Volume 13 Issue 27
Originally issued as C9



Global Journal of Management and Business Research
Finance
Volume 13 Issue 9 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

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GJMBR-C Classification : *JEL Code: G01, F65*



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An Empirical Analysis of Trends in Financial Intermediation and Output in Nigeria

Andrew O Agbada[α] & Osuji C.C.[σ]

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I. Introduction

The attainment of a steady, viable and speedy economic development in any nation is essentially a function of the availability of monetary assets in the economy. Sanusi (2002), opined that the 'availability of investible funds is a key factor in the growth process of any economy. Although not a sufficient condition, resource availability is certainly a necessary condition for output and employment growth. Indeed, there is ample evidence to show that countries that have enjoyed or are enjoying economic prosperity have been linked with an efficient mechanism for mobilizing financial resources and allocating same for productive investment.' Efficiently managed financial intermediation process contributes immensely to a vibrant financial system, higher levels of output, employment, and income and through that enhances the living standards of the citizenry. This no doubt explains why special attention is being focused on financial intermediation by economic players in recent times. By definition, Financial Intermediation is a process whereby a financial intermediary such is a bank mobilizes and con-solidates bank deposits and transforms the mobilized or consolidated deposit money into bank credits, usually loans and overdraft. It is simply the process of taking in money from depositors and then lending same out to borrowers for investment and other economic deve-lopment purposes. The process allows financial institutions acting as intermediaries channel funds from surplus eco-nomic units (individuals and firms having surplus savings) to deficit economic units (firms and businesses in need of funds to carry out desired business activities). Relatively, it involves the conversion of bank largest liabilities (deposit liabilities) to bank largest interest earning assets (bank credits which includes majorly loans and overdrafts).

It is very obvious that the definitions of financial intermediation above are structured around financial Institutions commonly referred to as 'financial intermediaries' and from that, we deduce that the intermediaries are central institutions for economic growth and development. This brings to fore their importance. In its broad sense, the term 'financial intermediary' does not only refer to banks as it is often being misconstrued, may be, for reason that overwhelming proportion of business funds financed externally comes from banks but also integrates all financial institutions that play intermediary roles in an economy. This rather new scholarly thinking is the fallout of the financial crisis of 2008 – 2009 that compelled management scholars to attempt to redefine financial intermediation in a more comprehensive manner to embrace all and sundry institutions. According to Nicola, Benjamin and Lindsay (2012), a new narrative has emerged, describing intermediation as a decentralized rather than a bank-centered system, one in which the matching of the supply of and demand for funds occurs along an extended credit intermediation chain, with specialized markets and non-bank institutions playing a part along the way'. What is common and of great interest in these definitions is the determinant of the endogenous components of the process; the deposits mobilized in the form of Demand Deposit, Time deposits and Savings deposit as well as funds application or allocation in the form of Loans and Overdraft. From the foregoing were financial intermediation variables derived which include Demand

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Deposit (DD), Time/Savings deposits (T/Sav) and Loans/Overdraft (L/O).

The concept of Output is absolutely important in the field of macroeconomics, essentially, as it relates to the economy of nations. Output is defined as the quantity of goods and services produced in a country at a given period of time, whether consumed or used for further productive investments. It may also be defined as the total value of all goods and services produced in a country in a given period of time, usually a year. Officially, Gross Domestic Product (GDP) is the most popular measure of the output of a country. GDP indicates the market value of all officially recognized final goods and services produced within a nation at a specified time period. The relevance of GDP in every economy cannot be overemphasized because it is the major indicator of a country economic growth and the living standard of its citizens. Indeed, the best index to understand a country's economy is by looking at its output in terms of Gross Domestic Product (GDP). By global standard, it is output that shows how rich and viable a country is economically, thus a country may be said to be in recession if its output (GDP) growth is negative for three consecutive years and when critically assessed, three consecutive quarters.

a) Statement of the Problem

There seems to be a consensus in theoretical and empirical literatures that financial development can influence and foster output development, that there is a visible correlation between financial intermediation and economic growth, economic growth being synonymous to Output or GDP growth and that financial intermediation facilitates the efficiency of the financial system of any nation. These core economic facts appear to be eluding the Nigerian situation because the Nigerian banking industry in recent times has undergone series of financial turbulence and capital adequacy problems, the consequences of which appear to cast doubts on the role of financial intermediation on the economy. From the foregoing, this paper seeks to analyze empirically the trends in Financial Intermediation and Output (GDP) in Nigeria from the banking crises period beginning from 1981 to 2011. In doing so, the study used the endogenous components of financial intermediation such as Demand Deposits (DD), Time/ Savings deposits (T/Sav) and Credits (Loans and Overdraft) as explanatory variables to predict the outcome of our dependent variable Output (GDP).

b) Limitation of Study

The study though has implications for global economy as a result of the interplay between economics aggregates such Deposits, Savings, Credits and Output in every nation's economy, it is however limited to the Nigerian economy as data employed in our regression estimations sourced from the Statistical Bulletin of the Central Bank of Nigeria (CBN), 2011 relates solely to the Nigerian economy.

c) Hypothesis

To enable us make justifiable inferences, the following null hypothesis will be tested using our regression estimation results.

Ho1 : There is no significant relationship between Financial Intermediation and Output (GDP) in the Nigerian.

This concludes the introductory aspect of this study and the rest of this paper is organized as follows. Section 2 reviews related literatures to the study, section 3 presents the research methodology and model specification, section 4 deals with data presentation, graphic representation and analysis of empirical results while section 5 is summary, conclusion and recommendations.

II. Review of Related Literatures

Deductions from theoretical and empirical literatures have vividly evidenced that financial development can influence output development and that financial intermediation is crucial to the functioning of the financial system of any nation, acting as a pivotal instrument of economic growth. Thus the efficiency of the financial system of every nation could be said to hinge largely on financial intermediation process because it plays very vital and proactive roles in ensuring capital accumulation necessary for productive investments and development As a matter of fact, the global financial system and the business of banking in particular flourishes on financial intermediaries' abilities to receive deposit at low interest rate and lend them at a pretty higher rate of interest to businesses. Precisely, this is the fundamental function of financial intermediation. The economic role of financial intermediaries in acting as conduit for the conversion of deposit liabilities mobilized at low interest rates into monetary assets for financing productive investments obtained at relatively high rates of interest is crucial for economic development and growth, particularly that it creates a wide profit margin that allows for the sustenance of banking business and serve as a source of funding for businesses. According to Nieh et at (2009), financial intermediation drives economic growth. Ho (2005) reinvigorates McKinnon (1973) and Shaw (1973) argument that financial development can foster economic growth by raising savings, efficiently improving the allocation of loanable funds and promoting capital accumulation. Yours truly, the concept of financial intermediation has attracted discussions at various sphere of financial studies that there appear to be a consensus in theoretical and empirical literatures that it has some underlying economic functions at both the macroeconomic and microeconomic levels.

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A number of research studies that have been focused on financial intermediation and economic growth; economic growth being synonymous to growth in output or GDP, evidenced a positive correlation between the duos. For instance: Shittu (2012) referring to Schumpeter (1911), concurred that the services provided by financial intermediaries --- mobilizing savings, evaluating projects, managing risk, monitoring managers, and facilitating transactions are essential for technological innovations and economic development. On his part, Odedokun (1998), in his analysis of seventy one Less Developed Countries (LDCs) for the period 1960 to 1980 contend that even though financial intermediation promotes economic growth, the growth-promoting effects are more pronounced in the low-income countries. To what extent this finding is justified is not intended to be argued here but the underlying fact is that financial intermediation influences output positively in terms of economic growth. Levine, Loayza, and Beck (2000) appear to re-invigorate the debate on the relationship between financial intermediation and economic growth on a new path. In their research study on the impact of the endogenous component of financial intermediation on economic growth which consisted of two models, they vehemently affirmed that there is a strong positive relationship between the endogenous components of financial intermediation and economic growth but noted that countries with high priority for creditors' protection, strong will to enforce contracts, and unambiguous accounting standards have the potential for a developed financial inter-mediation.

Financial intermediation provides a range of portfolio options for savers with surplus funds and financial intermediaries as well. Financial intermediaries are able to augment their capacity to finance businesses and contribute positively to the economy in general through the process. The economics of financial intermediation are structured and based on the fundamental roles of financial intermediaries. Besides pooling the resources of small savers and efficiently allocating same to deficit economic units for productive investments, financial intermediaries provide safe-keeping modalities for real money balance in deposit accounts and facilitate transaction, exchange and specialization. They provide liquidity and operate the payments system of nations. Liquidity defined as the readiness of an asset to be easily and cheaply converted to a means of payment; provision of liquidity is said to arise when financial intermediaries transform various financial assets into a means of payment through the use of debit/ATM cards and negotiable instruments such as cheques employed as payment device. From these roles of financial intermediaries endue by financial intermediation process, we may want to conclude that financial intermediation supplies recourses to brace the provision of liquidity to business firms and so acting, rejuvenates the entire economy. In the words of Holmstrom and Tirole (1998), financial intermediation stimulates the funding of liquidity needs through credit lines.

Benston and Smith (1975) posit that financial intermediation mitigates the costs associated with information acquisition and the conduct of financial transactions. Information acquisition and the conduct of financial transactions are some other excellent roles of financial intermediaries operating within the financial systems of nations. Financial Intermediaries role in reducing costs associated with information acquisition and the conduct of financial transaction may come in several ways. For instance, a banking institution investigates a potential firm's credit proposal and financial statement before lending and since that is an area of specialization for banks, there is the likelihood that the cost of obtaining such information will reduce drastically, their expertise being brought to bear. Again, Banks have the duty of monitoring credit facilities granted and once the loan is granted, the bank has the responsibility to ensure that the borrower does not engage in risky activities that could lead to default and in this way financial loss is being mitigated. Besides, requesting potential borrower to pledge assets as collateral security to fall back on or cushion the effect of default does not only scale down credit risk but also protects the bank from total financial loss and eliminate or reduce moral hazard problems. Moreover, financial intermediaries, especially banks, ethically act prudently as experts in collecting and processing information in order to accurately gauge the operational and allied risks of various transactions and investments and to price them accordingly. Expressly or impliedly, these economic roles of financial intermediaries performed through the process of financial intermediation are aimed at influencing or enhancing output in a number of ways.

Basically, the relationship between the endo-genous component of financial intermediation, parti-cularly the Deposit elements and Output can best be explained from the fact that deposit funds are the primary source of capital accumulation. The magnitude of mobilized deposits available as capital funds influences and determines the level of investments; boosts economic activities and subsequently causes growth in the level of output. Quijano and Quijano (2003) put it this way; the interactions between output and capital have two important relations in the long run: the amount of capital determines the amount of output being produced and the amount of output determines the amount of saving, investment and accumulated capital. The other endogenous component of financial intermediation that strongly influences output is banking credits (loans and overdraft). Based on theoretical evidences, they contribute immensely to the productive capacity of an economy in several ways. In developed

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and emerging economies banking system credits spurs innovative economic development by financing productive investments, provides real money balance which constitutes a major source of liquidity that facilitates and lubricates business transactions and perhaps, specialization. Agbada (2010) opined that banking system credit plays a very significant role in businesses and even in financing government investment. Credits are used to facilitate commerce, manufacturing, construction, and mining and provide capital for Small and Medium Enterprises (SMEs) in an attempt to enhance growth in the economy.

III. Research Methodology

a) The Model Variables

It may be necessary to reiterate here that the Nigerian banking industry in the last three decades has undergone series of financial turbulences: capital adequacy problems, distresses, liquidations, global financial crisis, rescue mission, outright buyout, merger and acquisitions, the consequences of which appear to cast doubts on the role of financial intermediation in the economy. Thus, in this study, we attempt to analyze empirically the trends in Financial Intermediation and Output (GDP) in Nigeria from the banking crises period beginning from 1981 to2011. It used the endogenous components of financial intermediation such as Demand Deposits (DD), Time/Savings deposits (T/Sav) and Credits (Loans and Overdraft) to predict the outcome of our response variable Output (GDP).

From the foregoing were our independent or explanatory variables adopted which are the endogenous components of financial intermediation, namely, Demand Deposit (DD), Time/Savings deposits (T/Sav) and Loans/Overdraft (LOD). The dependent or explained variable is Output measured in terms of Gross Domestic Product (GDP). Universally, GDP is the indicator of the market value of all officially recognized final goods and services produced within a nation at a given period of time. The data obtained for these variables were analyzed or computed using IBM Statistical Package for Social Science (SPSS) Statistics 20.

b) Theoretical Framework and Model Specification

We utilized Multiple Linear Regression (MLR) equation to provide the formula for the line of best fit for our empirical model. Our choice of MLR is borne from the fact that it is a statistical technique that uses several explanatory variables to predict the outcome of a response or dependent variable and it models the relationship between the explanatory and response variables. In general terms the relationship between the variables may be stated as shown in equation 1below.

$$Y = f(X_1, X_2, X_3) \quad (1)$$

Where: Y = The dependent variable; representing Output (GDP) and

X_1; X_2; X_3 = The independent variables being represented by the endogenous components of financial intermediation namely; Demand Deposit (DD), Time/Savings deposits (TSav) and Loans/ Overdrafts (LOD) respectively.

From theories, we deduce that MLR model takes a group of random variables and tries to find a mathematical relationship between them, creating a linear relationship in the form of a straight line that best approximates or fit all the individual data points. Oaikhenan and Ojamieruaye; (2001;53) opined that there exist a stochastic relationship between a variable Y and a set of other variables (say, X_1; X_2; X3……..X_n); that the Y referred to as the dependent variable could be explained in terms of other observed variables, (X_1; X_2; X_3; ……..; X_n) known as the independent variables, and an unobserved random disturbance term usually denoted by u'. From the foregoing, a general Multiple Linear Regression (MLR) model may be written as shown below in equation 2.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots + \beta_n X_n + u \quad (2)$$

Where: Y = Dependent variable representing Output (GDP) in this study β_1; β_2 …… β_n = Independent variables' coefficient, in this study, the parameters for DD, TSav and LOD representing the endogenous components of financial inter-mediation.

β_0 The intercept. The intercept represents the expected value of the dependent variable (Output) when all the independent variables assume zero as value.

u = Random disturbance.

Our empirical analysis formula in this study is modeled after equation 2 above, In it, we attempt to use our explanatory variables, the endogenous components of financial intermediation, namely, Demand Deposits (DD), Time/Saving deposit (TSav) and Loans and Overdraft (LOD) to predict the outcome of our response or dependent variable Output (GDP). For ease of discussion, these explanatory variables have been classified into two broad groups --- 'Deposits and Credits'; 'Deposits' combines Demand deposit, Time deposit and Savings deposits and Credits refers majorly to Loans and Overdraft. Deposits and Credits are vital and effective ingredients of Output growth as here under evaluated.

From theoretical literatures, we deduced that Deposits have extremely strong impact on Output, though the relationship appeared indirect in the sense that Deposits and Output relates in terms of the interaction between Output and accumulated Capital needed to finance the productive sector of the economy. While it is agreed that Demand Deposit is

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essentially meant to serve the liquidity needs of businesses, the unused proportion of it together with Time and Savings deposits constitute the primary sources of accumulated Capital funds for entrprenurs. The magnitude of accumulated Capital available for productive purposes positively influences the magnitude of Output that could be produced. In other words, the higher the accumulated Capital, the higher the Output produced. Reciprocally, in a cyclical manner, it is also true that the magnitude of Output produced has positive impact on the amount of Savings and other economic activities and subsequently on capital accumulation, and in turn, further higher Output. This phenomenon is responsible for the gradual, steady and continuous economic growth of emerging and developed economies. Okorie and Uwaleke (2010) argued that the financial systems that are more effective at pooling the savings of individuals can profoundly affect economic development; better savings mobilization impact positively on capital accumulation and that can improve resource allocation and boost technological innovation.

On the other hand, availability of banking system credits in the form of advances, loans and overdraft have profound impact on the real economy. Emerging modern economies of the world are credit economies. Advancement in technological innovations and complexity of modern businesses have made transactions to be facilitated by a number of credit instruments such commercial papers, documentary letter of credit, leases, bonds, banker acceptance, bill dis-counting, electronic credit cards et cetera. For its ability to boost economic activities and facilitates transactions, banking system credit is now being regarded as the oil in the wheels of commerce and industry. It constitutes a major source of liquidity for financing businesses in general and aids households in their bid to satisfy their consumption needs. Theoretical and empirical evidences exist to affirm that a significant change in the volume of credit has the ability to cause a positive and significant change in Output produced. Nzotta (2004) was affirmative on this and concludes that bank credits influence positively the level of economic activities in any country. It influences what is to be produced, who produces it and what quantity is to be produced. Banking system credit affects and alters the level of money supply in an economy. It is the most important source of bank income and it promotes the activities of bank and non-bank financial institutions, thus, it influences the level of growth of the financial system. It also affects aggregate output and productivity, the pattern of production, the efficiency of entrepreneurship and the realization of aggregate economic performance, development and growth.

Based on the foregoing we specify an empirical model to link our dependent or explained variable, Output (GDP) and our independent or explanatory variables; Demand Deposit (DD) Time/Saving deposit (TSav) and Loans and Overdraft (LOD) as below:

$$GDP = \beta_0 + \beta_{1DD} + \beta_2 TSav + \beta_3 LOD + u \quad (3)$$

Where: GDP = Gross domestic product (Output)

DD = Demand Deposit; TSav = Time/Savings deposit; and LOD = Loans/Overdraft

β1; β2; β3 = Independent variables' coefficient, that is, the parameters for DD, TSav and LOD representing the endogenous components of financial intermediation.

β0 The intercept. The intercept represents the expected value of the dependent variable (Output) when all the independent variables assume zero as value.

u = Random disturbance;

The apriori expectations with respect to signs are: $\beta 0 > < 0$; $\beta 1 > 0$; $\beta 2 > 0$ and $\beta 3 > 0$

c) Statistical Parameters for the Interpretation of our Empirical Results

The empirical results obtained from the regression estimation were interpreted using;

i. The Pearson Correlation coefficient which serves to measure the strength of linear relationship between variables.

ii. The t-test coefficients of the independent variables which attest to the individual significance of the independent variables,

iii. The adjusted R square (R2) referred to as the coefficient of determination. Barenson and Levine (1998), affirmed that R2 measures the proportion of variation that is explained by the independent variables in the regression model and

iv. The F-statistics of the Analysis of Variance (ANOVA). The F-statistics indicates the overall significance of the model, that is, it shows the general or overall effect of all the independent or explanatory parameters on the dependent or explained variable. According to Oaikhenan and Udegbunan (2005), F – statistics enables us compare the magnitude of the difference between two quantities. The question we seek to answer in ANOVA is: is the magnitude of this difference enough to lead us to dismiss the null hypothesis as untrue?

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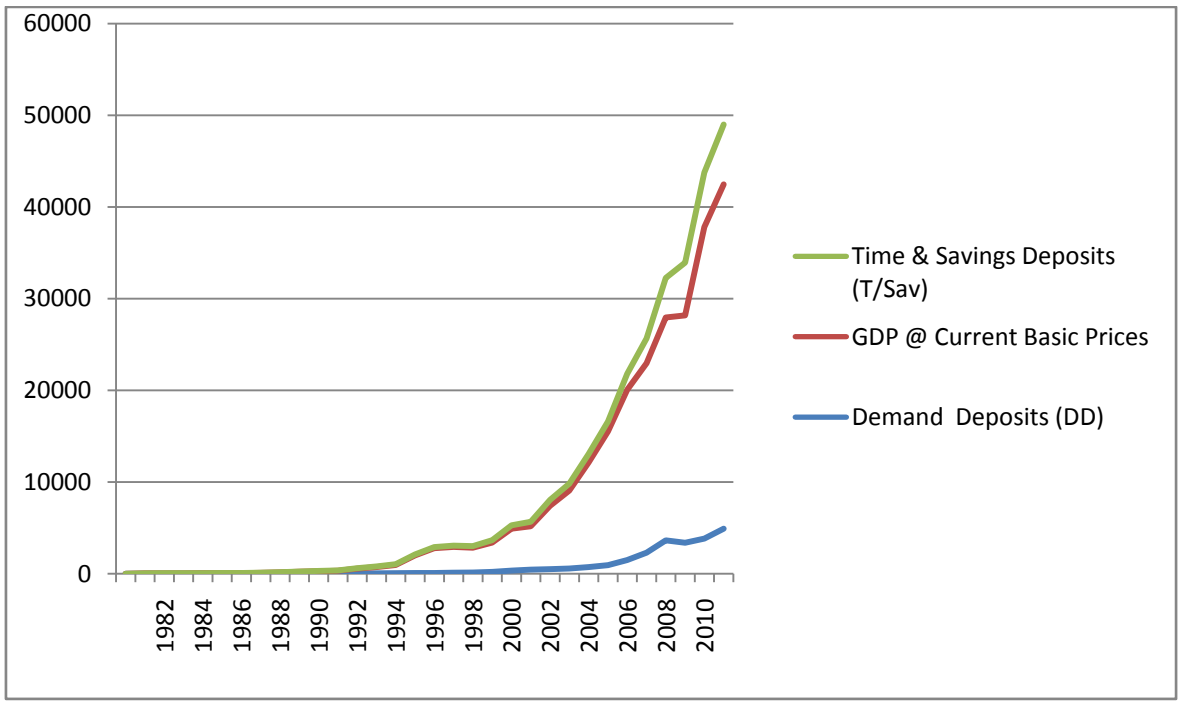
IV. Data Presentation and Empirical Analysis

a) Data Presentation

Our data are presented on a tabular form as per table 1 in the appendix and subsequently patterned graphically to showcase the trends in financial intermediation endogenous variables and Output (GDP) as per figures 1 and 2 below.

i. *Graphic Representation of Data*

Our empirical model in equation 3 above has altogether four variables, namely, GDP, Demand deposit, Time/Saving deposit and Loans and Overdraft. The data for these variables are as presented in table 1 above. Owing to the limitation of our computer software (window 7 ultimate) used for computing the graphic representation, all four variables could not be presented at once, but three of the four variables are displayed on each graph at a time. Thus, we present two graphs to comprehensively drive home our views.



Source : Author's graphical representation, 2013

Figure 1 : GDP; Demand Deposit and Time/Savings Deposit

The graphic representations of data obtained yielded robust results that stimulated interest and discussion on two fundamental economic view points. First, it reflects the true state of the Nigerian economy for the period under review. Umoh (2005) ascertained that the banking sector in Nigeria experienced severe distress in the late 80s and early 90s and that the prolonged oil glut that started in mid 1981 resulted in economic down turn such that the financial condition of firms and individual worsened. The resultant consequences were that firms were unable to honour their contractual obligations of loan repayment to banks, thus impairing bank's portfolio quality, leading to asset impairment and write-offs'. This low state of the economy between 1981 and 1994 is clearly visible in figure 1 as all the variables on zero dragged along x-axis indicating that financial intermediation and output growth were also impaired during this period. The boom in the activities of banks took effect with the implementation of some economic reforms. Umoh (2005, 8/9) contends 'that The Structural Adjustment Programme (SAP) introduced in 1986 led to the robust growth rate of the Gross Domestic Product (GDP) which averaged 6.8 percent annually from 1988 to 1992. By 1999, the total assets crossed the trillion naira mark while deposits crossed same mark in 2001. By the end of 2004, total deposits stood at N1.8 trillion while total assets had significantly increased to N4.04 trillion.' Umoh's assertion perfectly conformed to the simultaneous upward movement of all variables in the graphs from 1999, depicting that increased economic activities culminated into higher amounts of mobilized deposits and that transformed into higher amount of accumulated capital funds most needed to boost the level of investments and subsequently cause growth in the level of Output.

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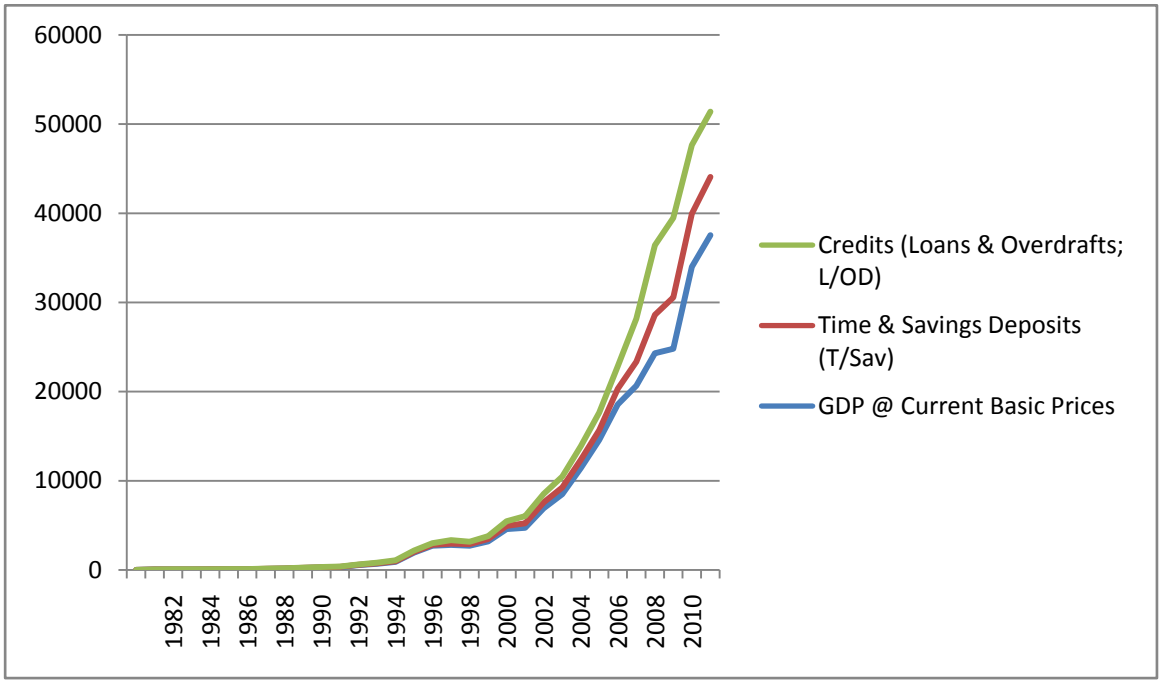

Source : Author's graphical representation,2013

Figure 2 : GDP; Time/Savings deposit (TSav) and credits (loans/Overdraft (LOD)

In addition to the aforementioned economic scenario, the 2004 re-capitalization reform also reinvigorated competiveness in banking business that resulted in rapid growth of financial intermediation, vis a vis, growth in Deposits and Credits with the ultimate goal of achieving corresponding growth in Output. As a matter of fact, one variable that experienced awesome growth but whose growth was threatening to economic realities was Credits granted by banks. The gains of re-capitalization appeared to have been utilized to advance credits channeled majorly to the private sector for consumption. This is evidenced by the growth characteristics of credits which as figure 2 shows grew faster than other variables in the model. CBN Statistical Bulletin (2007) revealed that the aggregate credit (net) disbursed by Banking Service Providers (BSPs) to the domestic economy in Nigeria grew from N171,071.00 million in 1992 to an astronomically high figure of 5,857,572 million, with credit to the Federal Government standing at on a negative balance of N9,954,984 million in 2007. Specifically, the records showed that an inconceivable large sum of N15,558,801 million (over 15 trillion in real terms) representing the largest proportion of total credits was channeled to the private sector alone. In economic forum, funds channeled to the private sector are usually for consumption, thus portraying that the Nigeria economy is consumption based. Agbada (2010, 34) observed from available records that Nigerian banks presently find solace in lending to private salary earners rather than lend to companies and SMEs operating under stress of inadequate infrastructures, poor roads, epileptic power supply, inadequate water supply et cetera. As a result, majority of bank products these days are aimed at individuals. These come in the form of personal loans, utility loans auto loans, asset acquisition loans, LPO finance, Cash-Overdraft-Against-Salary-Treasure (COAST) et cetera. Consumption centered economy negates Cobb-Douglass production function and cannot influence Output or economic growth favourably. This may explain why GDP had the smallest growth rate in figure 2. It may be noted that the variables in figure 2 completely reflects the trend in financial intermediation and output in Nigeria and from their simultaneous growth characteristics, we may deduce that financial intermediation influences Output in Nigeria.

Secondly, the graphic representations conformed excellently to the theoretical literature reviewed. We stated earlier that demand deposits are essentially to meet liquidity needs of businesses and for that reason; its contribution to accumulated capital is minimal. This coupled with the frequency of demand; DD exhibited dwindling growth characteristics all through the period under review as shown in figure 1. The non concurrent growth characteristic of DD and GDP may be interpreted to mean the exclusion of DD from funds utilized as capital funds for investment and productive purposes, thus having minimal effect on Output (GDP).

Finally, on a critical survey, it is observed that all the variables in the graphs exhibited slight distortion, downward movement in 2008, picking again in 2010.

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This no doubt, reflects the recessional effect of the global financial crises commonly referred to as 'global meltdown'. It indicates that the slight downward growth of financial intermediation caused by the global financial crisis influenced a downward growth in output also; asserting the responsiveness of the effect of changes in financial intermediation on Output. From the foregoing, we deduce again that financial intermediation has significant and positive influence on Output (GDP) in Nigeria.

b) Empirical Analysis

i. *Pearson Correlation Coefficient Matrix*

Table 2 below presents Pearson correlation coefficient matrix for all the variables. Correlation coefficients serve to measure or attest to the strength of the linear relationship between the variables.

Table 4. 2 : Pearson Correlation Coefficient Matrix of variables

	GDP	DD	TSav	LOD
GDP	1.000			
DD	0.975	1.000		
TSav	0.962	0.988	1.000	
LOD	0.943	0.974	0.980	1.000

Source : Author's computation using IBM SPSS Statistics 20; 2013

The correlation coefficients of all the variables are very high, indicating that there exists a strong linear relationship between them. These statistics suggests the existence of a strong linear relationship between Output and the independent variable, Demand Deposit (DD), Time/Savings deposits (TSav) and Loans/Overdrafts (LOD) on one hand and there also exists a strong linear relationship between the independent variable on the other hand . The least of the coefficients is that between Loans/Overdraft (LOD) and Gross Domestic Product (GDP). It stood at .943, meaning that the linear relationship between LOD and GDP is 94.30%. This conforms to apriori expectation and suggests that a significant change in the volume of credit has the ability to cause a positive and significant change in Output produced.

The most outstanding and probably the most significant correlation coefficient is that between Time/Saving deposits and Demand deposit. This remarkable coefficient stood at .988 indicating that these two endogenous variables of financial intermediation are strongly related and 98.80% interwoven, meaning that their interaction is significant to capital accumulation and thus to output growth. Between the least coefficient of .943 and the outstanding coefficient of .988 lie all other coefficients and these statistics indicate the existence of strong linear relationship between the variables. Based on these relatively high correlation coefficients between the variables, we reject the Null hypothesis of no relationship and accept the Alternative hypothesis of a relationship. We therefore conclude that there is a strong linear relationship between financial intermediation and Output (GDP) in Nigeria.

ii. *Regression Analysis: Hypothesis Testing*

The empirical results for this study are as displayed below in tables 4.3 to 4.5. In our regression estimation, Output (GDP) was regressed on its determinants, the endogenous components of financial intermediation, namely, Demand Deposit (DD), Time/ Savings deposits (TSav) and Loans/Overdrafts (LOD). As earlier mentioned, the t-test coefficients, the coefficient of determination, R square (R2) and F-statistics parameters serves to test our hypothesis. It states thus:

Ho1: There is no significant relationship between financial intermediation and output (GDP) in the Nigerian.

Table 4. 3 : Coefficients (a)

Model	Unstandardized coefficients		Standardized coefficient	T	Sig.
	B	Std Error	Beta		
1(constant)	1398.621	522.133		2.679	.012
DD	8.452	2.199	1.073	3.843	.001
TSav	.153	1.771	.027	.086	.932
LOD	-.506	.852	-.128	-.594	.557

Source : Regression Analysis Report using IBM SPSS Statistics 20 Dependent variable: GDP

Table 4. 4 : Model Summary (b)

Model	R	R. squared	Adjusted R Squared	Std Error of the Estimate	Durbin Watson
1	.975 a	.951	.946	2481.056	.814

Source : Regression Analysis Report using IBM SPSS Statistics 20

a. Predictor (constant), LOD, DD, Tsav

b. Dependent Variable GDP

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Table 4. 5 : ANOVA (a)

Model	Sum of Squares	df	Mean Squares	F	Sig.
Regression	3250953790.603	3	1083651263.534	176.042	.000 b
1 Residual	166202234.171	27	6155638.303		
Total	3417156024.774	30			

Source : Regression Analysis Report using IBM SPSS Statistics 20

The empirical results obtained from our regression estimation showed overall significance of the model; however, the parameters of some of the explanatory variables appear controversial. The co-efficient of Demand Deposit (DD) at 8.452 is the best in the model but it is in a way controversial in the sense that it is theoretically believed that a large proportion of demand deposit is essentially meant to meet liquidity needs of business firms. The coefficient exhibited a positive sign and it is greater than zero in value. That result coupled with a t-test parameter of 3.843 suggests that it could be considered as being very relevant to policies that are formulated to affect Output (GDP). Never-the-less, the result has its significance and that may be derived from the fact that the Management of banks seldom employs the Pool-of-funds strategy in allocating available resources to the various classifications of bank assets. The fundamental principle of this strategy is that funds from all available sources are gathered together to form a pool and from the pool, allocations are made to various economic units or asset groups. The implication of this is that since the Pool-of-funds strategy emphasizes priorities stated in general terms, the proportion of DD in the pool may have contributed immensely to accumulated capital utilized for investment purposes and this may be significantly huge enough to influence Output positively.

The coefficient of Time/Savings deposits variable exhibited a positive sign and with a positive t-test parameter of .086, suggests that Time/Saving deposit (T/Sav) can be considered as being relevant to policy formulated to affect Output. Indeed, the positive sign conforms to apriori expectation, thus affirming the theoretical assertion that Time deposit and domestic Savings are the primary source of Capital accumulation. However, the variable failed the test of statistical significance at all significant levels and thus casting doubts on its relevance to policies that are formulated to affect Output (GDP).

More controversial is the empirical result exhibited by Loan/Overdraft (LOD) variable. The co-efficient of LOD variable and the t-test parameter of -.594 exhibited negative signs in this regression estimation suggesting that Loans and Overdraft cannot be relevant to policy that are formulated to affect Output. This empirical finding counters apriori expectation absolutely. The result brought to fore the implication of inefficient allocation of bank resources particularly mobilized deposit funds being transformed to loans through the process of financial intermediation. CBN Statistical Bulletin (2007) indicated that the banking system credits granted to only the Private sector of the Nigerian economy grew from 76,098.7 million in 1992 to a tremendous sum of N15,558,801 million in 2007, that is, over fifteen trillion naira. This represents the largest proportion of total credits disbursed to the domestic economy in Nigeria. The private sector in Nigeria consists mainly of private companies, Small and Medium Enterprises (SMEs) and households and since private companies and SMEs lack necessary collateral to secure bank loans, it could be deduced that over fifteen trillion naira credits were channeled to house-holds who are salary earners for consumption. This portrays the Nigeria economy as consumption based. From theoretical literatures, a consumption centered economy negates Cobb-Douglass production function and cannot influence Output or economic growth favourably. Viewed from this perspective, there are therefore ample reasons why the LOD variable failed the test of statistical significance at all significant levels. The results may be the subtle reflection of the Nigerian economy and that calls for policy reforms to correct the trend. With the t–statistics of -.594 in this regression estimation, LOD cannot be considered as being relevant to policies that are formulated to affect Output (GDP).

However, we found solace in the empirical results exhibited by the coefficient of determination, the R square (R2). The R2 coefficient of the model stood at .951 and that indicates that the explanatory variables accounted for 95.10% of systematic variations in Output GDP. In other words, 95% of the dependent variable, GDP, was explained by the independent variables namely, Demand Deposit (DD), Time/Savings deposits and Loan/Overdraft (LOD). This outstanding result is complemented by an equally good F–Statistics result. The F-statistics shows the overall significance of the estimated model and for this study, the F – statistics of the model stood at 176.042, the magnitude of which is considered huge enough to reject the null hypothesis of no relationship and accept the alternate hypothesis of a relationship. Based on the R square (R^2) and F-Statistics results, we conclude that the estimated model passed the test of overall significance at all significant levels.

V. Summary, Conclusion and Recommendation

This research study is an empirical analysis of the trends in Financial Intermediation and Output in Nigeria from the banking crises period beginning from 1981 to 2011. As an economic phenomenon, the

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process of financial Intermediation involves the transformation of mobilized deposits by financial intermediaries such as banks into credit facilities such as loans and overdraft for productive purposes. Thus, the study explained the impact of financial intermediation on Output (GDP) using the endogenous components of Financial intermediation such as Demand Deposits (DD), Time/Savings deposits (T/Sav) and Credits (Loans and Overdraft) as explanatory variables. Data for the empirical estimation were sourced from CBN statistical Bulletin, 2011, presented first in a tabular form and subsequently patterned graphically to visibly showcase the trends in the variables and the regression estimation was carried out using IBM SPSS statistics 20. Generally, the findings from both the graphic representation and the empirical analysis were quite robust; however some parameters of our explanatory variable especially, LOD counters apriori expectation which appear to cast doubts as to LOD relevance in formulating policy that could affect Output (GDP). However, viewed from another angle, LOD variable though failed the test of statistical significance at all significant levels may be the subtle reflection of the Nigerian economy which calls for policy reform. That-not-withstanding, the R2 coefficient of the model stood at .951 and that indicates that the explanatory variables accounted for 95.10% of systematic variations in Output (GDP) and the F-statistics which shows the overall significance of the estimated model stood at 176.042, the magnitude of which is considered huge enough to reject the null hypothesis of no relationship and accept the alternate hypothesis of a relationship.

In conclusion, these empirical findings clearly indicate that there is significant relationship between financial intermediation and Output (GDP) in Nigeria but whatever strategy that is being adopted for the allocation of resources in the form of credit facilities must be reviewed. The implication of the lopsided distribution of banking system credit to favour households in the Nigerian economy negates the principle of Cobb-Douglass production function because credits targeted at consumption do not impact or influence Output or GDP growth as other factors of production do.

Based on the forgoing, we strongly recommend that all economic stakeholders, monetary and regulatory authorities in particular should combine efforts and formulate policies aimed at improving financial intermediation process and entrench modalities for reversing the consumption-based economy in order to achieve favourable productive-based economy and viable growth of GDP. Such policies must include ways and means of effective implementation, monitoring and sanction on erring operators particularly with respect to credit allocation. The need for government to ensure the existence of a vibrant and an efficient financial system that promote financial intermediation process cannot be overemphasized. Besides, with the advent of modern technologies in businesses, the workforce must consistently be trained and retrained to brace up with new and innovative ideas on modalities and methodology of allocating available recourses for productive purposes.

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Appendix

Table 4. 1 : Output (GDP), Demand deposit, Time/Savings deposit and Loan/Overdraft data; 1981 - 2011

Years	Demand Deposits (DD) N' Billion	GDP @ Current Basic Prices N' Billion	Time & Savings Deposits (T/Sav) N' Billion	Credits (Loans & Overdrafts; L/OD) N' Billion
1981	4.88	47.62	5.80	8.58
1982	5.18	49.07	6.84	10.28
1983	5.86	53.12	8.08	11.09
1984	6.34	59.62	9.39	11.50
1985	7.05	67.91	10.55	12.17
1986	6.65	69.15	11.49	15.70
1987	7.99	105.22	15.09	17.53
1988	10.67	139.09	18.40	19.56
1989	10.19	216.80	16.98	22.01
1990	15.59	267.55	23.19	26.00
1991	22.05	312.14	30.36	31.31
1992	33.26	532.61	41.78	42.74
1993	49.92	683.87	60.53	65.67
1994	65.35	899.86	77.19	94.18
1995	79.47	1933.21	99.49	144.57
1996	95.90	2702.72	118.46	169.44
1997	128.16	2801.97	141.68	385.55
1998	142.25	2708.43	172.05	272.90
1999	202.15	3194.02	274.20	322.77
2000	345.00	4582.13	357.10	508.30
2001	448.02	4725.09	499.16	796.17
2002	503.87	6912.38	653.24	954.63
2003	577.66	8487.03	759.63	1210.03
2004	728.55	11411.07	932.03	1519.24
2005	946.64	14572.24	1089.45	1976.71
2006	1497.90	18564.60	1747.25	2524.30
2007	2307.92	20657.32	2693.55	4813.49
2008	3650.64	24296.33	4309.52	7799.40
2009	3386.53	24794.24	5763.51	8912.14
2010	3830.28	33984.75	5954.26	7706.43
2011	4920.85	37543.66	6531.91	7312.73

Source : Central Bank of Nigeria (CBN) Statistical Bulletin,; Volume 22; Pages 44 – 50; 51 & 122 – 123;.(2011)

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