of finance, if not the single most important one … is the effect that financial structure and development have on economic growth." Economic growth cannot be possible without the combined role of investment, labour and financial deepening (Ndebbio, 2004). Though Economists have accepted effects of financial deepening on economic growth, they have not had the same idea about the direction of causality, which means whether financial development causes economic growth or economic growth causes financial development. For instance, Hicks (1969), Shaw (1973) and Schumpeter (1912) support that financial development causes economic growth, that is, financial deepening is a necessary pre-condition for economic growth. This hypothesis is usually labeled "supply leading" since it postulates that the presence of efficient financial markets increases the supply of financial services in advance of the demand for them in the real sector of the economy. In contrast to this opinion, Robinson (1952) and Patrick (1966) discusses that in the existence of same type of financial regulations, economic growth creates a demand, and financial system gives an automatic response to this demand which causes financial system development. They argue that financial deepening is merely a by-product or an outcome of growth in the real side of the economy. This is called the "demand-following"

hypothesis since financial markets develop and progress following the increased demand for their services from the growing real economy.

Theoretically, financial development creates enabling conditions for growth through either a supply leading (financial development spurs growth) or a demand following (growth generates demand for financial products) channel, (Smith, 2007). A large body of empirical research supports the view that development of the financial system contributes to economic growth (Rajan and Zingales, 2003).

The reforms in the financial system in Nigeria which heightened with the 1986 deregulation, affected the level of financial deepening of the country and the level relevance of the financial system to economic development (Nnanna and Dogo, 1998). However, the rapid globalization of the financial markets since then and the increased level of integration of the Nigerian financial system to the global system have generated interest on the level of financial deepening that has occurred.

Nigeria has experienced growth in the financial sector and consequently increases in financial deepening over time. Growth in financial outlet, development in the money and capital market increases in stocks, and activities in the capital market, increases bank branches, rapid use of credit and debit cards, increasing use of payment technologies like ATM machines(Automatic Teller Machine Technology) and electronic transfer of deposits, expanding Internet banking services, e-banking, and increase in total deposits, (Luis, 2009). Growth in financial sector should translate into the growth of the economy, because growth in the financial sector will make available funds for investment.

In the capital market, market capitalization is the most widely used indicator in assessing the size of a capital market to an economy. Before 1988, the total market capitalization was less than N10 billion from 1988 to 1994, it hovered between N10 billion to N57 billion. In 2003, it was N1,3593 trillion, N2.1125 trillion in 2004 and N5.12 trillion in

2006.The market capitalization recorded the highest value of N13.2294 trillion in 2007. But this fell to N9.562 trillion in 2008 due to the global financial meltdown. The percentage market capitalization compared to the economy's Gross Domestic Product (GDP) helps to assess the size of the stock market. In 1981, this was 10.5%, but fell to 7.4% in 1994. It rose again to 9.3% in 1995, 10.6% in 1996; 18.9% in 2003, 25.6% in 2004 and 27.4% in 2005.

The question is whether the development in the financial sector, which has led to financial deepening, has been able to bring about anticipated growth, considering the fact that Nigeria still experiences high level of unemployment, inflation rates are still high, lack of credit for investment, the deposit and lending rates are still very wide apart, there is wide disparity between the lending and deposit rates. Therefore, this study examines the extent to which financial deepening has impacted on economic growth in Nigeria.

1.2 STATEMENT OF PROBLEM

The relevance of the financial system to economic growth is not clear-cut. The direction of causality between financial deepening and growth has always been a controversial issue. There are two main opposing hypotheses which are testable: the 'supply-leading' hypothesis versus the 'demand-following' hypothesis. Supply-leading emphasizes financial deepening as an important prerequisite for growth. The supply-leading hypothesis suggests that financial deepening fuels growth. The existence and development of the financial markets brings about a higher level of saving and investment and enhance the efficiency of capital accumulation, (Hicks 1969, Levine 1993, Diego 2003). Demand-following posits that financial deepening follows growth; development of the financial markets is merely a lagged response to economic growth. This implies that any early efforts to develop financial markets might lead to a waste of resources which could be allocated to more useful purposes in the early stages of growth. As the economy advances, this triggers an increased demand for

more financial services and thus leads to greater financial development, (Robinson 1952, Lucas 1988, Favara 2003).

Since 1986, the monetary authorities in Nigeria have adopted various measures aimed at deepening the financial system and reducing the level of financial repression in the system. The reform of the financial structure led to changes in Nigeria's financial sector in an effort to foster competition, strengthen the supervisory role of the regulatory authority and streamline the relationship between the public and financial sectors of the economy. Many new financial instruments/assets and techniques have been developed and existing ones have been modified, the financial markets have been adapted to meet new demands and new circumstances. All these have been aimed at deepening the financial system. But how has all these impacted on economic growth in Nigeria.

This research will examine the causal relationship that exists between finance and growth within the Nigerian economy, is it supply leading or demand following in nature?

1.3 OBJECTIVES OF THE STUDY

The main objective of the study is to examine empirically the extent of financial deepening in Nigeria, and its impact on the Nigerian economy since the onset of financial reforms in 1986 up to 2008.

The specific objectives of the study include:

i. To examine the structure and growth of financial deepening in Nigeria.
ii. To analyze the impact of financial deepening on economic growth in Nigeria
iii. To make policy recommendations

1.4 RESEARCH HYPOTHESIS

The research will test one main hypothesis which is as follows:

H_1: B_1=O Financial deepening has no significant effect on economic growth in Nigeria.

H_1: $B_1 \neq O$ Financial deepening has significant effect on economic growth in Nigeria.

1.5 JUSTIFICATION

Although most studies have found that financial development contributes to economic growth, example McKinnon (1973), Goldsmith (1969), and Levine (1993), they have not ended the debate on the direction of causality between economic growth and financial development. It is expected that the outcome of this research will shed more light on the role of financial deepening on economic growth in Nigeria.

If the development of financial system affects economic growth positively, large financial deepening rate will make economic growth increase. When this rate is small, due to weak financial deepening, economic growth will not reach the required level (Greenwood, 1990). Thus, how economic growth is affected by financial development or financial system is an important point for discussion.

This study contributes to knowledge by investigating empirically the causal relationship between financial deepening and economic growth in Nigeria using the vector autoregressive model.

1.6 SCOPE AND LIMITATION

The study covers the period 1986 to 2010. This period however, is considered by the study wide enough to permit a logical deduction that can influence policy decisions in the financial sector development. The summing up of financial assets to represent a broad measure of financial deepening is not a problem, but the availability of data for some of them is.

1.7 ORGANISATION OF THE STUDY

This research work is structured into five chapters. Chapter One consists of our discussion so far, which covers the general introduction of the study, statement of problem, objectives of the study, justification, hypothesis methodology, scope and limitation, and organization of chapters. Chapter two presents the conceptual framework, theoretical and empirical literature review, while chapter three presents the methodology; chapter four presents the data analysis and interpretation. Finally, summary of findings, conclusion and recommendation are contained in chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.1 CONCEPTUAL FRAMEWORK

2.1.1 FINANCIAL DEEPENING

Financial deepening implies the ability of financial institutions to effectively mobilize savings for investment purposes. The growth of domestic savings provides the real structure for the creation of diversified financial claims. Financial deepening generally entails an increased ratio of money supply to Gross Domestic Product (Popiel, 1990, Nnanna and Dogo, 1999, and Nzotta, 2004).

Financial deepening can be defined as the effort aimed at developing the financial system that is evident in increased financial instrument/assets in the financial markets – money and capital markets, leading to the expansion of the real sector of the economy (Njiforti et'al, 2007). It is the effort of developing countries to achieve growth through financial intermediation.

The definition of financial deepening in literature reflects the share of money supply in GDP. The most classic and practical indicator related to financial deepening is the ratio of *M2/GDP* which means the share of M1 + all time-related deposits and noninstutional money market funds to GDP in a certain year (Öçal and Çolak, 1999). Financial deepening is thus measured by relating monetary and financial aggregates such as M1, M2 and M3 to the Gross Domestic Product (GDP). M1: Technically defined, is the sum of: the tender that is held outside banks, travelers checks, checking accounts (but not demand deposits), minus the amount of money in the Federal Reserve float.

M2: The sum of: M1, savings deposits (this would include money market accounts from which no checks can be written), and small denomination time deposits

M3: M2 plus the large time deposits.

M1, M2, M3 are all measures of money supply, that is the amount of money in circulation at a given time. Generally, the types of commercial bank money that tend to be valued at lower amounts are classified in the narrow category of M1 while the types of commercial bank money that tend to exist in larger amounts are categorized in M2 and M3, with M3 having the largest. The terms M1, M2, M3 refer to the monetary aggregates. For quite some time it was thought that there was a perfect one to one relationship between these numbers and the rates of inflation. Recently this relationship seems to have broken down, and the money supply numbers have lost some of their appeal to market participants.

Shaw (1973) explains the changes in system of finance with a term *financial deepening*. According to this idea, when financial system has achieved a specific depth, credits and deposits maturity would become equal.

2.1.2 ECONOMIC GROWTH

Jhingan (2003) defines economic growth as a process whereby the real per capital income of a country increases over a long period of time. According to him, economic growth is measured by the increase in the amount of goods and services produced in a country. Economic growth occurs when an economy's productive capacity increases which, in turn, is used to produce more goods and services.

Economic growth is the increase of per capita gross domestic product (GDP) or other measure of aggregate income. It is often measured as the rate of change in GDP. Economic growth refers only to the quantity of goods and services produced. The term economic growth refers to the increase (or growth) of a specific measure such as real national income, gross domestic product, or per capita income. National income or product is commonly expressed in terms of a measure of the aggregate value added output of the domestic

economy called gross domestic product, GDP. In other words, GDP is a measure of the value of all of the goods and services produced in a country in a year. GDP can be calculated as the value of the output produced either in a country or equivalently as the total income, in the form of wages, rents, interests, and profits, earned in a country. Thus, GDP is also known as output or national income.

2.2 THE STRUCTURE OF THE NIGERIAN FINANCIAL SYSTEM

A financial system is a conglomerate of various markets, instruments, operators and institutions that interact within an economy to provide financial services such as resources mobilization and allocation, financial intermediation and facilitation of foreign exchange transaction to exchange foreign trade.

As mentioned earlier, the Nigerian financial system can be broadly subdivided into 2, namely: the informal and the formal. The informal sector comprises the local money lenders, the thrifts and savings associations etc. This component is poorly developed, limited in reach, and not integrated into the formal financial system. Its exact size and effect on the economy remain unknown and a matter of speculation. The formal financial system on the other hand, can be subdivided into the money market and capital market and these comprise the banks and non-bank financial institutions.

2.2.1 THE MONEY MARKET

The money market segment of the financial system constitutes the hub of the financial system. Its major function is to facilitate the raising of short-term funds from the surplus sectors to the deficit sectors of the economy and comprises the discount houses, commercial and special purpose banks like the Community banks. They deal in short term credit

instruments of high quality, such as treasury bills, treasury certificates, call money, commercial paper and so on.

Commercial banks perform three major functions, namely, acceptance of deposits, granting of loans, and the operation of the payment and settlement mechanism. In terms of flow of funds, the banking system, clearly dominates and has an important impact on the level of economic development. The first commercial bank was established in 1894, and is the forebear of the present day First Bank of Nigeria PLC. Since the government commenced the active deregulation of the economy in 1986, the commercial banking sector has continued to witness rapid growth, especially in terms of the number of institutions and product innovations in the market. With the bank consolidation of 2005 and bank reforms, Nigeria has a total of twenty four commercial banks with over 3000 branches nationwide (Ndebibo, 2010)

Discount houses these are non-bank financial institutions that mobilize funds for investment in securities according to the liquidity needs of the system. Discount houses were created to serve as financial intermediaries between the CBN, licensed banks and other financial institutions.

2.2.2 THE CAPITAL MARKET

The Nigerian Capital Market is a channel for mobilization and utilization of long-term funds. The instruments traded in the market include government securities, government and corporate bonds and equity and preference shares (stocks) and mortgage loans. The main institutions in the market include the Securities and Exchange Commission (SEC), which is at the apex and serves as the regulatory authority of the market, the Lagos Stock Exchange (LSE), the issuing houses and the stock broking firms. The capital market is classified into primary and secondary segments. The Lagos Stock Exchange commenced business in 1961.

The Primary Market is a market for new issues of securities. The mode of offer for the securities traded in this market includes offer for subscription, rights issues, offer for sale and private placements.

The Secondary Market is a market for trading in existing securities. This consists of exchange and over-the-counter markets where securities are bought and sold after their issuance in the primary market. In a strict sense, it constitutes the stock exchange since it is the mechanism which gives liquidity to the securities listed on the exchange. Activities in the secondary market have increased substantially over the years.

The structure of the Nigerian financial system, can be summarized in the chart below, showing that the financial system is made up of bank and non-bank financial institutions under different regulatory institutions

2.3 FINANCIAL DEEPENING IN NIGERIA

The financial deepening index of MS2/GDP moved from 35.9 in 1986 down to 24.2 in 1992 and increased to 29.7 by 1994. This declined further to 15.3 by 1997 before rising to 32.0 by 2004. The aggregate moved down to 18.0 by 2005 and up again to 29.7 by 2007. The trends above clearly show that the financial deepening index did not experience any dramatic changes during the period. This is despite the various reforms introduced from 1986 which should have a positive effect on financial deepening in Nigeria (Nnanna and Dogo, 2008).

The ratio of currency outside banks to money supply progressively declined between 1997 and 2007. The ratio moved from 30.4 in 1979 down to 15.2 in 2007. This shows a higher level of banking habits in the country. The decline had been more pronounced between 2005 and 2007 following the increased use of Automated Teller Machines and plastic money in the country (Garba, 2003).

Table 2.1: Financial development indicators in Nigeria (1970 – 2008)

Indicators (%)	Before reforms (1970 – 1986)	During reforms (1987 -2008)
M2/GDP	26.7	22.8
Private sector credit/GDP	16.8	14.4
Currency outside bank/M2	23	15.7
Interest rate spread	1.8	10.7
Real interest rate	-8.1	-15.5
Gross Savings/GDP	7.1	12.6

Source: CBN Statement Bulletin 2008

2.3 THEORETICAL LITERATURE REVIEW

Theoretically, financial development creates enabling conditions for growth through either a supply leading (financial development spurs growth) or a demand following (growth generates demand for financial products) channel. A large body of empirical research supports the view that development of the financial system contributes to economic growth (Rajan and Zingales, 2003). The most influential contributions on the relationship between finance and growth identify financial development as a crucial precondition of long-run growth, suggesting that financial liberalization is an important instrument of economic policy.

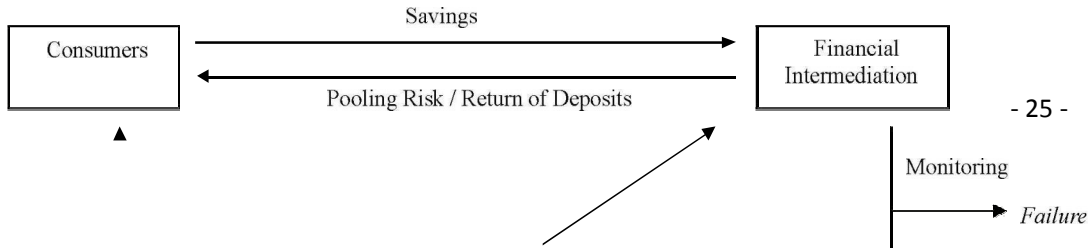
2.3.1 THE ENDOGENOUS GROWTH MODEL

Bencivenga and Smith (1991) and Levine (1991) were among the first to propose endogenous growth models to identify the channels through which financial markets affect long-run economic growth. With the emergence of the endogenous growth theory, the direct and indirect influence of financial markets on economic growth has drawn considerable attention, particularly with regard to sound development strategies.

The endogenous growth models show that economic growth performance is related to financial development, technology and income distribution. The endogenous growth models focus on the relationship between financial development and long-run economic growth, emphasizing that productivity growth is most likely to be the channel of transmission from financial development to economic growth. It is concerned with financial markets, savings, investments, and growth. The argument is that financial markets will raise savings, investment and hence the growth rates.

The endogenous growth model of King and Levine (1993b) focuses on the connections between finance, entrepreneurship and economic growth. Financial institutions in this model play an important role in both the monitoring and financing of potential entrepreneurs, in their initiation of innovative activities, and launching of new products.

Figure 2.2 Channels: Finance and growth model of King and Levine (1993b)



Source: King and Levine 1993.

Figure 2.2 displays the channels, through which financial intermediation contributes to economic growth. Initially, in the entrepreneurial selection procedure, the financial intermediary monitors the whole set of candidates in the market and picks up potential entrepreneurs with the ability to manage innovations in the intermediate goods production technology. Second, the financial intermediary finances the innovative activities. If entrepreneurs are successful, they will enjoy monopoly profits by producing the unique intermediate product at a lower cost than their rivals but charging the same price. However, to produce intermediate goods the successful entrepreneurs need external financing.

The financial intermediary evaluates and finances those entrepreneurs while it can pay back the consumers (savers) the interest according to its evaluation of the profitability of those entrepreneurs. Requiring the input of intermediate goods and labor, the production of final goods is also affected by the innovative success − the productivity increases with the technological progress. Of course, the aggregate final goods' production influences the consumers, who also provide the labor in this model, by affecting their optimal choice of intertemporal substitution in consumption.

The model identifies the following potential relationships between finance and growth. First, finance supports innovations and hence increases the productivity which is positively correlated with growth. Second, efficiency improvements in the financial sector, such as a decrease in the cost of monitoring, will increase the real rate of return and thus lead to a higher future growth rate. Third, the model also suggests a reverse channel of causation where distortions in the innovative sector lower the demand for financial services and retard financial development.

2.3.2 HARROD-DOMAR GROWTH MODEL

The economic growth models of Harrod and Domar are based on the experiences of the advanced capitalist economies. They both emphasize the role of investment in economic growth based on the dual characteristics of investment. Firstly, it creates income and secondly, it augments the productive capacity of the economy by increasing its capital stock. The former is regarded as the 'demand effect' while the later is the 'supply effect' of investment.

The Harrod - Domar model provides accurate short-term predictions of growth and has been used extensively in developing countries to determine the required investment rate or financing gap to be covered in order to achieve a target growth rate. It is based on the following assumptions.

i. There is an initial full employment equilibrium level of income.

ii. There is the absence of government intervention.

iii. The models operate in a closed economy which has no foreign trade.

iv. The average propensity to save is equal to the marginal propensity to save.

v. There are no lags in adjustments between investment and creation of productive capacity.

vi. Savings and investment relates to income of the same year.

vii. There is no depreciation of capital goods.

Based on the above assumptions, Domar's model was built on premise that to maintain full employment equilibrium level of income, aggregate demand should be equal to aggregate supply. Thus, we arrive at the fundamental equation of the model.

$\Delta I\alpha = I\delta$…… 1

Where I= Investment,

ΔI = Changes in Investment,

α = Marginal propensity to save

δ = Net potentials social average productivity of investment ($=\Delta Y/I$)

Solving equation (1) by dividing both sides by I and multiplying by α we get:

$\Delta I/I = \alpha\ \delta$…….. 2

This equation shows that to maintain full employment the growth rate of net autonomous investment ($\Delta I/I$) must be equal to $\alpha\delta$ (the MPS times the productivity of capital). This is the rate at which investment most grow to ensure the use of potential capacity in order to maintain a steady growth rate of the economy at full employment. According to Domar, any divergence between the two will lead to cyclical fluctuations. When $\Delta I/I$ is greater than δ, the economy would experience boom and when $\Delta I/I$ is less than δ, it would suffer from depression.

Harrod model tries to show how steady growth may occur in the economy. Once the steady growth rate is interrupted, and the economy falls into disequilibrium, cumulative forces tend to perpetuate this divergence thereby leading to either secular deflation or secular inflation. Harrod's model is based upon three growth rates; the actual growth rate (G) which is determined by the savings ratio and the capital output ratio. The actual is given as G=S/C.

Where G is the rate of growth of output in a given period of time, C is the net addition to capital and is given as the ratio of investment to the increase in income (I/ΔY) and S is the average propensity to save APS.

The second is the warranted growth rate GW which is given as the GW=S/Cr where S=APS and Cr= the capital requirement needed to maintain GW. This equation shows that if the economy is to grow at the steady rate of GW. That will fully utilize its capital; income must grow at the rate of S/Cr per year.

The third is the natural growth rate. This is the rate of increase in output at full employment as determined by a growing population and the rate of technological progress Jhingan (2003). Harrod's equation for the national growth rate is Gn. Cr = or ≠ S where Gn is the natural of full-employment rate of growth. For full employment equilibrium growth, Gn=GW=G. Any divergence between the three rates of growth would cause condition of secular stagnation or inflation in the economy.

Harrod- Domar growth models were criticized on the ground of their unrealistic assumptions such as the existence of full-employment, non-government intervention in the economy, constancy of MPS (s) and the capital output ratio (∂) etc.

However, Harrod-Dommar postulates that a change in national income depends linearly on change in capital stock. That is =N=1b investment will bring about =N=1b output. In summary the Harrod-Domar growth model summaries as follows: economic growth will proceed at the rate which society can mobilize domestic savings resources coupled with the productivity of the investment (Somoye, 2002).

2.3.3 SUPPLY - LEADING HYPOTHESIS

The supply-leading hypothesis suggests that financial deepening fuels growth. The existence and development of the financial markets brings about a higher level of saving and investment and enhance the efficiency of capital accumulation. This hypothesis contends that well functioning financial institutions can promote overall economic efficiency, create and expand liquidity, mobilize savings, enhance capital accumulation, transfer resources from traditional (non-growth) sectors to the more modern growth inducing sectors, and also promote a competent entrepreneur response in these modern sectors of the economy.

Early economists like Schumpeter (1911) have strongly supported the view of finance led causal relationship between finance and economic growth. According to Mckinnon (1973), a farmer could provide his own savings to increase slightly the commercial fertilizer that he is now using and the return on the marginal new investment could be calculated. However, there is a virtual impossibility of a poor farmer's financing from his current savings, the total amount needed for investment in order to adopt the new technology. As such access to finance is likely to be necessary over the one or two years when the change takes place.

The recent work of Demirguc-Kunt & Levine (2008) in a theoretical review of the various analytical methods used in finance literature, found strong evidence that financial development is important for growth. To them, it is crucial to motivate policymakers to prioritize financial sector policies and devote attention to policy determinants of financial development as a mechanism for promoting growth.

2.3.4 DEMAND - FOLLOWING HYPOTHESIS

The demand-following hypothesis view is that the development of the financial markets is merely a lagged response to economic growth. This implies that any early efforts to develop financial markets might lead to a waste of resources which could be allocated to more useful purposes in the early stages of growth. As the economy advances, this triggers an increased demand for more financial services and thus leads to greater financial development.

Some research work postulate that economic growth is a causal factor for financial development. According to them, as the real sector grows, the increasing demand for financial services stimulates the financial sector (Gurley & Shaw, 1967). Robinson (1952) was of the opinion that economic activity propels banks to finance enterprises. Thus, where enterprises lead, finance follows.

They argue that financial deepening is merely a by-product or an outcome of growth in the real side of the economy, a contention revived by Ireland (1994) and Demetriades and Hussein (1996). According to this alternative view, any evolution in financial markets is simply a passive response to a growing economy.

2.4 STAGES OF FINANCIAL DEEPENING

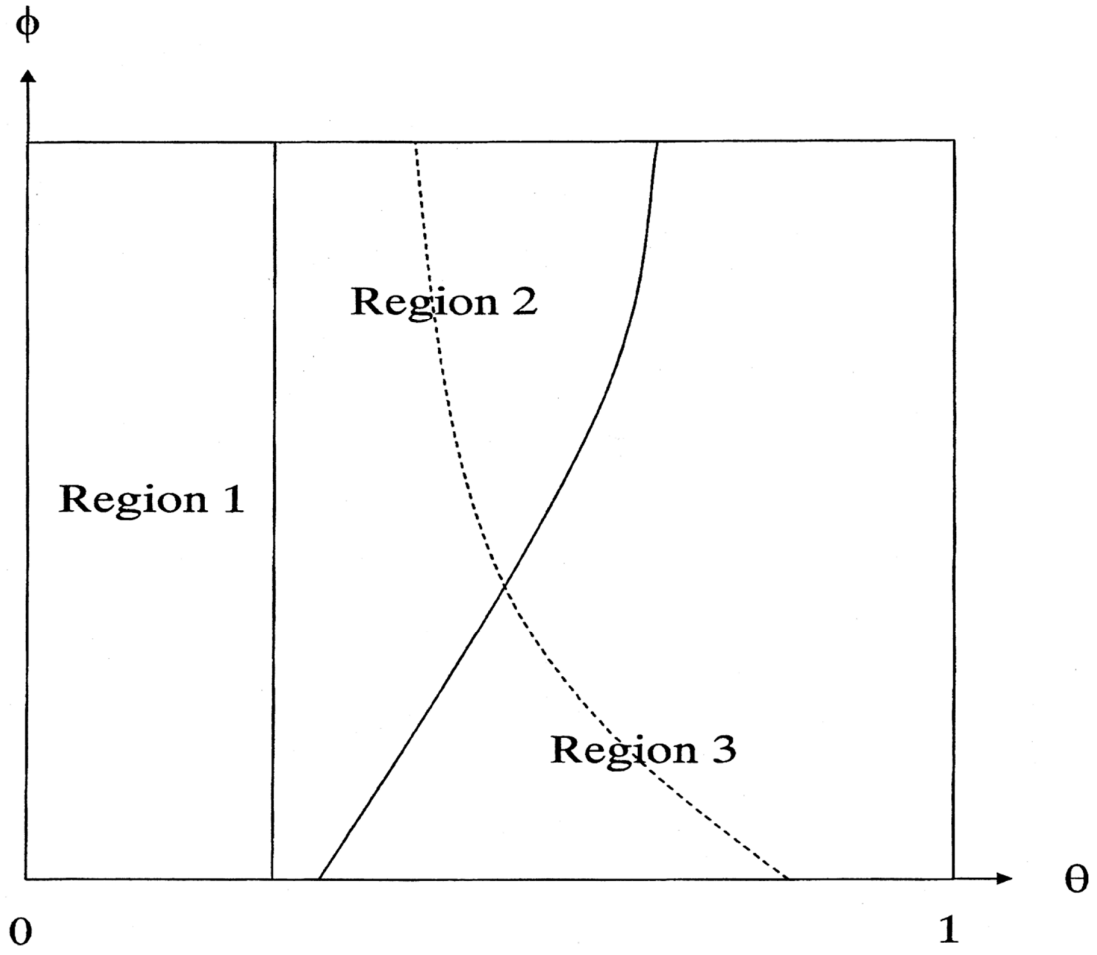
Nobuhiro Kiyotaki and John Moore (2005) identified 3 stages of financial deepening. On the one hand, there may be a limit on how much a private agent can credibly promise to repay someone who provides finance: that is, the degree of bilateral commitment a borrower can make to an initial lender when selling a paper claim. On the other hand, there may be a limit on the extent to which the initial lender can resell the paper to someone else in a secondary market

They assumed that an agent can credibly commit to repay at most a fraction "θ" of his or her future output. The parameter θ in part reflects the legal structure and contractual

redress available to a creditor in the event of default. In this sense, θ provides one simple measure of financial depth, capturing the degree of "trust" in the economy. Unless steps are taken by the borrower at the time of issue, private paper cannot freely circulate later on, that is, ex ante, the borrower must expend resources in order that, ex post, outsiders are on an equal footing with the insider and paper is liquid. Without such expenditure, paper becomes illiquid after being initially sold: it cannot be subsequently resold in a secondary market. The costs of conversion are indexed by a parameter φ, which, like θ, is taken to lie between 0 and 1. The higher is φ, the less costly is conversion. Taking φ to be another index of financial depth, we will be investigating the effects of an exogenous rise in φ.

The "θ-φ model" predicts three stages of financial deepening, corresponding to three different regions of the θ-φ parameter space, as shown in Fig 2.3

Fig 2.3 The three regions of financial deepening.



Source: Kiyotaki and Moore (2005)

Region 1 (A Cash-Based Economy)

In this region, θ is low and there is little trust between agents, the economy is cash-based. Most saving is undertaken by holding cash, outside money that bears no interest (or, equivalently, by storing goods). That is, cash is used for both short-term and long-term saving. As there is a severe shortage of any form of commitment, there is very little private paper. All such paper is illiquid, and merely serves as a substitute for cash as a means of long-term saving. There is no financial intermediation because no one is willing to incur the conversion costs of issuing liquid paper, if it commands no premium over illiquid paper. Since illiquid saving (holding illiquid private paper) earns no more than liquid saving

(holding cash), agents are never "liquidity constrained": they are never constrained by their inability to resell private paper. However, agents with investment projects are "credit constrained": they would like to borrow more at the prevailing interest rate (zero), but are constrained by the upper limit θ. Without adequate means of transferring resources from savers to investors, the economy has too little investment. A rise in θ -financial deepening- would boost investment and output. In the early Middle Ages prior to the development of banking or negotiable financial instruments is a good example of this stage.

Region 2 (An Economy with Specialized Financial Markets)

In Region 2, where θ is higher and there is more trust, the economy enjoys specialized financial markets, in the sense that liquid paper is used exclusively for short-term saving, whereas illiquid paper is used for specific "point-to-point" long-term saving. Given its versatility, liquid paper sells at a premium over illiquid paper -there is an interest rate differential—and hence financial intermediation takes place: borrowers have an incentive to incur the costs of converting some of their illiquid paper into liquid paper at the time of issue. In saying that an economy has specialized financial markets, we mean the level of financial intermediation is such that, in relative terms, the supplies of liquid and illiquid paper balance the demands. The modern-day United State of America economy appears to be like this. However, θ is still appreciably below unity- this implies that agents with investment projects are still credit constrained. Given that too few resources are transferred from savers to investors, further financial deepening, through a rise in θ or φ, would boost investment and output in Region 2.

Region 3 (An Economy with Gross Financial Positions)

In an economy with a relatively high level of trust (θ high), if the costs of converting to liquid paper are high (φ low), there can be an imbalance between the supplies of liquid and illiquid paper. The markets are no longer specialized, in that savers resort to using

cumbersome long-term savings portfolios, holding different vintages of illiquid paper as a surrogate for liquid saving. This is what distinguishes Region 3 from Region 2: without adequate financial intermediation, agents hold gross financial positions, with illiquid paper assets on both sides of their balance sheets. Arguably, the Japanese economy is currently in Region 3, with large cross-holdings of trade credit (and equity), and too little netting out. In financial terms, the economy is clogged up. Indeed, with enough trust (θ close to 1, the upper part of Region 3), the economy can achieve first-best, despite the inconvenience of illiquid paper. Here agents neither are credit constrained (interest rates match the return on investment projects, and so the limit on borrowing, θ, is not binding), nor are liquidity constrained.

Hervé Hannoun (2008) also identified four stages of financial deepening and its sequencing over time:

The first stage of financial deepening is usually the emergence of banks. In an economy where there is only very partial information about borrowers, banks are particularly good at dealing with asymmetric information. Relationship lending allows banks to work closely with borrowers to develop trust as well as to share information.

A second stage often involves the stock market. This usually comes later in the financial system development process since it requires companies to publicly disclose information about their business. But once this infrastructure is in place, the key advantage of a well functioning stock market is that it provides something banks are not good at: a long-term commitment of risk capital while still giving investors a liquid form of investment.

A third stage often emerges with the development of fixed income markets. These markets, including both the bond markets and the money markets, are the markets of choice for fundraising by governments, financial institutions and mature companies. The bond markets provide good investment instruments for long-term investors such as pension funds

and insurance. The money markets are the place to manage short-term liquidity needs in large quantities.

The final stage involves derivatives markets and securitization. Derivatives are instruments for hedging risks. Securitization allows risks to be redistributed across investors – a key step for the development of the so-called originate-to-distribute model of financing. This final stage is what has given us the problems of the recent global turmoil.

2.5 IMPACT OF FINANCIAL DEEPENING ON ECONOMIC GROWTH

According to Dancheng (2008), financial deepening plays an important role in economic growth and development:

i. Financial deepening can improve and enhance the allocation of resources. Finance has the significant function of adjusting economic structure. First, it is to create favorable conditions for readjustment of the industrial structure. In capital market, under the premise of ownership, corporate assets can shift the enterprises resources from industries or enterprises to the higher margin industries and the businesses through securitization form, and change the resource allocation structure, which realize the optimization and readjustment of the industrial structure. Secondly, it is to adjust the industrial structure and expand sources of funds. Readjustment of the industrial structure requires a large amount of incremental capital investment. Thirdly, it is to widen the space of the industrial structure adjustment. Incremental investment is often bounded by the sources of funds. Therefore, changes in the existing resources among different industries and distribution can quickly realize the stock restructuring.

ii. Financial deepening can promote the capital formation. If a country has not sufficient and sustained capital supply, it can not form a new economic growth point and promote sustained and stable economic development. However, the capital formation in a region is constrained by the level of savings in the region, but using the direct and

indirect means of financing, it can translate directly surplus funds of the inner region, outside enterprises and residents into the investment capital by changing savings into the investment indirectly or directly, this is the basic function of finance.

iii. Financial deepening can promote the reform of the corporate governance structure. A country's financial development, especially in the development of capital markets, not only provides a convenient channel of financing for enterprises, and financing mechanisms of capital markets can effectively promote the governance structure change of the state-owned enterprises.

iv. Finance is the core of the modern economy, in the economic operation; it plays an important role in guiding the flow of resources in the country and among countries through special funds flow, which gets scarce resources in the region.

2.6 EMPIRICAL LITERATURE

The financial system serves as a catalyst to economic development through various institutional structures. The system vigorously seek out and attract the reservoir of savings and idle funds and allocate same to entrepreneurs, businesses, households and government for investments projects and other purposes with a view of returns. This forms the basis for economic development (Nzotta 2004:169).

Empirical evidence suggests that there are economies that have indeed benefited from well-developed financial systems in the past. For some of the very successful emerging market economies, finance appears to have been a crucial factor for economic success, e.g. in Taiwan (Chang and Caudill, 2005). However, it is not always possible to identify such a strong effect of finance on growth in mature OECD countries (Shan and Morris, 2002). For developing economies, the results are similarly diverse. Some studies find a strong impact of finance on growth (Tsionas, 2004), while others find the finance-growth relationship to be more complex (Harb, 2005). The efficiency of financial markets in promoting financial

deepening and savings mobilization of financial resources has been recognized by policy makers and Economists such as Ronald McKinnon (1973) and Edward Shaw (1973). McKinnon postulates that an increase in holding financial assets (financial deepening) by the public, promotes savings mobilization which leads to higher levels of savings, investment, production, growth, and poverty alleviation.

Ndebbio (2004) in his study; financial deepening, economic growth and development: evidence from selected Sub- Saharan African countries, argued that the poor growth of output (economic growth) of any country is caused by shallow financial depth, the range of financial assets for that country is narrow. He tried to explain why most Sub – Saharan African countries have low or negative per capita growth rates. He identified a range of financial assets that could adequately approximate financial deepening. Using ordinary least squares (OLS) multiple regression procedure, three modelled equations, were estimated and analysed. A cross-country regression was used for 34 SSA countries. He concluded from his results that financial deepening as represented by the growth rate of per capita (real/nominal) money balances (*GPRMB/GPMB*) and degree of financial intermediation (*FDY*) positively affect per capita growth of output.

Goldsmith (1969) in his study, tried to find out whether finance exerts a causal influence on growth and whether the mixture of markets and intermediaries operating in an economy influences economic growth. He carefully compiled data on 35 countries over the period 1860 to 1963 on the value of financial intermediary assets as a share of economic output. He assumed, albeit with ample qualifications, that the size of the financial intermediary sector is positively correlated with the quality of financial functions provided by the financial sector. He graphically documented a positive correlation between financial development and the level of economic activity.

According to Gershenkron (1962), banks effectively finance industrial expansion than any other form of financing in developing economies. Banks are the largest financial intermediators in the Nigerian economy. In addition to the intermediation role, a nation's financial system links the domestic economy with the rest of the world by providing the means for the settlement of international transactions. It has also been observed that growth in the financial industry, if transmitted well, would result in the growth of real sector and the opposite is possible if the financial sector is repressed and inefficient (Cameron, 1972).

Coskun Koçukozmen (2009) in his study; financial development and economic growth: a cointegration approach, examined the direction of the relationship between financial development and economic growth with Granger Causality test on a quarterly basis between 1991-2008. He used GDP as an indicator of economic growth, and the ratio of M2, M2Y, and M3 money supplies to GDP was used as indicators for measuring financial deepening. The results show that a long term relationship between financial development and economic growth does not exist. He argued that financial systems need developed financial markets, which completed its deepening to affect economic growth positively. The results of Granger Causality also showed that financial development has a positive effect on the economic growth rate in the short run.

Using the Vector auto regressive model with high frequency quarterly data from 1998Q to 2006Q4, Mbutor (2009) analyzed the channels of transmission of monetary policy in the Nigerian economy. Using variables such as GDP, domestic prices, broad monetary aggregates and real effective exchange, he discovered that, the lending rates had the highest impact on GDP, in terms of time of impact, broad money supply had the fastest impact on GDP. He argued that the role of the banking system in propagating monetary impulses to the real sector should be recognized as critical.

King and Levine (1993) conducted a study on seventy seven countries made up of developed and developing economies used cross-country growth regression. The aim of the research was to find out whether higher levels of financial development are significantly and robustly correlated with faster current and future rates of economic growth, physical capital accumulation and economic efficiency improvements. The result showed that finance not only follows growth; finance seems important to lead economic growth.

Using panel integration and cointegration techniques for a dynamic heterogeneous panel of 15 OECD and 50 non-OECD countries(65 countries in total) over the period 1975–2000, Nicholas et'al(2006), examines whether a long-run relationship between financial development and economic growth exists. In their study; Financial Deepening and Economic Growth Linkages: A Panel Data Analysis, the specification used to test for cointegration and causality between financial depth and growth was given as:

$Yit = aoi + a1iFit + a2iXit + uit$…… 1

Where: Yit is GDP per capita; Fit is a measure of financial development; Xit is a set of control variables, and uit is the error term. Their results support a positive and statistically significant equilibrium relation between financial development and economic growth for all different financial indicators that was tested for and in all groups of countries.

Ayadi et'al, (2007) examine The Structural Adjustment, Financial Sector Development and Economic Prosperity in Nigeria. They evaluated the structural adjustment program in Nigeria, with a view to finding out if it resulted in an enhanced level of financial development. Using the Spearman rank correlation, they examined the relationship between financial development and economic growth during post-SAP period. They argued that the extent of financial development depends on the volume of bank credit as well as the stock market capitalization. They employed the use of some of the variables identified by Beck et'al (2000) to test whether or not economic growth and financial development co-move since

the introduction of structural adjustment in Nigeria. Their results reveal a lack of consistent relationship between financial system development and economic growth in post-SAP Nigerian economy.

Christopoulos and Tsionas (2004), use panel cointegration analysis to examine whether a long-run relationship between financial development and economic growth exists for 10 developing countries over the period 1970–2000. Their findings are supportive to a unique cointegrating vector between growth, financial development, investment share, and inflation, and to unidirectional causality from financial depth to growth.

Rajan and Zingales (2003) argue that trade openness may also induce financial development with respect to effects from political economy. Domestic interest groups have a natural interest in obstructing financial development in order to prevent competitors from entering the market. As international competition increases, such groups shift their interests towards positive financial sector development.

Hemachandra (1998) examines Financial Deepening and its Implications on Savings and Investments in Sri Lanka. He investigates the validity of financial deepening paradigms in the context of Sri Lanka, and the effects of financial deepening on savings and investment that promote growth. In investigating financial deepening in Sri Lanka, Hemachandra uses three paradigms i.e., Keynesian, McKinnon-Shaw and neo-structuralist. After examining these three versions he argued that an improved model which combines both Keynesian and McKinnon- Shaw versions produces a model more successful in explaining the characteristics of financial deepening in Sri Lanka. The results showed that there are several factors other than interest rate influencing financial deepening in Sri Lanka.

Oya Pinar and Evren Damar (2006), examines the financial sector deepening and economic growth: Evidence from Turkey. They analyzed the effects of financial sector deepening on economic growth using a province-level data set for 1996-2001 on Turkey. The

analysis was carried out using two different methods: cross-section analysis and dynamic panel data analysis. Using both traditional OLS and dynamic panel GMM techniques, the results showed that financial deepening (i.e. an increase in the total deposits to GDP ratio) has a direct and robust impact on the growth rate of real GDP per capita. However, unlike most of the cross-country studies in this literature, the findings suggest that financial development has a negative relationship to economic growth.

Gries et'al (2009) investigates the direct and indirect causal interactions between financial deepening, trade openness and economic growth for 13 Latin American and Caribbean countries. They employed *unit root and cointegration tests* to identify the stationary properties and possible cointegration relationships of the investigated time series, employing Hsiao's version of Granger causality within a autoregressive (*VAR*) or vector error correction models (*VECM)* framework. Findings from the result showed that for Latin America and the Caribbean, they detected almost no evidence of finance led growth, most results pointed at a demand-following or insignificant causal interaction between finance and growth in the Latin American region.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

In this part of the study, the relationship between financial deepening and economic growth in Nigeria was examined. To serve our purpose, appropriate variables will be established and the causal relationships between these variables determined by using econometric estimation methods.

3.2 SOURCE OF DATA

The data employed in this research work are annual time series data of relevant variables and the data are mainly secondary. The data were collected from publications of the Central Bank of Nigeria (CBN), Federal Office of Statistics (FOS) and World Bank publications. Financial deepening was defined as the ratio of money supply to GDP, and it is a function of money supply to GDP, value of cheques to money supply, ratio of private sector credit to GDP, financial savings to GDP, rate of inflation, real lending rates, deposit money bank assets to GDP, and Currency outside Banks to money supply. The prime lending rates of the banks shall be used to stand for interest rate (the long term interest).

3.3 ANALYTICAL TECHNIQUE

If the series variables for this study are stationary and no causality exists, the Autoregressive Distributed Lag model (ADL) will be used in estimating the parameters of the model. However, if the variables are not stationary and there exist no causality, Error Correction Model (ECM) will be applied. But if there is causality and the variables are still not stationary (they cointegrate), Vector Error Correction (VEC) model will be applied. Furthermore, if the variables are stationary and there is causality and they do not cointegrate, the Vector Autoregressive (VAR) model will be used to estimate the parameters of the model.

From our literature, we adopted and specified the VAR model used by Coskun (2009). The VAR model has proven to be especially useful for describing the dynamic behavior of economic and financial time series and for forecasting (Sims, 1980). Forecasts from VAR models are quite flexible because they can be made conditional on the potential future paths of specified variables in the model. These impacts are usually summarized with impulse response functions and forecast error variance decompositions. The vector autoregression (VAR) method, being a data-induced technique places a minimal theoretical emphasis on the structural relationship, but simply involves the specification of the set of endogenous variables that are believed to have logical relationship and qualify for inclusion as part of the economic system. The Vector autoregressive (VAR) is used for estimating systems of interrelated time series and for analyzing the dynamic impact of random disturbances on the system of variables.

3.4 MODEL SPECIFICATION

The bench mark for the above model can be specified as:

$GDP_t = f(FD_t)$ …….1

$FD_t = (MSG_t, PLR_t, FSG_t, CHM_t\ INF_t, PCG_t, DBG_t, COBM_t)$ …….2

Where:

GDP_t = Gross Domestic Product

FD_t = Financial Deepening

MSG_t = Money supply/GDP ratio (M2/GDP)

FSG_t = Financial Savings/GDP ratio (FS/DGP)

CHM_t = Value of Cheques Cleared to Money Supply (CHQ/MS2)

PCG_t = Ratio of Private Sector Credit to GDP (PSC/GDP

DBG_t = Ratio of Deposit Money Bank Asset to GDP (DBMA/GDP)

INF_t = Rate of Inflation

PLR_t = Prime lending rates

$COBM_t$ = Currency outside Banks to Money Supply (COB/MS2)

The above variables were logged to take care of non-linear phenomena. Thus, we consider a restricted standard form of our VAR model with lag order k, as:

$$Y_t = \mu + \sum_{i=1}^{k} A_i Y_{t-1} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2$$

Where Y_t is an (n x 1) vector of endogenous variables, μ is a vector of constants, while Y_{t-i} is the corresponding lag term for each of the variables. A_i is an (nxn) matrix of autoregressive coefficient vector of Y_{t-i}, ε_t is a vector of white noise processes.

THE MODEL

$$\begin{bmatrix} GDP_t \\ FSG_t \\ MSG_t \\ CHM_t \\ PCG_t \\ DBG_t \\ INF_t \\ PLR_t \\ COBM_t \end{bmatrix} = \Sigma_{i=1}^{k} \begin{bmatrix} a_{1i} & b_{1i} & c_{1i} & d_{1i} & e_{1i} & f_{1i} & g_{1i} & h_{1i} & i_{1i} \\ a_{2i} & b_{2i} & c_{2i} & d_{2i} & e_{2i} & f_{2i} & g_{2i} & h_{2i} & i_{2i} \\ a_{3i} & b_{3i} & c_{3i} & d_{3i} & e_{3i} & f_{3i} & g_{3i} & h_{3i} & i_{3i} \\ a_{4i} & b_{4i} & c_{4i} & d_{4i} & e_{4i} & f_{4i} & g_{4i} & h_{4i} & i_{4i} \\ a_{5i} & b_{5i} & c_{5i} & d_{5i} & e_{5i} & f_{5i} & g_{5i} & h_{5i} & i_{5i} \\ a_{6i} & b_{6i} & c_{6i} & d_{6i} & e_{6i} & f_{6i} & g_{6i} & h_{6i} & i_{6i} \\ a_{7i} & b_{7i} & c_{7i} & d_{7i} & e_{7i} & f_{7i} & g_{7i} & h_{7i} & i_{7i} \\ a_{8i} & b_{8i} & c_{8i} & d_{8i} & e_{8i} & f_{8i} & g_{8i} & h_{8i} & i_{8i} \\ a_{9i} & b_{9i} & c_{9i} & d_{9i} & e_{9i} & f_{9i} & g_{9i} & h_{9i} & i_{9i} \end{bmatrix} \begin{bmatrix} GDP_{t-1} \\ FSG_{t-1} \\ MSG_{t-1} \\ CHM_{t-1} \\ PCG_{t-1} \\ DBG_{t-1} \\ INF_{t-1} \\ PLR_{t-1} \\ COBM_{t-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \\ \varepsilon_{5t} \\ \varepsilon_{6t} \\ \varepsilon_{7t} \\ \varepsilon_{8t} \\ \varepsilon_{9t} \end{bmatrix} \ldots\ldots\ldots\ldots 3$$

Where a_{ij}, b_{ij}, c_{ij}, d_{ij}, e_{ij},f_{ij},g_{ij},h_{ij}, and i_{ij} are coefficients of GDP_t, FSG_t, MSG_t, CHM_t, PCG_t, DBG_t, INF_t, PLR_t and $COBM_t$ respectively ε_t are error terms assumed to be a white noise process and t-i are the lagged values of each series up to the p-lag.

3.5 ESTIMATION TECHNIQUE

3.5.1 UNIT ROOT TEST

There are several reasons why the concept of non-stationarity is important. A stationary series have a zero mean and constant variance. One of the methods to test whether series is stationary or not is Dickey-Fuller (DF) (1979), DF test is very important in terms of measuring which degree stationary series have, but it does not consider an autocorrelation in disturbance term. If disturbance term contains autocorrelation, DF test is invalid. In this situation, by adding lagged terms of dependent variable to explanatory variable, generalized Dickey Fuller (Augmented Dickey-Fuller) is used (Brooks, 2002).

The ADF test, can be defined as follows

$$\Delta Y_t = Y_0 + \alpha t + \Phi Y_{t-1} + \sum \Phi_i Y_{t-1} + \mu_t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4$$

$$\Delta Y_t = Y_t - Y_{t-1} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 5$$

Where:

Y_t = dependent variable

Y_0 = constant term

T = trend variable

U_t = stochastic disturbance term

There are hypotheses to test series

H_0 : $\Phi = 0$ (Yt is non-stationary)

H_1 : $\Phi \neq 0$ (Yt is not non-stationary)

ADF is a regress test using each series own lagged terms with big differences. Many econometric programs satisfy ADF test statistics. If calculated t-value of variable is greater than ADF critical t-value, then H0 is rejected and thus the data is stationary. It will be

compared with the Mckinnon critical values, if ADF test statistic is greater than McKinnon critical values absolutely, the series are stationary at that level.

3.5.2 GRANGER CAUSALITY TEST

If there is a lagged relationship between two variables, one of the test, which is applied to determine the direction of relation in terms of statistics, is Granger Causality test. Granger Causality test also gives information about the short-term relationship between the variables (Granger and Engle, 1987).

Even there are different ideas about causality in terms of conceptional definition, this concept makes a relation between causes and results. Conceptional definition of causality depends on Aristo's assumption. According to Aristo, there is a relationship between causes and results and these results cannot occur without causes. This relationship is a strong relationship.

Granger's operational causality definition depends on the hypotheses below:

i. Certain causality is possible only with past causes present time or future time. Cause is always to be come true before the result. In addition, this makes time lagged between causes and results.

ii. Causality can be determined only stochastic process. It is not possible to determine the causality between two deterministic processes.

$$Y_t = \alpha + \sum\beta_j X_{t-j} + \sum \Phi_i Y_{t-I} + U_t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 6$$

$$X_t = \alpha + \sum\beta_j Y_{t-j} + \sum \Phi_i Xt\text{-}j + U_t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 7$$

In Granger Causality test, there are three possible situations that one directional causality from x to y or y to x, opposite direction between x and y or one affect the other and independency of x and y each other. This situation changes according to the null hypothesis and lagged values randomly in equations above whose parameters are whether equal to zero or not. According to researches, randomly choice makes causality incline to deviations importantly. Indicators of the economic growth and the financial deepening are variables,

which are used for Granger Causality test. Moreover, this test can determine the effects of one variable on the other.

3.5.3 IMPULSE RESPONSE FUNCTIONS

An impulse-response function traces the effect of a one-time shock to one of the innovations on the current and future values of the endogenous variables. The impulse response functions can be used to produce the time path of the dependent variables in the VAR, to shocks from all the explanatory variables. If the system of equations is stable any shock should decline to zero, an unstable system would produce an explosive time path. It simply refers to the reaction of any dynamic system in response to some external change. In both cases, the impulse response describes the reaction of the system as a function of time (or possibly as a function of some other independent variable that parameterizes the dynamic behavior of the system).

Innovations in financial deepening will certainly affect economic growth either positively or negatively. We shall therefore use the impulse-response function to trace the effect of innovations in financial deepening on economic growth.

3.5.4 VARIANCE DECOMPOSITION ANALYSIS (VDA)

The Variance Decomposition is an alternative method to the impulse response functions for examining the effects of shocks to the dependent variables. This technique determines how much of the forecast error variance for any variable in a system, is explained by innovations to each explanatory variable, over a series of time horizons.

The Variance Decomposition provides information about the relative importance of each random innovation in affecting the random variables in the VAR (Hamilton, 1994). Therefore, Variance Decompositions show the proportion of forecast error variance that is

attributable to its own innovation and to innovations from other endogenous variables in the model.

3.6 A PRIORI EXPECTATIONS

It is expected that at the end of this study to either see that financial deepening influences economic growth, with MSG, PCG, VCM, FSG and DBM having a positive relationship with GDP, supporting the supplying leading hypothesis, or see that it is economic growth that exerts influence on the financial system supporting the demand following hypothesis.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTAION OF RESULTS

4.1 INTRODUCTION

This chapter is basically divided into two. Section 4.2 presents the trend, structure and growth of financial deepening in Nigeria, while section 4.3 presents empirical analysis.

4.2 TREND, STRUCTURE AND GROWTH OF FINANCIAL DEEPENING NIGERIA

Until recently, with the recapitalization in the banking sector which resulted in mergers and acquisitions, increased bank branches and innovations of new products and technology coupled with growth in the capital markets, the Nigerian financial system remained by and large relatively underdeveloped because of lack of financial intermediation and financial deepening which the economy requires for sustained growth. In Nigeria however, the influence of money supply on economic growth can only be taken with mixed reactions. Between 1971 and 1975, the growth rate of the economy measured by the real GDP ranged from 21.3% in 1971 to 3.0% in 1975.

By 1981, the real GDP grew by 26.8% and remained negative till 1984. A simple variance analysis shows that between 1971 and 1986, the mean spread of the GDP was 108.7. However, between 1986 and 1994, the real GDP had a variance of 9.1. The variability of the GDP was much higher before deregulation, while it becomes lower during and after the deregulation of the economy. Both M1 and M2 had little correlation with growth of real GDP before deregulation in 1986. M2 was observed to have a variance of 362.6 and a correlation coefficient of 0.21.

The period 1986-1994 had a lower correlation of 0.16 between broadmoney (M2) and growth of real GDP. The mean spread of M2 was 289.2 as against 108.7 for the real GDP.

The correlation between M1 and GDP between 1970 and 1986 stood at 0.22 and for 1986-1994, it was 0.33.

Table4.1: Trend in selected monetary and economic aggregates

Year	M2 Growth	M2 Growth	Real GDP Growth	Lending Rate	GDP Growth Deflator
1970	4.1	3.2	22.1	7.0	4.21
1971	5.8	3.4	21.3	7.0	4.16
1975	68.0	73.5	-3.0	6.0	18.02
1980	46.1	50.1	5.5	7.5	12.17
1985	10.3	8.7	9.4	9.3	3.6
1986	3.2	-1.2	3.1	10.5	-2.03
1987	22.0	13.7	-0.5	17.5	48.87
1988	42.6	41.9	9.9	16.5	21.44
1989	8.0	21.5	7.3	26.8	45.23
1990	40.4	44.9	8.2	25.5	7.09
1991	32.7	32.6	4.7	20.0	18.61
1992	48.9	52.3	3.6	29.8	64.93
1993	53.0	55.1	2.6	32.2	42.41
1994	16.7	13.6	43.8	24.5	12.77
1996 - 2000	14.9	12.8	3.7	21.5	11.65
2000 - 2006	15.4	11.7	3.45	12.0	9.8

Source: Central bank Nigeria Bulletin (various issues)

THE NIGERIAN CAPITAL MARKET

The capital market is very vital to the growth, development and strength of any country because it supports government and corporate initiatives, finances the exploitation of new ideas and facilitates the management of financial risk. From 1961, the Nigerian capital market has grown tremendously, particularly during the periods of the indigenization decrees of 1972 and 1977. The securities increased from 8 in 1961 to about 301 in 2008. Over the years, the Nigerian capital market has witnessed relatively stability and also recorded impressive growth. This has positioned it to positively impact the economy.

The total new issues before 1989 was below N1 billion. However, from 1989 to1996 it hovered between N1 billion to N10 billion. The amount crossed the N10 billion marks in 1997. For instance, between 1996 and 2001, a total of 172 new issues (securities of public

companies amounting to N56.40 billion) were floated in the capital market. The total new issues were valued at N5.85 billion in 1996 but it rose by about 532% to N37.198 billion in 2001. Total new issues were N61, 284 billion, in 2002, N180, 079.9 billion in 2003. N195,418.4b in 2004 and N552,782b in 2005. It crossed the trillion mark in 2007 being N1.935 trillion that year but fell to N1.509 trillion in 2008.

Market Capitalization is the most widely used indicator in assessing the size of the capital market of an economy. Before 1988, the total market capitalization was less than N10 billion from 1988 to 1994. It hovered between N10 billion to N57 billion. In 2003, it was N1,3593 trillion, N2.1125 trillion in 2004 and N5.12 trillion in 2006.The market capitalization recorded the highest value of N13.2294 trillion in 2007. But this fell to N9.562 trillion in 2008 due to the global financial meltdown. The percentage market capitalization compared to the economy's Gross Domestic Product (GDP) helps to assess the size of the capital market. In 1981, this was 10.5%, but fell to 7.4% in 1994. It rose again to 9.3% in 1995, 10.6% in 1996; 18.9% in 2003, 25.6% in 2004 and 27.4% in 2005.

However, in 1995, when the market was liberalized, the capitalisation shows a steady rise from 20% in 2005 to over 50% in 2007. The sharp increase from 2005 to 2007 can be mainly attributed to the bank consolidation programme of the Central Bank of Nigeria (CBN) where banks were directed in 2004 to increase their capital base to about US$200milliom by December 2005 (World Bank, 2007). The market however plummeted in 2008 owing to the global financial crisis. During that period according to the CBN (2009), Nigeria stock market lost almost 70% of market capitalisation.

Table 4.2: Gross domestic product and performance of the Nigerian capital market from 1981-2008

Year	GDP{ at current prices (# B)	Total new issues (#M)	Market capitalization (Equities and debts) (#B)	Value of transactions (Government and industrial securities) (#M)	Total listing on the Nig Stock Exchange (Equity, industrial loan & govt. stock)

1986	205,971.4	833.0	6,794.8	494.4	240
1987	204,806.5	450.7	8,297.6	348.0	244
1988	219,876.8	400.0	10,020.8	137.6	253
1989	263,729.6	1,629.9	12,848.6	521.6	267
1990	267,660	9,964.5	16,358.4	265.5	295
1991	265,379.1	1,870.0	23,125.0	136.0	239
1992	271,365.5	3,306.3	31,272.6	313.5	251
1993	274,833.3	2,636.9	47,436.1	402.3	272
1994	275,450.6	2,161.7	66,3680	569.7	276
1995	281,407.4	4,425.6	180,305.1	1,838.8	276
1996	293,745.4	5858.2	281,815.8	7,062.7	276
1997	302,022.5	10,875.7	281,887.2	11,072.7	264
1998	310,890.1	15,018.1	262,517.3	13,572.3	264
1999	312,183.5	12,038.5	300.041.1	14,027.4	268
2000	329,978.7	17,207.8	472.290.0	28,154.6	260
2001	356,994.3	37,198.8	662,561.3	57,6372	261
2002	433,203.5	61,284.0	764,975.8	60,088.6	258
2003	477,833	180,079.9	1,359,274.2	120,703.0	265
2004	527,576	195,418.4	2,112,549.6	225,820.6	277
2005	561.931.4	552,782	2,900,062.1	262,929.6	288
2006	595,821.6	707,400	5,120,000	470,253.0	294
2007	634,251	1,935,080	13,294,059	2,100,000	310
2008	674,889	1,509,230	9,562,970	4,400,000	301

Source: SEC, NSE, CBN (Various issues)

Some selected indicators of financial deepening are highlighted below. From the table 4.3, we can see the trend of money supply (M2), credit o the private sector and Gross domestic product. Also, included are the ratios of M2 to GDP and credit to the private sector and GDP. In 1986, M2/GDP ratio was 34.43%, it fell to 14% in 1995, it started rising, and by 2001 it was 26%, by 2010, it had risen to 37%. However, we could see a level of inconsistencies and fluctuations over the years.

Table 4.3: Selected Financial Deepening Indicators

Year	Money Supply² (M_2) (N' Million)	Credit to Private Sector² (N' Million)	GDP at Current Basic Prices (N' Million)	Financial Deepening	
				(M_2/GDP) (%)	(CPS/GDP) (%)
1986	23,806.40	15,247.45	69,146.99	34.43	22.05
1987	27,573.58	21,082.99	105,222.84	26.20	20.04
1988	38,356.80	27,326.42	139,085.30	27.58	19.65
1989	45,902.88	30,403.22	216,797.54	21.17	14.02
1990	52,857.03	33,547.70	267,549.99	19.76	12.54
1991	75,401.18	41,352.46	312,139.74	24.16	13.25
1992	111,112.31	58,122.95	532,613.83	20.86	10.91

1993	165,338.75	127,117.71	683,869.79	24.18	18.59
1994	230,292.60	143,424.21	899,863.22	25.59	15.94
1995	289,091.07	180,004.76	1,933,211.55	14.95	9.31
1996	345,853.96	238,596.56	2,702,719.13	12.80	8.83
1997	413,280.13	316,207.08	2,801,972.58	14.75	11.29
1998	488,145.79	351,956.19	2,708,430.86	18.02	12.99
1999	628,952.16	431,168.36	3,194,014.97	19.69	13.50
2000	878,457.27	530,373.30	4,582,127.29	19.17	11.57
2001	1,269,321.61	764,961.52	4,725,086.00	26.86	16.19
2002	1,508,172.91	930,493.93	6,912,381.25	21.82	13.46
2003	1,952,922.28	1,096,535.57	8,487,031.57	23.01	12.92
2004	2,131,820.08	1,421,664.03	11,411,066.91	18.68	12.46
2005	2,637,913.73	1,838,389.93	14,572,239.12	18.10	12.62
2006	3,799,538.05	2,290,617.76	18,564,594.73	20.47	12.34
2007 [1]	5,138,700.94	3,680,090.19	20,657,317.66	24.88	17.81
2008 [1]	8,029,088.61	6,941,383.41	24,296,329.29	33.05	28.57
2009 [1]	9,456,480.31	9,147,417.17	24,794,238.66	38.14	36.89
2010	11,034,940.93	10,157,021.18	29,205,782.96	37.78	34.78

Sources: Central Bank of Nigeria and National Bureau of Statistics (2011)

4.3.1 UNIT ROOT TEST

This research work began with the investigation of the time series properties of each variable employed in the study by using both the Augmented Dickey Fuller (ADF) and Phillip Peron (PP) tests to determine the order of integration of the series. Table 4.4 shows that the two tests are consistent, suggesting that GDP, INF, PLR, FSG, PSG, and DMBA are all stationary at first difference which implies that, they all integrated of order one, while MSG, VCM and COBM are stationary at second difference, meaning they are integrated of order two. Since the series are not integrated of the same order, it therefore excludes the possibility of a long run relationship among the variables, which implies the cointegration test is not necessary. Therefore the analysis of this study proceeded with the Vector Autoregressive approach.

Table 4.4: Unit Root Test

VARIABLES	AUGMENTED DICKEY FULLER TEST			PHILIP PERRON TEST (PP)			Order of Integration
	Levels	1st Difference	2nd Difference	Levels	1st Diff	2nd Diff	
GDP	-1.914316	-3.758154		-1.978333	-4.583836		I(1)
MSG	-2.157673	-3.245701	-4.803433	-2.316620	-4.462011		I(2)
COBM	-1.196450	-3.646667	-6.522666	-1.121046	-5.191223		I(2)
INF	-3.259615	-4.120127		-2.707685	-4.153398		I(1)
PLR	-3.279916	-5.083103		-3.513118	-5.676626		I(1)
FSG	-3.172769	-4.883144		-4.121516			I(1)
VCM	-1.384435	-3.500262	-3.754765	-1.972000	-6.845338		I(2)
PSG	-1.444976	-7.169413		-2.486433	-5.856403		I(1)
DMBA	-2.015773	-4.131488		-2.335235	-5.768409		I(1)

Notes: The ADF and PPT critical value at 5% level is -3.6219. All the series had intercepts with trends respectively. The critical values are based on Mckinnon criterion. The optimal lag is selected on the basis of Akaike Information Criterion (AIC). The null hypothesis of the test is: a series has a unit root. The rejection of the null hypothesis is at the 5% level of significance .I() shows the level of integration.

4.3.2 GRANGER CAUSALITY

Since no cointegration relationship exists between GDP and financial deepening, the next step is to examine the direction of causality among the variables. The effect was analyzed using granger causality test as shown in table 4.5. Only the significant results are reported below.

The results show that a weak unidirectional causality was found running from Financial Savings to GDP, implying that the effect or influence of financial savings to GDP in Nigeria is weak. The results show that Currency outside banks granger causes inflation, implying that the more currency (money) outside the banking sector, the higher the level of inflation, this is in line with the quantity theory of money. There exists a bi-directional

causality between GDP and VCM (the ratio of value of cheques cleared to money supply). MSG (ratio of money supply to GDP) granger cause DMB (ratio of deposit money bank asset). Also, PSC (ratio of private sector credit to GDP) granger causes MSG. The causality test also suggests that economic growth proxied by GDP causes PSG (ratio of private sector credit to GDP)) without a feedback.

Table 4.5 Granger causality test

Null Hypothesis	F- test	P- Value
FGS does not Granger Cause GDP	3.59504	0.04988
COB does not Granger Cause INF	6.13604	0.00986
COB does not Granger Cause MSG	4.54199	0.02628
PLR does not Granger Cause COB	5.02064	0.01935
MSG does not Granger Cause DMB	6.2755	0.0091
DMB does not Granger Cause MSG	4.92775	0.02051
DMB does not Granger Cause VCM	3.76889	0.04418
FGS does not Granger Cause INF	7.72825	0.0041
PLR does not Granger Cause INF	3.65982	0.04766
INF does not Granger Cause PLR	5.95264	0.01098
PSC does not Granger Cause M2	4.77072	0.02267
PSC does not Granger Cause VCM	1.6028	0.23031
GDP does not Granger Cause PSG	14.4276	0.00022
GDP does not Granger Cause VCM	12.0483	0.00055

*Notes: All tests are achieved with a lag length chosen according to the Akaike criterion.The direction of causality is based on the probability value. The smaller p-value indicated the presence of causality***.**

4.3.3 IMPULSE RESPONSE FUNCTION

In this section, we investigated the effect of financial deepening on economic growth. We used the graphs below to show how growth (GDP) responded to unexpected shocks in financial deepening.

Impulse response analysis is a device to display the dynamics of the variables tracing out the reaction of each variable to a particular shock at time t. The simulation horizon covered 10 quarters. The solid blue lines are impulse responses.

The lag length of one was chosen based on the FPE, AIC, SC and HQ as indicated in table 4.6.

Table 4.6 Lag Length Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
1	-448.2652	NA	3.90E+09*	44.54480*	47.70444*	45.33944*

** indicates lag order selected by the criterion*
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

SUPPLY LEADING

Figures 4.1 (a-h), enable us to trace out the responses of the variables to a shock in the exogenous variables. The set of graphs show the response of GDP to variables that make up financial deepening.

Panel A, shows that GDP responds negatively to financial deepening within the first four quarters and latter rose significantly attaining a positive sign at the end of the fourth quarter till the end of the tenth quarter. The negative significance within the first four quarters can be attributed to the period where banks were terminally distressed and accounted for low levels

of financial deepening. The fact that GDP rises thereafter from a negative to attain a positive sign suggest that deepening of the financial markets can lead to a significant growth in the long run. This lends credence to the supply leading hypothesis that financial deepening causes economic growth.

Panel B indicates that private sector credit (PSC) impacts positively on economic growth (GDP). That is GDP responds positively to an unexpected shock in PSC within the first four quarters, and further increases significantly till the end of the tenth quarter. The implication of this finding is that, sustaining desired levels of new investments through private sector credit will facilitate growth in the economy. Although the level of interest rates have remained very high, the level of private sector credits have not sustained the desired levels of new investments through private sector credit to facilitate growth in the economy.

Panel C, shows an unexpected shock in inflation leads to a constant rise in GDP. This result is in line with our a priori expectations. A mild level of inflation stimulates investment and consequently growth.

We observed from panel D that, GDP increased from negative to positive within the first two quarters when financial savings increase by one standard deviation and there after declines persistently till the end of the last quarter. This result suggests that economic growth cannot be sustained by banks' savings.

In panel E below, we observed that GDP responds negatively to checks outside banks. The implication is that if more checks are issued into the economy, this will slow down economic activities.

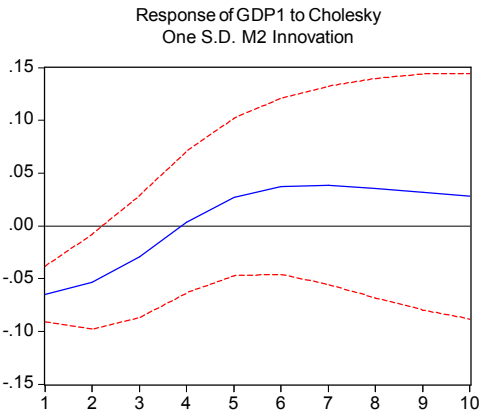
Panel F shows the response of real GDP to an expansionary shock in the prime lending rate (PLR). Within the first two years, GDP is stable with changes in PLR. At the end of the second quarter, GDP rises quickly and significantly and further increases up to the fourth

quarter. And almost stabilizes till the end of the last quarter. This suggests that financial deepening with respect to the prime lending rates would lead to a high and sustainable economic growth in Nigeria.

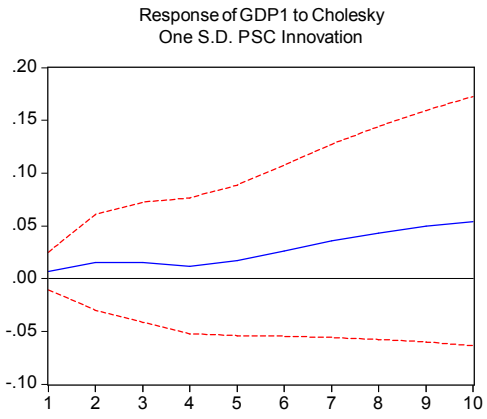
In Panel G, we observe that a positive innovation in deposit money outside bank (DMB) has a positive effect on GDP in the first three quarters and then it fizzles out in the fourth quarter. At the end of the fourth quarter till the last quarter, GDP responds negatively to unexpected shocks in DMB. This suggests that if more deposits are held by non-financial banks (institutions), GDP will drop significantly.

In Panel H below, a one standard deviation increase in currency outside bank, leads to significant rise in GDP reaching its maximum in the third quarter and thereafter declines gradually till the end of the last quarter maintaining its positive sign. This suggests that more currency outside bank will leave more cash balances with individuals in the economy thus increasing the level of demand for goods and services which in turn increases the level of investment thus increasing the level of GDP.

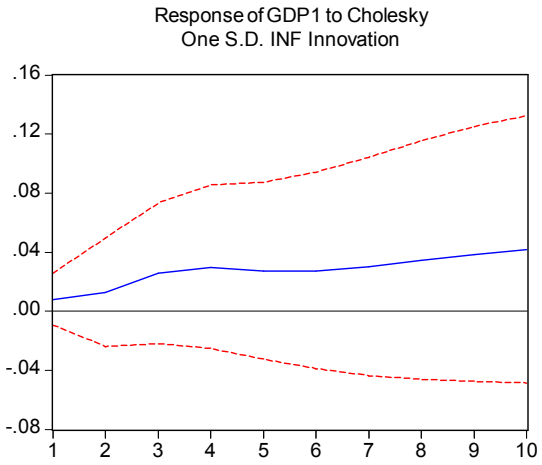
FIGURE 4.1(a-h): IMPULSE RESPONSE FUNCTIONS OF GDP TO A SHOCK IN THE EXPLANATORY VARIABLES



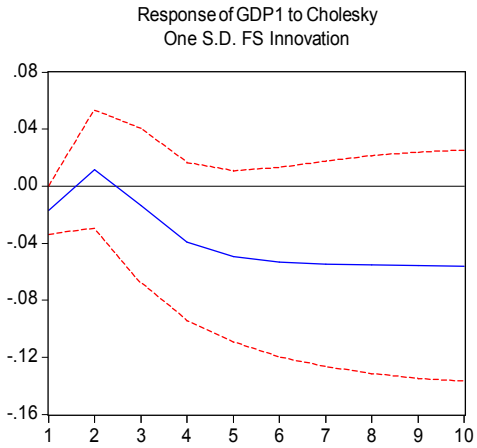
Panel a



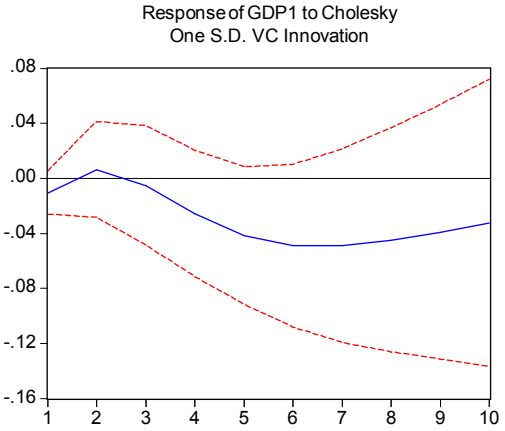
Panel b

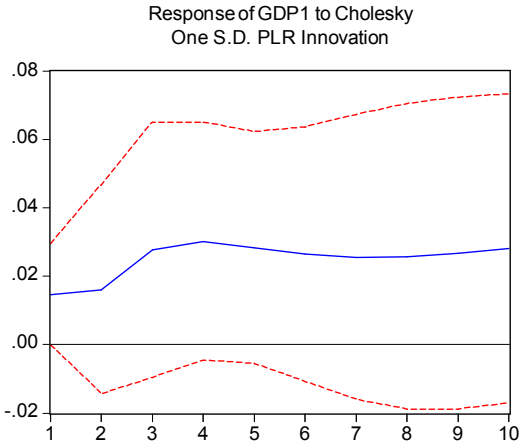


Panel c



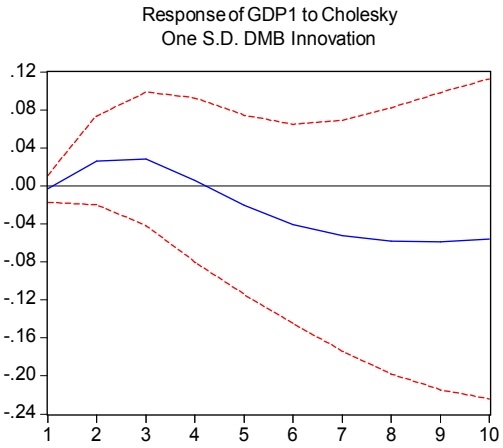
Panel d

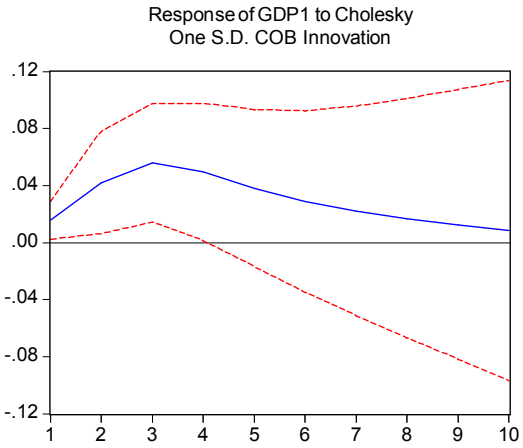




Panel e

Panel f





Panel g **Panel h**

DEMAND FOLLOWING

In figures 4.2 (a-h), we trace out the responses of the variables to a shock in the endogenous variable. The set of graphs show the response of the variables that make up financial deepening to GDP.

Panel A shows the response of COB to a sudden change in GDP within the 1st two quarters as being insignificant. But at the end of the 2nd quarter, right up to the 12th quarter, COB responds negatively and significantly to a sudden change in GDP which does not meet our a priori expectation. This suggests that increase in economic growth does not lead to increased COB.

Panel B shows the response of DMB to a change in GDP, it is negative within the 1st three quarters; however, from the 4th quarter up to the 12th quarter, DMB responds both significantly and positively to changes in GDP. This is in support of the demand following hypothesis.

Panel C indicates that financial savings FSG, responds positively to GDP within the 1st quarter, it then significantly falls to negative up to 3rd quarter and gradually moves up to positive in the 6th quarter and it steadily rises through to the 12th quarter.

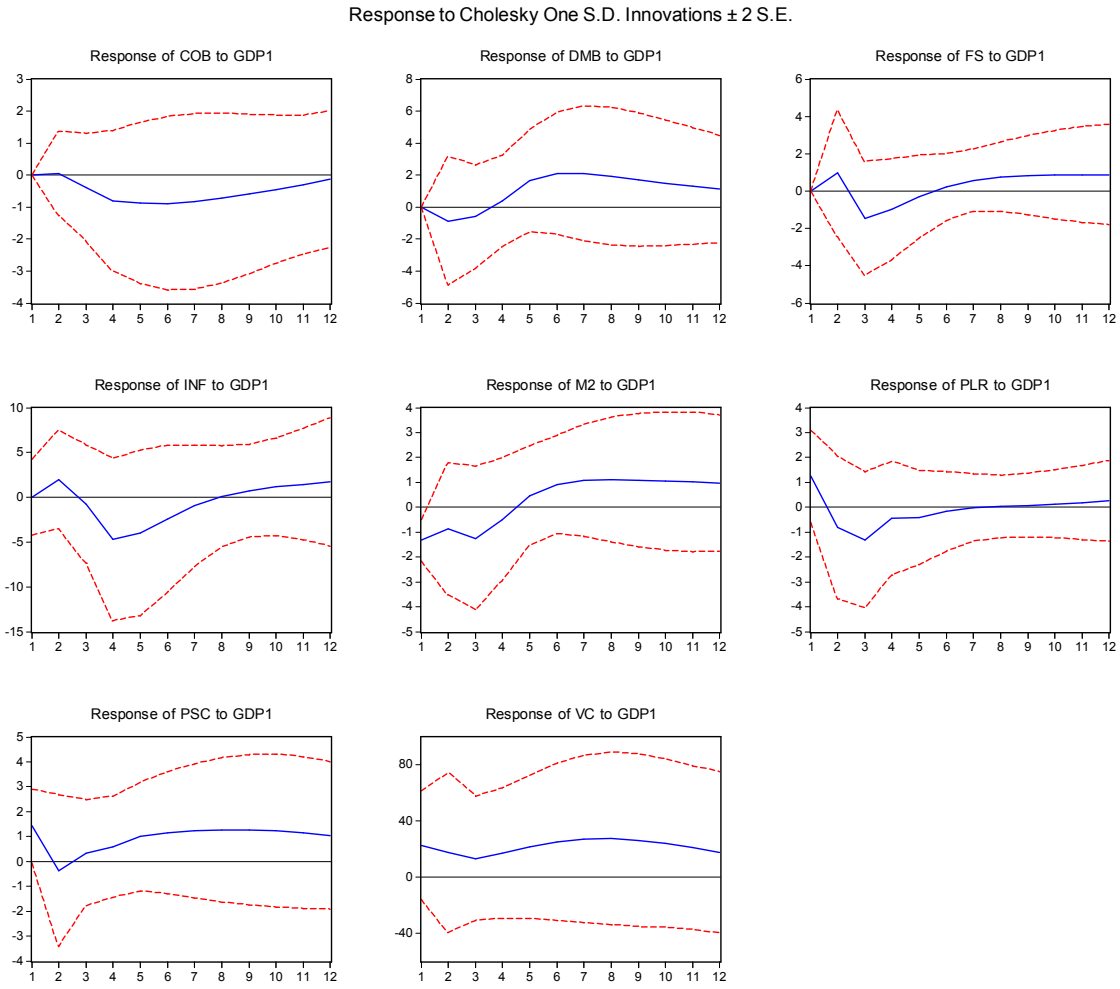
We observed from panel E that, MSG within the first four quarters was significantly negative, however, there was a steady growth from the fifth quarter to the seventh quarter, which leveled out to the 12th quarter.

Panel F shows the response of PLR to a shock in Gross domestic product (GDP). PLR significantly declined from the 1st quarter, became negative in the second up to the seventh quarter and then insignificantly fizzled out up to the 12th quarter.

We observed from panel G that, PSG decreased from positive to negative within the first two quarters when GDP increased by one standard deviation and thereafter, increased persistently till the end of the last quarter. This result suggests that GDP has an influence on PSG.

Panel H shows the response of VCM to expansionary shocks in D. We observed that VCM is positive in the 1st quarter, but slowly declined to the 3rd quarter, after which it steadily rose through the 12th quarter.

Figure 4.2 (a-h): IMPLUSE RESPONSE FUNCTIONS OF THE EXPLANATORY VARIABLES TO A SHOCK IN GDP



4.3.4 VARIANCE DECOMPOSITION

In this section, we examined the relative contribution of the variables in the VAR model to GDP. This is accomplished by carrying out a decomposition of GDP with a view to determining the size of the fluctuations in a given variable that are caused by different

shocks. We calculated the variance decomposition at forecast horizons from the first to the 10 quarters. The first to the fourth quarters represent the short run, while the eighth and 10 quarters represent the medium term.

Table 4.3 shows that, deposit money bank contributes more to GDP in the first three quarters than the other variables and from the fourth quarter, the financial deepening variable MSG contributes more significantly and relatively to GDP. For instance, in the third quarter, DMB accounts for 7.5% of the variability in GDP. In the fourth, eighth and tenth quarter, MSG accounts for 18.6%, 47.7% and 48.8% for the variations in GDP respectively.

However, the contribution of the private sector credit and prime lending rate to total GDP is very small when compared with the other variables of financial development. This possibly implies that a good percentage of the deposit money banks lending is not really to the private sector but, rather to other areas of the economy.

Conclusively**,** our empirical findings point at a supply-leading hypothesis confirming the fact financial deepening leads to economic growth in Nigeria.

Table 4.7: Variance Decomposition of GDP:

Period	S.E.	M2	PSC	INF	FS	VC	PLR	DMB	COB	GDP
1.000	4.360	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	100.000
2.000	6.723	0.001	0.688	0.320	5.692	2.541	0.017	7.069	4.675	78.996
3.000	7.956	5.242	0.610	1.361	4.008	2.085	0.277	9.703	10.049	66.665
4.000	8.396	18.644	0.448	1.985	3.468	1.897	0.560	7.489	11.109	54.400
5.000	8.724	32.294	0.379	1.937	3.719	3.257	0.629	6.337	9.503	41.945
6.000	9.158	41.102	0.634	1.791	3.996	4.747	0.594	7.542	7.471	32.124
7.000	9.642	45.627	1.279	1.787	4.183	5.532	0.547	9.716	5.880	25.448
8.000	10.111	47.730	2.203	1.967	4.342	5.664	0.524	11.725	4.771	21.075
9.000	10.542	48.615	3.276	2.294	4.525	5.414	0.532	13.155	4.013	18.176
10.000	10.932	48.879	4.414	2.704	4.741	4.995	0.572	13.969	3.511	16.214

Source: Eviews software

4.4 Analysis of Regression Results

The regression model has a very good statistical fitness judged by high adjusted R-squared values while the t-values indicate the significance of the individual variables at 5% level of significance. The interpretations of the results are made with respect to GDP only.

From Table 4.8, COB, FSG and MSG exhibit a positive and significant relationship with GDP at 5% level of significance. If COB is lagged by one is increased by one unit, GDP will increase by 0.0175 points. Also, if Financial saving (FSG) is lagged by one is increased by one unit, GDP increases by 0.015648 points. When MSG is lagged by one, is also increased by one unit, GDP increases by 0.017852.

VCM, DMB, PLR, have a positive correlation with GDP with little significance. If the previous year's VCM is increased by one unit, GDP will increase by 0.00034 unit points. GDP rises by 22 unit points when DMB lagged once increases by one unit. The result further indicates that if previous year's PLR rises by one unit, GDP will rise by 0.0036 unit points. Increasing FSG by one unit increases GDP by 0.0034 unit points. A positive relationship is observed between INF and GDP. This debunks the recent empirical growth literature of Khan and Senhadji (2001) that there is a negative but nonlinear relationship between inflation and growth.

The implication of the above findings is that, deepening of the financial sector has been able to mobilize and allocate resources to some extent to meet up with investment expenditure that will final translate into meaningful economic growth.

Table 4.8 Standard errors & t-statistics

	GDP1	DMB	FS	COB	INF	M2	PLR	VC

GDP1(-1)	0.897740	11.73590	-2.898033	0.160378	-16.67490	6.056541	1.541413	60.75840
	(0.04752)	(4.90191)	(4.15972)	(1.50512)	(6.35119)	(2.93362)	(3.28592)	(68.7266)
	[18.8932]	[2.39415]	[-0.69669]	[0.10655]	[-2.62548]	[2.06453]	[0.46910]	[0.88406]
DMB(-1)	22 0.008	-0.094983	0.133451	-0.119883	0.204267	-0.317228	-0.158787	3.066472
	(0.00584)	(0.60260)	(0.51136)	(0.18503)	(0.78076)	(0.36063)	(0.40394)	(8.44862)
	[1.37569]	[-0.15762]	[0.26097]	[-0.64792]	[0.26163]	[-0.87965]	[-0.39309]	[0.36296]
FS(-1)	0.015648	0.050583	-0.254708	0.013841	0.803016	-0.088442	-0.514789	-0.416946
	(0.00313)	(0.32261)	(0.27377)	(0.09906)	(0.41800)	(0.19307)	(0.21626)	(4.52317)
	[1.16658]	[0.15679]	[-0.93038]	[0.13973]	[1.92110]	[-0.45807]	[-2.38042]	[-0.09218]
COB(-1)	0.017544	-1.721087	0.133793	0.782822	2.466214	-0.976479	-0.035471	-11.76171
	(0.00837)	(0.86334)	(0.73263)	(0.26509)	(1.11860)	(0.51668)	(0.57873)	(12.1044)
	[2.09639]	[-1.99351]	[0.18262]	[2.95306]	[2.20474]	[-1.88991]	[-0.06129]	[-0.97169]
INF(-1)	0.000587	-0.095609	0.050650	-0.006882	0.155021	-0.032125	0.072221	0.517172
	(0.00114)	(0.11792)	(0.10007)	(0.03621)	(0.15279)	(0.07057)	(0.07905)	(1.65331)
	[0.51330]	[-0.81078]	[0.50616]	[-0.19008]	[1.01463]	[-0.45521]	[0.91365]	[0.31281]
M2(-1)	0.017852	0.791737	0.379086	0.218187	0.308691	1.090533	0.824224	-2.800844
	(0.00979)	(1.01042)	(0.85743)	(0.31025)	(1.30915)	(0.60470)	(0.67732)	(14.1664)
	[-0.80166]	[0.78357]	[0.44212]	[0.70327]	[0.23579]	[1.80344]	[1.21689]	[-0.19771]
PLR(-1)	0.003621	-0.091557	0.578981	0.195534	1.183138	0.090347	0.178028	0.103186
	(0.00394)	(0.40606)	(0.34458)	(0.12468)	(0.52611)	(0.24301)	(0.27220)	(5.69310)
	[0.91995]	[-0.22548]	[1.68026]	[1.56828]	[2.24883]	[0.37178]	[0.65405]	[0.01812]
VC(-1)	0.000338	-0.023984	0.015372	-0.003275	0.056619	-0.015524	-0.009435	0.491751
	(0.00021)	(0.02117)	(0.01796)	(0.00650)	(0.02743)	(0.01267)	(0.01419)	(0.29680)
	[1.64940]	[-1.13295]	[0.85570]	[-0.50389]	[2.06426]	[-1.22537]	[-0.66489]	[1.65684]
R-squared	0.992671	0.776293	0.449858	0.873664	0.807084	0.687162	0.364677	0.829030
Adj. R-squared	0.989251	0.671897	0.193125	0.814707	0.717056	0.541171	0.068193	0.749243

CHAPETER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The study empirically investigated the impact of financial deepening on economic growth in Nigeria, with the view of determining which of the hypothesis (theories) is relevant in the Nigerian economy, is it supply leading (Financial deepening leads to economic growth) or demand following (economic growth triggers financial deepening). The literature on the relationship between the economic growth and financial development overwhelmingly suggest as positive, first-order relationship between the two. Nevertheless, empirical studies on the issue of causality between the financial development and economic growth, however, remain sparse (Pagano, 1993).

To represent economic growth, we used GDP (Gross domestic product) and percentage change data natural logarithm was taken. Financial deepening was defined to include MSG (the ratio of money supply to GDP, VCM (value of cheques to money supply), PSG (ratio of private sector credit to GDP), FSG (financial savings to GDP), INF (rate of inflation), PLR (real lending rates), DMB (deposit money bank assets to GDP), COB (currency outside Banks to money supply). The prime lending rates of the banks was used to stand for interest rate (the long term interest).

To attain the set objectives, we employed the Structural Vector Auto Regressive method because it uses economic theory to sort out the links among the desired variables with the standard practice reporting the Granger causality tests, impulse response functions and the variance decompositions according to (Stock and Mark, 2001). But before employing the VAR we investigated the nature of the time series data using both Augmented Dickey-Fuller (ADF) and Philip Peron (PP) tests

Major findings

From the empirical analysis we found out that; financial deepening does not impact or influence economic growth in the short run. However, in the long run there is a significant effect of financial deepening on economic growth. Lending credence to the supply leading hypothesis that financial deepening causes economic growth.

Also, the private sector credit contributes positively to economic growth; however, the level of significance is very low. A positive relationship is observed between inflation and GDP. This result is in line with the a priori expectations since we normally expect rising inflationary pressures to have a positive effect on growth. Even though there has been clear improvement in the financial sector over the past few decades, the degree of financial development is still below the threshold needed to spur economic growth. The implication is that the financial sector is still not able to mobilize and effectively allocate funds to the private sector.

From the demand side, it was also observed that GDP had a positive and significant impact on Deposit Money Bank Asset, Money supply and private sector credit, thereby laying credence to the demand following hypothesis. In the Long-run, there is strong evidence that economic growth is leading financial development when bank credit to private sector is used thereby supporting the demand following hypothesis.

5.2 CONCLUSION

In this study, we used the structural vector auto-regressive (SVAR) model to empirically analyze financial deepening and economic growth in Nigeria, given the two theories; supply leading and demand following hypotheses. The study basically investigated the causality between financial deepening and economic growth. Results showed that in Nigeria some of the indicators of financial deepening; money supply, private sector credit, inflation, favoured the supply leading hypothesis, meaning that financial deepening influenced economic growth. The financial sector has an important role to play in the growth of the Nigerian economy. We also observed some traces of demand following hypothesis with financial deepening variables like private sector credit and deposit money banks responding positively to gross domestic product. However, this study concluded that financial deepening propels economic growth because the variables of financial deepening were more significant in explaining economic growth, therefore supporting the supply leading hypothesis.

5.3 RECOMMENDATIONS

There should be a determined effort by the monetary authorities to bridge the gap existing between lending rate and deposit rate, foster a moderate rise in nominal rates and stabilize inflationary pressures so that the people will be fully motivated to save in a bid to generate needed loanable funds for investment in Nigeria. Savings must be encouraged and any country that does not encourage savings should forget about making any investment, whether private or public, (Fry, 1988).

There is an urgent need to sustain a higher level of macroeconomic stability in Nigeria, reduce the high incidence of non performing credits ensure that private sector credits are channeled to the real sector of the economy, enhance the level of corporate governance in the financial system.

Based on the findings of the study, another recommendation is that monetary authorities should continue with the policy reforms to consolidate the emerging confidence in the financial system. The financial sector reforms should be intensified; this will create a sound market-oriented financial sector, leading to an increase in the level of financial savings and level of financial activities in the financial markets, which will translate to increased deepening and hence economic growth.

The Central Bank of Nigeria should be encouraged with their current drive to ensure a cashless economy. This will help to bring the currency outside banks to its lowest level since everyone willing to carry out any transaction will need to have an account with one of the financial institutions. Therefore, efforts should be made to extend financial services to the informal or rural areas. There should be a decentralization of financial activities from the urban areas to the rural areas.

DIRECTION OF RESEARCH

The findings in this study suggest there is much room for further study. While there exists, an empirical link between financial development and economic growth, yet, there is still limited knowledge on the support of the supply leading or demand following hypothesis in Nigeria. Further analysis along these and similar lines appears a promising avenue for future research.

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APPENDICES

Variance Decomposition of GDP:

Period	S.E.	M2	PSC	INF	FS	VC	PLR	DMB	COB	GDP1
1.0000	4.3597	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	100.0000
2.0000	6.7234	0.0008	0.6880	0.3205	5.6923	2.5408	0.0173	7.0694	4.6753	78.9956
3.0000	7.9556	5.2421	0.6100	1.3609	4.0080	2.0855	0.2768	9.7031	10.0486	66.6650
4.0000	8.3964	18.6442	0.4485	1.9849	3.4678	1.8967	0.5600	7.4887	11.1089	54.4003
5.0000	8.7240	32.2945	0.3792	1.9370	3.7186	3.2575	0.6288	6.3373	9.5027	41.9445
6.0000	9.1583	41.1017	0.6337	1.7914	3.9964	4.7466	0.5937	7.5418	7.4711	32.1235
7.0000	9.6425	45.6274	1.2788	1.7871	4.1829	5.5320	0.5471	9.7164	5.8804	25.4480
8.0000	10.1113	47.7298	2.2032	1.9667	4.3419	5.6641	0.5238	11.7252	4.7706	21.0748
9.0000	10.5424	48.6150	3.2758	2.2937	4.5251	5.4140	0.5321	13.1546	4.0134	18.1763
10.0000	10.9324	48.8793	4.4144	2.7045	4.7406	4.9947	0.5723	13.9692	3.5111	16.2141

Variance Decomposition of M2:

Period	S.E.	M2	PSC	INF	FS	VC	PLR	DMB	COB	GDP1
1.0000	6.3949	30.9642	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	69.0358
2.0000	7.3201	36.5923	1.5122	0.0045	8.8984	4.4038	1.0815	6.0976	2.4244	38.9853
3.0000	7.8374	31.0981	2.2695	0.0046	10.1360	4.6988	0.8722	11.9859	7.6130	31.3219
4.0000	8.3847	27.9263	4.9389	0.0061	9.2321	4.2356	0.7916	13.0349	11.2640	28.5706
5.0000	9.0550	26.7712	7.1611	0.1442	8.5538	5.4179	0.7827	12.0810	12.4008	26.6874
6.0000	9.7852	25.9880	7.8275	0.3900	7.7812	7.7488	0.8230	12.3283	12.1401	24.9732
7.0000	10.5286	25.1195	7.6034	0.5209	7.0407	9.9357	0.8957	14.2181	11.4016	23.2645
8.0000	11.2486	24.2440	7.0951	0.5256	6.4263	11.4722	0.9675	16.9539	10.6328	21.6826
9.0000	11.9138	23.4643	6.5704	0.4858	5.9489	12.4097	1.0154	19.8585	9.9370	20.3099
10.0000	12.4981	22.7979	6.1131	0.4591	5.5937	12.9206	1.0361	22.5965	9.3156	19.1675

Variance Decomposition of PSC:

Period	S.E.	M2	PSC	INF	FS	VC	PLR	DMB	COB	GDP1
1.0000	10.4080	16.9429	69.1277	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	13.9295
2.0000	13.0606	13.1800	62.7438	0.0261	0.0788	0.0185	0.1570	5.4018	6.6492	11.7449
3.0000	18.8829	11.7309	58.9898	1.1872	0.8559	1.9827	0.3664	4.9421	9.4544	10.4909
4.0000	24.1785	12.0944	54.2577	1.5560	0.7612	5.4068	0.5032	4.8392	11.0626	9.5189
5.0000	27.3878	12.8799	48.0403	1.6695	0.6532	9.1281	0.6798	7.1301	10.9923	8.8267
6.0000	28.9759	13.6716	41.7593	1.5584	0.5749	11.9998	0.8223	11.1070	10.3200	8.1868
7.0000	29.7396	14.3173	36.2798	1.3645	0.5510	13.8484	0.9082	15.7137	9.4317	7.5854
8.0000	30.1906	14.7795	31.8255	1.1969	0.5852	14.8640	0.9447	20.2152	8.5185	7.0705
9.0000	30.5608	15.0614	28.3707	1.0941	0.6679	15.2912	0.9467	24.2203	7.6893	6.6585

10.0000	30.9458	15.1741	25.8040	1.0563	0.7813	15.3354	0.9291	27.5712	7.0044	6.3442
Variance Decomposition of INF:										
Period	S.E.	M2	PSC	INF	FS	VC	PLR	DMB	COB	GDP1
1.0000	6.5061	6.9307	0.7594	92.1488	0.0000	0.0000	0.0000	0.0000	0.0000	0.1611
2.0000	8.1921	11.5046	5.9689	64.6229	4.5084	0.1058	0.2178	0.1656	12.1124	0.7935
3.0000	9.3408	29.5763	2.9020	35.6726	13.0069	3.1523	0.7461	6.7635	7.2300	0.9503
4.0000	9.9386	29.5008	1.7915	22.0332	11.8581	6.5342	0.4647	18.5160	5.0766	4.2250
5.0000	10.2074	27.0728	2.2430	17.2259	10.4328	7.1692	0.3657	25.2631	5.1631	5.0645
6.0000	10.4018	25.1720	3.3733	15.5386	9.7491	6.7826	0.3284	28.5007	5.6847	4.8705
7.0000	10.6343	23.9901	4.5608	15.0379	9.4234	6.4418	0.3131	29.3960	6.2062	4.6308
8.0000	10.9134	23.2877	5.5033	14.9358	9.2333	6.4985	0.3207	29.0587	6.6367	4.5254
9.0000	11.2200	22.8387	6.1254	14.8622	9.0659	6.9037	0.3534	28.3694	6.9890	4.4924
10.0000	11.5381	22.5274	6.4703	14.6724	8.8684	7.5122	0.4024	27.8122	7.2640	4.4707
Variance Decomposition of FS:										
Period	S.E.	M2	PSC	INF	FS	VC	PLR	DMB	COB	GDP1
1.0000	115.2417	0.3969	29.9537	2.2875	40.9733	0.0000	0.0000	0.0000	0.0000	26.3886
2.0000	135.3269	15.8379	19.6221	7.1964	37.5629	0.1616	1.7374	0.2021	0.9864	16.6934
3.0000	149.5471	18.2760	15.1465	5.8528	32.5836	1.5943	1.4298	6.8332	2.7063	15.5774
4.0000	165.1838	17.5433	14.6360	5.1929	29.5470	1.7685	1.2762	10.4149	4.6128	15.0085
5.0000	183.1574	16.6646	15.5114	5.0233	28.2169	1.7135	1.2263	11.2720	6.0603	14.3118
6.0000	202.6087	16.2846	16.2789	5.0242	27.2014	2.3023	1.2151	10.9094	6.9515	13.8326
7.0000	221.8787	16.2463	16.4340	5.0012	26.0265	3.5275	1.2276	10.7439	7.3385	13.4545
8.0000	239.4222	16.3103	16.0528	4.8724	24.7128	4.9488	1.2540	11.3873	7.4134	13.0482
9.0000	254.3011	16.3849	15.3865	4.6552	23.3870	6.2354	1.2786	12.7708	7.3129	12.5886
10.0000	266.1626	**16.4510	14.6204	4.4078	22.1365	7.2632	1.2905	14.6153	7.1049	12.1104
Variance Decomposition of VC:										
Period	S.E.	M2	PSC	INF	FS	VC	PLR	DMB	COB	GDP1
1.0000	5.4491	21.1754	1.8894	12.7245	0.0693	38.5528	0.0000	0.0000	0.0000	25.5885
2.0000	7.1992	17.5249	3.6316	13.7294	1.6724	37.8208	0.7490	1.1645	2.1804	21.5270
3.0000	7.9251	16.4066	4.7501	12.1977	1.7405	37.0532	1.1461	3.5825	5.1594	17.9640
4.0000	8.2628	16.4036	5.1945	10.1820	1.4425	35.7819	1.3399	7.8884	6.7717	14.9955
5.0000	8.4699	17.0254	4.8599	8.3088	1.2021	34.1144	1.3853	13.4699	7.0135	12.6208
6.0000	8.5874	17.7259	4.1801	6.7901	1.1178	32.2175	1.3449	19.3283	6.4621	10.8335
7.0000	8.6638	18.1627	3.5113	5.6804	1.1504	30.3039	1.2737	24.6993	5.6681	9.5503
8.0000	8.7185	18.2955	3.0219	4.9337	1.2429	28.5235	1.1984	29.2037	4.9405	8.6399
9.0000	8.7589	18.2037	2.7472	4.4713	1.3621	26.9489	1.1286	32.7625	4.3838	7.9919
10.0000	8.7890	17.9749	2.6618	4.2170	1.4896	25.6094	1.0679	35.4370	4.0104	7.5320
Variance Decomposition of PLR:										
Period	S.E.	M2	PSC	INF	FS	VC	PLR	DMB	COB	GDP1

1.0000	8.1568	35.1001	0.4873	3.3790	19.6339	18.7546	19.4608	0.0000	0.0000	3.1844
2.0000	10.0562	34.5360	6.5502	4.6192	25.2740	13.9415	11.3420	1.3210	0.0376	2.3786
3.0000	10.7724	31.8332	5.4053	4.5283	20.8574	14.8562	9.4394	6.3949	0.4439	6.2413
4.0000	11.4754	31.6050	5.1975	4.1691	19.4898	15.0550	8.6884	9.2396	0.4421	6.1134
5.0000	12.6464	30.9962	5.1600	3.9874	18.6723	14.8888	8.2814	11.6067	0.5087	5.8985
6.0000	13.9858	30.5797	5.3253	3.9583	18.2218	14.6278	8.0597	12.9425	0.5456	5.7393
7.0000	15.1767	30.3159	5.5164	4.0285	17.9724	14.3945	7.9183	13.6306	0.5767	5.6465
8.0000	16.1221	30.1317	5.6957	4.1229	17.8291	14.2149	7.8231	13.9706	0.6253	5.5868
9.0000	16.8416	29.9824	5.8716	4.2052	17.7428	14.0890	7.7602	14.1032	0.6999	5.5457
10.0000	17.3783	29.8416	6.0450	4.2682	17.6824	14.0174	7.7205	14.1070	0.7972	5.5208

Variance Decomposition of DMB:

Period	S.E.	MSG	PSC	INF	FSG	VCM	PLR	DMB	COB	GDP
1.0000	2.4164	20.0541	5.6230	0.6009	0.0618	1.4658	0.2111	19.0523	0.0000	52.9309
2.0000	3.4080	20.9873	6.1207	1.9163	2.7936	1.9995	1.3286	12.6312	6.4214	45.8013
3.0000	4.6583	18.5993	6.6318	1.8481	4.3477	1.7496	1.4324	11.0896	12.9100	41.3916
4.0000	5.9472	18.7294	7.9094	1.7943	3.9478	3.4070	1.3166	10.6332	15.7854	36.4769
5.0000	7.1301	19.8559	7.7223	1.4781	3.6246	7.1704	1.1963	13.7887	14.1786	30.9852
6.0000	8.1500	20.1526	6.5898	1.2249	3.2700	10.2396	1.1255	18.9213	11.8749	26.6015
7.0000	8.9881	19.7876	5.6106	1.0406	2.9946	11.8807	1.0961	23.9706	10.1445	23.4749
8.0000	9.6533	19.2227	4.9888	0.9391	2.8190	12.5239	1.0780	28.1138	8.9979	21.3168
9.0000	10.1633	18.6782	4.6472	0.9246	2.7322	12.6363	1.0556	31.2455	8.2458	19.8347
10.0000	10.5381	18.2028	4.4919	0.9737	2.7111	12.5037	1.0286	33.5064	7.7584	18.8235

Variance Decomposition of COB:

Period	S.E.	MSG	PSC	INF	FSG	VCM	PLR	DMB	COB	GDP
1.0000	0.0780	0.1994	11.7084	3.0420	23.4584	2.3036	12.2551	0.7668	45.1962	1.0702
2.0000	0.1137	9.0123	8.5755	2.0067	13.2517	12.4176	6.9850	6.3041	40.6951	0.7519
3.0000	0.1421	19.3005	6.9377	1.1105	7.7815	17.7748	4.0208	14.7893	27.8117	0.4730
4.0000	0.1657	23.1183	4.7768	0.6825	5.2597	20.0059	2.7284	23.7101	18.6426	1.0758
5.0000	0.1919	24.5172	3.3400	0.5055	4.1893	20.2139	2.0636	30.3051	13.4749	1.3906
6.0000	0.2210	24.7849	2.6021	0.4892	3.7218	19.5659	1.6827	35.2320	10.4316	1.4898
7.0000	0.2503	24.6217	2.3382	0.5889	3.5351	18.6040	1.4405	38.8045	8.5862	1.4809
8.0000	0.2779	24.3125	2.3846	0.7714	3.5059	17.5795	1.2739	41.2932	7.4515	1.4275
9.0000	0.3034	23.9525	2.6364	1.0024	3.5651	16.6173	1.1564	42.9273	6.7794	1.3632
10.0000	0.3267	23.5756	3.0267	1.2532	3.6670	15.7834	1.0760	43.8814	6.4355	1.3012

Cholesky Ordering: GDP1 M2 PSC INF FS VC PLR DMB COB

Vector Autoregression Estimates

Date: 11/05/11 Time: 11:55

Sample(adjusted): 1987 2009

Included observations: 23 after adjusting endpoints

Standard errors in ( ) & t-statistics in [ ]

	GDP1	DMB	FSG	COB	INF	MSG	PLR	VCM
GDP1(-1)	0.897740	11.73590	-2.898033	0.160378	-16.67490	6.056541	1.541413	60.75840
	(0.04752)	(4.90191)	(4.15972)	(1.50512)	(6.35119)	(2.93362)	(3.28592)	(68.7266)
	[18.8932]	[2.39415]	[-0.69669]	[0.10655]	[-2.62548]	[2.06453]	[0.46910]	[0.88406]
DMB(-1)	0.008036	-0.094983	0.133451	-0.119883	0.204267	-0.317228	-0.158787	3.066472
	(0.00584)	(0.60260)	(0.51136)	(0.18503)	(0.78076)	(0.36063)	(0.40394)	(8.44862)
	[1.37569]	[-0.15762]	[0.26097]	[-0.64792]	[0.26163]	[-0.87965]	[-0.39309]	[0.36296]
FS(-1)	0.003648	0.050583	-0.254708	0.013841	0.803016	-0.088442	-0.514789	-0.416946
	(0.00313)	(0.32261)	(0.27377)	(0.09906)	(0.41800)	(0.19307)	(0.21626)	(4.52317)
	[1.16658]	[0.15679]	[-0.93038]	[0.13973]	[1.92110]	[-0.45807]	[-2.38042]	[-0.09218]
COB(-1)	0.017544	-1.721087	0.133793	0.782822	2.466214	-0.976479	-0.035471	-11.76171
	(0.00837)	(0.86334)	(0.73263)	(0.26509)	(1.11860)	(0.51668)	(0.57873)	(12.1044)
	[2.09639]	[-1.99351]	[0.18262]	[2.95306]	[2.20474]	[-1.88991]	[-0.06129]	[-0.97169]
INF(-1)	0.000587	-0.095609	0.050650	-0.006882	0.155021	-0.032125	0.072221	0.517172
	(0.00114)	(0.11792)	(0.10007)	(0.03621)	(0.15279)	(0.07057)	(0.07905)	(1.65331)
	[0.51330]	[-0.81078]	[0.50616]	[-0.19008]	[1.01463]	[-0.45521]	[0.91365]	[0.31281]
M2(-1)	-0.007852	0.791737	0.379086	0.218187	0.308691	1.090533	0.824224	-2.800844
	(0.00979)	(1.01042)	(0.85743)	(0.31025)	(1.30915)	(0.60470)	(0.67732)	(14.1664)
	[-0.80166]	[0.78357]	[0.44212]	[0.70327]	[0.23579]	[1.80344]	[1.21689]	[-0.19771]
PLR(-1)	0.003621	-0.091557	0.578981	0.195534	1.183138	0.090347	0.178028	0.103186
	(0.00394)	(0.40606)	(0.34458)	(0.12468)	(0.52611)	(0.24301)	(0.27220)	(5.69310)
	[0.91995]	[-0.22548]	[1.68026]	[1.56828]	[2.24883]	[0.37178]	[0.65405]	[0.01812]
VC(-1)	0.000338	-0.023984	0.015372	-0.003275	0.056619	-0.015524	-0.009435	0.491751
	(0.00021)	(0.02117)	(0.01796)	(0.00650)	(0.02743)	(0.01267)	(0.01419)	(0.29680)
	[1.64940]	[-1.13295]	[0.85570]	[-0.50389]	[2.06426]	[-1.22537]	[-0.66489]	[1.65684]
R-squared	0.992671	0.776293	0.449858	0.873664	0.807084	0.687162	0.364677	0.829030
Adj. R-squared	0.989251	0.671897	0.193125	0.814707	0.717056	0.541171	0.068193	0.749243

Sum sq. resids	0.088969	946.8448	681.8292	89.26723	1589.489	339.1205	425.4635	186121.7
S.E. equation	0.077015	7.944997	6.742053	2.439498	10.29397	4.754791	5.325808	111.3917
F-statistic	290.2418	7.436011	1.752243	14.81869	8.964858	4.706877	1.230004	10.39063
Log likelihood	31.24649	-75.38846	-71.61236	-48.23120	-81.34583	-63.58049	-66.18896	-136.1202
Akaike AIC	-2.021434	7.251170	6.922814	4.889669	7.769203	6.224390	6.451214	12.53219
Schwarz SC	-1.626479	7.646125	7.317769	5.284624	8.164157	6.619345	6.846169	12.92715
Mean dependent	6.361304	38.55783	12.81130	24.36435	22.23913	25.68652	20.07174	257.4457
S.D. dependent	0.742828	13.87039	7.505665	5.667229	19.35233	7.019496	5.517247	222.4470

BS	GDP	COB	DMB	FSG	INF	MSG	PLR	PSC	VC
1986	4.840	20.900	57.230	20.150	5.400	35.900	10.500	25.100	100.000
1987	5.020	21.000	47.000	17.790	10.200	28.600	17.500	18.800	89.000
1988	5.140	23.600	42.600	16.700	38.300	28.000	16.500	16.700	141.000
1989	5.340	18.000	30.200	11.000	40.900	21.300	26.800	14.300	84.500
1990	5.430	23.000	31.000	11.000	7.500	24.300	25.500	13.700	67.100
1991	5.490	26.800	37.600	12.000	13.000	27.600	20.010	14.500	96.800
1992	5.730	28.500	23.900	10.300	44.500	24.200	29.800	14.300	85.750
1993	5.830	29.140	33.000	12.400	57.200	29.000	36.030	13.300	103.500
1994	5.950	33.900	32.800	40.600	57.000	29.700	21.000	16.100	116.200
1995	6.290	33.590	20.000	5.600	72.800	16.500	10.180	10.600	126.000
1996	6.430	31.360	17.000	5.000	20.300	13.700	19.740	9.500	146.400
1997	6.450	30.400	20.000	6.300	8.500	15.300	13.540	11.300	96.400
1998	6.430	29.800	25.600	7.400	10.000	19.400	18.290	13.690	74.600
1999	6.500	26.690	33.500	8.600	6.600	21.900	21.320	14.200	171.300
2000	6.660	26.690	34.600	8.500	6.900	22.800	17.980	12.900	202.300
2001	6.670	25.740	47.950	10.400	18.900	28.100	18.290	17.700	171.500
2002	6.730	24.220	51.200	11.000	12.900	29.600	24.400	17.700	145.400
2003	6.840	20.800	43.900	9.400	14.000	28.100	20.480	17.400	449.800
2004	6.850	20.300	53.000	11.300	15.000	32.000	19.150	21.700	485.800
2005	7.160	21.400	31.300	9.000	17.900	18.000	17.850	13.800	747.800
2006	7.270	18.800	41.150	12.100	8.500	22.000	17.330	25.600	480.100
2007	7.320	15.200	61.700	18.000	6.600	29.400	16.460	48.000	584.000
2008	7.390	16.250	61.750	16.950	11.600	37.720	15.140	33.170	658.000
2009	7.390	15.200	66.080	23.320	12.400	43.570	18.360	41.300	598.000

Source Derived from Central Bank of Nigeria Statistical Bulletin 2010

Year	GDP @curt price	Fin Sav	Inflation	Money supply	Private sectorCR	Deposit moni bnk	Curency O B	Prime L
1986	69,147.0	13,934.1	5.4	27,389.8	18,299.9	39,678.8	5,178	10.50
1987	105,222.8	18,676.3	10.2	33,667.4	21,892.5	49,828.4	6,299	17.50
1988	139,085.3	23,249.0	56.0	45,446.9	25,472.5	58,027.2	9,413	16.50
1989	216,797.5	23,801.3	50.5	47,055.0	29,643.9	64,874.0	11,688	26.80
1990	267,550.0	29,651.2	7.5	68,662.5	35,436.6	82,957.8	14,941	25.50
1991	312,139.7	37,738.2	12.7	87,499.8	42,079.0	117,511.9	23,108	20.01
1992	532,613.8	55,116.8	44.8	129,085.5	79,958.9	159,190.8	36,755	29.80
1993	683,869.8	85,027.9	57.2	198,479.2	95,529.7	226,162.8	57,845	36.03
1994	899,863.2	108,460.5	57.0	266,944.9	151,000.3	295,033.2	90,601	21.00
1995	1,933,211.6	108,490.3	72.8	318,763.5	211,358.6	385,141.8	106,843	10.18
1996	2,702,719.1	134,503.2	29.3	370,333.5	260,613.5	458,777.5	116,121	19.74
1997	2,801,972.6	177,648.7	10.7	429,731.3	319,512.2	584,375.0	130,668	13.54
1998	2,708,430.9	200,065.1	7.9	525,637.8	372,574.1	694,615.1	156,716	18.29
1999	3,194,015.0	277,667.5	6.6	699,733.7	455,205.2	1,070,019.8	186,456	21.32
2000	4,582,127.3	385,190.9	6.9	1,036,079.5	596,001.5	1,568,838.7	274,010	17.98
2001	4,725,086.0	488,045.4	18.9	1,315,869.1	854,999.3	2,247,039.9	338,671	18.29
2002	6,912,381.3	592,094.0	12.9	1,599,494.6	955,762.1	2,766,880.3	386,942	24.40
2003	8,487,031.6	655,739.7	14.0	1,985,191.8	1,211,993.4	3,047,856.3	412,155	20.48
2004	11,411,066.9	797,517.2	15.0	2,263,587.9	1,534,447.8	3,753,277.8	458,586	19.15
2005	14,572,239.1	1,316,957.4	17.8	2,814,846.1	2,007,355.8	4,515,117.6	563,232	17.85
2006	18,564,594.7	1,739,636.9	8.2	4,027,901.7	2,650,821.5	7,172,932.1	779,120	17.33
2007	20,657,317.7	2,693,554.3	5.4	5,809,826.5	5,056,720.9	10,981,693.6	960,000	16.46
2008	24,296,329.3	4,118,172.8	11.6	9,166,835.3	8,059,548.9	14,999,508.0		15.14
2009	24,712,669.9	5,763,511.2	12.4	10,767,377.8	10,206,086.7	16,329,218.5		18.36

Central Bank of Nigeria, Statistical Bulletin, Vol. 16 Dec. 2010