

# An econometric analysis of the effect of financial sector reform and monetary policy on Nigerian economy

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Accepted 9<sup>th</sup> September, 2014

**Abstract.** This study examines the effect of financial sector reform and monetary policy on Nigeria economy. The study used Nigeria time series data from 1980 to 2012 and employed econometric technique in its analysis by regressing Credit allocation to Private Sector, Liquidity Ratio and Interest Rate on Gross Domestic Product. It was found out that all variables truly affect Gross Domestic Product both in the short and long-run. The causality test shows that only Credit Allocation to Private Sector and Interest Rate caused Gross Domestic Product while the other variable is caused by Gross Domestic Product. The study concludes that the reform measures were not inherently defective and that the management of the reform process skillfully would go a long-way in achieving the goals of the monetary and fiscal authorities and the country at large. It is then recommended that the Central Bank of Nigeria should make efforts to stabilize prices, discourage fiscal indiscipline, reduce inflation and stabilize exchange rates. Government should ensure proper integration and implementation of financial sector and monetary policies that would increase the flow of investible funds to the private sectors and improves the capacity of banks to extend credit to the prospective investors at a low interest rate. Monetary authority should also ensure healthy competition in the banking industry. Finally, Strong macroeconomic policies should be pursued to maintain and stabilize the economy by laying down strict prudential rules and regulations to stabilize and strengthen the banking industry.

**Keywords:** Financial reforms, economic growth, monetary policy.

## INTRODUCTION

One of the most significant tasks before developing countries, are to achieve higher rate of economic growth. Due to the influence of the activities in the financial sector of the economy at large, every nation strives to have a proper and up-to-date financial sector. The financial sector is of no doubt a very essential part of the economy of a nation and any reforms carried out in the financial sectors extends to other parts of the economy representing a transformational moment for the economy and its people. Financial sector reforms however, have been a regular feature of the financial system. The reforms have evolved in response to the challenges posed by developments in the system such as systematic crisis, globalization, technological innovation and financial crisis. Financial reforms in Nigeria dates back to 1952

when the banking ordinance was enacted.

The deregulation of banking in 1986 provided the impetus for the Structural Adjustment Programme (SAP). The 1986 reform of the financial system saw a policy shift from direct control to a market based financial system, especially as regards monetary management, risk management and asset holding capabilities of the institutions. A number of other reforms followed including the 2004 and the latest 2009. At the commencement of comprehensive financial sector reform in Nigeria in 1987, the sector was highly repressed. Interest rate controls, selective credit expansion and use of reserve requirements and other direct monetary control instruments were archetypal characteristics of the financial system. Access in to banking business was

limited and government owned banks dominated the industry. The reform of the foreign exchange market, which until then was also controlled, began in 1986. Indeed the financial sector reform was a component of the comprehensive economic reforms program; Structural Adjustment Program (SAP) which was adopted in 1986.

Although the policy plans of sap in Nigeria were the prototype prescriptions of the Bretton woods institutions, the program was sold to Nigerians by government as Nigerian's alternative to International Monetary Fund (IMF) loan-based adjustment. The introduction of the program was on the heels of the rejection of IMF loan package with its conditionality, a decision that reflected the consensus of national wide debate. The main financial sector reform policies applied were deregulation of interest rates, exchange rate and access into banking business. Other reform measures included, establishment of Nigeria Deposit Insurance Corporation (NDIC), strengthening the regulatory and supervisory institutions, upward review of capital market deregulation and introduction of indirect monetary policy instrument. Some distressed banks were liquidated while the Central Bank of Nigeria (CBN) took over the management of others. Government share holdings in some banks were also sold to private sector. The reform of the foreign exchange market in 1986 began with the dismantling of exchange controls and establishment of a market based autonomous foreign exchange market. Bureau de changes were allowed to operate from 1988. However, a fixed official exchange rate has continued to exist alongside the autonomous market.

In 1994, the gradual market based depreciation in the official exchange rate was truncated by a sharp devaluation in a bid to close the widening gap between the official and the autonomous exchange rate. Unsatisfied with the observed further widening of the gap between the two exchange rates, government outlawed the autonomous foreign exchange market and re-introduced exchange control in 1994. But a full year of exchange controls, the autonomous market was brought back in 1995 to co-exist with the fixed official exchange rate. The continued operation of the fixed official exchange rate brings with it a great deal of distortions in the domestic allocation of resources within the public sector. This is very pronounced in the vertical distribution of export earnings among the three levels of government. A similar pattern of policy reversals applies to the reform of interest rates. First introduced in 1987, the market determined interest rates ruled until 1991 when interest rates were capped. But after only a year of controls, market forces were permitted once more to determine all interest rates in 1992 and 1993. But after indirect monetary instruments (open market operations) have been initiated since 1993, some measures of controls such as sectoral credit allocation guidelines have continued to be applied. In the sphere of bank licensing and regulation, the reform was ushered in with deregulation of bank licensing in 1987. When the increase in the required

banks paid up capital in 1989 and the reform of their accounting procedure (1990) appeared insufficient to curb the excesses of the sector, government placed total embargo on bank licensing in 1991 in Nigeria, the liberalization of interest rates and entry into banking business gave rise to sharp increases in nominal interest rates. With the additional effects of currency devaluation and higher central bank-financed public sector deflates with the period, the rate of inflation soared.

However, despite the SAP reforms, the seeming lackluster of banks in lubricating the economy was the percussive to the emergence of widespread banking crisis in the early 1990s. The linkage between the sector and the growth of economy remained weak throughout this period. Not only was industrial finance appealing, the cost of capital was. The Nigerian banking system has undergone remarkable changes over the years, in terms of the number of institutions, ownership structure, as well as depth breadth of operations. These changes have been influenced largely by challenges posed by deregulation of the financial sector, globalization of operations, technological innovations and adoption of supervisory and prudential requirements that conform to international standards.

In 2004 the Nigerian banking sector was still weak and fragmented, often financing short term arbitrage projects rather than productive private investments. For clarity, the summary of the major problems of many Nigeria banks are as follow, from the studies carried out by Odufu (2005). Weak corporate governance, evidence by high turnover in the board and management staff, inaccurate reporting and non-compliances with regulatory requirements, falling ethnics and de-marketing of other banks in the industry. Later, non-publication of annual accounts that obviates the impacts of market discipline in ensuring banking soundness. Gross insider abuses, resulting in huge non- performing insider related credits, insolvency, as evidenced by negative capital adequacy ratios and shareholders's funds that had been completely eroded by operating losses, weak capital base and over-dependency on public sector deposits and neglect of small and medium class savers.

CBN assessment of 2004 shows that while the overall health of the Nigerian banking system could be described as generally satisfactory, the state of some banks were less cheering. Specifically, as at the end of March 2004, the CBN's ratings of all the banks, classified 62 as sound \ satisfactory, 14 as marginal and 11 as unsound, while 2 of the banks did not render any returns during the period .The weakness of some of the ailing banks were manifested by their overdrawn positions of the CBN, high incidence of non-performing loans, capital deficiencies, weak management and poor corporate governance.

The poorly managed liberalization reform of the 1980s is partly responsible for the sector's weakness mentioned above. Supervision remained weak and there was evidence that many banks had bad balance sheets, conducting only very limited lending to the private sector, while engaging

in short term foreign exchange arbitrage. To strengthen the financial system and improve on the lending to the private sector; the consolidation exercise was launched in mid-2004. The CBN required all deposit banks to raise their minimum capital base from about ₦2 billion to ₦25.0 billion by the end of 2005 (implementation exercise triggered various mergers in the banking sector, reducing the number of deposit money banks to 25 from 89 and eventually 24). The banking sub-sector reforms 2005 was adjudged as most successful, with the emergent of 24 strong banks (down from 89) larger capital base (from under US\$3.0 billion to over US\$9.0 billion). Rating of Nigerian banks by international rating agencies (S&P, Fitch) for the first time, branch network increased from 3200 in 2004 to 3866 in April 2007.

Eight main interdependent factors are believed to have led to the creation of an extremely fragile financial system that was tipped into crisis by the global financial crisis and recession. These factors include: macro-economic instability caused by large and sudden capital inflows, major failures in corporate governance at banks, lack of investor and consumer protection, inadequate disclosure and transparency about the financial position of banks, critical gaps in regulatory framework and regulations, uneven supervision and enforcement, unstructured governance and management process at the CBN, and weaknesses in the business environment in the country.

The CBN in response to the above problems, unveiled a ten year reform blue print in 2009 anchored on four cardinal reform programmes for the stabilization of the banking sector and the financial sector in general. The four cardinal programmed for the sector's transformation involves enhancing the quality of banks, establishing financial stability, enabling healthy financial sector revolution and ensuring that financial sector contributes to the real economy. The CBN plans to initiate a five part programmes to fix the key causes of these crisis, implementation of risk based supervision, reforms to regulations and regulatory framework, enhance provision for consumer protection and internal transformation. Although, the financial system has undergone substantial changes over the last two decades, the system remains by and large unstable and under-developed, since it is yet to achieve that degree of financial intermediation, which the economy requires to foster growth and development.

Monetary policy is known to be a vital instrument that a country can deploy for the maintenance of domestic price and exchange rate stability as a critical condition for the achievement of a sustainable economic growth and external viability. Its role in ensuring an overall macroeconomic stability cannot be overemphasized. Although in Nigeria appreciable progress has been made in this regard since the introduction of various financial sector reforms programs in 1986. Despite the foregoing, the Nigeria monetary policy has continued to face several challenges. No wonder, the CBN, is increasingly focusing

more on the aspect of price stability, recognizing the relevance of macroeconomic stability for economic sustainable output and employment growth. The objective of this study is to examine the effect of financial sector reform and monetary policy on economic growth of Nigeria. Specifically, to determine the effect of the complementary or substitutability of financial sector reform and monetary policy on independent variables and the direction of relationship between financial sector reform, monetary policy and economic growth. This paper is organised into of five sections. The first section is introductory part. Second sections examine the literature review. Third part looks at the methodology. Fourth part shows the presentation and analysis if data and lastly the fifth section present a remarkable conclusion on the study with the relevant recommendation.

## LITERATURE REVIEW

According to Charlse (2005), financial reform is the changes in the financial system by innovating new policies, re-engineering, restructuring process which has three possible triggers like discrete events, shocks, a learning process that grew out of new information or success with initial reform measures and a government's political ideology, institutions or structure. According to Paul (2010), financial reform is a dynamic change to a good and well policy; it is a step taken to make financial system more secure.

In Nigeria, the importance of an economic reform became more evident as a result of the background of economic problems including stagnant growth, rising inflation, unemployment, food shortages and mounting external debt, which confronted the country since the early 1980's. The sharp reduction in crude oil prices resulted in deteriorating government's finances and foreign exchange earnings. The primary goal of monetary policy in Nigeria has been the maintenance of domestic price and exchange rate stability since it is critical for the attainment of sustainable economic growth and external sector viability (Sanusi, 2002:1).

Adefeso and Mobolaji (2010) employed Jahansen maximum likelihood co-integration procedure to show that there is a long run relationship between economic growth, degree of openness, government expenditure and M2. They observe that that monetary policy exerts significant impact on economic activity in Nigeria. Kogar (1995) examine the relationship between financial innovations and monetary control and concludes that in a changing financial structure, Central Banks cannot realize efficient monetary policy without setting new procedures and instruments in the long-run, because profit seeking financial institutions change or create new instruments in order to evade regulations or respond to the economic conditions in the economy.

Examining the evolution of monetary policy in Nigeria in

the past four decades, Nnanna (2001:11) observe that though, the monetary management in Nigeria has been relatively more successful during the period of financial sector reform which is characterized by the use of indirect rather than direct monetary policy tools, yet the effectiveness of monetary policy has been undermined by the effects of fiscal dominance, political interference and the legal environment in which the Central Bank operates. Busari et al. (2002) state that monetary policy stabilizes the economy better under a flexible exchange rate system than a fixed exchange rate system and it stimulates growth better under a flexible rate regime but is accompanied by severe depreciation, which could destabilize the economy meaning that monetary policy would better stabilize the economy if it is used to target inflation directly than be used to directly stimulate growth. They advised that other policy measures and instruments are needed to complement monetary policy in macroeconomic stabilization.

In the same stride, Batini (2004:32, 35) stress that in the 1980s and 1990s monetary policy was often constrained by fiscal indiscipline. Monetary policies financed large fiscal deficit which averaged 5.6 percent of annual GDP and though the situation moderated in the later part of the 1990s it was short lived as Batini, described the monetary policy subsequently as too loose which resulted to poor inflation and exchange rates record. Folawewo and Osinubi (2006) investigate how monetary policy objective of controlling inflation rate and intervention in the financing of fiscal deficits affect the variability of inflation and real exchange rate. The analysis is done using a rational expectation framework that incorporates the fiscal role of exchange rate. The study reveals that inflation affects volatility of its own rate as well as the rate of real exchange.

A peculiar feature of the reform program in Nigeria is the associated inconsistency in policy implementation. The financial sector in Nigeria is dominated by the banking sector, especially the commercial banking. The Deposit Money Banks (DMBs) account for 93.0% of non-central assets in 2000 (World Bank 2000) and 94.0 and 95.2% of the aggregate financial savings in 2002 and 2003, respectively as well as above 60.0% of the stock market capitalization.

In terms of the relationship between financial reforms and economic development, according to the 1989 World Development Report, Nigeria, reform measures seem to have had limited developmental effect in the country so far. It is increasingly recognized that the adoption of a financial liberalization policy has not proved sufficient to generate greater savings mobilization, increased private investment or wider financial sector intermediation. According to Soludo (2005), the objectives of the reform in the banking sector includes taking proactive steps to prevent imminent system crisis, creation of a sound banking system that depositors can trust, professionalism creation of banks that are investors friendly and that can finance capital intensive projects, enhancement of

transparency, good corporate governance and accountability, and driving down the cost of banks.

## MATERIALS AND METHODS

This study is built on the modification of the model used by Omankhalen (2012). The model used Gross Domestic Product as the dependent variable while the explanatory variables are proxies of financial sector reform and monetary policy which are Credit Allocation to Private Sector, Liquidity Ratio and Interest Rate. The model is restated as:

$$GDP = f (CAPS, INV, LR, LOAN, LEND) \quad (1)$$

The model was modified by removing INV, LOAN and LEND to suit the study under investigation, the model of this study thus become:

$$GDP = f (CAPS, LR, INTR) \quad (2)$$

In regression equation, the model is as follows:

$$GDP = \alpha + \beta CAPS + \delta LR + \varphi INTR + \mu \quad (3)$$

Where:

GDP	=	Gross domestic product
CAPS	=	Credit allocation to private sector
LR	=	Liquidity ratio
INTR	=	Interest rate
$\alpha, \beta, \delta$ and $\varphi$	=	Coefficients
$\mu$	=	Error term
$f$	=	Functional notation

It is expected '*a priori*' that  $\beta_1, \delta_2, > 0$  and  $\varphi_3 < 0$  implying that a unit increase in the independent variables will lead to increase or decrease in GDP by a unit.

## RESULTS AND DISCUSSION

The OLS results of the relationship between the dependent variables and the explanatory variables used in the study can be expressed mathematically as:

$$GDP = 9.886871 + 0.218594_{CAPS} - 0.120392_{LR} + 0.185438_{INTR} + \mu$$

(8.592648) (8.162551) (-0.490700) (0.931493)

$$R^2 = 0.784783 \quad Adj. R^2 = 0.763529 \quad F\text{-stat} = 35.24934 \quad D.W. = 1.220755$$

Standard errors are shown in parenthesis under their respective coefficients. From the results, the constant

**Table 1.** Result of ADF unit root test at first difference.

Variables	ADF test stat. value	Mackinnon critical value at 5%	Decision rule		Remarks
			H <sub>0</sub>	H <sub>1</sub>	
GDP	-4.149640	-2.9627	Reject	Accept	Stationary
CAPS	-4.113923	-2.9627	Reject	Accept	Stationary
LR	4.696183	-2.9627	Reject	Accept	Stationary
INTR	-5.707397	-2.9627	Reject	Accept	Stationary

Source: E-view 3.1.

parameter is positively related to GDP with a coefficient of 9.886871. This implies that if all the explanatory variables are held constant, GDP will increase by 9.886871 units. The coefficient of credit allocation to private sector is 0.218594. This is in agreement with *a priori* expectation because the value of the coefficient of CAPS shows that in the short run, a positive relationship exists between GDP and CAPS which means that a unit increase in CAPS increase GDP by 0.218594 units. Also, the coefficient of liquidity ratio (LR) is negatively related to GDP contrary to *a priori* expectation. A unit increase in liquidity ratio will consequently reduce GDP by 0.120392 units. The coefficient of interest rate (INTR) is not in agreement with the *a priori* expectation because the value is positive suggesting that a unit increase in INTR to GDP will lead to increase in GDP by 0.185438 units. This is not economically plausible because an increase in INTR will discourage borrowing and invariably cause reduction in GDP.

The coefficients of multiple determinations (Adjusted R<sup>2</sup>) indicate that 76.25% explanation of the behaviour of gross domestic product is explained by the totality of the explanatory variables with the remaining 23.75% is attributed to other variables outside the model otherwise referred to as the stochastic variables.

### Unit root test

Following Engel and Granger (1987) assertion that many of the variables that appear in time series econometric models are non-stationary (or are integrated variables), we therefore perform unit root test on the univariate time series to ascertain the stationarity or otherwise of the series. The null hypothesis in these tests is that the underlying process which generated the time-series is non-stationary. This will be tested against the alternative hypothesis that the time-series information of interest is stationary. If the null hypothesis is rejected, it means that the series is stationary, that is, it is integrated to order zero. If, on the other hand, the series is non-stationary, it is integrated to a higher order and must be differenced till it becomes stationary.

As can be seen from the results given in Table 1, all the variables are not stationary in levels. This implies that the null hypothesis cannot be rejected and that the time-

series has to be differenced. We then conduct the same tests on the first difference of the time-series. As can be seen from the test results on the first difference given in the table, the null hypothesis has been rejected for all the variables indicating that all variables become stationary at their first difference and are thus integrated of order zero I(0) as the variables do not require further differencing (Gujarati, 2003).

From Table 1, all variables are stationary at first difference. The ADF statistics of each variable (GDP, CAPS, LR and INTR) is greater than the 5% Mackinnon critical values respectively. Hence, we reject their respective null hypothesis (H<sub>0</sub>) and accept their alternate hypothesis (H<sub>1</sub>).

### Co-integration test

Having tested the time series for stationarity, the next step in the time series analysis is to test for co-integration which amounts to checking whether the linear combination of the variables is (also) stationary or not. It requires that the variables of interest have the same order of integration. It is only when the variables are integrated of the same order that a linear relationship among them can be expected. Variables are said to be co-integrated if a long run equilibrium relationship exists among them. Engel and Granger (1987) argued that for such relationships to exist, the error terms of the model should be stationary. The first stage of the co-integration test involves estimating the equation and save the error terms. Then the Augmented Dickey-Fuller test is applied on the error terms. If the error terms are found to be stationary, the variables are said to be co-integrated and this necessitates the estimation of an Error Correction Model involving long run relationship. If, on the other hand, the variables are not co-integrated, then the modeling should proceed with differenced time-series. Table 2 reports the test statistics from the unit root tests. As can be seen from the table, test results are greater, in absolute terms, than the critical values both with and without trend. This suggests that the variables in the equation are co-integrated. In other words, an error correction model is required.

It could be inferred that long-run relationship or co-integration exists among gross domestic product, credit

**Table 2.** Co-integration result.

Eigen value	Likelihood ratio	5% critical value	1% critical value	Hypothesised no of (ce <sub>s</sub> )
0.714498	52.23077	47.21	54.46	None *
0.221920	13.37207	29.68	35.65	At most 1
0.165040	5.593349	15.41	20.04	At most 2
5.96E-05	0.001848	3.76	6.65	At most 3

\*(\*\*) denotes rejection of hypothesis @ 5%(1%) Significant level. L.R. test indicates 1 co-integrating equation @ 5% significant level. Source: E-view 3.1

**Table 3.** Normalized Co- integration result.

GDP	CAPS	LR	INTR	C
1.000000	-0.098212	1.888004	1.240320	-22.37505
	(0.06931)	(1.05591)	(0.69866)	

Source: E-view 3.1 (2)

**Table 4.** Over-parametized model (Ecm-1).

Variables	Coefficients	Standard error	T-statistics	Prob value
D(GDP(-1),2)	0.009182	0.031858	0.288202	0.7759
D(CAPS,2)	-0.065531	0.058621	-1.117869	0.2757
D(CAPS(-1),2)	0.000626	0.054786	0.011421	0.9910
D(LR,2)	-0.030954	0.039913	-0.775538	0.4463
D(LR(-1),2)	-0.001389	0.042628	-0.032594	0.9743
D(INTR,2)	0.081529	0.042454	1.920425	0.0679
D(INTR(-1),2)	0.078268	0.042460	1.843320	0.0788
ECM(-1)	-0.041643	0.077027	-0.540629	0.5942

Dependent Variable = D (GDP, 2). R<sup>2</sup> = 0.223986. DW-STATISTICS = 2.360253. Source: E-view 3.1

allocation to private sector, liquidity ratio and interest rate. This is because the critical value at 5% is less than the likelihood ratio. Therefore, the hypothesis of no co-integration is rejected at 5% significance level.

Standard error are shown in parenthesis under their respective coefficients. From the results, credit allocation to private sector (CAPS) showed a negative relationship with gross domestic product on the long-run while the remaining variables liquidity ratio (LR) and interest rate (INTR) showed a positive relationship with gross domestic product (Table 3). The constant parameter maintained a negative value of 22.37505 implying that if all explanatory variables are held constant, gross domestic product will reduce by 22.37505 units on the long-run. From the equation, if all independent variables are held constant, GDP will reduce by 22.37505 units in the long run. CAPS and GDP are inversely related, GDP will decrease in the long run by 0.098212 units if CAPS increases by a unit. The coefficient of LR is 1.888004, implying a positive relationship between LR and GDP. A unit increase in LR will cause a rise in GDP by 1.888004 units. INTR has a coefficient of 1.240320. If INTR should increase by a unit, it will discourage investment and invariably reduces GDP by 1.240320 units. Meanwhile,

INTR gave the same effect on gross domestic product as in the short-run and the long-run which means that INTR in Nigeria is still on the high side, thereby discourages borrowing for investment in the period of this study.

### Error correction mechanism

Having ascertained that the variables are co-integrated, we then generate a model that captures the short-run and long run behaviour of the independent variables with the dependent variable; this is achieved by estimating the over-parameterized Error Correction Mechanism (ECM-1) and Parsimonious Error Correction Mechanism (ECM-2). The ECM results are presented in Tables 4 and 5, respectively.

The summary of the over-parametized ECM above shows that the coefficient of the ECM is significant with the negative sign (-). It implies its effectiveness in the correction of any deviation that may occur in the long-run. The model has the coefficient of -0.041643 which implies a sharp adjustment rate of approximately 0.04 units to any changes that may occur on the long-run and rate of correction of past deviation in the present

**Table 5.** Parsimonious model (Ecm-2).

Variables	Coefficients	Standard error	T-statistics	Prob value
D(GDP(-1),2)	0.013259	0.030312	0.437421	0.6656
D(CAPS,2)	-0.049368	0.055964	-0.882139	0.3861
D(LR,2)	0.005169	0.029490	0.175291	0.8623
D(INTR,2)	0.036941	0.030127	1.226164	0.2316
ECM(-1)	-0.043242	0.076744	-0.563465	0.5781

Dependent variables = D (GDP, 2).  $R^2 = 0.097802$ . DW-STATISTICS = 2.488198. Source: E-view 3.1

**Table 6.** Credit allocation to private sector (CAPS) and gross domestic product (GDP).

Hypothesis	F-statistics	Probability
A H <sub>0</sub> : - CAPS does not Granger Cause GDP H <sub>1</sub> : - CAPS does Granger Cause GDP	1.75915	0.19207
B H <sub>0</sub> : - GDP does not Granger Cause CAPS H <sub>1</sub> : - GDP does Granger Cause CAPS	0.69603	0.50761

Source: E-view 3.1.

period. These means that the present value of GDP adjust very sharply to changes in CAPS, LR and INTR.

In order to attain effectiveness of the models, there is the need to simplify the models to a more parsimonious model. The parsimonious model would be gotten by estimating the equation of only those variables that appear significant in the over-parametized ECM. Table 5 shows the result of the parsimonious model estimated in the model.

From the result above, the coefficient of the ECM is further proven significant with it conformity to the over-parametized ECM. The value of the ECM shows a negative of -0.043242. The coefficient in its negative form implies that the speed of adjustment of any past deviation to long-run equilibrium in present period. It therefore indicates that the value of the GDP adjust more sharply to changes in the explanatory variables that it was in the over-parametized model.

However, the parsimonious model shows all variables proved insignificant. This is determined by the evaluation of the probability value of each variable. The corresponding probability of a variable must be less than 10% before it is said to be significant. Therefore, it can be deduced from the parsimonious model above that changes in the dependent variable (GDP) are determined by nothing in the short-run while other variables (CAPS, LR and INTR) determines this changes in the long-run of the model.

Furthermore, Table 4 reveals that one of the variables (CAPS) is inversely related with GDP with a negative coefficient of 0.049368, while the remaining two variables (LR and INTR) maintained a direct relationship with GDP with their respective coefficients given as: 0.005169 and 0.036941. These therefore implies that an increase in any of the credit allocation to private sector (CAPS) in the

long-run will result into a decrease in the value of gross domestic product (GDP) while an increase in the value of any of the remaining two variables (LR and INTR) will result into an increase in the value of gross domestic product on the long-run. The coefficient of multiple determinants ( $R^2$ ) showed an approximate value of 0.098 which implies that the variables that makes up the model can account for approximately 9.8% of the behaviour of gross domestic product (GDP). The remaining 90.2% can be linked to white noise which is usually captured by other variables not present in the model.

### Causality test

Granger causality test is carried out to determine the direction of causality between the dependent and the explanatory variables. The causality test results is presented in Tables 6 and 7, respectively.

There exist a bilateral causality between Credit Allocation to Private Sector (CAPS) and Gross Domestic Product (GDP) since the probability value of both is greater than 10% and the F-statistics is less than the F-tabulated, therefore, we reject the Null Hypothesis ( $H_0$ ) and accept the Alternate Hypothesis ( $H_1$ ) in both cases.

There exist a unilateral causality between Liquidity Ratio (LR) and Gross Domestic Product (GDP) since the probability value of the first case is less than 10% and it corresponding F-statistics is greater than the table value, we accept Null Hypothesis ( $H_0$ ) and reject Alternate Hypothesis ( $H_1$ ) for the first case (Case A) while in the second case, the probability value is greater than 10% and the F-statistics is less than the F-tabulated, therefore, we reject the Null Hypothesis ( $H_0$ ) and accept the Alternate Hypothesis ( $H_1$ ) in the second case (Case B).

**Table 7.** Liquidity ratio (LR) and gross domestic product (GDP).

	<b>Hypothesis</b>	<b>F-statistics</b>	<b>Probability</b>
A	H <sub>0</sub> : - LR does not Granger Cause GDP	3.32923	0.05161
	H <sub>1</sub> : - LR does Granger Cause GDP		
B	H <sub>0</sub> : - GDP does not Granger Cause LR	0.40936	0.66828
	H <sub>1</sub> : - GDP does Granger Cause LR		

Source: E-view 3.1

**Table 8.** Interest rate (INTR) and gross domestic product (GDP).

	<b>Hypothesis</b>	<b>F-statistics</b>	<b>Probability</b>
A	H <sub>0</sub> : - INTR does not Granger Cause GDP	0.42095	0.66082
	H <sub>1</sub> : - INTR does Granger Cause GDP		
B	H <sub>0</sub> : - GDP does not Granger Cause INTR	0.05676	0.94493
	H <sub>1</sub> : - GDP does Granger Cause INTR		

Source: E-view 3.1

There exist a bilateral causality between Interest Rate (INTR) and Gross Domestic Product (GDP) since the probability value of both is greater than 10% and the F-statistics is less than the F-tabulated, therefore, we reject the Null Hypothesis (H<sub>0</sub>) and accept the Alternate Hypothesis (H<sub>1</sub>) in both cases (Table 8).

## CONCLUSION

This study critically examines and provides a significant contribution to the effect of Financial Sector Reform and Monetary Policy on Nigeria economy by carefully studying, diagnose past research works to objectively identify the most reliable results and conclusions. The study is carried out using the Nigerian economy and data as a case study without compromising any standard for a reliable result. This study takes into cognizance original and well sourced data in order to prevent against any form of subjectivity of result. All quantitative analysis were performed with the aid of econometric view (E-view) version 3.1.

The importance of this study may be viewed from its contribution to fill an important gap in literature by combining financial sector reform and monetary policy in a single model that examined their effect on the Nigerian economy. The study revealed a significant relationship between the dependent variable and the independent variables in the short-run and long-run. It then implies that all variables used in this study are significant in the explanation of the behaviour of Gross Domestic Product as proposed. The main finding emerging from this study indicates that financial sector reform in Nigeria has been significant on her economic growth; hence, it justifies the assertion of Mckinnon-Shaw (1973) and Raghbendra

(2003) on financial reforms and also monetary policy justifies the assertion of Fisher (1932) and Keynesian theory. The coefficient of multiple determination, both in the short-run and long-run presents the model adopted as a veritable tool that are capable of explaining the behaviour of the dependent variable, hence, emphasizing the importance of each explanatory variable.

Although, not all the explanatory variables conforms to the 'apriori' expectations, they all have the potential to stimulate economic growth of Nigeria. Gross Domestic Product is grossly affected by the level of credit allocation to private sector in Nigeria in the short-run and long-run respectively. This therefore echoed the need to pay more serious attention to the level of private sector credit, to attain a level capable of sustaining the economic growth because private sector credit is one of forcing variable for achieving economy growth. Meanwhile, the main private sector credit shows that it can only be beneficial to gross domestic product level in the short-run and passing a negative signal in the long-run. This implies that Nigeria banks are burdened with excess liquidity and these banks are very cautious in providing credit to private sector. Interest Rate maintained a positive relationship with Gross Domestic Product both in the short-run and long-run implying that financial charges has not refrained investors from seeking funds from banks at the deregulated rate. The rate also allowed for the effective and efficient intermediation of funds to the users of funds to participate in productive activities that contribute to economic growth.

The reform measures were not inherently defective given that there are few nations that have used the same reform packages and got positive results. The management of the reform process skillfully would have gone a long-way in achieving the goals of the country.



With this question who then are supposed to be the managers of the reform process? It is the government and the bodies that government put in place to oversee the monetary system in conjunction with the authorities put in place to oversee the fiscal affairs of the country vis-a-vis the Central Bank, the Nigerian Deposit Insurance corporation the Ministry of Finance and the Presidency. Even for the financial sector reforms alone, good management (on the part of the managers CBN, NDIC, Federal Ministry of Finance and the presidency) would have meant proper sequencing of the reforms Ikhide and Alawode (2001). The monetary and fiscal authorities could not work as a team to provide the needed macroeconomic stability for reforms to work. First as the CBN makes efforts to stabilize prices, government fiscal indiscipline frustrates those efforts. High level of inflation was also coupled with high balance of payments deficit and a fast depreciating exchange rate to negate activities in the financial sector. Depreciating exchange rates raised the cost of inputs to the extent that firms that borrowed could not pay back.

Conclusively, all variables may not have being a cause of change in economic growth, but still does not mean that there is no relationship between them and the explained variable. The variables that does not have being in accordance with the prior statement about their outcomes, but then it emphasise the fact that the study was done with extreme objectivity and also that care needs to be taken in macroeconomic decisions in order to avoid diverstating trade-offs. Meanwhile, this study have being done in it best possible and objective manner to serve as good starting point for further researcher or academicians who vows for a future development in the subject matter through objective contribution of this nature. To end it all financial reform and monetary policy plays a significant complementary effect on the economy if they are properly managed and better sequenced. It is therefore recommended that proper integration and implement of the financial sector should be ensured by the government so that financial units can be strategically positioned and adequately capable to intermediate funds, thereby promoting financial development. The monetary authority should implement policies that increase the flow of investible funds and improves the capacity of banks to extend credit to the economy and should come together for better sequencing of reform and for better synchronization of fiscal and monetary measures to move the economy forward. The CBN should promote healthy competition in the banking industry so as to improve the efficiency of banks in rendering financial services to the public and The monetary policy actions that should give rise to increase in intermediation cost, hence, generating moral hazards and grow risk aversive behavior should be watched against because such action has the tendency of promoting more of service related activities at the expense of production related activities. Growth substantially plat on service is not sustainable.

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