

Impact of Financial Intermediation by Deposit Money Banks on the Real Sector of the Nigerian Economy (1989 – 2021)

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Abstract

The empirical paper is an impact assessment of financial intermediation of the Deposit Money Banks (DMBs) on the growth of the real sector of the Nigerian economy. The theoretical basis for the study was obtained through review of related literature. The study employs unit root test, co-integration and Vector Error Correction (VEC) model using real GDP growth rate as the dependent variable and credits to private sector (CPS), average manufacturing capacity utilization (AMCU) and inflation rate (INFR) as independent variables from 1989-2021. The research finding established that credit to private sector contributes significantly to real sector growth in Nigeria. The study further found that both the average manufacturing capacity utilization and inflation rate do exert a significant effect on real sector growth in Nigeria. The study recommends for a sound public policies to stimulate the supply of basic infrastructure, reward DMBs for providing large loans to private sector, improve security of lives and properties and discipline monetary and fiscal policies in order to enhance real sector growth.

Keywords: Financial Intermediation, Deposit Money Banks (DMBs), Gross Domestic Product (GDP), Real Sector Growth, Nigerian Economy.

1. Introduction

The Nigerian Deposit Money Banks (DMBs) having commercial banks as its orthodox functions as the mobilization of savings for good investment portfolio. Such a vital function of influencing economic growth within a nation's economy cannot be underestimated as it is widely acknowledged worldwide. Schumpeter (1932) as cited in Blum, Federmaier, Fink and Haiss (2002) in highlighting the specific role of bank in facilitating technological innovation stated that such tremendous miles can only be achieved through their intermediary roles. His belief is that efficient allocation of savings through identification and funding of

entrepreneurs with the right chances of successfully implementing innovative products and production processes, served as the basic tools towards the attainment of a real growth.

In the popular opinion of Blum (2002), the concept of financial intermediation is a unique process of transfer of savings of surplus economic units to others, for the purpose of consumption or investment at a price. For financial intermediation to take place there must be instruments and financial institutions operating together with the objective of bringing about economic growth of the country. In the same vein, Black (2002) defines financial intermediaries as firms whose main function is to borrow money from one set of people and lend it to another. Financial Intermediary institutions consist of banks and non-bank loan suppliers such as Finance companies, mortgage lenders and development finance institutions.

The financial intermediaries of the Nigerian economy are expected to be responsible for financial resource mobilization and intermediation between the various sectors of the economy. They are to redirect funds from the surplus sectors to the deficit sectors of the economy. Therefore, the financial sector, especially the banking sector is very important in effective functioning of the real sector of the economy. The main driving force of any nation's economy is the real sector, as it serves as the engine room of economic growth and development. To a very large extent, the real sector is dependent on the banking sector for proper functioning and discharge of its activities as provision of the required funds for investment purposes. However, despite the series of reforms and restructuring aimed at strengthening the bank's ability to efficient service delivery and branch networking and fund the real sector, problems still persists such as; decline in domestic credit by the banking sector to the private sector, there is also a considerable liquid mismatch in the Nigerian economy (CBN, 2007).

Although agriculture is the largest contributor to the Nigerian's GDP (42% of total GDP in 2007), only 3% of bank credit exposure is to the agricultural sector in 2007. When compared to the communication sector which contributed only 2.38% of total real GDP in 2007 was supplied with 24% of total credit to the private sector in 2007 (CBN, 2007). Therefore, the problem remains that the real sector is yet to be effectively linked to the financial intermediaries in the country.

Quite a number of researchers have identified a theoretical relationship between financial intermediation and the real sector (using the output and services sector of the economy as economic indices), for instance, Smith (1976) cited in Blum (2002)

expressed the view that the high density of banks in the Scotland was a crucial factor for the rapid development of Scottish economy. Schumpeter (1932) cited in Blum (2002) canvassed an argument and made a case that the creation of credit through the banking system was an essential source of entrepreneur's capability to drive real sector growth by funding and employing new combinations of factor use.

Many other researchers as; Goldsmith (1969); McKinnon (1973); Shaw (1973); Fry (1988); and King and Levine (1993) have pointed out the significance of banks to the growth of the economy. In examining the relationship, a number of recent empirical studies (for example, Azege, 2004; Levine, 2005; and Ayadi, Adegbite, 2008) have relied on measures of size of financial intermediaries to provide evidence of a link between financial system development and economic growth. They used macro level data such as size of financial intermediaries relative to Gross Domestic Product (GDP) to determine the impact of financial development on economic growth. In particular, Ayadi, and Adegbeti (2008) established a positive relationship between financial development and economic growth in Nigeria for the period of 1986 – 2005.

Also there are many other studies that investigate the relationship between financial intermediation and real sector growth in Nigeria. Notable among them are; Azege (2004); Ndebbio (2004); Ayadi, et al, (2008); Agu and Chukwu (2008); Adbullahi (2009); and Nzotta and Okereke (2009), but the results of these studies are divergent. The divergence seems to emanate from the different estimation procedures and the data used for analysis. These results are deficient in that they did not attempt to evaluate the causality between financial intermediation and real sector growth in Nigeria. They merely examine the correlation between financial intermediation and real sector. Another observed weakness of these previous studies is that they did not discuss the implications of the relationship that exist between finance and real sector growth. These studies also did not give the specific implication of each variable of financial intermediation on the real sector activities in Nigeria. This means there is a gap in the literature which needs to be covered by research.

This study attempts to cover the gap that exists in this area of study by examining empirically, the impact of financial intermediation by deposit money banks on the real sector growth of the Nigerian economy.

The broad objective of the study is to examine whether financial intermediation have any impact on the real sector growth of Nigerian economy. The specific objectives are:

- i) To determine the extent to which the credit to the private sector by deposit money banks (DMBs) have contributed to the growth of the real sector in Nigerian economy.
- ii) To ascertain the level to which average manufacturing capacity utilization (AMCU) has impacted on the real sector growth of the Nigerian economy;
- iii) To investigate the effect of inflation rate in the real sector growth in Nigerian economy.

To achieve this aim, the following null hypotheses are formulated:

- H₀₁:** Credit to private sector by deposit money banks (DMBs) has no significant impact on real sector growth in Nigeria;
- H₀₁:** Average manufacturing capacity utilization has no significant effect on real sector growth in Nigeria;
- H₀₁:** Inflation rate has no significant influence on real output growth in Nigeria.

The rest of the paper is structured as follows, literature review, methodology, result and discussion of findings, finally conclusion and recommendations follow

2. Literature Review

Theoretical Review

Financial intermediation refers to the process that facilitates the transferring of savings of surplus units in the economy to the deficits units of the economy for investment at a price. The real sector of an economy is the output sector where goods and services are produced and it is the main driving force that moves the economy forward. The real sector is represented by Gross Domestic Product (GDP).

However, the relationship between financial intermediation and the real sector growth has received considerable attention in the economic growth literature of 1960s and 1970s. Goldsmith (1969), McKinnon (1973), Shaw (1973) offered detailed arguments for the role of finance in promoting long-run economic growth. However, these studies did not establish the direction, timing and relative strength of casual links between finance and real section growth. Kings and Levine (1993) addressed the issue of direction in a cross-sectional study that relates broad proxies for the intensity of financial intermediation to measure the real sector performance

using post-war international data, yet casual inference is restricted to the observation that economies with greater financial depth at a given point in time appear to grow faster in subsequent decades than those with lower initial level of financial activity. Time series studies of individual country (for example, Jung, 1986) found bi-directional causality between financial and real sector variables in post-war data, and seem to offer little hope for understanding direct effects from feedback.

However, the works of Goldsmith (1969), McKinnon (1973) and Shaw (1973) concerning the relationship between financial development and economic growth have created an important ground for debate in development economics. Most of the literatures mainly focused on the role of macroeconomic stability, inequality, income and wealth, institutional development, ethics and religious diversity and financial market imperfections. Among these factors, the role of financial markets in the growth process has received considerable attention. In this framework, financial development is considered by many economists to be of paramount importance for output growth. Economists are of the view that government restrictions on the banking system such as interest rate ceiling, high reserve requirements and direct credit programmes will hinder financial development and reduce output growth (McKinnon, 1973 and Shaw, 1973).

Contributions due to McKinnon, (1973) and Shaw, (1973) postulate that the government in the pricing and allocation of loanable funds impedes financial development and depresses real interest rates. McKinnon (1973) emphasizes that the order and appropriate sequencing of financial reforms in the financial sector would be much more effective once price stabilization has taken place.

The endogenous growth literature stresses the influence of financial markets on economic growth (Bencirenga, Smith and Stirr, 1995; Greenwood and Smith, 1997). Similarly, Benhabib and Spiegel (2000) agree that a positive relationship is expected between financial development and total factor productivity, growth and investment.

Some literatures provide key insights for understanding the potential role of financial intermediaries in economic performance. Broadly defining financial intermediaries as individuals or institutions that solicit loanable funds from surplus spending units and allocate these funds among deficit units whose direct debt they absorb, Bencivenga and Smith (1991), for example, formalized the “debt-accumulation” channel with an overlapping generation models in which the

disposition of savings shifts from unproductive liquid assets to the assets of emerging intermediaries that can exploit investment synergies and encourage output growth through the capital stock.

Greenwood and Jovanovic (1990) demonstrate in a dynamic general equilibrium setting, that as savers become able to avoid unnecessary risk and gain confidence in the ability of intermediaries to make profitable allocation decision, they place an increasing portion of their surpluses with intermediaries. Thus, increase in the efficiency of the financial sector leads to out-put growth, which in turn generates additional demand for deposits and financial services.

Similarly, Kings and Levine (1993) constructed an endogenous growth model in which intermediaries reduced inefficiencies by acquiring information about the qualities of individual projects that are available to private investors and public markets. The information advantage encourages the funding of less-established firms that are likely to develop innovative intermediate and final products. A reduction in the cost of productivity enhancement is then shown to accelerate economic growth rates.

Another class of model focuses on the role of financial intermediaries monitoring loan recipient. Sussman(1993) for example, shows that better monitoring of loan recipients in a monopolistically competitive banking sector reduces mark-ups, and encourages entry of participants. However, Rouseau (1998) investigation shows that a search for temporal rent among competitive financial intermediaries with credit rationing and informational asymmetries can lead to more effective monitoring; narrower loan-deposit rate spreads and increases in deposit. Furthermore, Beck, Levine, and Loayza (2000) found that financial development has a large and positive impact on total factor productivity, which feeds through to overall Gross Domestic Product (GDP) growth.

Empirical Studies

Owing to the differing opinions regarding the relationship between finance and economic growth, many empirical studies have been carried out to investigate the relationship between financial depth defined as the ratio of total bank deposit liabilities to real GDP and economic growth.

Adam (1998) examines how efficient financial intermediation process has been in Nigeria's economic growth performance. The study used second stage least-square (2SLS) method. The empirical results show that financial intermediation process is

sub-optimal and caused by high lending rate, high inflation rate, low per capita income and poor branch networking. Nzotta and Okereke (2009) examine financial deepening and economic growth in Nigeria between 1986 and 2007. The study concludes that the financial system has not sustained an effective financial intermediation especially credit allocation and high level of mobilization of the economy. Abdullahi (2009) studied the impact of banking sector consolidation on the real sector of Nigerian economy, using Raw Score computational approach of correlation coefficient; the study establishes that there is a strong positive relationship between size of bank lending and real sector growth in Nigeria. Azege (2004) examines the empirical relationship between financial intermediaries and economic growth in Nigeria. The study employs data on aggregate deposit bank credit over time and GDP to establish that a moderate relationship exists between financial deepening and economic growth in Nigeria. He concludes that the development of financial intermediary institutions in Nigeria is fundamental for overall economic growth.

Similarly, Ndebbio (2004) investigates financial deepening, economic growth and development for Sub-Saharan African countries. The study uses M2 (aggregate liquid liabilities) as a ratio to GDP and the growth rate of per capita real money balances. The study finds that a developed financial sector spurs overall but sustainable growth of an economy.

Odiambho (2004) in Agu; and Chukwu (2008) investigates the role of financial development on economic growth in South Africa. The study uses three proxies of financial development namely the ratio of M2 to GDP, the ratio of currency to narrow money and the ratio of bank claims on the private sector to GDP against economic growth provided by real GDP per capita. He employs the Johansen-Juselius co-integration approach and vector error correction model to empirically reveal overwhelming demand-following response between financial development and economic growth.

Waqabaca (2004) examines the casual relationship between financial development and growth in Fiji using low frequency data from 1970 – 2000. The study employs unit root test and co-integration technique with a bivariate VAR framework. The empirical results suggest a positive relationship between financial development and economic growth for Fiji with causality running from economic growth to financial development. He stresses that this outcome is common with countries with less sophisticated financial system. Ulamis (2002) investigates the direction of causality between a financial development and economic growth in Turkey using Granger

non-casualty in the context of vector error correction (VEC) model. Annual data from 1970 – 2001 were used. The study finds that except for one of the proxies used, causality runs from financial development to economic growth in the short run. The study shows that in the long run, there exists bi-directional causality between financial deepening and economic growth.

In another study, Wadud, (2005) examines the long run casual relation between financial development and economic development in three South Asian countries namely India, Pakistan and Bangladesh. He disaggregated the financial system into “bank – based” and “Capital –market based” categories. The study uses co-integrated vector autoregressive model to assess the long run relationship between financial development and economic growth. The empirical findings indicate causality between financial development and economic growth, but running from financial development to economic growth.

Mohammed and Sidiropoulos (2006) investigates the effects of financial development and economic growth in Sudan from 1970 – 2004. The study estimates the short-run relationship between financial development and economic growth using the Auto-Regressive Distributed Log (ARDL) model to co-integration analysis by Pesaran and Shin (1999). The empirical results indicate a weak relationship between financial development and economic growth in Sudan due to the inefficient allocation of resources by banks, the absence of appropriate investment climate to foster significant private investment in order to promote growth in the long run.

Agu and Chukwu (2008) examine the direction of causality using augmented Granger causality test approach developed by Toda and Yamamoto (1995) to know the direction of causality between “bank – based” financial deepening and economic growth in Nigeria between 1970 – 2005. The study uses cointegration test which shows that financial deepening and economic growth in Nigeria are positively cointegrated and that there is only one cointegrating vector, indicating a stable and sustainable long run equilibrium relationship in the Full Information Maximum Likelihood (FIML) multivariate Johansen and Juselius (1988, 1992) and Juselius (1990) framework. In the Toda-Yamamoto sense, the study finds that the Nigerian evidence supports the demand following hypothesis for “bank – based” financial deepening variables like private sector credit and broad money; while it supports the supply leading hypothesis for “bank – based” financial deepening variables like loan/deposit ratio and bank deposit liabilities. Thus the empirical findings suggest that the choice of bank-based financial deepening variable influences causality outcome.

However, Ayedi, et al (2008) investigate the relationship between structural adjustment, financial sector development and economic prosperity in Nigeria, using time series data and spearman correlation coefficient technique to show that there is no consistent relationship between financial development and economic growth in Nigeria for the period 1986 – 2005.

Theoretical Framework

Financial intermediation theories as developed by Goldsmith (1969), McKinnon (1973), and Shaw (1973) point out that financial markets play a pivotal role in economic development; and that the differences in economic growth across countries are due to the quantity and quality of services provided by financial institutions. This view contrasts with Robinson (1952) who argued that financial markets are essentially handmaidens to domestic industry and respond passively to other factors that produce cross-country differences in economic growth. Robinson's school of thought believes that economic growth will lead to the expansion of financial sector.

Goldsmith (1969) attributed the positive correlation between financial development and the level of the real per capita Gross National Product (GNP) to the positive effects that financial development has on encouraging more efficient use of the capital stock. McKinnon (1973) argues that there is complementarity between money and physical capital, which is reflected on money demand. According to McKinnon, complementarities link the demand for money directly and positively with process of physical capital accumulation because the condition of money supply has first order impact on decision to save and invest. In addition, positive and high interest rates are necessary to encourage agents to accumulate money balances, and complementarity with capital accumulation will exist as long as real interest rate does not exceed the real rate of return on investment.

Shaw (1973) proposes a debt intermediation hypothesis whereby financial intermediation between savers and investors resulting from financial liberalization (higher real interest rate) and development increase the incentive to save and invest, stimulate investment due to an increased supply of credit and raises the average efficiency of investment.

However, with the emergence of the endogenous growth theories, there have been great emphases on the role played by financial intermediaries in the process of economic growth. Endogenous theory holds that government policy measures can have important impact on the long run rate of growth of the economy. In the neo-

classical growth model (the exogenous growth model) the long run rate of growth is exogenously determined either by assuming a saving rate (the Harrod-Domar model) or a rate of technical progress (Solow model). However, the savings rate and the rate of technological progress remained unexplained.

The divergent views on the relationship between finance and economic growth resulted into the emergence of two broad schools of thought with two contrasting views; these are the supply leading view and the demand following view.

The supply leading theory is of the views that finance plays an important role in economic growth and development (Schumpeter, 1912; Hicks, 1969). However, Robinson (1952) argues "...where enterprise leads finance follows". The argument put forward by Robinson (1952), which assumes that financial development primarily follows economic growth and the engine of growth must be sought elsewhere, forms the foundation for the second school of thought regarding the relationship between finance and economic growth. This line of thinking is known as "the demand leading theory". According to this view, economic growth creates demand for particular types of financial system which respond automatically to those demands. In line with the demand leading theory, Adams (1819) in Blum et al (2002) asserts that banks harm the morality, tranquility, and the wealth of nations.

In view of these conflicting opinions, this study uses the supply leading theory to organize an analytical framework and assess the impact of financial intermediation on the real sector of the Nigerian economy using endogenous growth model.

The endogenous model that is used is presented below and it follows Mankiw, Romer and Weil (1992) and Ulasan (2008) but with modification because the model used in this study does not employ Cobb-Douglas function. The implicit model can be stated as:

$$RGDPGR = F(CPS, AMCU, INFR).$$

Where: RGDPGR is real gross domestic product growth rate;

CPS is credits to private sector;

AMCU is average manufacturing capacity utilization;

INFR is inflation rate; and

μ is the random term or the error term.

3. Methodology

This study makes use of empirical analysis to assess the effect of CPS, AMCU and INFR on the real sector growth (represented by RGDPGR). The study uses the time

series methods of unit root test, co-integration and vector error correction (VEC) model. The unit root is applied to assess the time-series properties of the data; the co-integration test is used to enable the researcher appraise the long-run relationship among the variables being modeled; and the VEC model is used to model the effect of financial intermediation on real sector growth in Nigerian economy.

Model Specification

The study employed in this study as stated earlier follows closely the endogenous model employed by Mankiw, Romer and Weil (1992) and Ulasan (2008). It is, however, different from their model in the sense that it does not employ Cobb-Douglas production function. Its implicit form is;

$$RGDPGR = F(CPS, AMCU, INFR) \dots \dots \dots 3.1$$

Where: RGDPGR is real gross domestic product growth rate;

CPS is credits to private sector;

AMCU is average manufacturing capacity utilization; and

INFR is inflation rate.

The explicit form of the model can be stated as:

$$RGDPGR_t = \beta_0 + \beta_1 RGDPGR_{t-1} + \beta_2 CPS_t + \beta_3 AMCU_t + \beta_4 INFR_t + \mu_t \dots \dots \dots 3.2$$

The a priori assumptions of the model are: $\beta_1, \beta_2, \beta_3, > 0$; and $\beta_4, < 0$.

Estimation Procedure:

The estimation is performed with the following variables: (i) credit to private sector (CPS) by deposit money banks; (ii) average manufacturing capacity utilization (AMCU); and (iii) inflation rate as independent variables and RGDPGR as the dependent variable. To avoid the problem of spurious regression, unit root test was first conducted to ascertain whether the time-series data are stationary or not. Then the Augmented Dickey – Fuller (ADF) test for stationarity was used to test for stationarity.

The study uses co-integration analysis to ascertain the variables that are related in the long-run. The method of co-integration used is Johansen method that uses co-integrating vectors. The method compares computed eigenvalues and trace statistic with their critical values and if the critical values are higher than their computed values, we accept the null hypothesis but if less we reject the null hypothesis of no co-integration.

Thirdly, the study employs the vector error correction in assessing the impact of financial intermediation on real sector growth in Nigeria. If the variables are integrated of more than order zero, that is, there is non-stationary data, in the time-series, the study employs vector error correction (VEC) model.

The data used for this study are real GDP growth rate (RGDPGR), credit to private sector (CPS), average manufacturing capacity utilization (AMCU) and inflation rate (INFR). The RGDP was computed by subtracting the real GDP of succeeding year from the preceding year real GDP and multiplying the result by 100 to get the percentage growth rate.

The figure for CPS is obtained by dividing the private sector loan by the total loans giving by the deposit money banks in the economy and multiplying the result by 100. Lastly, inflation rate is retrieved directly from UNCTAD database (UNCTAD, 2013).

4. Data Presentations, Results and Analysis

This section presents the analyzed data, interprets the results and discusses the findings.

Table 1: ADF-Unit Root Test

Variable	Level	1 st Diff.	2 nd Diff	Remark
<i>AMCU</i>	-4.253788**	-3.2426**	-	Stationary at a Level
<i>CPS</i>	5.668722	-0.246129	-0.246129*	Stationary at 2 nd Diff
<i>RGDPGR</i>	-1.472303	-1.157674	-13.04636*	Stationary at 2 nd Diff
<i>INFR</i>	-3.308840***	-5.5436*	-	Stationary at a Level

Notes: *, ** and *** mean significant at 1 percent; 5 percent and 10 percent respectively

From the above results, two variables are stationary at a level and these are average manufacturing capacity utilization and inflation rate. The remaining two variables are also stationary at second differencing and these are real gross domestic product growth rate (RGDPGR) and credit to private sector (CPS). The variables are stationary at 10 percent for inflation rate; 5 percent for average capacity utilization and 1 percent each for CPS and RGDPGR.

Table 2: Co-integration Test based on Johansen Test

<i>Hypothesized No. C.E(s)</i>	<i>Trace Statistics</i>	<i>5% Critical Value</i>	<i>Max Eigen Statistics</i>	<i>5% Critical Value</i>
<i>None *</i>	102.6853	63.87610	45.40905	32.11832
<i>One*</i>	57.27624	42.91525	32.37067	25.82321
<i>Two</i>	24.90557	25.87211	17.55267	19.38704
<i>Three</i>	7.352898	12.51798	7.352898	12.51798

Note: * signifies the rejection of the null hypothesis of no co-integrating number of co-integrating equations.

The above result shows that there are two co-integrating equations in the model. This is in line with the result of unit root test which shows that only two variables in the equation are integrated of order two. These are real gross domestic product growth rates (RGDPGR) and the credit to the private sector (CPS). The other two variables are stationary at a level. Co-integration does not apply to these variables.

Table 3: Vector Error Correction (VEC) Equation: RGDPGR is the Dependent Variable

<i>Variable</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>T – Statistic</i>
<i>Constant</i>	27.83	5.0550	5.5058
<i>ECM_{t-1}</i>	0.000068	1.3	5.1002
<i>RGDPGR_{t-1}</i>	-0.4329	0.2015	-2.1413
<i>CPS_{t-1}</i>	6.22	2.4	2,5555
<i>AMCU_{t-1}</i>	0.8103	0.7160	1.1321
<i>INFR_{t-1}</i>	0.0812	0.1959	0.4146
<i>Ajusted R²</i>		0.5331	
<i>F Statistic</i>		7.85	
<i>Akaike AIC</i>		8.8017	
<i>Schwarz SC</i>		9.0793	

From the above regression results, all variables in the model have the expected signs of their coefficients, except for inflation rate that is positive rather than negative. The signs of credit to the private sector and average manufacturing capacity utilization are as expected positive.

The ECM result shows that the economy is very sluggish in recovering from disequilibrium. The rate of recovery is less than one percent per year. The

coefficient of ECM is 0.000068 and this means that the system will recover by the RGDPGR increasing its value as the RGDPGR is below its equilibrium value (see Hill, Griffiths and Lim, 2008).

The result shows that credit to the private sector significantly stimulate economic growth in Nigeria during the period under investigation. The coefficient of CPS is 6.22, meaning that an increase in CPS by one naira stimulates an increase in real GDP by over six naira. The fact that the t-ratio is statistically significant at 5 percent level of significance confirms our result to robust. Another feature of the finding is that the past real GDP value has significant negative impact on current real GDP value. The result is also statistically significant at 5% level of significance.

The result also shows that average manufacturing capacity has no significant impact on Nigeria economic growth. This is because the t-statistic is significantly very low. In fact the t-statistic is less than one. In the same way, the t-statistic of the inflation rate is very low. It is less than one. Thus, we cannot reject the null hypothesis that average capacity utilization has no impact on economic growth. In the same manner we cannot reject the null hypothesis that inflation rate has no impact on economic growth of Nigeria.

The overall model used for this study is statistically very significant. This is reflected in the F- statistic that is 7.85; and this is statistically significant at 5 percent. The explanatory power of the model is 53.3 percent, meaning the model explains 53 percent of income changes.

The above results show that the findings of the unit root test, co-integration test and vector error correction (VEC) model are consistent. The unit root test shows that there are only two variables that are related in the long-run; and they are credit to private sector and real GDP growth rate. In the same way, co-integration test shows that there is only one way co-integrating relationship. Lastly, the VEC result shows that only the credit to the private sector is related to the real GDP growth rate in the long-run.

Test of hypotheses

The hypotheses formulated in section one of this study are tested in this section. The numbers of observations are 33 with 6 coefficients, meaning that we have degrees of freedom of $n-5=33-6=27$. The critical t-statistic with degrees of freedom 27 at 5% level of significance is 2.05. Thus the decision rule is to reject the null

hypothesis if the computed t-statistic is greater than 2.05. But if the computed t-statistic is less than 2.05, we do not reject the null hypothesis.

The first hypothesis to be tested in this study is that credit to private sector by deposit money banks (DMBs) has no significant impact on real sector growth in Nigeria and this corresponds with the first objective to determine whether the credit to the private sector by deposit money banks (DMBs) have contributed to the growth of the real sector in Nigerian economy. The computed t-statistic is 2.555 which is greater than the critical t-statistic of 2.05. This study therefore rejects the null hypothesis and concludes that CPS contributes significantly to real sector economic growth in Nigeria.

The second hypothesis to be tested in this study is that average manufacturing capacity utilization has no significant effect on real sector growth in Nigeria; and this corresponds with the second objective to examine the impact of average manufacturing capacity utilization (AMCU) on the real sector growth of the Nigerian economy. The computed t-statistic is 1.1321 which is lesser than the critical t-statistic of 2.05. This study therefore accepts the null hypothesis and concludes that AMCU has no significant contribution to real sector growth in Nigeria.

The last hypothesis to be tested in this study is that Inflation rate has no significant influence on real output growth in Nigeria; and this corresponds with the third objective to investigate the effect of inflation rate in the real sector growth in Nigerian economy. The computed t-statistic is 0.4146 and this is lesser than the critical t-statistic of 2.05. This study therefore accepts the null hypothesis and concludes that INFR has no significant contribution to real sector growth in Nigeria.

Major Findings

The findings of this study are:

- i. Credit to the private sector (CPS) by DMBs contributes significantly to real sector economic growth in Nigeria.
- ii. Average manufacturing capacity utilization (AMCU) has no significant contribution to real sector growth in Nigeria.
- iii. Inflation rate (INFR) has no significant contribution to real sector growth in Nigeria.

5. Conclusion and Recommendations

Based on the above findings, it was revealed that the extension of credit to private sectors by DMBs equally goes a long way in stimulating the growth of Nigeria's

real sector. This result is in line with the finding of Odiamblio (2004) and Chukwu (2008) and this finding is in line with the theoretical postulation that by mobilizing savings from the public and making available to entrepreneurs, DMBs enhances the capital available to entrepreneurs and this increases investment and output (Schumpeter, 1932).

Average manufacturing capacity utilization (AMCU) has not contributed significantly to the real sector growth in Nigeria. This finding is reasonable as during the period under study, the observed manufacturing capacity is most of the time under decline. This finding is therefore not surprising.

Inflation rate (INFR) exerts no significant contribution to the real sector growth. This finding is in line with the neoclassical economic growth that sees the price level as exerting no influence on the long-run period (Jhingan, 2008). The Keynesians, however, feel that it has a positive effect in the long-run, since they assume that there are idle capacities in the economy. The current thinking is that violent increases in prices amount to instability in the economy and it injures business expectation and contributes to loss of investors' confidence thereby reducing investment and output (Blachard, 2011).

Following from the findings and conclusions of this study, the following recommendations are made:

1. DMBs should be encouraged by public policies that will provide basic infrastructures to enhance efficient financial intermediations in the country.
2. The Federal Government through the Central Bank of Nigeria and the Nigeria Deposit Insurance Corporation should develop credit friendly policy for the DMBs to enhance their ability to lend more credits to the private sector. Again, the government should sensitize the public to save, so that more money can be saved. This will increase availability of funds for lending to the private sector for investment purpose.

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