TITLE PAGE

THE LINK BETWEEN FINANCIAL LIBERALIZATION AND ECONOMIC GROWTH IN NIGERIAL (1970-2013)

CERTIFICATION

THIS IS TO CERTIFY THAT THIS WORK WAS CARRIED OUT BY ILESANMI OYETUNDE AJEWOLE WITH MATRIC NUMBER EDS/11/0174 IN THE DEPARTMENT OF ECONOMICS AND DEVELOPMENT STUDIES, FEDERAL UNIVERSITY OYE – EKITI, UNDER THE SUPERVISION OF MR. UGWU EPHRAIM.

THE LONG EASY HAS BEEN READ AND APPROVED AS MEETING THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE IN ECONOMICS AND DEVELOPMENT STUDIES.

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DEDICATION

This project work is dedicated to the Almighty God (the ever available God), my unforgettable late father Mr Julius Omisusi Ilesanmi, and may his gentle soul rest in perfect peace. (Amen), my ever supportive guardian Mr G.B Ilesanmi, who stood by me as a caring father, my ever supportive sisters, Shola Ilesanmi and Tosin Ilesanmi, my department, Economics and Development Studies, my dear family members Baptist Student Fellowship (Fuoye chapter) and finally, my caring and lovely friend Ibiyemi Kehinde Victoria.

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ABSTRACT

The study examine the link between financial liberalization and economic growth in Nigeria. The study adopt Ordinary Least Square method, co-integration test and Augmented Dickey fuller (ADF) procedure. The descriptive statistics for the dependent and independent variables, RGDP, DEEP, OPEN, LENDING, EXCHR and INF all have a positive mean value which ranges from14.71844 to 2135488 with a 44 observations. The highest standard deviation of 5562937 is recorded by RGDP rate while the least standard deviation of 6.345961 is recorded by LENDING. The probabilities of Jarque-Bera test of normality for variables are all greater than 5% level of significance which indicates that the data are normally distributed. The regression estimates of financial liberalisation equation shows that three of the coefficients of the explanatory variables DEEP, OPEN and EXCHR have positive signs while the coefficient of LENDING and INF indicates a negative signs, this implies increase in the bank lending rate reduces loanable fund thereby decreasing growth rate. On the other hand, the effect of bank credit to public and private sector in Nigeria, the regression result obtained shows that the coefficients of the variables PUBLIC indicates a negative sign while the coefficient of the variable, PRIVATE exhibit positive signs. The granger causality test is use to determine the predictive content of the variable beyond that inherent in the explanatory variable itself, the result suggest that there is no direction of causality between RGDP and DEEP, which is the financial liberalization. T-test procedures shows that the t-value of variables (OPEN, LENDIING, and EXCHR) are significant while others are not. The result of the F-test shows that since F-calculated of 10.04928 are greater than F-tabulated of 4.04 for the first regression and F-calculated of 75.52089 are greater than F-tabulated for the second regression, we reject H_0 and concluded that the overall estimate of the regressions are adequate statistically. The unit root test was conducted to establish that the time series data on all variables are stationary and integrated of order one at 5% level of significance in ADF. The co-integration test procedures conducted indicates at most six co-integrating vectors. Multicolinearity test was conducted to ascertain the degree of relationship between the dependent (GDP) variable and the independent (DEEP, OPEN, EXCHR, INF, LENDING, PRIVATE AND PUBLIC) variable, and the result shows that the three of the variable (OPEN, EXCHR and LENDING) have positive relationship with GDP and the relationship are actually at 1%, 4%, and 60% respective while DEEP and INF are negatively related with value 16% and 14% respectively. Normality test was also conducted to ascertained the normality distribution of the error term of the variable under consideration, the result of the test shows that chi-square tabulated is 48.12885 while chi-square calculated is 5.99147, since the chi-square calculated is less than chi-square tabulated, the variable under consideration are not normally distributed. The heteroscedasticity test was also conducted to ascertain which of the hypothesis should be accepted or rejected, the test explain that if chi-square calculated is less than chi-square tabulated, we accept H_0 otherwise we reject. On the other hand, the result of the test shows that chi-square tabulated with degree of freedom (10) is 11.91592 while the calculated chi-square is 18.3070. Since the chi-square calculated is less than chi-square tabulated, the error term of the variable under consideration are homoscedastic.

Keyword: Financial liberalization, financial repression, trade openness, economic growth and financial deepening.

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CHARPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND TO THE STUDY

The concept of financial liberalization and financial openness are often used interchangeably in financial literature. Kaminsky and Schmukler (2003) stated that financial liberalization consists of the deregulation of the foreign sector capital account, domestic financial sector and stock market sector. They noted that stock market sector was treated separately from the domestic financial sector. Johnston and Sundararan (1999) viewed financial liberalization as a set of operational reforms and policy measures designed to deregulate and transform the financial system and its structure with a view to achieve a liberalized market-oriented system within an appropriate regulatory framework. According to the authors, it focuses on abolishing controls that restrict financial activities and allowing the market forces (interplay of the forces of demand and supply) to serve as the price mechanism for financial services. Financial liberalization has been noted as one of the major growth ingredients in developing countries (Adams, 2011). The financial liberalization that took place in developing countries in the late 1970s up to the early 1990s was part of government plans to give their market an important role to play in the economic development process (Jhingan, 2005).

Economic growth on the other hand is a gradual and steady change in the long-run which comes about by a general rise or increase in the rate of savings and population. It has also been described as an increase in the level of production of goods and services by a country over a certain period of time. An economy is said to be growing when there is an increase in its productive capacity which later yield more in production of more goods and services (Jhingan 2003). On the other hand, Dwivedi, (2006) described it as sustained increase in per capita

national output or net national product over a long period of time. It also implies that the rate of increase in total output must be greater than the rate of population growth (Dwivedi, 2006). According to Lipsey (2004), Economic growth occurs when a nation's production possibility frontier (PPF) shifts outward. The author stated that Economic growth, being the growth in output per capita, is an important objective of government since it is associated with macroeconomics objective such as, rising average real incomes and living standard. According to Samuelson and Nordhaus (2005), it is the single most important factor in the success of nations in the long run. Bencivenga and Smith (1991) asserted that economic growth will increase if more savings are channeled into the activity with high productivity while reducing the risk associated with liquidity needs. This will show that banks provide the benefits of eliminating unnecessary liquidations (Bencivenga and Smith, 1991).

On the relationship between financial liberalization and economic growth, the findings are inconclusive and mixed. Many financial economists such as King and Levine (1993), Levine and Zervos (2000), Darrat and At-Sowaidi (2010), Esso (2010), Omoke (2010) show that real economic growth is robustly linked to financial liberalization. However, Ayadi, Adegbite and Ayadi (2002) in their study conclude that financial liberalization and economic growth have no consistent relationship in Nigeria. While Nzotta and Okereke (2009) conclude that the financial system has not sustained an effective financial intermediation, especially credit allocation and a high level of monetization.

In Nigeria, financial sector liberalization took effect from 1991, after which interest rate was liberalized by migrating from an administered interest rate setting to a market based interest rate determination; embargo was place on credit control by eliminating directed and subsidized credit schemes. As a result of these, credit ceiling was used instead of Open Market Operation (OMO); strict regulations were also put in place; banks owned by government were also privatized (World Bank, 2000). The decision to undertake financial liberalization in Nigeria

liberalization of interests rate policies that militates against the successful functioning of financial markets. According to (Denizer, 1998), negative change in financial intermediation lead to decline in activities in the banking system since it is the major role of the bank. Also, the compulsory sectorial allocation of bank credit and the ceiling on bank credit to the private sector lead to distribution in credit allocation. On the basis of financial liberalization paradigm, developing countries took initial financial liberalization measures in the early 1980s, but in Nigeria, financial liberalization increased fragility and vulnerability giving rise to crises. Based on this contradicting issues and time lag in liberalization process, identifying the relationship between financial liberalization and economic growth in the case of Nigeria is crucial. In view of the continuing progress of this sector, particularly the recent consolidation exercises within the financial markets. The question this study tends to answer is therefore stated as follow; how does the financial liberalization affect economic growth in Nigeria? What is the actual direction of causation between financial liberalization and economic growth in Nigeria? Does bank credit to public and private sector affect economic growth in Nigeria?

1.3 Objectives of the study

The broad objective of this study is to evaluate the link between financial liberalization and economic growth in Nigeria. The specific objectives includes:

(1) To determine the direction of causality between financial liberalization and economic growth in Nigeria

(2) To ascertain if bank credit to public and private sector affect economic growth in Nigeria

(3) To proffer necessary policy measures that will enhance the growth of the Nigeria financial sector.

1.4 Research hypothesis

Based on the objectives above, the hypothesis that guide this study is therefore stated as follows;

H0: There exist no links between financial liberalization and economic growth in Nigeria

H1: There are links between financial liberalization and economic growth in Nigeria

H0: There is no direction of causality existing between financial liberalization and economic growth in Nigeria

H1: There exists causal relation between financial liberalization and economic growth in Nigeria

H0: Bank credit to private sector and public sector does not have a significant effect on the economic growth in Nigeria

H1: Bank credit to private sector and public sector have significant impact on economic growth in Nigeria

1.5 Significance of the study

With the aim of contributing to the existing literature on the link between financial liberalization and economic in Nigeria, the study will be of utmost importance because it would provide policy recommendations to the various stakeholders in Nigeria such as; the government, the financial sector, domestic consumers , private entities, researchers, and students. To the government, financial liberalization is the lessening of government regulations

and restrictions in an economy in exchange for greater participation by private entities. Thus, liberalisation in short is "the removal of controls" in order to encourage private sector participation. To the financial sector, Liberalisation offers the opportunity for the sector to compete internationally, generate foreign exchange and contribute to GDP growth. To the domestic consumers, the entry of Foreign Service providers as a result of financial liberalization is a welcome development as it will yield better services to them. To the private entities, it allows for participation in the allocation of resources with the aim of improving the economy. Thus, this sector has helped in facilitating business transactions and economic development. If a financial system is well developed, it will enhance investment by identifying and funding good business opportunities, mobilizes savings, enable trading, hedging and diversification of risk and facilitate the exchange of goods and services.

1.6 Justification for the Study

The reform of the financial sector occupies a central position in the liberalization of sectors, because it is an efficient financial system that is a necessary condition for efficient functioning of a nation's economy. Distortions in this sector tend to distort the workings of the entire economy. In most countries of the world (whether developed or less developed economies), considerable attention is normally given to the financial sector of the economy because it is difficult to achieve most of their targets under any economies reform programme without an appropriate financial sector reform (Afolabi & Mamman, 1994). The existence of a relationship between financial liberalization and economic growth has mainly been conducted through cross-country regressions (Singh & Weisse, 1998), Durmus, Ozdemir and Erbil (2008) and Imene & Schalck (2010). While in Nigeria, many other authors like Ojo (1991), Oluyemi (1995) and Anyanwu (1995), have written about the link between liberalization and economic growth as a whole using time series approach of a single country Nigeria. This study will fill

the gap and contribute to knowledge in two major ways. First, to look at the effectiveness of an increase in credit facilities to private sector and public sector on Nigeria's economic growth.

1.7 Scope of the study

This study covers the period of 1970 to 2013. This period was chosen as it spans the periods before SAP, during SAP and after the implementation of SAP. This will enable us ascertain the reactions of the economy as a result of the introduction of Structural Adjustment Programme (SAP). Base on the adoption of SAP up to 2013 (the period under study) when the Nigeria financial sector was fully liberalized. The period was chosen as a result of data availability.

1.8 Organization of the study

The study is divided into five major chapters;

- chapter one contains, background to the study, statement of the problem, research question, objective of the study, statement of the hypothesis , scope of the study justification for the study, significance of the study, scope of the study and organization of the study.
- Chapter two focus extensively on;

- Literature review (conceptual issues, Theoretical literature and Empirical evidence)
- Theories of financial liberalization
- Link between financial liberalization and economic growth
- Financial liberalization in Nigeria:
- the Nigeria financial liberalization before SAP,
- Nigeria financial liberalization during SAP and
- Nigeria financial sector reform

- Theoretical frame work

- Chapter three discusses the research methodology of the Research study.
- Chapter four present the data analysis, interpretation of results of the analysis and the discussion of findings.
- Chapter five deals with the summary, conclusion and proffers appropriate policy recommendations based on the findings of the study.

1.9 Definition of term:

Financial liberalization: There are many definitions of financial liberalization and one of such definitions as proposed by Johnston and Sundararajan (1999) is that financial liberalisation can be viewed as a set of operational reforms and policy measures designed to deregulate and transform the financial system and its structure with the view to achieving a free market-oriented system within an appropriate regulatory framework. Financial liberalisation can take many forms such as deregulating interest rates, eliminating or reducing credit controls, allowing free entry into the banking sector, giving autonomy to commercial banks, permitting private ownership of banks, and allowance for international capital flows. Financial liberalization as used in this paper refers to the deliberate and systematic removal of regulatory controls, structures, and operational guidelines that may be considered inhibitive of accelerated growth, competition and efficient allocation of resources in the financial system (Ojo, 1991).

Economic Growth: economic growth is a gradual and steady change in the long-run which comes about by a general rise or increase in the rate of savings and population. It has also been described as an increase in the level of production of goods and services by a country over a certain period of time. An economy is said to be growing when there is an increase in its productive capacity which later yield more in production of more goods and services (Jhingan).

Economic growth occurs when a nation's production possibility frontier (PPF) shifts outward Lipsey (2004). He explain that Economic growth, being the growth in output per capita, is an important objective of government since it is associated with macroeconomics objective such as; rising average real incomes and living standard.

Financial Repression: According to Edward (1973), financial repression refers to policies that result in savers earnings returns below the rate of inflation in order to allow banks to provide cheap loans to companies and governments, reducing the burden of repayment. It can also be effective at liquidating government debt denominated in domestic currency. On the other hand, Ayadi, and Adegbite, (2008), define financial repression as a deliberate and calculated distortion of financial prices by regulatory authorities in an economy. It includes administrative tinkering by governments with financial prices such as interest rates and exchange rates. In the words of Denizer (1998), it refers to a set of policies, laws, formal regulations and controls imposed by government on the financial sector. Financial repression is characterized by rigid exchange and interest rate controls, mandatory sectorial allocation of bank credits and quantitative ceiling in bank credits to the private sector.

Financial deepening: Financial deepening generally means an increased ratio of money supply to GDP or some price index. It refers to liquid money. The more liquid money available in an economy, the more opportunities exists for continued growth. It can also play an important role in reducing risks and vulnerability for disadvantaged groups, and increasing the ability of individuals and households to access basic services like health and education, thus having a more direct impact on poverty reduction. It also refers to the increased provision of financial services with a wider choice of services geared to all levels of society.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the link between financial liberalization and economic growth. And the link can be critically explain using; conceptual issues that explain the major concept such as financial liberalization, economic growth, financial repression, financial deepening and trade openness. It also look at the theoretical literature and finally discuss the empirical literature based on the information gotten from the past research.

2.2 Conceptual issues

2.2.1 Financial liberalization

According to economic dictionary, financial liberalization is the removal or loosening of restrictions imposed by the government on the domestic financial market. This view seems to be narrow in explaining the concept of financial liberalization. Kaminsky and Schmukler (2003) provide a broader concept. They opined that financial liberalization consists of the deregulation of the foreign sector capital account, domestic financial sector, and the stock market sector viewed separately from the domestic financial sector. From this definition, they put forward that full financial liberalization occurs when at least two of the three sectors are fully liberalized and the third one is partially liberalized. Johnston and Sundararajan (1999), also viewed financial liberalization as a set of operational reforms and policy measures designed to deregulate and transform the financial system and its structure with the view to achieving a liberalized market-oriented system within an appropriate regulatory framework. financial liberalization usually include official government policies that focus on deregulating

credit controls, deregulating interest rate controls, removing entry barriers for foreign financial institutions, privatizing financial institutions, and removing restrictions on foreign financial transactions. In other words, financial liberalization has both domestic and foreign dimension. Moreover, it focuses on introducing or strengthening the price mechanism in the market, as well as improving the conditions for market competition. From the above, it is obvious that financial liberalization focuses on abolishing controls that restrict financial activities and allowing the market forces (interplay of the forces of demand and supply) to serve as the price mechanism for financial services.

Financial liberalization can be termed to mean the deregulation of the financial system. Furthermore, financial liberalization apart from alleviating liquidity constraints in financial markets could enable a country to be integrated into the world markets, and promote transparency and accountability which will in turn increase economic growth.

Measures of financial liberalization

There are three broad categories of measuring financial liberalization, namely; capital account liberalisation, equity market liberalisation and banking sector liberalisation.

Capital account liberalisation: capital account liberalization is a decision by a country's government to move from a closed capital account regime, where capital may not move freely in and out of the country, to an open capital account system in which capital can enter and leave at will (Henry, 2006). It is also the future of a nation's financial regime that centres on the ability to conduct transactions of local financial assets into foreign financial assets freely and at country determined exchange rates.

Equity market liberalization: equity market liberalisation uses measures of restrictions on the international sale or purchase of equities. It aims at determining the time period in which the liberalisation of equity markets to foreign investors occurred (Bekaert and Harvey 2000).

Liberalization of the banking sector: In general, these measures are concerned with the liberalisation of the interest rate.

2.2.2 Economic growth

Economic growth can be defined as a gradual and steady change in the long-run which comes about by a general rise or increase in the rate of savings and population. It has also been described as an increase in the level of production of goods and services by a country over a certain period of time. An economy is said to be growing when there is an increase in its productive capacity which later yield more in production of more goods and services (Jhingan, 2003). On the other hand, Dwivedi, (2006) described it as sustained increase in per capita national output or net national product over a long period of time. It also implies that the rate of increase in total output must be greater than the rate of population growth. Economic growth occurs when a nation's production possibility frontier (PPF) shifts outward (Lipsey, 2004). He explain that Economic growth, being the growth in output per capita, is an important objective of government since it is associated with macroeconomics objective such as; rising average real incomes and living standard. According to Samuelson and Nordhaus (2005), it is the single most important factor in the success of nations in long run. According to Todaro (1977) and the World Bank (1997), to determine the growth of any country's economy certain indicators are usually taken into consideration. The indicators includes:

(i) The nation's Gross Domestic Product (GDP)

(ii) The nation's Per Capita Income (PCI)

(iii) The welfare of the citizens; and

(iv) The availability of social services and accessibility of the people to these services.

Benefit of Economic growth

Lipsey and Chrystal (2004) identify the benefits of economic growth in the following ways:

1The most important benefit of growth lies in its contribution to the long run struggle to raise living standards and to escape poverty. The cumulative effects of what may appear to be small growth rates become large over periods of a decade or more.

2. The new products created by technological change transform the entire ways of living of the people of the economy. As consumption patterns of members of society may change as their average income rises. As more profitable cars are produced, the government is made to construct more roads

3. It is much easier for a rapidly growing economy to redistribute income so as to avert poverty and extreme hardship. With economic growth it is possible to reduce income inequalities without having to lower anyone's income

2.2.3 Financial repression

Financial repression is a deliberate and calculated distortion of financial prices by regulatory authorities in an economy. It includes administrative tinkering by governments with financial prices such as interest rates and exchange rates (Ayadi, Adegbite, Ayadi, 2008). According to McKinnon and Shaw, financial repression, by forcing financial institutions to pay low and often negative real interest rates, reduces private financial savings, thereby decreasing the resources available to finance capital accumulation. Both of them agree that economic growth is severely hindered in a repressed financial system by the low level of savings rather than by the lack of investment opportunities. In the words of Denizer (1998), it refers to a set of policies, laws, formal regulations and controls imposed by government on the financial sector. These controls distort financial prices, interest rates and inhibit the operation of financial intermediation at their full potential. Financial repression is characterized by rigid exchange and interest rate

controls, mandatory sectorial allocation of bank credit and quantitative ceiling in bank credits to the private sector. McKinnon (1982) contends that one of the reasons for financial repression is to give government power to control chronic fiscal deficits.

Component of financial repression

Financial repression consist of the following:

1) Explicit or indirect capping of interest rate, such as on government debt and deposit rate
2) High reserve requirement
3) Government ownership or control of domestic banks and financial institutions with barriers that limit other institutions from entering the market
4) Government restriction on the transfer of assets abroad through the imposition of capital controls

2.2.4 Financial deepening

Financial deepening is the term used often by economic development experts. It refers to the increased provision of financial services with a wider choice of services geared to all levels of society. Financial deepening generally means an increased ratio of money supply to GDP or some price index. It also refers to the liquid money. The more liquid money is available in an economy, the more opportunities exist for continued growth. financial deepening plays a very important role in reducing risk and vulnerability for disadvantaged group, and increasing the ability of individuals and households to access basic services like health and education thus having a more direct impact on poverty reduction

Constrain of financial deepening

A confluence of demand and supply factors constrains financial deepening. The factors includes:

1) Low mobilization of deposits
2) Financial illiteracy
3) High fees and documentation requirements can limit financial intermediation.
4) Regulatory restrictions often act as barriers to the deepening and diversifying of their financial systems.

2.2.5 Trade Openness

Trade openness refers to the outward or inward orientation of a given country's economy. Outward orientation refers to economic that take significant advantage of the opportunities of trade with other countries, inward orientation refers to economies that overlook taking or are unable to take advantage of the opportunities to trade with other countries. Some of the trade policy decisions made by countries that empower outward or inward orientation are trade barriers, import- export, infrastructure, technologies, scale economies and market competitiveness.

Measures of trade openness

The degree of trade openness existing in counties is measure on a number of economic issues and tracked in the Open Market Index. The measures includes:

1) Trade openness (including trade to GDP ratio and real growth of imports)
2) Trade policy regime (including applied tariffs, tariff profile, broader efficiency)
3) Openness of foreign direct investment (including FDI inflow to GDP and ease of business establishment)

leads to better allocation of financial resources in presence of a well-functioning financial system. In this case, firms can expand their businesses by the ease of borrowing at lower rates (MacKinnon and shaw, 1997). Also, financial intermediaries can channel their funds to the best projects. This is also expected to lead to an improvement in quality, quantity and efficiency of financial intermediary services (Ang, 2008). Financial liberalization fosters specialization, efficiency in capital allocation and growth (Acemoglu and Zilibotti, 1997 and Obstfeld, 1994). By generating international competition, it may also improve the functioning of domestic financial systems, with beneficial effects on savings and allocation (Klein and Olivei, 1999 and Levine, 2001).

Smith (1776) and Jhinghan, (2005) believed in the doctrine of natural law in economic affairs. They regarded every person as the best judge of his own interest who should be left to pursue it to his own advantage. Since every individual if left free, will maximized his own wealth, therefore all individuals if left free, maximized aggregate wealth. Smith and Jhinghan was naturally opposed to any government intervention in industry and commerce. They believed in the doctrine of laissez faire (no government). Rose (1988) noted that bankers are entrepreneurs, who when freed from constraints of regulations, will readily pursue new opportunities for better services, stronger growth and improved earnings whenever these opportunities appear. Too much regulation, especially the inflexible and dogmatic ones deny banks of their innovation and incentive to take risk and invest in business enterprise. It could also result in problems such as loss of competitiveness and inefficiency, resource misallocation, etc among banks, thereby hindering the growth of the nation's economy. Cameron (1972) also noted that financial development will contribute most significantly to economic growth if the countries are not to interfere in the operations of the financial institutions

Rajah and Zingales (1998) opined that if the financial sector speeds up growth, its development should influence more the branches of industry which have external sources of financing than

4) Infrastructure open for trade (including logistics performance, communications infrastructure, telephone lines, internet)

2.3 Theoretical Literature

2.3.1Theory of financial liberalization

The theory of financial liberalization is greatly explained by the works of MacKinnon (1973) and Shaw (1973). They argue that liberalization enhances growth in an economy by allowing domestic and international firms to access their financial markets, and by improving the efficiency and corporate governance in domestic financial systems. Through financial liberalization, it is expected that real interest rates will stimulate savings as consumers forgoes current consumption in favour of future consumption. This releases more funds for investments thereby leading to higher economic growth. Financial liberalization refers to the removal of government ceilings on interest rates and of other controls on financial intermediaries. It is concerned with macroeconomic aggregates (interest rates, savings and investment) and conditions in formal financial markets (Baden, 1996). It refers to the removal of all constraints in the financial sector. Mandel (2009) points out that financial liberalization could be beneficial if it results in:

(1) Greater savings;

(2) Reduction in cost of capital; and

(3) Adoption of improved governance practices

According to MacKinnon (1973) and Shaw (1973), financial development is fostered when all regulations and controls that cause financial repression are removed and financial liberalization takes place. Financial liberalization can be promoted by use of appropriate supervision and well regulatory infrastructure to protect domestic and foreign investors and also to transfer sources created by new savings to efficient investments. Improvement in financial system

those which finance investment with undistributed profits. They use as method the variability between sectors of the same countries to identify the effect of financial development. They concluded that the branches of industry that are relatively dependent on external financing record a faster growth in the countries where the financial sector is most developed. King and Levine (1993) state that finance generates growth and financial development can be measured by the ratio of the credit of the financial sector to GDP, credit to the non-financial private sector over the total credit and the credit to the non-financial private sector over the GDP. They observed that the stage of development of the financial sector of a group of countries in 1960 made it possible to foresee economic growth over the following thirty years. They find that higher levels of financial liberalization are associated with faster economic growth and conclude that finance seems to lead to growth.

Another channel through which financial liberalisation could positively influence economic growth is through the benefits of portfolio diversification. Increased opportunity to diversify risk can enhance growth by inducing a shift toward investment in projects with higher expected returns. In turn, higher rates of return can deliver faster economic growth by encouraging higher savings and investment. Obstefeld (1994) presents a simple model of global portfolio diversification that links growth and financial liberalization. The setup follows the idea, developed by Romer (1990) and by Grossman and Helpman (1991) that ongoing growth depends on investments that supply specialised and hence inherently risky production inputs. Because risky technologies in the model have higher expected returns than safe ones, international asset trade, which allows each country to hold a globally diversified portfolio of risky investments, encourages all countries to shift from low-return safe investments toward high-return risky investments. Provided risky returns are imperfectly correlated across countries, and provided some risk-free assets are initially held, a small rise in diversification

opportunities always raises expected growth as well as national welfare. The key here is that financial liberalisation can enhance growth even in the absence of net capital inflow.

According to Hansson and Jonung, 1997, it is theoretically expected that financial liberalization will lead to economic growth, whereas, financially repressive policies such as interest ceilings, high reserve ratios and credit programs alike, will lead to lower savings, lower investments and will ultimately have a negative impact on economic growth.

2.3.2 Link between Financial Liberalization and Economic Growth

It will be necessary to focus on what have been the relationship and also the impact of financial liberalization on the economic growth indeptly. This section will focus on the evidence of financial liberation in developed and less developed countries Durmus, Ozdemir and Erbil (2008).

According to Patrick (1966), there exist two theoretical links between financial liberalization and economic growth. The first link is called "demand following", and it involves the measurement of the growth in demand of financial services which depend on the growth of real economic output and the process of commercializing and advancement of agriculture, industry and other sectors. In other words, economic growth causes financial liberalization. The faster growth of real national income, the larger will be the demand by firms for external funds and also among different sectors or industries, the need for financial intermediation will be more sensible for transferring savings to fast growing sectors from slow growing sectors and from individuals. The second theoretical link between financial liberalization and economic growth is called "supply leading" (Patrick, 1966). Supply leading works in two ways: First, by transferring the resources from old low growth sector to the modern high growth sectors and, second, by stimulating the enterprises response to the modern sectors (Patrick 1966).

Klien and Olivei (1999) are somewhat kinder to the hypothesis that financial liberalisation is good for growth. They find that countries that had relatively open capital markets during 1976–1995 (defined as the number of years when the capital account was free of any restrictions) experienced relatively higher rates of economic growth. This result however is largely driven by the developed countries in the sample. Using the Quinn (1997) measure of financial openness, Edwards (2001) comes to a similar conclusion. While liberalisation is found to boost economic growth, the effect is limited to the relatively developed countries in the sample. The interaction term between liberalisation and per capita GDP enters positively, indicating that the effect of a more open capital account increases with the country's initial level of development. Furthermore, the coefficient on the openness index is negative, suggesting that an open capital account may in fact have a negative effect at low level of development.

2.3.3 Financial liberalization in Nigeria

The financial liberalization in Nigeria can be best explain using its experience before SAP, during SAP and the reformation of the financial sector after SAP.

The Nigerian financial sector in the pre-SAP period, as argued by Ojo (1989), was said to have witnessed rapid structural changes and regarded to have generally performed satisfactorily. But its growth potential as explain by Ojo (1989) was said to be limited by several constraints such as inadequate capital base, poor credit policies and especially inappropriate macro-economic policies. Before SAP, financial liberalization is characterized by dualism, market segmentation and spatial fragmentation. The money and capital markets are thin and shallow. Financial intermediation is imperfect (Akingunola, Oluwasegun, 2013). During this period, there were only a handful of commercial banks (40 banks altogether) in 1960. In the second half of the 1990s, there were about 67 commercial banks, 55 merchant banks, 6 development banks, and 1 saving bank (the National Provident Fund). Even though the money and capital markets are still not as deep as desirable, a start seems to have been made in the late 1980s and early 1990s

to develop a more robust and balanced financial structure that would improve the ability of the domestic financial system to mobilize savings and contribute to self-sustained economic growth.

The adoption of SAP in July 1986 ushered in an era of laissez-faire policies, economic liberalization and price deregulation in virtually all aspects of economic life. Financial deregulation began in earnest in 1987 and had far-reaching impact especially on the banking industry. Financial deregulation was accompanied by the rapid emergence of financial innovations, deregulated interest rates, and fierce competition among and between various financial institutions (Akingunola et al 2013). The deregulation initially provided powerful incentives for expansion in both the size and number of banking and non-banking financial institutions. The consequent phenomenal increase in the number of banks and non-bank institutions (from 40 in 1960 to about 120 in 1996) providing financial services led to increased competition among various banking institutions, and between banks and non-bank financial intermediaries. Indeed, commercial banks, merchant banks, mortgage institutions, insurance and finance companies have all expanded the range and volume of their activities since the deregulation exercise began (CBN, 1995). Apart from the stiff competition in the range of financial activities, banks also faced problems associated with a stubborn slow-down in economic activities, severe political instability, virulent inflation, worsening economic and financial conditions of their corporate borrowers, and increasing incidence of fraud and embezzlement. Another major problem banks had to contend with was inconsistency in monetary and regulatory policies. The official policy and regulatory response to the rapid developments in the financial system was apparently characterized by poor anticipation, indecision, delay, and panic. Iyoha (1997) has observed that the CBN's surveillance and regulatory measures have unfortunately failed to keep pace with the rapidity of the changes in the financial system. The end result of the adoption of SAP was a sharp increase in the

incidence of bank distress and bank failure. For example, while 8 banks were officially reported to be distressed in 1991, the number rose to 16 in 1992 and further increased to 24 in 1993. In fact, by 1996, the Central Bank of Nigeria published a list of 26 failed banks. If we add 5 banks that had earlier been closed down as insolvent, then the total number of banks certified dead total 31.

The reform of the financial sector occupies a central position since the efficiency of this sector is a necessary condition for the efficient functioning of a nation's economy. According to Calderon and Liu (2003), for a country to gain a sustainable economic growth, it will be imperative for such an economy to undertake financial reform. Several financial restructuring programs have been put in place since early 1990s up to this period of democracy such as recapitalization, merger and acquisition, capital control and deflationary policy, all with the aim of improving the financial system. The on-going reforms in the Nigerian financial sector were as a result of the weaknesses and the inability of the sector to complement the developmental efforts of the country. According to Maduka and Onwuka (2013), the reforms act proactively to strengthen the system, by preventing financial crisis, strengthening the market mechanisms and upholding ethical standards. According to Emenuga (2005) interest rate controls, selective credit guidelines, exchange rate regulations, ceiling on credit expansion and use of reserve requirements and other direct monetary control instruments characterized the reforms. Entry into the banking system was also restricted. Consequently, the reform package of this era was to dismantle the regulation of interest rates, introduce liberalization and the establishment of a market based autonomous foreign exchange market, among others. This reflected the inconsistency of policy and implementation in Nigeria (Omotar, 2007). In mid-2004, another round of banking system reform was undertaken. The reasons given were that the liberalization reforms during the Structural Adjustment Programme (SAP) of the mid-1980s were poorly managed and the banking system was adjudged weak and fragmented and

that the short-term arbitrage opportunities were often financed rather than productive private investments. Consolidation and improved supervision of the banking system were needed to strengthen the reform (Okonjo and Osafo, 2007). The banking sector reform is expected "to build and foster a competitive and healthy financial system to support economic growth and to avoid systematic distress" (Soludo, 2007). Some key elements of the 2004 reforms include the following; Deregulation of interest rates, Rationalization of credit controls, Deposit Money Banks, The shift from direct to indirect system of monetary control etc. the most recent outcome of the financial sector liberalization is the introduction of cashless policy in Nigeria early 2012

2.3.4 Theoretical framework

Economic growth is a term used to show increase in specific measure of gross national output such as gross domestic product (GDP) or gross national product (GNP). GDP is the value of all goods and services produced within a nation in one year. GDP can be calculated as the value of output produced in the country or equivalently as the total income of country such as wages, rent, profits and interests obtained (Vuranok, 2009). There are several theories on economic growth which includes;

Solow Growth Model

It is very difficult to construct a model to include all related macroeconomic factors. The Solow growth model is well-known economic growth model introduced by the economist Robert Solow who won the Nobel Prize in 1987 for his research in the area of economic growth. This simple model shows the basic mechanism of economic growth elegantly. In contrary to other models, for example Keynesian model which focuses on demand side of an economy, the Solow model focuses on supply side of economy and simply assume that increase in supply of goods can imply economic growth (Mankiw, 2002). The Solow growth model is designed to

exhibit how increase in capital and labour force and advancement in technology can effect total output of goods and services of a nation (Mankiw, 2002). According to the model, the output depends on two input factors, capital stock and the labour force. The production function is given by:

$$Y = F(K, L)$$

Where: K denotes capital, L denotes labour, and Y denotes output.

The Solow growth model shows that a higher rate of savings causes higher stock of capital and thus larger number of output (Mankiw, 2002). Furthermore, the Solow growth model shows that an increase in the rate of labour force will lower the level of output. The model also suggests that technological progress can affect the level of output as it increases the efficiency of labour (Mankiw, 2002).

Endogenous Growth Theory

Endogenous growth theory emphasizes the factors that have impact on long-run economic growth. The theory argues that the economic growth is acquired from internal processes such as improvement in a nation's human capital, i.e. education and introduction of innovation (Gordon, 2003). To understand the endogenous growth theory we need to go further than the Solow growth model and develop a model which can explain the technological progress. The major differences between these two models are that the Solow growth model simply assumes the effect of technology progress without explaining the source of technological progress. The endogenous growth model can be mathematically written as;

$$Y = AK$$

Where; Y is output, K is capital stock and A is constant state of knowledge and available techniques (Mankiw, 2002). In summary, endogenous growth theory suggest four important conclusions:

- ...ld not be considered as an exogenous effect.

2) Increase in capital investment will lead to increase in returns.

3) The main source of technological progress is obtained from investing in research and development (R&D) and

4) Investment in human capital such as education and training of the workforce is the key for growth

AK model

AK model suggests that long-run economic growth is not driven by some exogenous process, like exogenous technological progress, which increases the growth rate for the short-run. Instead, the long-run growth rate depends on the economic decisions of a country.

The model states that a perpetual change in government policies will cause a permanent change in economic growth of a country. AK model is shown as:

$$Y = AK$$

Where; A reflects the level of technology and K is the capital. This model assumes that the growth can be obtained endogenously and return on capital will not diminish as capital stock increases. In summary AK model argues that the growth in output depends on total factor productivity and the efficiency of financial liberalization.

Export-Led Growth Hypothesis

The Export-Led Growth Hypothesis adds a new input factor to the economic growth theory by suggesting that the export factor can also increase economic growth rate, and by expanding the export beside other factors such as labour and capital, the overall economic growth will be fostered (Medina-Smith, 2001).

Cobb-Douglas production function

The Cobb-Douglas production function is one of the most simple production functions. The model was introduced by Douglas and Cobb (1928). The model has the following form:

$$F(L, K) = b\ La\ K\beta$$

Where:

$f(L, K)$ - is total production function of an economic system for input factors,

(L) – is labour input

(K) – is the capital input

The parameter b is a number greater than zero and measures the total factor productivity; whereas a and β are estimated from empirical data. For example if a = 20%, then one percent increase in labour force will increase the output nearly by 20% (Edmond, 2008).

If $a + \beta = 1$, the Cob-Douglas production function shows constant returns to scale. If $a + \beta < 1$, it shows decreasing in returns to scale. For instance, if the labor factor increases by 10% the output will increase by less than 10%. If $a + \beta > 1$ the model shows increasing in returns to scale

Harrod-Domar Model

The model was introduced by Sir Roy F. Harrod in 1939 and Evsey Domar in 1946. This model argues that increase in savings will cause the investment rate to increase, and if the investments are used efficiently, this will cause accumulation in capital which will itself lead to economic growth. According to the Harrod-Domar Model, the growth rate of an economy is dependent on two factors savings rate and capital per output ratio. In summary, this model suggest that economic growth can be achieved if more is invested on both physical capital and human capital, i.e. if the ratio of capital per output, is reduced through technological progress.

2.4 Empirical Evidence

Ehinomen and Afolabi (2015) explore the effect of financial liberalization and bank performance in Nigeria from the perspective of Mckinnon- show hypothesis. Using co-integration analytical technique and panel data models spanning a period of thirty four years (1971 to 2005). The results of the study revealed that the impact of financial liberalization on bank performance in Nigeria for the period of study though was significant, especially as measured by the proxies of Earnings Per Share and Return on Equity but has not been significant enough to take Nigeria's economy out of the woods.

Nwadiubu, Sergius and Onwuka (2014) evaluate financial liberalization and economic growth in Nigeria using the Johansen Co-integration test and the Error Correction Mechanism (ECM). Using annual data from the Central Bank of Nigeria Statistical Bulletin for the period (1987 to 2012) on the variables used for the study. In their study, they assert that the removal of government control and restrictions on the workings of the financial market (financial liberalization) would stimulate higher savings as interest rate would be more market driven. They further explain that the higher savings would enhance greater investment in the classical Keynesian fashion of savings being equal to investment. The increase in investment would lead to economic development and growth all other things being equal. However, they conclude that financial liberalization has impacted minimally on economic growth in Nigeria for the period under study (1987 - 2012).

Akingunola, Olusegun and oluwaseyi (2013) examine the relationship between financial liberalisation and economic growth in Nigeria. Using the Vector Error Correction model between the period of 1976 to 2006, they found out that monetary policies as well as financial development does not impact significantly on the growth process of the Nigerian economy both at the 5 percent and 1 percent level of significance. In their findings, the level of financial

liberalization on the growth process of the Nigerian economy is positive but has not been significant in nature.

Ogunsakin (2013) examine the impact of financial liberalization on the growth of Nigerian Economy. Using co-integration methods by Johansen and Juselius (1988) and Johansen (1990) to estimate the relationship between financial liberalization and growth of Nigerian Economy. The times series data between 1980 to 2010 was employed and his Results showed that financial sector has impact on the growth of Nigerian Economy but not remarkable impact which might be due to underdeveloped financial market, inadequate financial instrument and poor monitoring of the activities of money market by the central bank.

Anne, and kevin (2013) conduct a research on financial market structure and economic growth in Nigeria from 1970 – 2008. In their research, they investigate both the long run and short run relationship between financial structure (liberalization) and economic growth using time series data covering the period of 1970 to 2008. Using vector error correction model procedure, their result reveal that financial market structure has a negative and significant effect on economic growth based on Nigeria data. This suggests a low level of development of the country's financial sector.

Muhammad and Wizarat (2013) explore the link between financial liberalization index (FLI) and economic growth in Pakistan by using annual data for 1971- 2007. They employ a Cobb-Douglas production function and the Phillips Perron unit root test is utilized to verify the level of integration and Auto-Regressive Distributed Lag (ARDL) technique for obtaining long run and short run coefficients. The ARDL techniques result indicates that FLI and economic growth are positively linked in the short run.) On the other hand, FLI is statistically insignificant in the long run, while the impact of real interest rate (RIR) on economic growth is negative and significant.

Johannes (2011) explore link between finance and economic growth in Cameroon for the period 1970 to 2005. Using Johansen co-integration method, his result shows that, financial sector development cause economic growth in the long run and the short run. His study unlike some of the previous studies includes control variables such as investment rate, the size of government and openness of the economy. They also investigated the stationary properties of the series to avoid spurious regression or results.

Cavenaile (2011) investigates the long run relationship between financial development and economic growth for five developing countries (Malaysia, Mexico, Nigeria, Philippines and Thailand), for the period 1977- 2007 using panel co-integration analysis. From his findings he concludes that there is significant long run relationship between economic growth and financial development. He funds evidence of weak bidirectional causality. He concluded that "promoting the development of the financial system may support long run economic growths.

Adam (2011) investigates the impact of Ghana's financial openness induced growth on poverty using the Johansen Co-integration test and Granger-Causality tests. The study covers the period from 1970 to 2007. The results shows that there is a positive relationship between growth and standard of living, though it is disproportionate. Also, it provides evidence that there exist a positive long-run relationship between growth and financial liberalization.

Odhiambo (2011) investigate the impact of financial liberalisation in developing countries with specific reference to Zambia, South Africa, Tanzania and Lesotho. Using Granger-Causality tests between 1970 to 2010. Findings of the study show that although financial liberalisation leads to financial development in all the study countries, it Granger-causes economic growth only in Zambia and in the other countries, it is the economic growth which induces the development of the financial sector. The results show that the relationship between financial liberalisation and economic growth is at best ambiguous, and may be sensitive to a country's level of financial development

Oluitan (2010) examines the link between bank credit and economic growth for Nigeria for the period 1970-2005. The co-integration results based on the Johansen approach indicated significant co-integration relationship among financial development proxies and real GDP per capita. This indicates statistical significant long run relationship between financial development and economic growth in Nigeria.

Munir and Wizarat (2010) in Pakistan examine the short and long run relationship among investment, savings, real interest rate on bank deposits and bank credit to the private sector, accompanied with the impact of financial liberalization on key macroeconomic variables for the period 1973 to 2007 using Co-integration test and Error Correction Method to analyze the annual time series data. Their findings show that financial liberalization has no positive effect on private credit and private investment because interest rate has been negative for some years due to high inflationary situation in Pakistan. Evidence showed that financial liberalization made no significant impact; nevertheless, their results strongly favour the Mckinnon-Shaw hypothesis.

The study of Banam (2010) analyzed the impact of financial liberalization on economic growth in Iran through Johansen Co-integration test using time series data from 1965 to 2005 while also investigating the determinants of economic growth. The results suggest that financial liberalization has positive and statistically significant impact on economic growth measured by the gross domestic product in Iran. The findings provide support to McKinnon (1973) and Shaw (1973), who argued that financial liberalization can promote economic growth by increasing investment and productivity.

Okpara (2010) also investigate the effect of financial liberalization on some macroeconomic variable in Nigeria from 1965 to 2008. Okpara's findings explain that the variable that impacts most on the economy owing to financial liberalization is the real GDP which recorded

yearly and seasonal dummy variables instead of post and pre-liberalization as the dummies. The empirical estimation of 42 observations i.e. January 2000 to June 2003 was evaluated using the Ordinary Least Square (OLS) regression analysis. The results show that the rise in interest rate over the years after liberalization of the financial sector has led to a corresponding increase in savings which has a positive impact on the growth of GDP. The findings showed that financial liberalization has increased the rate of capital accumulation and improved efficiency in capital utilization which is both essential for economic growth

Ozdemir and Erbril (2008) evaluate the impact of financial liberalization on economic growth in 10 new European Union countries and Turkey between 1995 and 2007. They constructed different financial openness indicators using panel data for different types of financial flows such as foreign direct investment, other investments, portfolio investments, trade openness index as well as other control variables. Employing the Ordinary Least Squares (OLS) method, their static robust and dynamic panel data estimates indicates clear evidence between the long-run growth and a number of financial liberalization indicators which confirms the anticipations of the 'new growth theory'. Their findings take cognizance of financial liberalization as a policy tool because of its possibility to promote economic growth.

Taghipour (2008) examined the role of banking system development in economic growth for Iran (1960-2004) using annual data. The analysis revealed structural breaks in the data for the 1979 revolution and the years of war in Iraq. The co-integration results revealed one co-integration vector. This indicate statistical significant long run link among the variables at the 5% level of significance. If financial sector develops, the economy grows. Taghipour (2008) explain that "supply-leading view is supported" and that financial development positively affect economic growth of Iranian economy. Taghipour (2008) concluded that "policies that affect financials system are also likely to influence investment and economic growth".

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

The study adopts an Ordinary Least Square (OLS) method in determining the effect of financial liberalization on economic growth in the Nigeria economy, both in the short and long run deterministic equilibrium. The study gathered time series annual data for the period covering 1970 to 2013 from the Central Bank of Nigeria Statistical bulletin and National Bureau of Statistics. The methodology allows for a short and long run equilibrium relationship to be established. The methodology involves econometric techniques such as; Ordinary Least Square (OLS) method, Augmented Dickey-Fuller (ADF) Unit Root test, Johansen Co-integration test. The study hypothesized that financial liberalization does not have a significant effect on economic growth of Nigeria.

3.2 Nature and Sources of Data

The data used for this research work are mainly secondary data obtained from Central Bank of Nigeria, and National Bureau of Statistics (NBS) which features the overall macroeconomic instrument. The needed data for the model are real gross domestic product (dependent variable), financial deepening (the ratio of M2 to gross domestic product), trade openness, exchange rate, lending rate, inflation rate, credit to private sector and credit to public sector (independent variable) and dummy variable to cater for policy changes. The data covers the period of 1970-2013. Some of these variables are defined as follows:

3.2.1 Dependent Variable (Gross Domestic Product)

This paper work uses the non-oil Gross Domestic Product as a proxy for economic growth. This is a measure of growth of the economy in annual basis. This was determined by dividing real gross domestic product with the total population and obtaining the growth rate. For example, the population figures were projections from the 1991 and 2006 official census

figures. The projections were based on the 2.8 per cent annual growth rate (CBN, 2012). The per capita GDP growth was used to proxy economic growth. This is in line with the works of Demirguc-Kunt andLevine (1996), Levine and Zer vos (1996), Demirguc-Kunt and Makismovic (1996), Levine and Zervos (1998).

3.2.2 Independent Variable:

Financial Deepening (M2/GDP)

This is broad money aggregate and measures the depth of financial sector development and has inducement to saving-investment and growth. This is determined by dividing the value of liquid liabilities (M2) with real gross domestic product. Liquid liabilities as a ratio of GDP were used as proxy for financial deepening. This is in line with the works of King and Levine (1993) and Beck, Demirguc-Kunt and Levine (2001).

Liquid Liabilities = Value of Liquid Liabilities (M2)/GDP

Macroeconomic Measures of Uncertainty (Inflation, Lending and Exchange Rate)

Uncertainty is the unconditional variance of a particular economics series (e.g. demand, price, inflation, exchange rate, interest rate, etc.) which managers are presumed to be uncertain about. According to Gecizi (2007) there are various methods of constructing an uncertainty variable in the empirical literature. One approach is to incorporate some direct measure of uncertainty, generally from business surveys. A second approach is to compute the unconditional variance of a particular economics series, (commonly, demand, price, inflation, exchange rate, interest rate, etc.) which, managers are presumed to be uncertain about. A third approach is to estimate a statistical model of the process (such as ARCH/GARCH or ARIMA models) determining the conditional variance of the same related series and use this as a proxy for uncertainty. The computation of conditional variance via such models requires high frequency of data which are not always available especially in developing country like Nigeria.

The study used an unconditional volatility measure of inflation rate, lending rate and exchange rates as macroeconomic measures of uncertainty. Many empirical works {Price, (1995), Huizanga, (1993), Driver and Moreton, (1991), Goldberg, (1993), Campa and Goldberg, (1995) and Darby, (1999)} have used various macroeconomic variables.

3.3 Model specification

The chosen economic growth indicator is the real Gross Domestic Product (RGDP) is specified to depend on the financial sector indicators which are financial deepening (M2/GDP), trade openness (OPEN), real lending rate (LENDING), exchange rate (EXCHR), inflation rate (INF), credit to private sector (PRIVATE), credit to public sector (PUBLIC) and dummy variable (DM) to cater for policy changes. Calderon and Liu (2003) noted that a higher M2GDP ratio implies a larger financial sector and greater financial intermediary development. According to Pill (1997) a move from negative to positive real interest rates indicates progress in financial sector reform.

In the specification of model, the first step is to identify the problem which is the relationship between financial liberalization and economic growth. Base on the foregoing, two intrinsic (essential) linearity is used for the relationship between gross domestic product (GDP) and its determinants. The first linear equation is to evaluate the effect of financial liberalization on economic growth while the second linear equation is to examine the effect of an increase in bank credit to the private and public sector on economic growth. Thus the functional relationship is expressed as follows

GDP= f (DEEP, OPEN, EXCHR, INF, LENDING)..... (1)

GDP = f (PRIVATE, PUBLIC)..... (2)

Where,

GDP = Gross Domestic Product

DEEP = Financial Deepening measure

OPEN = Trade Openness

EXCHR = Exchange Rate

INF = Inflation Rate

LENDING = Lending Rate

PRIVATE = Credit to Private Sector

PUBLIC= Credit to Public Sector

f = Functional relationship

In its econometric form, the equation (1) and (2) above is rendered thus:

$GDP = B_0 + B_1DEEP + B_2OPEN + B_3EXCHR + B_4INF + B_5LENDING + e$ ..... (3)

$GDP = B_0 + B_1PRIVATE + B_2PUBLIC + e$ ..... (4)

Where,

B_0 = intercept of relationship in the model

B_1 to B_5 = coefficient of each of the independent variables

e = stochastic error or error term

From equation (1), each of the independent variable is also regressed against the endogenous variable (GDP) in order to separately know the impact and relationship between each of the independent with the dependent variable.

$GDP = B_0 + B_1DEEP + e$ ..... (5)

$GDP = B_0 + B_2OPEN + e$ ..... (6)

$GDP = B_0 + B_3EXCHR + e$ ..... (7)

$GDP = B_0 + B_4INF + e$ ..... (8)

$GDP = B_0 + B_5LEND + e$ ..... (9)

From equation (2), each of the independent variable is also regressed against the endogenous variable (GDP) in order to separately know the impact and relationship between each of the independent in equation (2) with the dependent variable.

$GDP = B_0 + B_1PRIVATE + e$ ..... (10)

$GDP = B_0 + B_2PUBLIC + e$ ..... (11)

3.4 A Priori Expectation

This explains the theoretical linkage on the signs and magnitudes of parameter of the specified functions. A priori expectations are determined by the principles of economic theory guiding the economic relationship among the variables being studied.

Adegbite (2004) and Nnanna (2004) asserted that a positive correlation between financial sector growth and real sector growth. Oluyemi (1995) stated that there also exist a positive relationship between financial liberalization and economic growth. According to Khan and Villanueva (1991) and Nnanna (2004), there exist a significantly strong positive relationship between real interest rate and economic growth.

$\partial RGDP / \partial DEEP > 0$

$\partial RGDP / \partial OPEN > 0$

$\partial RGDP / \partial EXCHR > 0$

$\partial RGDP / \partial INF < 0$

$\partial RGDP / \partial LENDING < 0$

$\partial RGDP / \partial PUBLIC < 0$

$\partial RGDP / \partial PRIVATE > 0$

The a priori expectation for equation (1) is that B_1, B_2, B_3 must be >0 while B_4, B_5 must be <0. While the a priori expectation for equation (2) is that B_1 must be >0 while B_2 must be < 0. This expectation is underpinned by financial liberalization literature and economic growth theories.

3.5 Method of Data Analysis

This study employed time series regression analysis to estimate the model of the study with two multiple regression analysis to determine the link between financial liberalization and economic growth in Nigeria. The test of analysis to be used are; the Augmented Dickey Fuller, and the Johansen Co-integration test, as the basic techniques of analysis.

The Augmented Dickey Fuller test is used to test the stationarity of the data. The time series properties of the variables used in the model were determined by performing stationary tests. This is because the non-stationarity of the variables will result to the loss of the desirable properties of efficiency, consistency and un-biasedness of the variables if ordinary least technique is used to estimate the model. This will result to spurious results and inferences and hence, inaccurate predictions.

The Augmented Dickey Fuller (ADF) test is used to determine the order of integration, that is, the number of times a variable has to be differenced before it becomes stationary.

The Johansen Co-integration test determines whether there is an equilibrium condition that keeps the variables in proportion to one another in the long run. The test indicates the existence of a long-run equilibrium relationship between the variables of the model. This is to cater for the problems of spurious correlation associated with non-stationary time series data.

After testing the direction of causality, stationarity of the data and having established the extent and form on co-integration relationship between the variables, other test such as the normality

test, multicolinearity test, and heteroscedasticity test was conducted to estimate the link that exists between financial liberalization and economic growth

Test of statistical adequacy, such as the adjusted R-square, t-statistic, F-statistic, standard error of coefficient, Durbin-Watson will be carried out to assess the relative significance of the variables, the desirability and reliability of model-estimation parameters.

CHAPTER FOUR

4.0 DATA PRESENTATION AND DATA ANALYSIS

4.1 Data Analysis

This chapter examines the results of the estimation carried out to analyse the link between financial liberalization and economic growth in Nigeria and also the effect of increase in bank credit to private and public sector. It also discusses the analysed result and their interpretation.

4.1.1 DESCRIPTIVE STATISTICS

The descriptive statistics of the variables used in this study are shown in Table 1.2. The probabilities of Jarque-Bera test of normality for variables are all greater than 5% level of significance which indicates that the data are normally distributed.

Table 1.2: **DESCRIPTIVE STATISTICS TABLE**

	RGDP	DEEP	OPEN	LENDING	EXCHR	INF
Mean	2135488.	24.26041	42.99773	14.71844	49.44592	18.87969
Median	269457.8	22.03041	42.10000	15.16467	9.754500	12.95000
Maximum	24700000	39.61098	97.30000	29.80000	157.5000	72.80000
Minimum	4219.000	12.49688	6.600000	6.000000	0.544500	3.200000
Std. Dev.	5562937.	7.135464	23.45429	6.345961	61.59967	15.72334
Skewness	2.814669	0.757198	0.419431	0.252445	0.727605	1.749866
Kurtosis	9.777763	2.771755	2.516089	2.258770	1.695127	5.492419
Jarque-Bera	142.3171	4.300062	1.719409	1.474614	7.003935	33.84383
Probability	0.000000	0.116481	0.423287	0.478401	0.030138	0.000000
Observations	44	44	44	44	44	44

Source: author compilation from E-view

The table: 1.2 above shows the descriptive statistics for the dependent and independent variables, RGDP, DEEP, OPEN, LENDING, EXCHR and all have a positive mean value which ranges from14.71844 to 2135488 with a 44 observations. The highest standard deviation

of 5562937 is recorded by RGDP rate while the least standard deviation of 6.345961 is recorded by LENDING.

4.1.2 Regression result

In the analysis of the regression result, it is expected that the coefficients of the variables under consideration will exhibit various characteristics in sign and sizes that conforms to the a priori expectations of the economic theory. The result on the effect of financial liberalisation on economic growth obtained below:

Table 1.3: **REGRESSION RESULT**

Dependent Variable: RGDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3630214.	2969845.	-1.222358	0.2291
DEEP	80900.69	88575.47	0.913353	0.3668
OPEN	122037.1	33301.12	3.664656	0.0008
LENDING	-366932.9	118530.2	-3.095692	0.0037
EXCHR	87508.67	13090.47	6.684912	0.0000
INF	-19627.83	47068.72	-0.417004	0.6790
R-squared	0.569388	Mean dependent va		2135488.
Adjusted R-squared	0.512728	S.D. dependent var		5562937.
S.E. of regression	3883201.	Akaike info criterion		33.30834
Sum squared resid	5.73E+14	Schwarz criterion		33.55164
Log likelihood	-726.7835	F-statistic		10.04928
Durbin-Watson stat	1.555900	Prob(F-statistic)		0.000003

Source: author compilation from E-view

From the result table: 1.3, the regression estimates of financial liberalisation equation shows that three of the coefficients of the explanatory variables DEEP, OPEN and EXCHR have positive signs. The coefficient of LENDING and INF indicates a negative signs, this implies increase in the bank lending rate reduces loanable fund thereby decreasing growth rate. Equally, Adamoulos (2010) in a study of the relationship between credit market development and economic for Spain noted that a short-run increase of economic growth per 1% induced an

increase of bank lending 0.08%, while an increase of inflation rate per1% induced a relative decrease of bank lending per 0.56%.

On the effect of increase in bank credit to public and private sector on economic growth, the regression result conducted is presented as follows:

Table 1.4: **Regression result (bank credit to private and public sector)**

Dependent Variable RGDP				
Ariable	Coefficient	Std. Error	t-Statistic	Prob.
C	626606.1	683595.5	0.916633	0.3647
PRIVATE	1.888939	0.231476	8.160416	0.0000
PUBLIC	-453.3058	234.0712	-1.936615	0.0597
R-squared	0.786505	Mean dependent variable		2135488.
Adjusted R-squared	0.776090	S.D. dependent variable		5562937.
S.E. of regression	2632331.	Akaike info criterion		32.47038
Sum squared resid	2.84E+14	Schwarz criterion		32.59203
Log likelihood	-711.3484	F-statistic		75.52089
Durbin-Watson stat	2.085395	Prob(F-statistic)		0.000000

Source: author compilation from E-view

For the effect of bank credit to public and private sector in Nigeria, the regression result obtained shows that the coefficients of the variables PUBLIC indicates a negative sign while the coefficient of the variable, PRIVATE exhibit positive signs. The positive coefficient of the bank credit to the private sector variable goes in line with the findings of Fadare (2010) study of the effect of banking sector reforms on economic growth for Nigeria finds that total banking sector credit to the private sector, inflation rate, inflation rate lagged by one year, size of banking sector capital and cash reserve ratios account for a very high proportion of the variation in economic growth. Caporale, Rault, Sova and Sova (2009) in their study note that GDP per capita has a positive effect on private credit, increasing financial depth. Higher

disposable income, as well as low foreign interest rates, made it easier for households to finance their expenditure and service their debt. According to the authors, Private credit growth has been largely the result of more loans to households, primarily mortgage-based housing loans.

4.1.3 Granger causality

The procedure used in the study for testing statistical causality between the Real Gross Domestic Product (RGDP), DEEP, OPEN, LENDING, EXCHR and INF is the "Granger-causality" test developed by C.W.J. Granger in 1969. The Granger causality tests determine the predictive content of one variable beyond that inherent in the explanatory variable itself. The result of the causality tests obtained are as follows:

Table 1.5: **GRANGER CAUSALITY TABLE**

Null Hypothesis:	Obs	F-Statistic	Probability
DEEP does not Granger Cause RGDP	43	0.29028	0.59303
RGDP does not Granger Cause DEEP		0.10699	0.74530
OPEN does not Granger Cause RGDP	43	4.1E-05	0.99492
RGDP does not Granger Cause OPEN		0.06745	0.79641
LENDING does not Granger Cause RGDP	43	0.01495	0.90330
RGDP does not Granger Cause LENDING		0.00941	0.92322
EXCHR does not Granger Cause RGDP	43	5.45586	0.02460
RGDP does not Granger Cause EXCHR		0.32388	0.57247
INF does not Granger Cause RGDP	43	0.31936	0.57515
RGDP does not Granger Cause INF		0.21854	0.64269
OPEN does not Granger Cause DEEP	43	0.00059	0.98075
DEEP does not Granger Cause OPEN		0.12773	0.72268
LENDING does not Granger Cause DEEP	43	0.62092	0.43535
DEEP does not Granger Cause LENDING		3.54314	0.06708
EXCHR does not Granger Cause DEEP	43	0.81879	0.37095
DEEP does not Granger Cause EXCHR		0.32733	0.57044
INF does not Granger Cause DEEP	43	2.53012	0.11957
DEEP does not Granger Cause INF		2.87276	0.09786
LENDING does not Granger Cause OPEN	43	0.25709	0.61491

OPEN does not Granger Cause LENDING		0.17758	0.67572
EXCHR does not Granger Cause OPEN	43	0.11748	0.73358
OPEN does not Granger Cause EXCHR		1.99023	0.16605
INF does not Granger Cause OPEN	43	1.06785	0.30764
OPEN does not Granger Cause INF		3.26396	0.07835
EXCHR does not Granger Cause LENDING	43	0.00343	0.95362
LENDING does not Granger Cause EXCHR		1.93647	0.17174
INF does not Granger Cause LENDING	43	0.00012	0.99115
LENDING does not Granger Cause INF		0.59623	0.44456
INF does not Granger Cause EXCHR	43	0.38897	0.53638
EXCHR does not Granger Cause INF		0.74886	0.39200

DEEP does not Granger Cause RGDP	43	0.29028	0.59303
RGDP does not Granger Cause DEEP		0.10699	0.74530
OPEN does not Granger Cause RGDP	43	4.1E-05	0.99492
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RGDP does not Granger Cause INF		0.21854	0.64269

Source: author compilation from E-view

The results given above suggest that there is no direction of causality between RGDP and DEEP, Which is financial deepening. The results equally indicate that direction of causality between trade openness and RGDP is unilateral from OPEN to RGDP; it shows that exchange rate granger causes real GDP. Between lending rate and the real gross domestic product, the result obtained indicate no direction of causality. There is uni-directional causality from exchange rate (EXCHR) to (RGDP); this imply that exchange rate granger causes real GDP. The causality test result obtained shows that no direction of causality between inflation and real gross domestic product.

Testing for the direction of causality between other variables, the result indicates no direction of causality between DEEP and (OPEN); while there is a unilateral causality from DEEP to LENDING. The result shows that financial deepening granger causes bank lending rate. The result obtained equally indicate that there is no direction of causality existing between (EXCHR) and (DEEP). It could be seen from the result table that there is a bilateral causality existing from INF and DEEP. The result shows that inflation granger causes financial deepening and financial deepening granger causes inflation. Also, there exists a no direction of causality between lending and trade openness and exchange and trade openness. The estimated result shows that causality exist from OPEN to INF. It shows that trade openness granger causes inflation. From the result table, there is no direction of causality between EXCHR and LENDING, INF and LENDING, INF and EXCHR; and also no direction of causality between DEEP and RGDP.

4.1.4 STATISTICAL CRITERION

Statistically, the coefficient of multiple determinations for the first regression model is given as: $R^2 = 0.569388$ and the adjusted coefficient of multiples determination as: $R^2 = 0.512728$. While the coefficient of multiple determinations for the second model on the effect of bank credit to public and private sector is given as: $R^2 = 0.786505$ and the adjusted $R^2 = 0.776090$. This indicates that the variations observed in the dependent variables as a result of changes in the independent variables were succinctly captured in the model and shows that 51 % and 77% of the variations in the dependent variables are predicated by the independent variables in the two models.

The t-statistics of the variables under consideration is interpreted based on the following decision rule: If the t-values of the variables under consideration is less than two or greater than the positive two ($\leq -2 \geq 2$), then it shows that the variables under consideration are significant,

The decision rule that guides the test is stated as follows: If the F- calculated is greater than the F- tabulated, we reject H_0 and accept H_1 with a conclusion that the overall estimate of the regression is statistically adequate, otherwise it is not.

From the first regression result, the F-values obtained are as follows: F (4, 39) = 10.04928, while tabulated value is given as follows F (4, 39) = 4.04. The second regression result as also as follows: the F-values obtained are as follows: F (1, 43) = 75.52089; while tabulated value is given as follows F (1, 43) = 7.31

Decision: Since the F –calculated are greater than the F- tabulated, we reject H_0 and conclude that the overall estimate of the regressions are adequate statistically.

The Durbin –Watson statistics: Because of the problem of heteroscedasticity and autocorrelation of the error terms due to the regression assumptions, Durbin-Watson-statistics (DW) will be used. It is defined by Durbin and Watson in their work as: $DW = \frac{\sum_{i=2}^{n}(\hat{u}_i - \hat{u}_{i-1})^2}{\sum_{i=1}^{n}\hat{u}_i^2}$ The Durbin-Watson statistic can be difficult to interpret. The range of values of DW is from 0 to 4. Values of DW around 2 indicate no serial correlation in the error terms, values less than 2 suggest positive serial correlation, and values greater than 2 suggest negative serial correlation. The high value of the Durbin-Watson statistic is indicative of the absence of serial correlation in the residuals of the estimated equation. The DW = 1.555900 and 2.085395 which are greater than the adjusted R^2 = 51% and 77% shows that the entire regressions are statistically significant. So we accept the null hypothesis of no autocorrelation in both equations.

4.1.5 ECONOMETRICS CRITERION

1 UNIT ROOT

In literature, most time series variables are non-stationary and using non-stationary variables in the model might lead to spurious regression (Granger 1969). The first or second differenced terms of most variables will usually be stationary (Ramanathan 1992).Using the Augmented Dickey Fuller (ADF) test for the unit root for the levels as follows:

Table 1.6: **UNIT ROOT**

	ADF Test 5% Critical Value -1.9488 I(0) 5% Critical Value -1.9490 I(1)	
VARIABLE	I(0)	I(1)
RGDP(-1)	-0.513816	-5.419813
DEEP(-1)	-0.325213	-4.492109
OPEN(-1)	-1.975151	-4.421055
LENDING(-1)	-0.113831	-6.336227
EXCHR(-1)	0.979017	-3.827631
INF(-1)	-2.024056	-6.514957
PRIVATE(-1)	0.199723	-2.944520
PUBLIC(-1)	0.316724	-4.488535

Source: author compilation from E-view

The tests indicate that of all the variables under consideration, RGDP DEEP OPEN LENDING EXCHR, INF, PRIVATE and PUBLIC are stationary and integrated of order one at 5% level of significance.

2 COINTEGRATION

When a linear combination of variables that are I (1) produces a stationary series, then the variables may need to be co-integrated. This means that a long-run relationship may exist among them, which connotes that they may wander from one another in the short-run but in the long-run they will move together. To establish whether long-run relationship exists among the variables or not, co-integration tests are conducted by using the multivariate procedure developed by Johansen (1988) and Johansen and Juselius (1990). The nature of the estimator

means that the estimates are robust to simultaneity bias, and it is robust to departure from normality (Johansen, 1995). Johansen method detects a number of co-integrating vectors in non-stationary time series. It allows for hypothesis testing regarding the elements of co-integrating vectors and loading matrix. The co-integration tests include: RGDP DEEP OPEN LENDING EXCHR INF. The results of the conducted Johansen tests for co-integration amongst the variables is specifies in table below: The results indicate that there are at most six co-integrating vectors.

Table 1.7: **COINTEGRATION TEST**

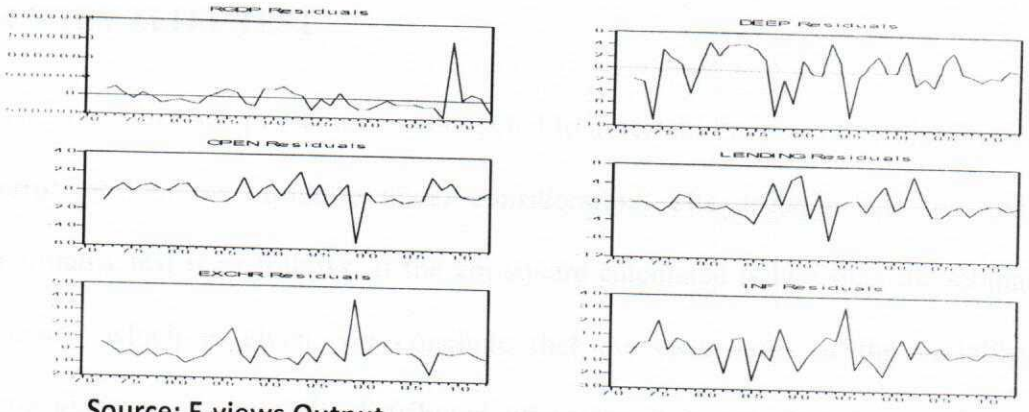
Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.737857	110.4174	82.49	90.45	None **
0.430774	55.52400	59.46	66.52	At most 1
0.368897	32.42143	39.89	45.58	At most 2
0.201347	13.54968	24.31	29.75	At most 3
0.082163	4.331705	12.53	16.31	At most 4
0.019718	0.816533	3.84	6.51	At most 5
*(**) denotes rejection of the hypothesis at 5%(1%) significance level				
L.R. test indicates 1 co-integrating equation(s) at 5% significance level				

Source: author compilation from E-view

Using the trace likelihood ratio, the results point out that the null hypothesis of no co-integration among the variables is rejected in favour of the alternative hypothesis up to one co-integrating equations at 5% significant level because their values exceed the critical values. This means there is one integrating equations, which implies that a unique long-run relationship exists among the variables and the coefficients of estimated regression can be taken as equilibrium values.

The residual result

The graph in table: 1.7 shows the residual test conducted after co-integration test. It displays the behaviour of the variables under consideration



Source: E-views Output

3 MULTICOLINEARITY TEST

Under the multicolinearity test, we conduct the test to ascertain the degree relationship that exists between the dependent variable and the independent variables. This is done using the correlation matrix. In the correlation test, we test the variables to ascertain the degree of relationship that exist between the independent variables and the dependent variable. For the variables under consideration, the values obtained are as follows:

Table 1.8: **MULTICOLINEARITY TEST**

	RGDP	DEEP	OPEN	LENDING	EXCHR	
RGDP	1.000000	-0.166661	0.018251	0.043811	0.606149	
DEEP	-0.166661	1.000000	-0.024386	-0.072943	-0.293635	
OPEN	0.018251	-0.024386	1.000000	0.248313	-0.371410	
LENDING	0.043811	-0.072943	0.248313	1.000000	0.371203	
EXCHR	0.606149	-0.293635	-0.371410	0.371203	1.000000	
INF	-0.149057	0.070003	0.539157	0.315438	-0.254096	

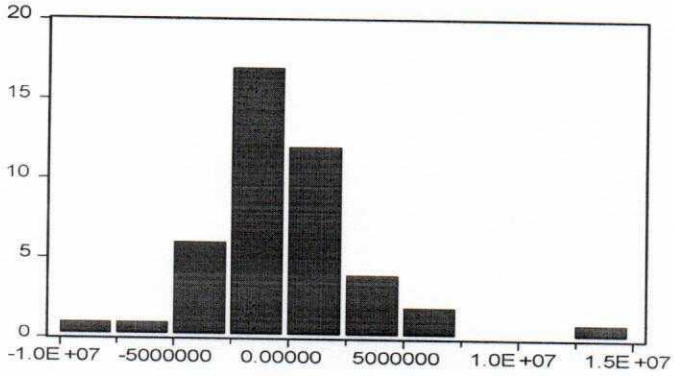
Source: author compilation from E-view

The correlation result shows that three of the variables, OPEN, LENDING and ECHR have positive relationships with the RGDP. The relationships are actually at 1%, 4% and 60% respectively .This result suggests these variables have a direct relationship with

RGDP. Other variables, DEEP and INF are negative with values 16%, and 14% respectively. This show that the variables negatively affected the growth of the economy during the period under review.

4 NORMALITY TEST

The normality test procedure is conducted to ascertain the normality distribution of the error term of the variables under consideration. The decision rule that guides the normality test is as follows: If the chi-square calculated is less than the tabulated chi-square, which is given, we conclude that the error term of the variables under consideration is normally distributed otherwise it is not. The Jargue Bera test for Normality test is therefore presented as follows:



Series: Residuals	
Sample 1970 2013	
Observations 44	
Mean	-2.82E-09
Median	-222272.3
Maximum	14502781
Minimum	-8092314.
Std. Dev.	3650459.
Skewness	1.252736
Kurtosis	7.469308
Jarque-Bera	48.12885
Probability	0.000000

For the variables under consideration, the normality test conducted is as follows: Jarque Bera = 48.12885 while the tabulated value which is given is as follows: chi - square = 5.99147. Decision: since the chi-square calculated is less than the chi-square tabulated, we conclude that the error term of the variables under consideration are not normally distributed.

5 HETROSCEDASTICITY TEST:

Under the heteroscedasticity test, we make the following assumptions: if the chi-square calculated is less than the chi-square tabulated, we accept Ho otherwise we reject. The hypothesis that guides the test is as follows:

$H_0: \alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5$

$H_1: \alpha_1 \neq \alpha_2 \neq \alpha_3 \neq \alpha_4 \neq \alpha_5$

The equation that guides the test is stated as follows:

$$U_t = \beta_0 + \beta_1 (DEEP) + \beta_2 (OPEN) + \beta_3(LENDING) + \beta_4(EXCHR) + \beta_5(INF) + \beta_6 (DEEP)^2 + \beta_7(OPEN)^2 + \beta_8(LENDING)^2 + \beta_9(EXCHR)^2 + \beta_{10}(INF)^2 + \beta_{11}(DEEP, OPEN, LENDING, EXCHR, INF) + V_t$$

The Heteroscedasticity result obtained is presented below:

Table 1.9: **HETROSCEDASTICITY TEST**

White Hetroscedasticity Test				
Obs*R-squared 11.91592				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.22E+13	8.77E+13	-0.253366	0.8016
DEEP	-9.76E+11	5.82E+12	-0.167746	0.8678
DEEP^2	1.92E+10	1.12E+11	0.171161	0.8651
OPEN	1.88E+12	1.28E+12	1.477511	0.1490
OPEN^2	-1.66E+10	1.37E+10	-1.208286	0.2355
LENDING	-2.00E+12	6.82E+12	-0.293482	0.7710
LENDING^2	4.73E+10	1.92E+11	0.246833	0.8066
EXCHR	7.03E+11	9.61E+11	0.732077	0.4693
EXCHR^2	-2.42E+09	5.86E+09	-0.413857	0.6817
INF	1.05E+11	1.24E+12	0.084461	0.9332
INF^2	1.15E+09	1.93E+10	0.059396	0.9530
R-squared	0.270816	Mean dependent var		1.30E+13
Adjusted R-squared	0.049852	S.D. dependent var		3.35E+13
S.E. of regression	3.27E+13	Akaike info criterion		65.28459
Sum squared resid	3.52E+28	Schwarz criterion		65.73064
Log likelihood	-1425.261	F-statistic		1.225609
Durbin-Watson stat	2.067092	Prob(F-statistic)		0.311419

Source: author compilation from E-view

For the variables under consideration, chi –square under 10 degrees of freedom chi square (10) = 11.91592, the chi-square (10) tabulated = 18.3070.

DECISION: Since the X^2 calculated < X^2 tabulated, we conclude that the error term of the variables under consideration are homoscedastic.

4.2 DISCUSION OF FINDINGS

The core of the study is to examine the link between financial liberalization on economic growth in Nigeria. A vivid observation of the results shows that all the explanatory variables and their lagged variables are positively related to GDP except LENDING and INF and their lagged variable which has an inverse relationship with GDP. The implication of the negativity of LENDING and INF which are in consonance with the a priori expectation means that although financial liberalization can cause financial development but the instability of the financial system and the frequent implementation of financial sector reforms have caused DEEP and INF not to positively impact the economy. Surprisingly, INF and its lagged variable are positively related to GDP as against the a priori expectation. INF which cause price to rise has encouraged production instead of consumption. Producers invest more in anticipation of higher profit and this tends to raise the levels of employment, production and income and this consequently cause economic growth to be achieved in Nigeria. Therefore, the macro economic instability accompanied with financial liberalization is gainful to the Nigerian economy.

In line with the a priori expectation posited, DOP and GDP are directly related. This positive relationship shows the success of globalization in Nigeria as a result of the financial liberalization. The globalization has constituted a major factor for economic growth in Nigeria. The test of statistical significance of the parameters from the regression model result implies that OPEN, EXCHR, and DEEP are statistically significant in explaining any changes that might occur in the economic growth of Nigeria. Also, the F-Calculated value obtained in the regression result implies that the model is adequate enough to explain GDP; this means that the model sufficiently captures the link between financial liberalization and economic growth.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The Nigerian financial sector, just like in many other less developed countries, was highly regulated leading to financial disintermediation which slowed down the growth rate of the economy. The country had in the past used government intervention as a tool to control their resources allocation. This intervention has resulted not only repressive but has become a major factor slowing down the economic growth process. In addition, it is negatively affecting the banking sector whose objective in the liberalization process is to protect the financial sector.

In review of literatures, the study adopted three major literature review (conceptual issues, theoretical literature, and empirical literature). Liberalization enhances growth in an economy by allowing domestic and international firms to access their financial markets, and by improving the efficiency and corporate governance in domestic financial systems. And finally discuss the empirical literature based on the information gotten from the past research.

5.2 Conclusion

In conclusion, the descriptive statistics for the dependent and independent variables, RGDP, DEEP, OPEN, LENDING, EXCHR and INF all have a positive mean value which ranges from14.71844 to 2135488 with a 44 observations. The highest standard deviation of 5562937 is recorded by RGDP rate while the least standard deviation of 6.345961 is recorded by LENDING. The probabilities of Jarque-Bera test of normality for variables are all greater than 5% level of significance which indicates that the data are normally distributed. The regression estimates of financial liberalisation equation shows that three of the coefficients of the explanatory variables DEEP, OPEN and EXCHR have positive signs while the coefficient of LENDING and INF indicates a negative signs, this implies increase in the bank lending rate reduces loanable fund thereby decreasing growth rate. On the other hand, the effect of bank credit to public and private sector in Nigeria, the regression result obtained shows that the coefficients of the variables PUBLIC indicates a negative sign while the coefficient of the variable, PRIVATE exhibit positive signs. The granger causality test is use to determine the predictive content of the variable beyond that inherent in the explanatory variable itself, the result suggest that there is no direction of causality between RGDP and DEEP, which is the financial liberalization. T-test procedures shows that the t-value of variables (OPEN, LENDIING, and EXCHR) are significant while others are not. The result of the F-test shows that since F-calculated of 10.04928 are greater than F-tabulated of 4.04 for the first regression and F-calculated of 75.52089 are greater than F-tabulated for the second regression, we reject H_0 and concluded that the overall estimate of the regressions are adequate statistically. The unit root test was conducted to establish that the time series data on all variables are stationary and integrated of order one at 5% level of significance in ADF. The co-integration test procedures conducted indicates at most six co-integrating vectors. Multicolinearity test was conducted to ascertain the degree of relationship between the dependent (GDP) variable and the independent

(DEEP, OPEN, EXCHR, INF, LENDING, PRIVATE AND PUBLIC) variable, and the result shows that the three of the variable (OPEN, EXCHR and LENDING) have positive relationship with GDP and the relationship are actually at 1%, 4%, and 60% respective while DEEP and INF are negatively related with value 16% and 14% respectively. Normality test was also conducted to ascertained the normality distribution of the error term of the variable under consideration, the result of the test shows that chi-square tabulated is 48.12885 while chi-square calculated is 5.99147, since the chi-square calculated is less than chi-square tabulated, the variable under consideration are not normally distributed. The heteroscedasticity test was also conducted to ascertain which of the hypothesis should be accepted or rejected, the test explain that if chi-square calculated is less than chi-square tabulated, we accept H_0 otherwise we reject. On the other hand, the result of the test shows that chi-square tabulated with degree of freedom (10) is 11.91592 while the calculated chi-square is 18.3070. Since the chi-square calculated is less than chi-square tabulated, the error term of the variable under consideration are homoscedastic.

5.3 Recommendation

From the analysis realised and the listed problems in this research work the following policy recommendations can be made;

- Government should ensure macroeconomic stability. The Central Bank of Nigeria should pursue with honesty measures to ensure stability in the macro economy. It is unarguable that financial liberalization may have achieved greater success in Nigeria if the economy has been stable overtime.
- Government should direct their efforts towards achieving a positive interest rate regime. There is need to lower lending rate in Nigeria. Moderate lending rate regimes have worked well for the developed nation. If government can work on the lending rate, positive interest rate will be attain and this will in turn spur economic growth
- Government should ensure a conducive business environment. No business can survive in an environment where fear and insecurity is the order of the day. The ongoing security challenges in the country should be seriously tackled to build confidence of investors in the economy. Moreover, infrastructures that support conducive businesses environment especially energy and good road should be made available in appropriate quality and quantity.
- Since the study shows that increase in bank credit to private sector leads to economic growth, government should make available more credit to the private sector for proper effectiveness to increase economic growth
- Lastly, That CBN should promote healthy competition in the banking industry so as to improve the efficiency of banks in rendering financial services to the public.

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Appendix

Appendix 1:Data presentation

YEAR	DEEP	INF	LENDING	EXCHR	RGDP	PRIVATE	PUBLIC	OPEN
1970	18.52	13.80	7.00	0.71	4219.00	351.70	2480.53	19.60
1971	15.66	16.00	7.00	0.68	4715.50	502.00	2480.53	24.50
1972	16.90	3.20	7.00	0.68	4892.80	628.70	2480.53	22.80
1973	17.64	5.40	7.00	0.68	5310.00	753.60	2480.53	31.30
1974	12.50	13.40	7.00	0.62	15919.70	966.70	2480.53	39.80
1975	19.75	33.90	6.00	0.63	27172.00	1671.90	2480.53	41.20
1976	22.15	21.20	6.00	0.63	29146.50	2464.40	2480.53	42.10
1977	25.60	15.40	6.00	0.65	31520.30	3808.40	2480.54	47.40
1978	23.12	16.60	7.00	0.65	29212.40	4513.00	2480.53	43.30
1979	24.36	11.80	7.50	0.56	29948.00	5399.60	2480.55	43.90
1980	30.42	9.90	7.50	0.54	31546.80	7457.80	2480.50	48.60
1981	33.94	20.90	7.75	0.64	205222.1	9670.50	2480.60	49.10
1982	36.87	7.70	10.25	0.67	199685.3	11611.40	2480.40	38.70
1983	39.31	23.20	10.00	0.75	185598.1	12237.80	2480.79	31.10
1984	39.20	39.60	12.50	0.81	183563.0	12895.30	2480.01	27.80
1985	38.70	5.50	9.25	1.00	201036.3	14139.00	2481.57	28.50
1986	39.61	5.40	10.50	3.32	205971.4	18299.90	2478.45	37.60
1987	31.996	10.20	17.50	4.19	204806.5	21892.50	2484.70	53.30
1988	32.68	38.30	16.50	5.35	219875.6	25472.50	2472.21	45.20
1989	21.70	40.90	26.80	7.65	236729.6	29643.90	2497.18	57.90
1990	25.66	7.50	25.50	9.00	267550.0	35436.60	2447.25	72.20
1991	28.03	13.00	20.01	9.75	265379.1	42079.00	2547.10	68.60
1992	24.24	44.50	29.80	9.75	271365.5	79958.90	2347.40	82.70
1993	29.03	57.20	18.32	22.63	274833.3	95529.70	2746.80	97.30
1994	29.67	57.00	21.00	21.89	275450.6	151000.3	3655.40	82.50
1995	16.49	72.80	20.18	21.89	281407.4	211358.6	3479.60	86.50
1996	13.70	29.30	19.74	21.89	293745.4	260613.5	1524.50	75.60
1997	15.34	8.50	13.54	21.89	302022.5	319512.2	1453.00	75.20
1998	19.41	10.00	18.29	21.89	310890.1	372574.1	926.10	80.10
1999	21.91	6.60	21.32	92.53	312183.5	455205.2	692.30	6.60
2000	22.61	6.90	17.98	109.55	329178.7	596001.5	951.00	8.90
2001	27.85	18.90	18.29	112.49	356994.3	854999.3	1080.10	9.00
2002	23.14	12.90	24.85	126.40	433203.5	955762.1	164.30	7.50
2003	23.39	14.00	20.71	135.41	477533.0	1211993.	212.00	10.80
2004	19.84	15.40	19.18	132.67	527576.0	1534448.	1930.80	12.50
2005	19.32	17.90	17.95	130.40	561931.4	2007356.	2449.40	17.90
2006	21.70	8.40	17.26	128.27	595821.6	2650822.	13249.40	18.00
2007	20.51	5.40	16.94	117.97	634251.1	5056721.	7849.40	39.80
2008	21.10	11.50	15.14	130.75	674889.0	8059549.	10549.40	41.20
2009	20.80	12.40	15.44	147.60	24700000	10206087.	9199.40	42.10
2010	20.95	11.95	15.19	148.67	12687444	9132818.	9874.40	47.40
2011	20.88	12.18	15.02	156.20	18693722	9669452.	9536.90	43.30
2012	20.92	12.06	14.88	157.50	15690583	9401135.	9874.40	43.90
2013	20.90	12.12	15.02	157.31	12687444	9535294.	9705.65	48.60

Appendix 2: Unit root test

	ADF Test 5% Critical Value -1.9488 I(0) 5% Critical Value -1.9490 I(1)	
VARIABLE	I(0)	I(1)
RGDP(-1)	-0.513816	-5.419813
DEEP(-1)	-0.325213	-4.492109
OPEN(-1)	-1.975151	-4.421055
LENDING(-1)	-0.113831	-6.336227
EXCHR(-1)	0.979017	-3.827631
INF(-1)	-2.024056	-6.514957

RGDP

ORDER ZERO

ADF Test Statistic	-0.513816	1% Critical Value*	-2.6182
		5% Critical Value	-1.9488
		10% Critical Value	-1.6199

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDP)
Method: Least Squares
Date: 08/11/15 Time: 14:05
Sample(adjusted): 1972 2013
Included observations: 42 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP(-1)	-0.061539	0.119769	-0.513816	0.6102
D(RGDP(-1))	-0.440379	0.160127	-2.750183	0.0089

R-squared	0.229954	Mean dependent var	301969.7
Adjusted R-squared	0.210703	S.D. dependent var	4338822.
S.E. of regression	3854713.	Akaike info criterion	33.21394
Sum squared resid	5.94E+14	Schwarz criterion	33.29669
Log likelihood	-695.4927	Durbin-Watson stat	1.970298

ADF Test Statistic	-5.419813	1% Critical Value*	-2.6196
		5% Critical Value	-1.9490
		10% Critical Value	-1.6200

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDP,2)
Method: Least Squares
Date: 08/11/15 Time: 14:06
Sample(adjusted): 1973 2013
Included observations: 41 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP(-1))	-1.530527	0.282395	-5.419813	0.0000
D(RGDP(-1),2)	0.033158	0.163757	0.202481	0.8406

R-squared	0.737836	Mean dependent var	-73251.61
Adjusted R-squared	0.731113	S.D. dependent var	7549280.
S.E. of regression	3914624.	Akaike info criterion	33.24589
Sum squared resid	5.98E+14	Schwarz criterion	33.32948
Log likelihood	-679.5407	Durbin-Watson stat	1.964376

DEEP

ORDER ZERO

ADF Test Statistic	-0.325213	1% Critical Value*	-2.6182
		5% Critical Value	-1.9488
		10% Critical Value	-1.6199

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DEEP)
Method: Least Squares
Date: 08/11/15 Time: 14:06
Sample(adjusted): 1972 2013
Included observations: 42 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEEP(-1)	-0.008125	0.024985	-0.325213	0.7467
D(DEEP(-1))	-0.058360	0.157293	-0.371024	0.7126

R-squared	0.005688	Mean dependent var	0.124596
Adjusted R-squared	-0.019170	S.D. dependent var	4.072935
S.E. of regression	4.111788	Akaike info criterion	5.712041
Sum squared resid	676.2719	Schwarz criterion	5.794787
Log likelihood	-117.9529	Durbin-Watson stat	1.986228

ADF Test Statistic	-4.492109	1% Critical Value*	-2.6196
		5% Critical Value	-1.9490
		10% Critical Value	-1.6200

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DEEP,2)
Method: Least Squares
Date: 08/11/15 Time: 14:07
Sample(adjusted): 1973 2013
Included observations: 41 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DEEP(-1))	-1.044915	0.232611	-4.492109	0.0001
D(DEEP(-1),2)	-0.012802	0.159029	-0.080501	0.9363

R-squared	0.529896	Mean dependent var	-0.030671
Adjusted R-squared	0.517842	S.D. dependent var	5.999393
S.E. of regression	4.165834	Akaike info criterion	5.739261
Sum squared resid	676.8128	Schwarz criterion	5.822850
Log likelihood	-115.6548	Durbin-Watson stat	2.002752

OPEN

ORDER ZERO

ADF Test Statistic	-1.975151	1% Critical Value*	-3.5930
		5% Critical Value	-2.9320
		10% Critical Value	-2.6039

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OPEN)
Method: Least Squares
Date: 08/11/15 Time: 14:08
Sample(adjusted): 1972 2013
Included observations: 42 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OPEN(-1)	-0.183598	0.092954	-1.975151	0.0554
D(OPEN(-1))	0.024689	0.158393	0.155874	0.8769
C	8.531606	4.526503	1.884812	0.0669

R-squared	0.094287	Mean dependent var	0.573810
Adjusted R-squared	0.047840	S.D. dependent var	13.91874
S.E. of regression	13.58172	Akaike info criterion	8.124076
Sum squared resid	7194.060	Schwarz criterion	8.248195
Log likelihood	-167.6056	F-statistic	2.030002
Durbin-Watson stat	1.998466	Prob(F-statistic)	0.144982

ADF Test Statistic	-4.421055	1% Critical Value*	-2.6196
		5% Critical Value	-1.9490
		10% Critical Value	-1.6200

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OPEN,2)
Method: Least Squares
Date: 08/11/15 Time: 14:08
Sample(adjusted): 1973 2013
Included observations: 41 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OPEN(-1))	-1.030651	0.233123	-4.421055	0.0001
D(OPEN(-1),2)	-0.025804	0.160043	-0.161230	0.8727

R-squared	0.528675	Mean dependent var	0.156098
Adjusted R-squared	0.516590	S.D. dependent var	20.49870
S.E. of regression	14.25227	Akaike info criterion	8.199260
Sum squared resid	7921.959	Schwarz criterion	8.282849
Log likelihood	-166.0848	Durbin-Watson stat	1.997031

LENDING

ORDER ZERO

ADF Test Statistic	-0.113831	1% Critical Value*	-2.6182
		5% Critical Value	-1.9488
		10% Critical Value	-1.6199

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LENDING)
Method: Least Squares
Date: 08/11/15 Time: 14:09
Sample(adjusted): 1972 2013
Included observations: 42 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LENDING(-1)	-0.003816	0.033520	-0.113831	0.9099
D(LENDING(-1))	-0.439401	0.143454	-3.063019	0.0039

R-squared	0.193431	Mean dependent var	0.191051
Adjusted R-squared	0.173267	S.D. dependent var	3.820517
S.E. of regression	3.473799	Akaike info criterion	5.374823
Sum squared resid	482.6912	Schwarz criterion	5.457569
Log likelihood	-110.8713	Durbin-Watson stat	2.152862

ADF Test Statistic	-6.336227	1% Critical Value*	-2.6196
		5% Critical Value	-1.9490
		10% Critical Value	-1.6200

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LENDING,2)
Method: Least Squares
Date: 08/11/15 Time: 14:10
Sample(adjusted): 1973 2013
Included observations: 41 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LENDING(-1))	-1.695994	0.267666	-6.336227	0.0000
D(LENDING(-1),2)	0.176260	0.157625	1.118225	0.2703

R-squared	0.729590	Mean dependent var	0.003482
Adjusted R-squared	0.722657	S.D. dependent var	6.576743
S.E. of regression	3.463537	Akaike info criterion	5.370008
Sum squared resid	467.8474	Schwarz criterion	5.453597
Log likelihood	-108.0852	Durbin-Watson stat	1.908155

EXCHR

ORDER ZERO

ADF Test Statistic	0.979017	1% Critical Value*	-2.6182
		5% Critical Value	-1.9488
		10% Critical Value	-1.6199

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXCHR)
Method: Least Squares
Date: 08/11/15 Time: 14:10
Sample(adjusted): 1972 2013
Included observations: 42 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXCHR(-1)	0.025989	0.026546	0.979017	0.3335
D(EXCHR(-1))	0.179099	0.164900	1.086108	0.2839

R-squared	-0.011829	Mean dependent var	3.729812
Adjusted R-squared	-0.037125	S.D. dependent var	11.88449
S.E. of regression	12.10309	Akaike info criterion	7.871246
Sum squared resid	5859.390	Schwarz criterion	7.953993
Log likelihood	-163.2962	Durbin-Watson stat	1.977077

ADF Test Statistic	-3.827631	1% Critical Value*	-2.6196
		5% Critical Value	-1.9490
		10% Critical Value	-1.6200

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXCHR,2)
Method: Least Squares
Date: 08/11/15 Time: 14:11
Sample(adjusted): 1973 2013
Included observations: 41 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXCHR(-1))	-0.754351	0.197080	-3.827631	0.0005
D(EXCHR(-1),2)	-0.003952	0.160152	-0.024674	0.9804

R-squared	0.378680	Mean dependent var	-0.004634
Adjusted R-squared	0.362749	S.D. dependent var	15.53736
S.E. of regression	12.40316	Akaike info criterion	7.921330
Sum squared resid	5999.698	Schwarz criterion	8.004919
Log likelihood	-160.3873	Durbin-Watson stat	2.001361

INF

ORDER ZERO

ADF Test Statistic	-2.024056	1% Critical Value*	-2.6182
		5% Critical Value	-1.9488
		10% Critical Value	-1.6199

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INF)
Method: Least Squares
Date: 08/11/15 Time: 14:11
Sample(adjusted): 1972 2013
Included observations: 42 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF(-1)	-0.186218	0.092002	-2.024056	0.0497
D(INF(-1))	0.077867	0.157337	0.494907	0.6234

R-squared	0.093066	Mean dependent var	-0.092411
Adjusted R-squared	0.070393	S.D. dependent var	14.71440
S.E. of regression	14.18705	Akaike info criterion	8.188984
Sum squared resid	8050.897	Schwarz criterion	8.271731
Log likelihood	-169.9687	Durbin-Watson stat	1.929507

ADF Test Statistic	-6.514957	1% Critical Value*	-2.6196
		5% Critical Value	-1.9490
		10% Critical Value	-1.6200

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INF,2)
Method: Least Squares
Date: 08/11/15 Time: 14:12
Sample(adjusted): 1973 2013
Included observations: 41 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INF(-1))	-1.373531	0.210827	-6.514957	0.0000
D(INF(-1),2)	0.356654	0.147968	2.410342	0.0208

R-squared	0.573834	Mean dependent var	0.313567
Adjusted R-squared	0.562907	S.D. dependent var	21.09089
S.E. of regression	13.94383	Akaike info criterion	8.155501
Sum squared resid	7582.782	Schwarz criterion	8.239090
Log likelihood	-165.1878	Durbin-Watson stat	2.057928

Dependent Variable: RGDP
Method: Least Squares
Date: 08/11/15 Time: 13:59
Sample: 1970 2013
Included observations: 44

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-3630214.	2969845.	-1.222358	0.2291
DEEP	80900.69	88575.47	0.913353	0.3668
OPEN	122037.1	33301.12	3.664656	0.0008
LENDING	-366932.9	118530.2	-3.095692	0.0037
EXCHR	87508.67	13090.47	6.684912	0.0000
INF	-19627.83	47068.72	-0.417004	0.6790

R-squared	0.569388	Mean dependent var	2135488
Adjusted R-squared	0.512728	S.D. dependent var	5562937
S.E. of regression	3883201.	Akaike info criterion	33.30834
Sum squared resid	5.73E+14	Schwarz criterion	33.55164
Log likelihood	-726.7835	F-statistic	10.04928
Durbin-Watson stat	1.555900	Prob(F-statistic)	0.000003

Appendix 3: Regression result

Dependent Variable: RGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3630214.	2969845.	-1.222358	0.2291
DEEP	80900.69	88575.47	0.913353	0.3668
OPEN	122037.1	33301.12	3.664656	0.0008
LENDING	-366932.9	118530.2	-3.095692	0.0037
EXCHR	87508.67	13090.47	6.684912	0.0000
INF	-19627.83	47068.72	-0.417004	0.6790

R-squared	0.569388	Mean dependent var	2135488.
Adjusted R-squared	0.512728	S.D. dependent var	5562937.
S.E. of regression	3883201.	Akaike info criterion	33.30834
Sum squared resid	5.73E+14	Schwarz criterion	33.55164
Log likelihood	-726.7835	F-statistic	10.04928
Durbin-Watson stat	1.555900	Prob(F-statistic)	0.000003

Regression result (bank credit to private and public sector)

Dependent Variable RGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	626606.1	683595.5	0.916633	0.3647
PRIVATE	1.888939	0.231476	8.160416	0.0000
PUBLIC	-453.3058	234.0712	-1.936615	0.0597
R-squared	0.786505	Mean dependent var		2135488.
Adjusted R-squared	0.776090	S.D. dependent var		5562937.
S.E. of regression	2632331.	Akaike info criterion		32.47038
Sum squared resid	2.84E+14	Schwarz criterion		32.59203
Log likelihood	-711.3484	F-statistic		75.52089
Durbin-Watson stat	2.085395	Prob(F-statistic)		0.000000

Appendix 4: DESCRIPTIVE STATISTICS

	RGDP	DEEP	OPEN	LENDING	EXCHR	INF
Mean	2135488.	24.26041	42.99773	14.71844	49.44592	18.87969
Median	269457.8	22.03041	42.10000	15.16467	9.754500	12.95000
Maximum	24700000	39.61098	97.30000	29.80000	157.5000	72.80000
Minimum	4219.000	12.49688	6.600000	6.000000	0.544500	3.200000
Std. Dev.	5562937.	7.135464	23.45429	6.345961	61.59967	15.72334
Skewness	2.814669	0.757198	0.419431	0.252445	0.727605	1.749866
Kurtosis	9.777763	2.771755	2.516089	2.258770	1.695127	5.492419
Jarque-Bera	142.3171	4.300062	1.719409	1.474614	7.003935	33.84383
Probability	0.000000	0.116481	0.423287	0.478401	0.030138	0.000000
Observations	44	44	44	44	44	44

The t-statistics

Variable	t-Statistic	Prob
DEEP	0.913353.	0.3668
OPEN	3.664656	0.0008
LENDING	-3.095692	0.0037
EXCHR	6.684912	0.0000
INF	-0.417004	0.6790
PRIVATE	8.160416	0.0000
PUBLIC	-1.936615	0.0597

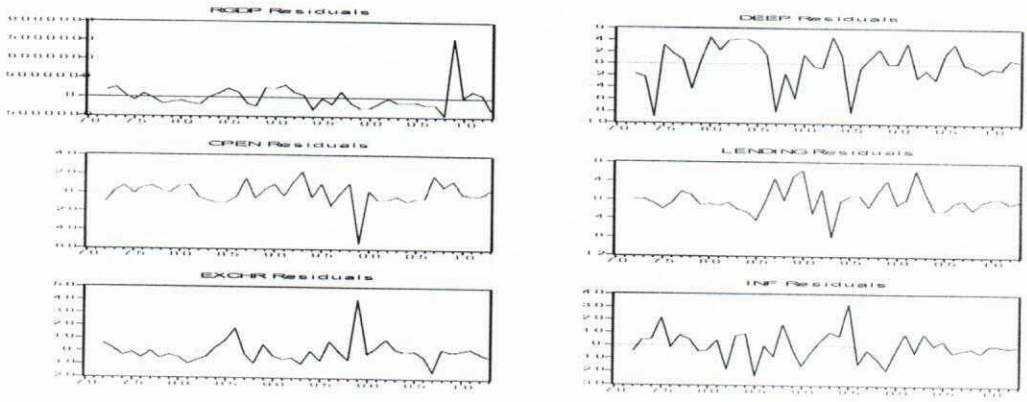
Appendix 5: Co-integration test

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.737857	110.4174	82.49	90.45	None **
0.430774	55.52400	59.46	66.52	At most 1
0.368897	32.42143	39.89	45.58	At most 2
0.201347	13.54968	24.31	29.75	At most 3
0.082163	4.331705	12.53	16.31	At most 4
0.019718	0.816533	3.84	6.51	At most 5

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

The residual result



Series: RGDP DEEP OPEN LENDING EXCHR INF

Lags interval: 1 to 2

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.737857	110.4174	82.49	90.45	None **
0.430774	55.52400	59.46	66.52	At most 1
0.368897	32.42143	39.89	45.58	At most 2
0.201347	13.54968	24.31	29.75	At most 3
0.082163	4.331705	12.53	16.31	At most 4
0.019718	0.816533	3.84	6.51	At most 5

Unnormalized Cointegrating Coefficients:

RGDP	DEEP	OPEN	LENDING	EXCHR	INF
2.03E-08	-0.001309	-0.011639	-0.007096	-0.000399	0.029089
1.82E-08	-0.006815	-0.003676	0.039388	-0.001874	-0.001557
-4.04E-08	-0.009812	0.010069	-0.032277	0.005870	0.004458
-3.26E-08	0.011879	0.001692	-0.019941	0.003261	-0.003540
-1.47E-08	-0.006041	-0.003499	0.014814	0.000699	-0.000497
2.85E-08	0.002195	0.000114	-0.006323	0.000997	-0.002553

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

RGDP	DEEP	OPEN	LENDING	EXCHR	INF
1.000000	-64358.44	-572212.5	-348836.6	-19635.45	1430035.
	(85191.5)	(138556.)	(334177.)	(28034.2)	(429295.)
Log likelihood	-1294.180				

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

RGDP	DEEP	OPEN	LENDING	EXCHR	INF
1.000000	0.000000	-649414.2	-870912.7	-2337.560	1745561.
		(241140.)	(977058.)	(51484.0)	(877707.)
0.000000	1.000000	-1.199557	-8.112007	0.268774	4.902635
		(1.43562)	(5.81688)	(0.30651)	(5.22540)
Log likelihood	-1282.629				

Normalized Cointegrating Coefficients: 3 Cointegrating Equation(s)

RGDP	DEEP	OPEN	LENDING	EXCHR	INF
1.000000	0.000000	0.000000	2546987.	-197860.6	-1115330.
			(1114290)	(72982.3)	(490957.)
0.000000	1.000000	0.000000	-1.798677	-0.092384	-0.381825
			(2.11927)	(0.13880)	(0.93375)
0.000000	0.000000	1.000000	5.263050	-0.301076	-4.405342
			(2.53384)	(0.16596)	(1.11641)
Log likelihood	-1273.193				

Normalized Cointegrating Coefficients: 4 Cointegrating Equation(s)

RGDP	DEEP	OPEN	LENDING	EXCHR	INF
1.000000	0.000000	0.000000	0.000000	-144292.2	-174132.3
				(73492.4)	(159976.)
0.000000	1.000000	0.000000	0.000000	-0.130214	-1.046497
				(0.08046)	(0.17514)
0.000000	0.000000	1.000000	0.000000	-0.190383	-2.460466
				(0.15830)	(0.34458)
0.000000	0.000000	0.000000	1.000000	-0.021032	-0.369534
				(0.03891)	(0.08470)
Log likelihood	-1268.584				

Normalized Cointegrating Coefficients: 5 Cointegrating Equation(s)

RGDP	DEEP	OPEN	LENDING	EXCHR	INF
1.000000	0.000000	0.000000	0.000000	0.000000	530779.2
					(713832.)
0.000000	1.000000	0.000000	0.000000	0.000000	-0.410363
					(0.78799)
0.000000	0.000000	1.000000	0.000000	0.000000	-1.530386
					(0.92387)
0.000000	0.000000	0.000000	1.000000	0.000000	-0.266786
					(0.23900)
0.000000	0.000000	0.000000	0.000000	1.000000	4.885304
					(5.77029)
Log likelihood	-1266.827				

Appendix 6:

Pairwise Granger Causality Tests
Date: 08/11/15 Time: 14:30
Sample: 1970 2013
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
DEEP does not Granger Cause RGDP	43	0.29028	0.59303
RGDP does not Granger Cause DEEP		0.10699	0.74530
OPEN does not Granger Cause RGDP	43	4.1E-05	0.99492
RGDP does not Granger Cause OPEN		0.06745	0.79641
LENDING does not Granger Cause RGDP	43	0.01495	0.90330
RGDP does not Granger Cause LENDING		0.00941	0.92322
EXCHR does not Granger Cause RGDP	43	5.45586	0.02460
RGDP does not Granger Cause EXCHR		0.32388	0.57247
INF does not Granger Cause RGDP	43	0.31936	0.57515
RGDP does not Granger Cause INF		0.21854	0.64269
OPEN does not Granger Cause DEEP	43	0.00059	0.98075
DEEP does not Granger Cause OPEN		0.12773	0.72268
LENDING does not Granger Cause DEEP	43	0.62092	0.43535
DEEP does not Granger Cause LENDING		3.54314	0.06708
EXCHR does not Granger Cause DEEP	43	0.81879	0.37095
DEEP does not Granger Cause EXCHR		0.32733	0.57044
INF does not Granger Cause DEEP	43	2.53012	0.11957
DEEP does not Granger Cause INF		2.87276	0.09786
LENDING does not Granger Cause OPEN	43	0.25709	0.61491
OPEN does not Granger Cause LENDING		0.17758	0.67572
EXCHR does not Granger Cause OPEN	43	0.11748	0.73358
OPEN does not Granger Cause EXCHR		1.99023	0.16605
INF does not Granger Cause OPEN	43	1.06785	0.30764
OPEN does not Granger Cause INF		3.26396	0.07835
EXCHR does not Granger Cause LENDING	43	0.00343	0.95362
LENDING does not Granger Cause EXCHR		1.93647	0.17174
INF does not Granger Cause LENDING	43	0.00012	0.99115
LENDING does not Granger Cause INF		0.59623	0.44456
INF does not Granger Cause EXCHR	43	0.38897	0.53638
EXCHR does not Granger Cause INF		0.74886	0.39200

DEEP does not Granger Cause RGDP	43	0.29028	0.59303
RGDP does not Granger Cause DEEP		0.10699	0.74530
OPEN does not Granger Cause RGDP	43	4.1E-05	0.99492
RGDP does not Granger Cause OPEN		0.06745	0.79641
LENDING does not Granger Cause RGDP	43	0.01495	0.90330
RGDP does not Granger Cause LENDING		0.00941	0.92322
EXCHR does not Granger Cause RGDP	43	5.45586	0.02460
RGDP does not Granger Cause EXCHR		0.32388	0.57247
INF does not Granger Cause RGDP	43	0.31936	0.57515
RGDP does not Granger Cause INF		0.21854	0.64269

Null Hypothesis:	Obs	F-Statistic	Probability
DEEP does not Granger Cause RGDP	43	0.29028	0.59303
RGDP does not Granger Cause DEEP		0.10699	0.74530
OPEN does not Granger Cause RGDP	43	4.1E-05	0.99492
RGDP does not Granger Cause OPEN		0.06745	0.79641
LENDING does not Granger Cause RGDP	43	0.01495	0.90330
RGDP does not Granger Cause LENDING		0.00941	0.92322
EXCHR does not Granger Cause RGDP	43	5.45586	0.02460
RGDP does not Granger Cause EXCHR		0.32388	0.57247
INF does not Granger Cause RGDP	43	0.31936	0.57515
RGDP does not Granger Cause INF		0.21854	0.64269
OPEN does not Granger Cause DEEP	43	0.00059	0.98075
DEEP does not Granger Cause OPEN		0.12773	0.72268
LENDING does not Granger Cause DEEP	43	0.62092	0.43535
DEEP does not Granger Cause LENDING		3.54314	0.06708
EXCHR does not Granger Cause DEEP	43	0.81879	0.37095
DEEP does not Granger Cause EXCHR		0.32733	0.57044
INF does not Granger Cause DEEP	43	2.53012	0.11957
DEEP does not Granger Cause INF		2.87276	0.09786
LENDING does not Granger Cause OPEN	43	0.25709	0.61491
OPEN does not Granger Cause LENDING		0.17758	0.67572
EXCHR does not Granger Cause OPEN	43	0.11748	0.73358
OPEN does not Granger Cause EXCHR		1.99023	0.16605
INF does not Granger Cause OPEN	43	1.06785	0.30764
OPEN does not Granger Cause INF		3.26396	0.07835
EXCHR does not Granger Cause LENDING	43	0.00343	0.95362
LENDING does not Granger Cause EXCHR		1.93647	0.17174
INF does not Granger Cause LENDING	43	0.00012	0.99115
LENDING does not Granger Cause INF		0.59623	0.44456
INF does not Granger Cause EXCHR	43	0.38897	0.53638
EXCHR does not Granger Cause INF		0.74886	0.39200

DEEP does not Granger Cause RGDP	43	0.29028	0.59303
RGDP does not Granger Cause DEEP		0.10699	0.74530
OPEN does not Granger Cause RGDP	43	4.1E-05	0.99492
RGDP does not Granger Cause OPEN		0.06745	0.79641
LENDING does not Granger Cause RGDP	43	0.01495	0.90330
RGDP does not Granger Cause LENDING		0.00941	0.92322
EXCHR does not Granger Cause RGDP	43	5.45586	0.02460
RGDP does not Granger Cause EXCHR		0.32388	0.57247
INF does not Granger Cause RGDP	43	0.31936	0.57515
RGDP does not Granger Cause INF		0.21854	0.64269

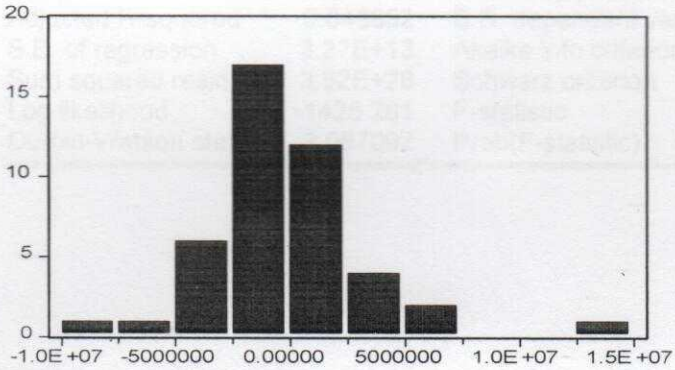
Appendix 7: ON BANK CREDIT TO PUBLIC AND PRIVATE SECTOR

Dependent Variable: RGDP
Method: Least Squares
Date: 08/11/15 Time: 14:32
Sample: 1970 2013
Included observations: 44

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	626606.1	683595.5	0.916633	0.3647
PRIVATE	1.888939	0.231476	8.160416	0.0000
PUBLIC	-453.3058	234.0712	-1.936615	0.0597

R-squared	0.786505	Mean dependent var	2135488.
Adjusted R-squared	0.776090	S.D. dependent var	5562937.
S.E. of regression	2632331.	Akaike info criterion	32.47038
Sum squared resid	2.84E+14	Schwarz criterion	32.59203
Log likelihood	-711.3484	F-statistic	75.52089
Durbin-Watson stat	2.085395	Prob(F-statistic)	0.000000

Appendix 8: Normality test



Series: Residuals	
Sample 1970 2013	
Observations 44	
Mean	-2.82E-09
Median	-222272.3
Maximum	14502781
Minimum	-8092314.
Std. Dev.	3650459.
Skewness	1.252736
Kurtosis	7.469308
Jarque-Bera	48.12885
Probability	0.000000