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THE EFFECTS OF FISCAL AND MONETARY POLICIES ON ECONOMIC GROWTH IN NIGERIA, 1960 – 2015.

ENOBONG UDEMEABASI MBOBO* & UBI-ABAI, ITORO PRAISE**

**Department of Economics, Faculty of Social Sciences, University of Uyo, Nigeria.*

***Department of Economics, Faculty of Social Sciences, University of Uyo, Nigeria.*

ABSTRACT

The study examined the effects of fiscal and monetary policies on the growth of the Nigerian economy using annual time series from 1960 to 2015. Specifically, the study sought to examine the individual, improvement and interactive effects on the growth of Nigeria; and the relative importance of both policies in influencing growth of the Nigerian economy. Also, the study analysed the specific objectives in different eras of Nigeria's history. The study traced the debate from the Keynesians to the Monetarists. The data used in the study were Government Expenditure (GE) as proxy for fiscal policy, and Money Supply (MS), as proxy for monetary policy. The modified Hodrick-Prescott filter was used to get the long term components of the data that were sourced from the Central Bank Statistical Bulletins, 2009 and 2015. The study incorporated the Transcendental Logarithm Function (TLF) - a functional form mostly ignored. Moreover, the study adopted the Conditional Error Correction (CEC) model of Auto-regressive Distributed Lag (ADL) to provide answers to the first three research questions; and a special formula was used to provide answer to the fourth research question. It was discovered that fiscal and monetary policies have individually affected growth positively; and the effects of improvements in both policies have often been successful in promoting growth. Unfortunately, these policies have been counteractive to growth. It was concluded that fiscal policy has greater influence on growth than monetary policy; but there was no synergy between fiscal and monetary policies in propelling the growth of the Nigerian economy. It was recommended that fiscal and monetary policies should be formulated and implemented in such a way that would interact positively to growth.

KEYWORDS: ***Fiscal, Monetary, Growth, CEC, ADL, Hodrik-Prescott, Scaling Quantity.***

1. INTRODUCTION

The most critical obligation of the government is to impact positively on living standards of its citizens. They try as much as possible to implement and formulate policies to stimulate the economy. The most important macroeconomic policies any government have embarked on are fiscal policy and monetary policy.

On one hand, Fiscal policy is the deliberate and conscious attempt by any government to formulate decisions on how to raise government revenue through taxation and other means; to make decisions on the level and pattern of expenditure for the purpose of influencing economic activities or attaining some desirable national objectives (Ubi-abai and Bosco, 2017). It refers to the manipulation of expenditure resources and taxation powers by the government for the purpose of managing the economy (Umo, 2012). On the other hand, monetary policy can be described as a deliberate effort by the monetary authority to control the money supply and the credit conditions for the purpose of achieving certain broad economic objectives which might be mutually exclusive (Olanipekan and Benjamin, 2015). It is designed to influence the behaviour of the monetary sector because changes in the behaviour of the monetary sector influence various monetary variables or aggregates. In effect, the monetary policy in force at any point in time, affects the level of money supply either by expanding it or through contraction of same. It also influences the level and structure of interest rates and thus the cost of funds in the market, depending on the prevailing economic conditions (Ogar, Nkamare, and Emori, 2014).

Generally, both fiscal and monetary policies aim at achieving relative macroeconomic stability. Ample evidences from the literature have shown that monetary and fiscal policy play significant role in achieving macroeconomic objectives in both developed and developing countries. Interestingly, no economy can operate optimally without the effective interactions of fiscal and monetary policies. While some economies favour the dominance of monetary policy in the formulation and implementation of macroeconomic policies, others economies emphasise the dominance of fiscal policy as a stabilization tool. These trends have sparked debate among policymakers and scholars on the relative importance of fiscal and monetary policies and how these policies interact to stimulate their economies.

Nigeria has witness different policy regimes in a bid to achieve macroeconomic stability since the first National development plan. While some regimes have favoured the manipulation of fiscal policies to stimulate growth, other regimes have supported monetary policies in bringing about growth. It is important to note that the pursuit of sound monetary and fiscal policies is capable of exerting strong moderating influence on the exogenous factors that have militated against the rapid growth of the Nigerian economy. Moreover, the recent recession has clearly

put to test the efficacy of fiscal and monetary policies and how both policies interact to propel growth. It is therefore pertinent to consider these thought-provoking questions:

1. What are the individual effects of fiscal and monetary policies on growth of Nigerian economy?
2. How have improvements in fiscal and monetary policies affected growth of Nigerian economy?
3. How have fiscal and monetary policies interacted to foster growth of the Nigerian economy? and
4. What is the relative importance of fiscal and monetary policies in influencing growth of the Nigerian economy?

The findings of this study will contribute to knowledge and enrich the existing body of literature on the relationship between these important macroeconomic policies and growth of the Nigerian economy. The study will be relevant to governments at all levels and policymakers in Nigeria. Finally, the research findings will serve as a foundation for further research in this aspect and other similar areas.

2. LITERATURE REVIEW

The Monetarists believed that aggregate demand is affected solely or primarily by the money supply and that the impact of money on aggregate demand is stable and reliable. In essence, the Monetarists say: 'Only money matters for aggregate demand.' However, they recognize the existence of fiscal policy, but believe that unless accompanied by monetary changes, it will have negligible effects upon output and prices.

The Keynesians, by contrast, held that the world is complex. They agreed that money has an important effect upon aggregate demand, output and prices. However, they argued that money is not the only factor that matters; other factors matter too. The Keynesians believed that government expenditures, taxes, and net export have important effects on aggregate demand and prices. Hence, Keynesians believe that fiscal policy rather than monetary policy exerts dominant influence on economic activities.

Many economic scholars have undertaken studies on the relative importance of fiscal and monetary policies; on which of the policies exert greater influence on economic activity and how these policies interact to drive economic activity.

Adefeso and Mobolaji (2010) re-estimated and re-examined the relative effectiveness of fiscal and monetary policy on economic growth in Nigeria using annual data from 1970-2007. They employed the error correction mechanism and co-integration technique to analyze the data and draw policy inferences. The findings showed that

the effect of monetary policy is much stronger than fiscal policy and the exclusion of the degree of openness did not weaken the conclusion.

Chuku (2010) used quarterly data to explore monetary and fiscal policy interactions in Nigeria between 1970 and 2008. Firstly, the paper examined the nature of fiscal policies in Nigeria using a Vector Auto Regression (VAR) model. Secondly, the paper analyzed the interactions between monetary and fiscal policies by applying a State-space model with Markov-switching to estimate the time-varying parameters of the relationship. The evidence indicated that monetary and fiscal policies in Nigeria have interacted in a counteractive manner for the sample period 1980 to 1994.

Jawaid, Arif, Naeemullah (2010) investigated the comparative effects of fiscal and monetary policy on economic growth in Pakistan using annual time series data from 1981 to 2009. The co-integration results suggested that both monetary and fiscal policy had significant and positive effect on economic growth. The findings showed that monetary policy has more concerns with economic growth than fiscal policy in Pakistan. However, they recommended the combination and harmonization of both monetary and fiscal policy.

These findings were also confirmed by Senbet (2011), who investigated the influence of monetary and fiscal policies on the United States' real economic activity, using quarterly data between 1959:1 and 2010:2 by employing Granger causality tests and VAR models. The results obtained from both models suggested that monetary policy affects the real output relatively better than fiscal policy.

Samson and Abass (2012) investigated the dynamics of Nigeria's monetary and fiscal policies and focused specifically on the effects on growth of Nigerian economy. They employed the Engle-Granger and Johansen-Joselius method of co-integration in a Vector Error Correction Mechanism (VECM) setting. The empirical results, according to them, demonstrated long-run linear relationship between the dependent variable and the independent variables, meaning that both monetary and fiscal policy contributed to the growth of Nigerian economy. Hussain and Siddiqi (2012) tested the fundamental relationship between fiscal, monetary policies and institutions in Pakistan from 1976 to 2008 using the Auto-regressive Distributed Lags (ARDL) econometrics technique. They estimated three models: fiscal policy model, monetary policy model, and a combined fiscal and monetary model with institutions. The findings showed that monetary policy was effective while fiscal policy had no robust role.

In order to determine the influence of fiscal and monetary policy on the economic activity in Serbia, Biljana and Tarnara (2013) conducted regression analysis on the series of quarterly data for the period 2003-2012. The results obtained showed that monetary policy was more effective in stimulating economic growth compared to fiscal policy. Hence, the overall conclusion was that government should pay more attention to fiscal policy to improve its efficiency in the future.

Fetai (2013) assessed the effectiveness of monetary and fiscal policy on economic growth during the financial crisis in developing and emerging countries. The study applied the dataset provided by Leaven (2008) and Valencia (2010), and examined 83 financial crisis episodes in 66 developing and emerging countries. The study employed the method utilized by Gupta e*t al*. (2007), Baldacci e*t al*. (2009), Hutchison (2010) and Li and Tang (2010), and performed the monetary and fiscal variables in order to control various determinants of output cost during the financial crisis. Applying the techniques of Ordinary Least Squares with robust standard errors and GMM estimator, it was discovered that monetary and fiscal policy contractions were associated with an increase of the output cost during the financial crisis. In addition, fiscal policy expansion was accompanied with smaller output cost over the financial crisis, whereas monetary expansion had not showed a clear effect.

Yakubu, Barfour, and Shehu (2013) investigated the effectiveness of monetary-fiscal policies interaction on price and output growth in Nigeria. The dynamic correlations of variables were captured by the analyses of impulse response and variance decomposition. The results suggested that the policy variables: money supply and government revenue had more positive impact on price and economic growth in Nigeria specifically in the long run. The estimates presented in the paper suggested that both monetary and fiscal policy exerted greater impact on real GDP and inflation in Nigeria.

Iyeli (2013) examined the Nigerian economic management approach in the light of the Keynesians-monetarists' debate from 1984 to 2011. The paper undertook a theoretical exploration and found that the main crux of the debate was a matter of government involvement (Keynesian view) or non-involvement (monetarist view) in the economic management, and not primarily a debate about whether fiscal or monetary policies should be used in economic management as claimed by some economists. The paper further revealed that the Nigerian economic management approach was tilting away from the Keynesians view towards the monetarists view.

Chigbu and Njoku (2013) focused on identifying policy that contributed effectively to the level of economic growth in Nigeria covering the period of 21years. Unit root test, cointegration, VAR model and graphs were some of the techniques used for data estimation. The individual variable: Minimum Rediscount Rate, Interest Rate,

Liquidity Rate, Cooperate Income Tax and Federal budget were not statistically significant to Gross Domestic Product in the previous and current year. However, interest rate and liquidity rate impacted negatively on the GDP but minimum rediscount rate, corporate income tax and federal budget affected the GDP positively. Monetary and fiscal policies measures were jointly statistically significant to level of economic growth in Nigeria. The reactions of monetary and fiscal policies measure on the level of economic growth in Nigeria were found to be unstable over the years of study which indicated no long run relationship. However, the study further revealed that fiscal policy measures are more effective in gearing economic growth in Nigeria.

Ali, Kenneth and Cedric (2014) continued to investigate the relative efficacy of monetary and fiscal policies for stabilizing the United States' economy-a debate that began with Anderson and Jordan's well-known study. They examined the contention of Senbet that monetary policy matters for stabilizing real economic activities; fiscal policy does not. They showed that this claim was unfounded and apparently the outcome of prematurely dismissing fiscal policy from the co-integrating vector. In the context of a properly specified model, results obtained from co-integration and error-correction tests using data and time period similar to Senbet's consistently suggested that only fiscal policy Granger-causes real output over the long-run. Moreover both monetary and fiscal actions Granger-cause significant short-run effects on the real side of the economy.

Emmanuel and Patrick (2014) examined the relative importance of monetary policy and fiscal policy on economic growth in Ghana and then determined which of these two policies was more powerful in promoting economic growth in Ghana. The study period was from 1980 to 2012. The method of Ordinary Least Squares estimation technique was used in the study. The study revealed that monetary policy impacted on the Ghanaian economy positively. Also, the study found that fiscal policy affected the Ghanaian economy positively. Finally, the study revealed that monetary policy was more powerful in promoting economic growth in Ghana.

Ogar, Nkamare, and Emori (2014) examined the empirical link on the effect of fiscal and monetary policy on the Economic Growth of Nigeria from 1986 to 2010 using the Ordinary Least Squares (OLS) technique. They employed the ordinary least squares method of statistical analysis. It was discovered that government expenditure and revenue had positive and significant impacts on growth of Nigeria Economy. The second model depicted that money supply and exchange rate had positive and significant impacts on growth of Nigerian economy. The findings revealed a positive but non-significant relationship between inflation and gross domestic product.

In order to determine the appropriate mix of both policies, Olanipekun and Benjamin (2015) examined the relative effectiveness of fiscal and monetary policy instruments on economic growth sustainability in Nigeria.

They employed the Error Correction Mechanism (ECM) using annual data covering the period 1970 to 2013. The results showed that all the fiscal and monetary variables of interest had long run relationships. They found that monetary and fiscal policy had positive influence on growth. Moreover, it was concluded that fiscal and monetary are still complementary.

Siyan and Adegoriola (2015) investigated the relative impact of money supply and government expenditure on economic growth in Nigeria using the Beta Coefficients and Two Stage Least Square techniques. The empirical results showed that the government expenditure was relatively more effective compared with money supply on economic activities. They were of the opinion that government expenditure, as a fiscal policy instrument, is greater, more reliable (predictable) and faster than the use of money supply as a monetary policy instrument in stabilizing the economy.

Huseyin and Ayse (2015) studied empirically the relative effectiveness of monetary and fiscal policies on growth. They considered the comparative efficacy of the two policies on growth by applying the Structural Vector Auto-Regression (SVAR) model to the quarterly data for Turkey from the first quarter of 2001 to the second quarter of 2014. The empirical findings showed that both monetary and fiscal policies had significant effects on growth. However, monetary policy was more effective than fiscal policy in stimulating growth. More specifically, interest rate, a monetary policy variable, was the most potent instrument in affecting growth. Also, budget deficit, a fiscal policy variable, was the second important variable. The findings suggested that both policies significantly influence growth, and that they should be used jointly but in an efficient manner.

Shoayeb and Mohsan (2015) studied the impact of fiscal and monetary policies on economic growth in Bangladesh from the period of 1979-80 to 2012-13. The study employed line diagram, correlation matrix, multiple linear regression models and trend analysis on fiscal and monetary variables. The findings showed that narrow money, broad money, exchange rate, government revenue and expenditure had positive correlations with Real GDP. On the contrary, inflation rate and interest rate on deposit had negative impact on Real GDP. The study concluded that exchange rate, interest rate, inflation rate, government revenue and government expenditure were significant variables that affected economic growth in Bangladesh.

Bokreta and Benanaya (2016) examined the relative effectiveness of monetary and fiscal policy in Algeria using the techniques of co-integration and Vector Error Correction (VECM) modelling to analyse and draw policy inferences. The fiscal policy variables were government expenditure and net taxes on products, while the effect of monetary policy was presented by the inflation rate and the official exchange rate. It was discovered that in the

long-run, the impact of government expenditures was positive, while the effect of taxes on growth was negative. Additionally, it was discovered that inflation rate had little effect on GDP per capita but the impact of the exchange rate was insignificant. They concluded that fiscal policy was more powerful then monetary policy in promoting economic growth in Algeria.

Najia and Priyanka (2017) investigated the comparative effects of fiscal and monetary policies on economic growth in Pakistan using annual time series data from 1984 to 2014. The co-integration result suggested that both monetary and fiscal policy had significant and positive effects on economic growth. The coefficient of monetary policy was much greater than fiscal policy which implied that monetary policy concerned economic growth than fiscal policy in Pakistan. However, the combination and harmonization of both monetary and fiscal policy are highly recommended.

David, Manu, and Dak-Adzaklo (2017) employed the Auto-regressive Distributed Lag (ARDL) econometrics technique to ascertain the relative effectiveness of monetary and fiscal policies in Nigeria using quarterly time-series from 1981 to 2012. They discovered that monetary and fiscal policies had significant positive impact on income. In the short run, monetary policy affected income more than fiscal policy but the reverse is the case in the long run.

Acknowledging the unending controversy existing on the efficacy of monetary and fiscal policies to influence an economy, Michael and Olufemi (2017) evaluated the relative impact of monetary and fiscal policy in Nigeria from 1986 to 2014 using a modified St. Louis equation. They employed the Ordinary Least Squares (OLS) estimation method. The study revealed that growth in money supply and export had positive and significant effects on growth in output of the economy while growth in government expenditure had a negative and insignificant effect. The study gave evidence that monetary policy had a greater growth-stimulating effect on the economy than fiscal policy.

In summary, the empirical works of scholars shows the relevance of fiscal and monetary policies in stimulating contemporary economies since the debate initiated by the Keynesians and the Monetarists. However, there are lapses in most of the empirical literatures reviewed. None of the empirical works considered the relative importance of the fiscal and monetary policies. Where it was made known, as in Emmanuel and Patrick (2014), the appropriate formula was not used. However, this study seeks to determine which of the policies is relatively important by using a scaling analysis. This was designed in a rigorous, systematic, valid, empirical and unbiased manner.

3. METHODOLOGY

The study was designed to be descriptive and empirical (quasi-experimental). The choice of this type of design was necessary to observe, obtain, analyse and interpret the variables (secondary data) relating to the objectives over a long period of time. In order to achieve this, it was important to specify a model that is consistent with theory.

3.1 MODEL SPECIFICATION

The formulation of an economic model is dependent on the available information on the study as embedded in standard economic theory and other major empirical work, or else, the model will be non-theoretical. In order to empirically ascertain the effects of fiscal and monetary policies on economic growth in Nigeria, it is important to state clearly the dependent and explanatory variables of the study. The dependent variable to capture economic growth was the Gross Domestic Product (GDP); while the explanatory variables to capture fiscal policy and monetary policy were government expenditure and money supply.

The rationale for using government expenditure as a proxy for fiscal policy was because government spends whatever it receives (revenue), even if it is borrowed (debt). This is in accord with the Keynesian's view that fiscal policy exerts dominant influence in the economy. In order to incorporate the monetarists' view, money supply was used to represent monetary policy because of the major roles played by the apex monetary authority, the Central Bank, in controlling not just the money in circulation but the exchange value of the local currency.

It is interesting to note that all of the empirical works considered in this work used the linear function. However, in order to ascertain the interactive effect of two policies, the linear function was not appropriate. The most appropriate function the study adopted was the Transcendental Logarithmic Function (TLF). The Transcendental Logarithmic Function (TLF) is used to analyse how two policies interact. It specifies the logarithmic value of the dependent variable as a function of the logarithmic values of the independent variables, the logarithmic values of the half of the square of the independent variables, and the multiplication of the logarithmic values of each independent variable. Incorporating the variables of interest, the functional relationship is stated thus:

$$GDP = f(GE, MS)$$

Where GDP is Gross Domestic Product, GE is Government Expenditure, and MS is Money supply. The Transcendental Logarithmic Function is stated thus:

$$LnGDP = \beta_0 + \beta_1 LnGE + \beta_2 LnMS + 0.5\beta_3 LnGE^2 + 0.5\beta_4 LnMS^2 + \beta_5 (LnGE)(LnMS) + \mu$$

Where Ln represented Log, β_1 measured the individual effect of fiscal policy; β_2 measured the individual effect of monetary policy; β_3 measured the improvement effect of fiscal policy; β_4 measured the improvement effect of monetary policy; and β_5 measured the interactive effect of fiscal and monetary policies.

3.2 DATA

The study used annual time series data covering 1960 to 2015. The Nigerian data used for the study were Gross Domestic Product (GDP), Government Expenditure (GE) and Money Supply (MS). The data were obtained from the Central Bank Statistical Bulletin of 2009 and the Central Bank Statistical Bulletin of 2015. The Central Bank Statistical Bulletin of 2009 was used to capture the data from 1960 to 1980; while Central Bank Statistical Bulletin of 2015 was used to capture the data from 1981 to 2015. Due to the disparity in time frames, the data had to pass through a smoothing process.

3.3 THE MODIFIED HODRICK-PRESCOTT FILTER

The smoothing process the study applied was the modified Hodrick-Prescott filter. The Hodrick-Prescott Filter is a smoothing method that is widely used among macroeconomists to obtain a smooth estimate of the long-term trend component of a series. It is used to extract a trend component from a time series (De Jong and Sakarya, 2013). However, Hamilton (2017) criticized the Hodrick-Prescott Filter for producing series with spurious dynamic relations that have no basis in the underlying data-generating process amongst others. In other to find solution to the problem, Ravn and Uhilg (2002) proposed and recommended a modified Hodrick-Prescott Filter (with a power of 4 rather than 2). Hence, it was necessary to adopt an estimation approach that made best use of the data and suitable for the study.

3.4 ESTIMATION TECHNIQUE

The study adopted the a dynamic model that portrayed not just the time path of the dependent variable in relation to its past value(s), but the time path of current and past values of explanatory variables was required. Based on these justifications, the estimation technique adopted for the study was the Auto-regressive Distributed Lag (ADL).

However, the ADL estimation technique was carried out using E-views 10.0. This is because the ADL estimation technique of the E-views 10.0 incorporates the Conditional Error Correction (CEC) form which is very important

for applied works. The Conditional Error Correction (CEC) is in fact an ADL model that offers a one-to-one correspondence with the model. The objective is to test for co-integration by reducing vector auto-regression framework to its corresponding Conditional Error Correction (CEC). The Bounds test was also used to determine whether the variables used for the study have long run relationships.

In order to ascertain the relative importance of a policy in influencing growth, it was important to state clearly the formula:

$$(Si \div Sy)\ |bi|$$

Where, **Si** represented the standard deviation of the independent variable, **Sy** represented the standard deviation of the dependent variable, and |**bi**| represented the absolute values of the coefficients of the independent variables.

Having analysed the ways in which the study was systematic and unbiased, it was necessary to analyse the data. These included the trends, unit root tests, co-integration, and the Auto-regressive Distributed Lag (ADL) results.

4 RESULTS AND DISCUSSION

The study carried out the trend analyses of government expenditure which represented fiscal policy and money supply which represented Monetary policy. These trends are displayed in

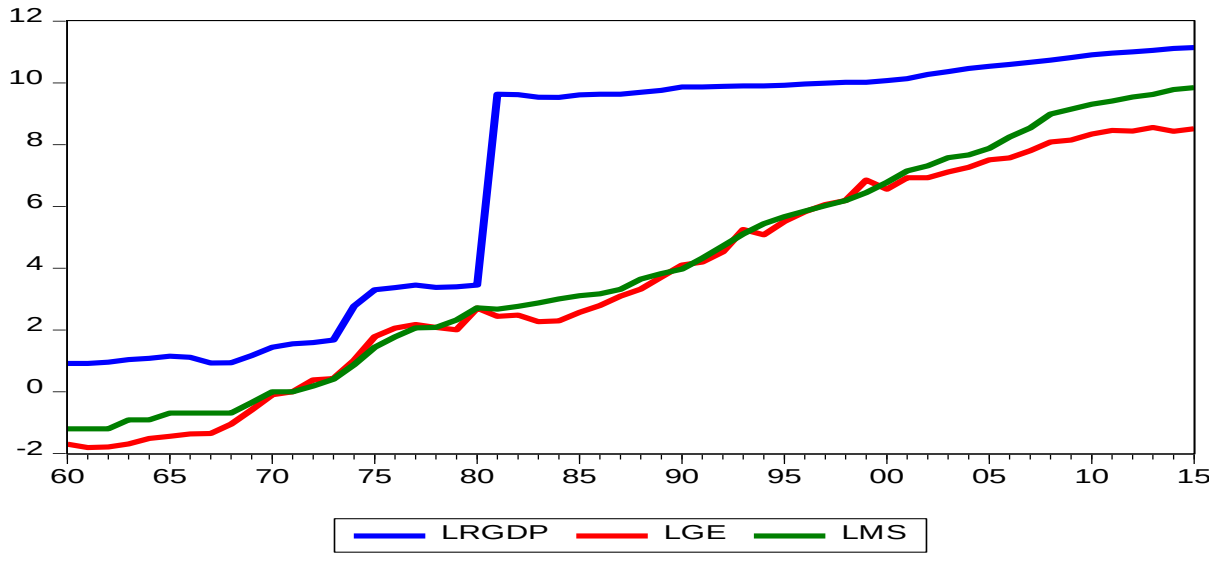

Figure 1: Trends in GDP, Government Expenditure and Money Supply, 1960 to 2015

Figure 1 indicates that the gross domestic product of Nigeria was over 2.4 billion naira in 1960 to 3.14 billion naira in 1965. However, it reduced in 1968, and increased sharply to 27.17 billion and 31.5 billion naira in 1975

and 1980 respectively. Government expenditure increased from 0.16 billion naira in 1960 to 0.23 billion naira in 1965. In a pace of 15 years, it reached peak of 14.96 billion naira. Money supplied from 1960 to 1963 were 0.3 billion naira respectively. Money supplied in 1970 and 1971 were 1 billion naira respectively, and reached a peak of 15.1 billion naira in 1980.

The rebasing of the GDP to 2010 constant price caused an upsurge in the figures from 1981. The gross domestic product of Nigeria was 15258 billion naira in 1981. It increased from 14953.91 billion naira in 1985 to 19305.63 billion naira in 1990. In 10 years, the growth figure had risen to 23688.28 billion naira. After a year-by-year increase, the gross domestic product of Nigeria amounted to 54612.26 billion naira in 2010 and grossed 69023.93 billion naira in 2015. The same increases were recorded for government expenditure and money supply. For example government expenditure increased from 11.4137 billion naira in 1981 to 60.26 billion naira in 1990. Since the 1995 and 2000 figures of 248.76 billion naira and 701.06 billion naira, government expenditures had recorded increases in the Nigerian economy, reaching peak at 4988.86 billion naira. Money supplied increased from 14.47 billion in 1981 to 52.86 billion naira in 1990. After experiencing a year-on-year increase, money supplied in the Nigerian economy reached peak of 18901.3 billion naira in 2015. Hence, the data for the study had to go through a smoothing process. Hence, the modified Hodrick-Prescott Filter was applied to the variables in figure 2.

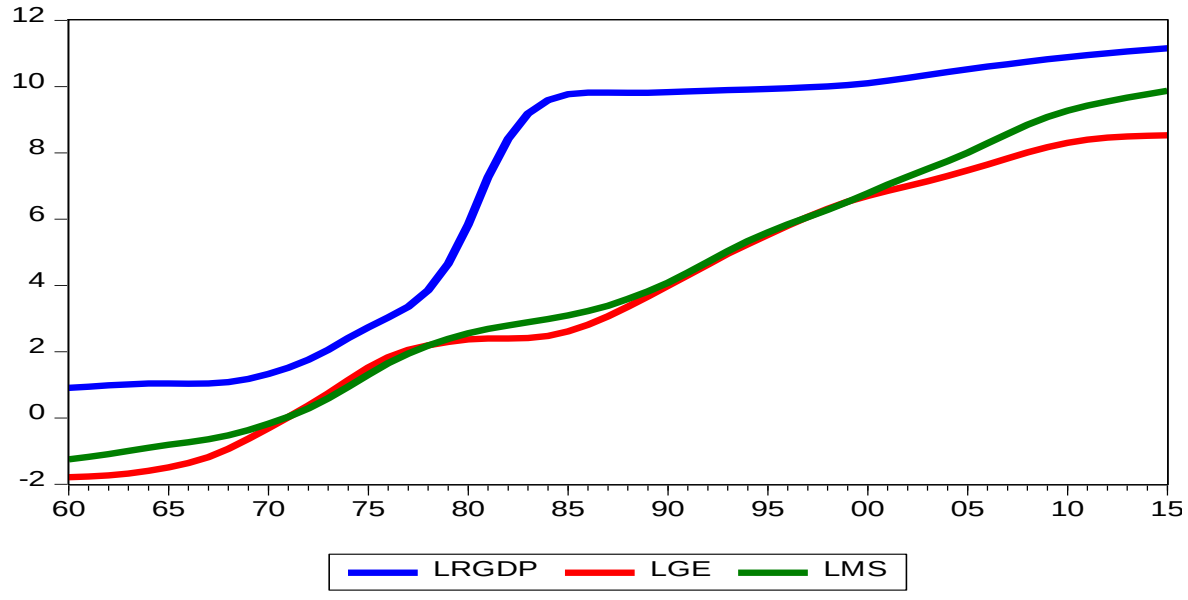

Figure 2: Modified Hodrick-Prescott Trends in GDP, Government Expenditure and Money Supply, 1960 to 2016

Figure 2 shows the Hodrick-Prescott Trend in gross domestic product, government expenditure and money supply of Nigeria from 1960 to 2015. The trend shows that the filtering method used has resulted to smooth estimates of the long-term trend component of the variables. In an attempt to get answers to the thought-provoking questions raised in the introduction, the Auto-regressive Distributed Lag results were explained. Before the Auto-regressive Distributed Lag results, it was necessary to determine if the variables in the study were integrated at I(0) or/and I(1). The unit root tests are displayed in table 1.

Table 1: Augmented Dickey-Fuller (ADF) Tests

Variable	ADF Stat	5% Critical Values	Order
LRGDP	-4.28	-2.92	I(1)
LGE	-3.13	-2.92	I(0)
LMS	-5.14	-2.92	I(1)

Table 1 shows the stationarity results using the Augmented Dickey-Fuller (ADF) unit root tests. The tests indicated that LRGDP and LMS were stationary at first difference, while LGE was stationary at level. These unit root tests justified the use of Auto-regressive Distributed Lag (ADL) in estimating the model since the variables used in the model are integrated to order I(0) and I(1). The Conditional Error Correction (CEC) model results of the Auto-regressive Distributed Lag (ADL) model is displayed in table 2.

Table 2: Conditional Error Correction ADL Results

Variable	Coefficient	Std Error	t-Stat	Prob
C	0.61	0.14	4.27	0.00
LRGDP(-1)	0.21	0.02	8.91	0.00
LGE(-1)	0.81	0.23	3.44	0.00
LMS(-1)	0.46	0.31	3.67	0.00
LGE2(-1)	-0.89	0.25	-3.54	0.00
LMS2(-1)	-0.94	0.25	-3.70	0.00
LGE_LMS(-1)	-0.86	0.25	-3.43	0.00
D(LRGDP(-1))	1.07	0.06	16.64	0.00
D(LRGDP(-2))	-0.67	0.07	-10.19	0.00
D(LGE)	0.39	0.84	0.46	0.65
D(LMS)	0.25	0.39	0.63	0.53
D(LMS(-1))	1.06	1.01	1.04	0.30
D(LMS(-2))	-2.74	0.68	-4.03	0.00
D(LGE2)	-0.01	0.82	-0.01	0.99
D(LGE2(-1))	3.81	1.09	3.50	0.00
D(LMS2)	-0.16	0.79	-0.20	0.84

D(LMS2(-1))	3.53	0.94	3.77	0.00
D(LGE_LMS)	-0.37	0.85	-0.43	0.67
D(LGE_LMS(-1))	-3.52	1.06	-3.33	0.00
D(LGE_LMS(-2))	0.13	0.09	1.46	0.16
CointEq(-1)	-0.21	0.01	-14.61	0.00
Long Run ADL Results				
Variable	**Coefficient**	**Std Error**	**t-Stat**	**Prob.**
LGE	3.88	0.86	4.48	0.00
LMS	3.03	0.99	3.07	0.00
LGE2	-4.27	1.25	-3.42	0.00
LMS2	-4.51	1.19	-3.77	0.00
LGE_LMS	-4.11	1.21	-3.38	0.00
C	2.93	0.82	3.57	0.00
Bounds Test	**F-Stat**	**Signif**	**I(0)**	**I(1)**
	25.79	5%	2.39	3.38

Table 2 shows the Conditional Error Correction (CEC), the Bounds test and long-run Auto-regressive Distributed Lag (ADL) results of the individual and improvement effects of fiscal and monetary policies as well as their interactive effects on growth of the Nigerian economy.

The F-bounds test shows that co-integrating relationship existed among the variables in the model. This is because the f-statistics of 25.79 is higher than the lower (2.39) and upper (3.38) bounds. The coefficient of error correction showed the speed of adjustment of about 21% to equilibrium in the co-integrating relationship.

The Conditional Error Correction results showed the one-to-one correspondence of the Auto-regressive Distributed Lag (ADL) model. The table shows that the one-year lag of Real GDP and the differenced one-year lag of real GDP were positive and significant. This implies that the growth of the Nigerian economy of last year affected present year positively and significantly. A one-to one correspondence on the individual effect of government expenditure on growth showed that the one-year lag and differenced value of the individual effect of government expenditure were positive with coefficient values of 0.81 and 0.25. This implies that individual effect of government expenditure affected growth of Nigeria positively during the period under study. Moreover, the long run results showed that government expenditure individually affected growth positively and significantly.

Also, an analysis of the one-to-one correspondence of money supply showed that the one-year lag and differenced value affected growth of Nigeria positively with coefficient values of 0.46 and 0.39 respectively. This implies that the individual effect of money supply on growth was positive. Moreover, the long run relationship showed that the money supply individually affected growth positively and significantly.

An analysis of the one-to-one correspondence of the improvement effects of fiscal and monetary policies showed that the improvements effects of both policies affected growth negatively in both the one-year lag values (-0.89 and -0.94) and differenced values (-0.01 and -0.16). The long-run relationship showed that the improvement effects of fiscal and monetary policies affected growth negatively and significantly. This implies that since 1960, efforts by the government to improve fiscal and monetary policies have been detrimental to the economy. These improvements have not had the needed impacts on the growth of the economy. Unfortunately, these macroeconomic policies have not interacted positively to growth.

The one-to-one correspondence show that the interactive effects of fiscal and monetary policies on growth were negative for both the one-year lag (-0.86) and differenced value (-0.37). The long run result shows that the coefficient of the interactive effect of fiscal and monetary policies was negative with a value of -4.11. This implies that fiscal and monetary policies interacted to the detriment of growth of the Nigerian economy during the period under study.

In summary, fiscal policy has individually affected growth positively but improvements in fiscal policy have not been successful in promoting growth. Also, monetary policy has individually affected growth positively but improvements in monetary policies by the apex monetary authorities have not supported growth. Unfortunately, these policies have been counteractive to growth during the period under study.

It is necessary to trace the effects of fiscal policy shock and monetary policy shock on the growth of the Nigerian economy during the period under study. Figure 3 shows the impulse response function.

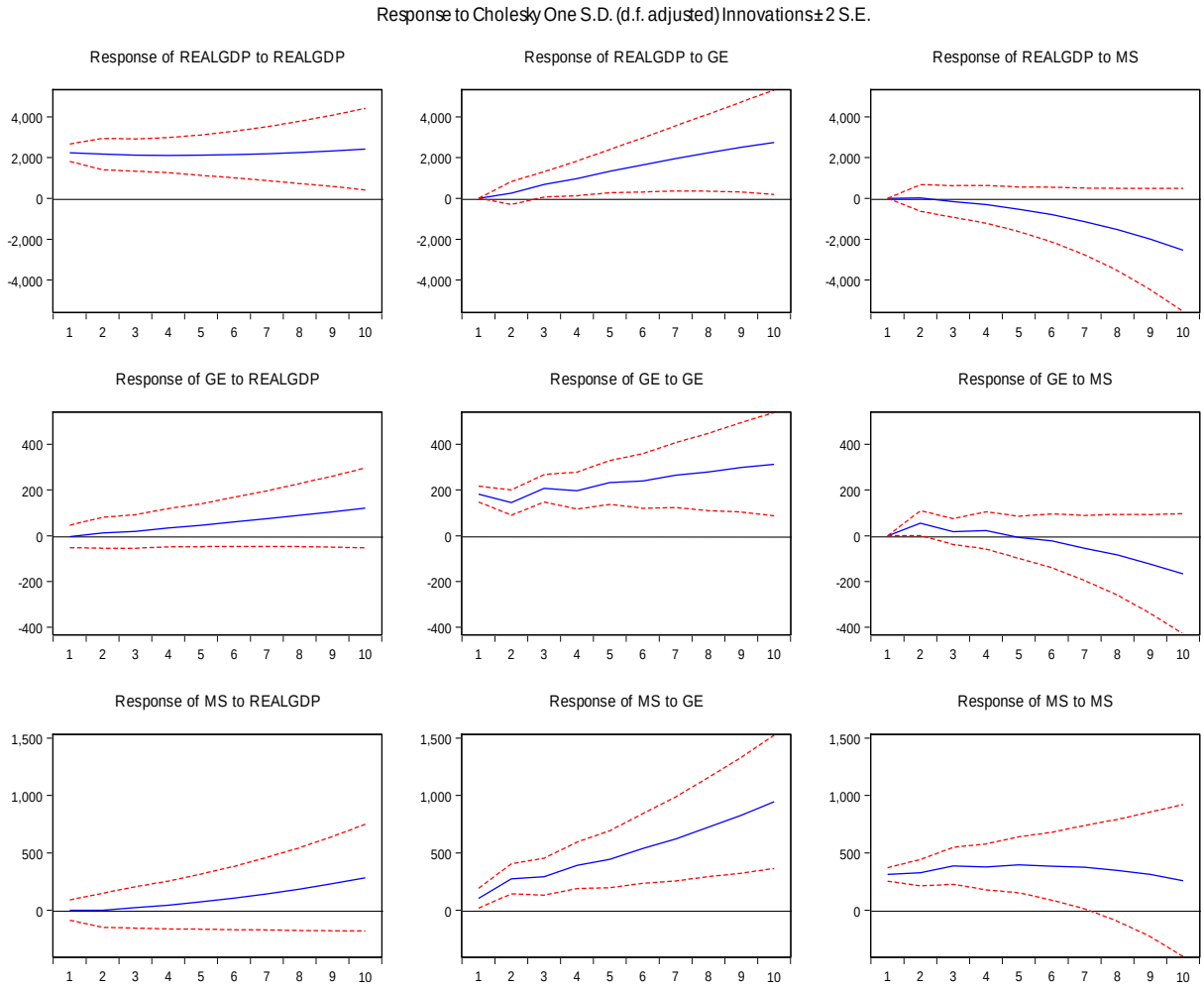

Figure 3: Impulse Response Function

Figure 3 shows that a one standard deviation shock to real GDP caused real GDP to increase gradually. Also, a one standard deviation shock to fiscal policy caused real GDP to increase. However, a one standard deviation shock to monetary policy caused real GDP to decrease. It is imperative to give a brief analysis of the individual, improvement and interactive effects of fiscal and monetary policies on growth of Nigeria in different periods of history since 1960. The results are displayed in table 3.

Table 3: Individual, Improvement and Interactive Effects of Fiscal and Monetary Policies on Economic Growth in different Periods in Nigeria's History.

ERAS IN NIGERIA'S HISTORY	GE	Prob.	MS	Prob.	GE^2	Prob.	MS^2	Prob.	(GE)(MS)	Prob.
Post-Independence Era (1960-1967)	+	√	-	√	+	√	-	X	-	√
Pre-SAP Era (1970-1985)	-	X	+	√	+	√	+	√	-	√
Post-SAP/Pre-Privatization Era (1986-1999)	+	√	-	√	+	√	+	√	-	√
Post-Privatization/Civilian Era (1999-2015)	-	X	+	X	+	x	+	X	-	x
Military Era (1966-1998)	+	X	+	√	+	√	+	√	-	√

Note: + signifies a positive relationship, while - signifies a negative relationship; √ denotes a significant relationship while x signifies a non-significant relationship.

The results of the interactive effects of fiscal and monetary policies on economic growth of Nigeria in the post independence/pre-civil war era (1960-1967) showed that the fiscal policy individually affected growth positively and significantly; and monetary policy individually affected growth negatively and significantly. Also, the improvement in fiscal policy in the post independence era affected the economy positively and significantly, while the improvement in monetary policy affected the economy negatively and non-significantly. Sadly, the interactive effects of fiscal and monetary policies on economic growth were negative and significant; that is both policies were counteractive to growth in the post independence era.

The interactive effects of fiscal and monetary policies on economic growth of Nigeria in the pre-SAP era (1970-1985) were also examined. The results showed that fiscal policy individually affected growth negatively. However, the relationship was not significant. On the other hand, monetary policy individually affected growth positively and significantly. Also, the improvement effects of both fiscal and monetary policies to growth were positive and significant. However, the interactive effects of both policies to growth were negative and significant, that is, they were counteractive to growth during the pre-SAP era.

The post-SAP/pre-privatization era (1986-1999) also experienced the individual, improvement and interactive effects of fiscal and monetary policies. The results showed that fiscal policy individually affected growth

positively and significantly. However, monetary policy individually affected growth negatively and significantly. Improvements in both policies affected the Nigerian economy positively and significantly. Sadly, the interactive effect of fiscal and monetary policies was negative and significant, that is, both policies were counteractive to growth during post-civil war/pre-SAP era.

Fiscal and monetary policies also had roles to play during the military era (1966-1998). Individually, fiscal and monetary policies affected growth positively. While the individual effect of fiscal policy on growth was not significant, the individual effect of monetary policy was significant. The improvement effects of both policies affected the economy positively and significantly. However, the both policies did not interact well to support growth, that is, they were counteractive to growth during the military era.

Results of the individual, improvement and interactive effects of fiscal and monetary policies were not significant during the post-privatization/civilian era (1999-2015). While the individual effect of fiscal policy on growth was negative, the individual effect of monetary policy on growth was positive. The improvement effects of both policies on the economy were positive. The interactive effect of both policies on the economy was negative.

In summary, fiscal and monetary policies have had significant individual effects on the Nigerian economy; and improvements of each policy have often had significant effects on the Nigerian economy. However, both policies have not interacted well to support growth; in other words, there is no synergy between both policies in propelling the economy. This creates counteractive effects on growth of the Nigerian economy. From the foregoing, fiscal and monetary policies have had varying effects on the economy.

Table 3: Relative Importance of Fiscal and Monetary Policies on Growth of Nigeria, 1960 to 2015

Period	GDP	GE	MS	$(Si_1/Sy)b_1$	$(Si_2/Sy)b_2$
Short Run	4.07	3.45	3.59	0.33	0.22
Long Run	4.07	3.45	3.59	3.28	2.67

Table 3 shows that fiscal policy has been relatively important in influencing growth in the short run, with a value of 0.33 in contrast to that of monetary policy with a value of 0.22. Also, fiscal policy has been relatively important in influencing growth in the long run with a value of 3.28 in contrast to monetary policy with a value of 2.67. In conclusion, fiscal policy has been relatively important and therefore dominant in influencing growth of Nigeria.

5. CONCLUSION

The study examined the effects of fiscal and monetary policies on the growth of the Nigerian economy using annual time series from 1960 to 2015. The study discovered that fiscal and monetary policies have individually affected growth positively; and the effects of improvements in both policies have often been successful in promoting growth. Unfortunately, these policies have been counteractive to growth. It was concluded that fiscal policy has greater influence on growth than monetary policy; but there was no synergy between fiscal and monetary policies in propelling the growth of the Nigerian economy. Based on the findings, it was recommended that:

1. Policy makers should focus more on fiscal policy than monetary policy to enhance economic growth. Fiscal policy can be more effective in promoting growth if corruption and resource leakages are checked.

2. Fiscal and monetary policies should be formulated and implemented in such a way that would interact positively to foster growth.

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