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The Relative Effectiveness of Fiscal and Monetary Policies on the Growth of Nigeria Economy

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Abstract

This paper examines the relative effectiveness of fiscal and monetary policies in Nigeria within the period of 1981 to 2018. The broad objective of this study is to examine the impact of fiscal and monetary policy instruments on the economic growth of Nigeria. The specific objectives are to: examine the trend of monetary policy instruments, fiscal policy instruments, and economic growth and to examine the long-run relationship between monetary policy instruments, fiscal policy instruments, and economic growth. The study employed quantitative tools of data analysis and was based on standard econometrics principles. The estimation techniques used were the Philip-perron unit root test, ARDL bound co-integration, and Error Correction Model. The study finds that there is a positive relationship between GDP, EXR, INTR, and M2 (broad money supply) while the study further shows that there is a negative relationship between GDP and GEX. It was gathered that monetary policy and fiscal policy have an impact on the economy. The study finds however that the impacts of both policies are necessary for economic growth within the period covered by this study. The research concludes that the combination of both policies would be a necessity for development in the long run for economic stability and each should be implemented in economic situations in which they are best suited. It was recommended that both policies should be seen as complementing each other

Keywords: *Monetary Policy, Fiscal Policy, Economic Growth.*

INTRODUCTION

Sustainable economic growth and development is of no doubt, one of the most challenging development issues in the third world countries today. It is also true that the focus of macroeconomic thinkers and policymakers is on how to attain macroeconomic stability. The two major economic policies often used to stabilize any economy of the world are monetary and fiscal policies and their cardinal tools are money supply and government expenditure, respectively (Asogu, 1998). On one hand, monetary policy is defined as the actions of a central bank that determine the size and rate of growth of the money supply, which in turn affects interest rates. Monetary policy is maintained through actions such as changing the interest rate, or the amount of money banks need to keep in the vault. On the other hand, fiscal policy has to do with changing government expenditure and tax to achieve a given macroeconomic. Monetary policy concerns the use of monetary instruments such as credit control, money supply, and interest rates to influence overall demand in the economy, while fiscal policy is the use of government taxes and expenditures, including debt to control aggregate demand in the economy. Monetary policy is implemented primarily by the monetary authorities, particularly the central bank, while fiscal policy is implemented by the fiscal authorities, particularly the Ministry of Finance or Treasury Department. Although monetary and fiscal policies pursue the same ultimate objective, i.e. the

attainment of high, stable, and sustainable economic growth, they employ different instrument objectives. Today, fiscal and monetary policies are linked heavily in macroeconomic management as they augment each other.

Fiscal policy involves the use of government spending, taxation, and borrowing to influence the pattern of economic activities and also the level and growth of aggregate demand, output, and employment. Fiscal policy entails the government's management of the economy through the manipulation of its income and spending power to achieve certain desired macroeconomic objectives (goals) among which is economic growth (Medee and Nembee, 2011). Olawunmi and Tajudeen (2007) opine that fiscal policy has conventionally been associated with the use of taxation and public expenditure to influence the level of economic activities 2002). According to Arthur Smithies, fiscal policy is the use of government income and expenditure to produce a desirable effect and avoid an undesirable effect. Monetary policy is one of the tools for controlling the money supply in an economy by the monetary authorities to achieve desirable economic growth. Governments try to control the money supply because most governments believe that its rate of growth affects the rate of inflation. Hence, monetary policy comprises those government actions designed to influence the behavior of the monetary sector. Monetary policies are effective only when economies are characterized by well-developed money and financial markets like developed economies of the world. This is where a deliberate change in monetary variables influences the movement of many other variables in the monetary sector.

Monetary policy has thus been 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 sustainable economic growth and external viability [Adegbite & Alabi, 2013]. Monetary policy may be inflationary or deflationary depending upon the economic condition of the country. Contractionary policy is enforced to squeeze down the money supply to curb inflation and expansionary policy is to stimulate economic activity to combat unemployment in recession. The action is carried out by changing the money supply and/or interest rates to manage the quantity of money in the economy.

Today, monetary and fiscal policies are both commonly accorded prominent roles in the pursuit of macroeconomic stabilization in developing countries, but the relative importance of these policies has been a serious debate between the Keynesians and the monetarists. The monetarists believe that monetary policy exerts a greater impact on economic activity while the Keynesians believe that fiscal policy rather than monetary policy exerts greater influence on economic activity. Despite their demonstrated efficacy in other economies as policies that exert influence on economic activities, both policies have not been sufficiently or adequately used in Nigeria, (Ajisafe and Folorunsho 2008). There is a consensus among economists that both policies individually and collectively affect the income of a nation but the degree of relative effectiveness of these policies has been the source of controversies and debates among economists. It is based on these controversies and debates that this study re-examines the relative effectiveness of fiscal and monetary policies on national income in Nigeria with the use of quarterly time series from 1981-2018.

Statement of Research Problem

In Nigeria, despite the government's effort to improve Economic growth and Welfare, the achievement of better economic welfare, Nigeria remains elusive with rising and unabated, unemployment, inflation, social restiveness, poverty, etc. Since independence in 1960, Nigeria has been striving to achieve sustainable economic growth and development. The poor growth performance of Nigeria over recent years is often attributed to the ineffectiveness of monetary and fiscal policy undertaken. Indeed, it has been argued in the literature that inappropriate monetary policy and constraints on fiscal policy can deteriorate the economy of a country.

The failure of monetary policy and fiscal policy to curb price instability has caused growth instability as Nigeria's record of growth and development has been very poor. The economy has also witnessed times of contraction and expansion but evidently, the reported growth has not been a sustainable one as there is evidence of growing poverty among the populace. There has been criticism concerning the fiscal policy implemented especially government spending and surplus budget often adopted.

Nigeria has experienced high volatility in inflation rates. Since the early 1970s, there have been four major episodes of high inflation, over 30 percent. The growth of the money supply is correlated with the high inflation episodes because the money supply was often more than real economic growth. However, preceding the growth in money supply, some factors reflecting the structural characteristics of the economy are observable. There has been a regime of monetary policy in Nigeria. Sometimes monetary policy is tight and at other times it is loose, mostly used to stabilize prices. The economy has also witnessed times of expansion and contraction but evidently, the reported growth has not been a sustainable one as there is evidence of growing poverty among the populace. This study would be set up to pinpoint the relative effectiveness of monetary and fiscal policy instruments on economic growth in Nigeria.

REVIEW OF LITERATURE

Monetary Policy

Monetary policies are measures taken by the monetary authorities aimed at enhancing economic growth and stability by adjusting the cost and level of money supply, to achieve broad macroeconomic objectives of price stability, output growth, and full employment. Mordi (2009) describes monetary policy as a blend of measures or set of instruments designed by the Central Bank to regulate the value, supply, and cost of money consistent with the absorptive capacity of the economy or the expected level of economic activity, without necessarily generating undue pressure on domestic prices and exchange rates.

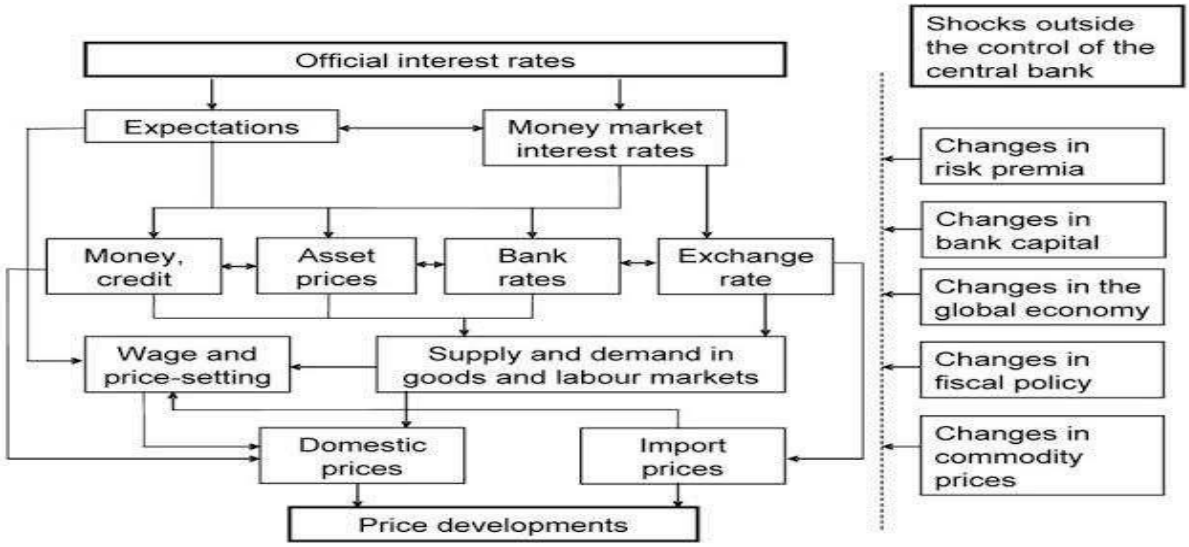
By altering the level of money supply in the economy, central banks make money cheaper depending on the absorptive capacity of the economy at a particular point in time. Reaching a balance is especially vital in monetary policy, because a surplus or shortage beyond the optimum level, in the money supply may be detrimental to the realization of the macroeconomic objectives. Monetary policy consists of the actions of the Central bank, currency board, or other regulatory committee that determine the size and rate of growth of the money supply, which in turn affects interest rates. Monetary policy is maintained through actions such as modifying the interest rate, buying or selling government bonds, and changing the amount of money banks are required to keep in the vault (bank reserves). Broadly there are two types of monetary policy, expansionary and restrictive.

Expansionary monetary policy is used to overcome recession or a deflationary gap, it increases the money supply to lower unemployment, boost private sector borrowing and consumer spending, and stimulate economic growth. It is often referred to as "easy monetary policy". Restrictive monetary policy is used to overcome an inflationary gap, it slows the rate of growth in the money supply or outright decreases the money supply to control inflation; while sometimes necessary restrictive monetary policy can slow economic growth, increase unemployment, and depress borrowing and spending by consumers and businesses. The combination of these measures is designed to regulate the value, supply, and cost of money in an economy, in line with economic activities. Excess supply of money will result in an excess demand for goods and services, prices will rise and balance of payment will deteriorate. The challenges of monetary policy effectiveness rest wholly on monetary authorities.

Monetary Policy Transmission Mechanism

Monetary policy is a government policy that tries to influence the economy by changing the amount of money circulating in the economy (money supply) and the interest rate. The process through which monetary policy decisions impact an economy in general and the price level, in particular, is known as the monetary policy transmission mechanism. The main channels of monetary policy transmission are set out in a simplified, schematic form in the chart below.

Fig 1.1 *Monetary policy transmission mechanism*



Source: *www.ecb.europa.eu/mopo/intro/shared/ir*

There are different transmission channels through which monetary policy affects economic activities and these channels of transmission have been broadly examined under the monetarist and Keynesian schools of thought. The monetarist postulates that a change in the money supply leads directly to a change in the real magnitude of money. Describing this transmission mechanism, Friedman and Schwartz (1963), say an expansive open market operation by the Central Bank, increases the stock of money, which also leads to an increase in commercial bank reserves and liability to create credit and hence increase money supply through the multiplier effect.

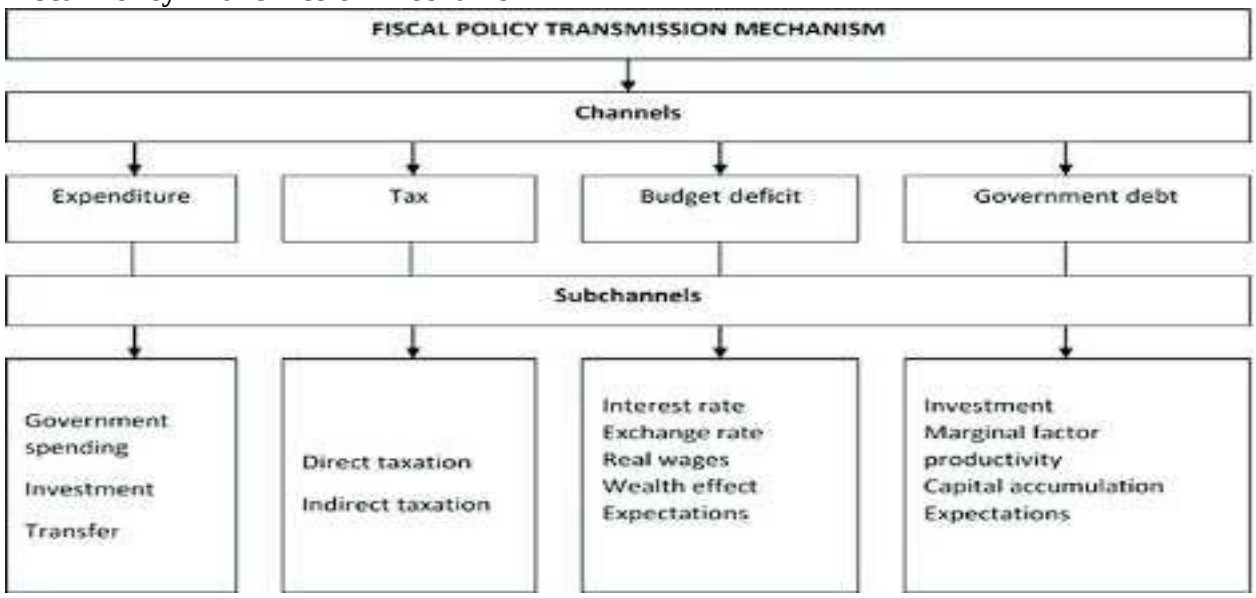
Fiscal Policy

Fiscal policy is mostly to achieve macroeconomic policy; it is to reconcile the changes which government modifies in taxation and expenditure, programs or to regulate the full employment price and total demand to be used through instruments such as government expenditures, taxation, and debt management (Hottz-Eakin, Lovely and Tosin, 2009). Fiscal policy can be contrasted with the monetary policy which attempts to stabilize the economy by controlling interest rates and supply of money. The two main instruments of fiscal policy are; government spending and taxation. Changes in the level and composition of taxation and government spending can impact the following variables in the economy such as aggregate demand and the level of economic activity, the pattern of revenue allocation, and the distribution of income. Fiscal policy consists of the manipulation of government finances by raising or lowering taxes or levels of spending to promote economic stability and growth. This role of the government sector in economic management is performed through the formulation and implementation of economic policy generally and fiscal policy in particular. It is designed to achieve the objective of price stability, growth, balance of payments equilibrium, full employment, mobilization of resources, and investment.

Fiscal Policy Transmission Mechanism

How does a change in fiscal policy feed through the economy to affect variables such as aggregate demand, national output, prices, and employment? The transmission mechanism of fiscal policy represents key macroeconomic activity through their interaction in the economy. However, the multiplier effects of an expansionary fiscal policy depend on how much spare productive capacity the economy has; and how much of any increase in disposable income is spent rather than saved or spent on imports. And also, the effects of fiscal policy on variables such as interest rates, (Riley 2016). This simple flowchart below identifies some of the possible channels involved with the fiscal policy transmission mechanism.

Fig 1.2 **Fiscal Policy Transmission Mechanism**



source: *www.ecb.europa.eu/mopo/intro/shared/ir*

Empirical Evidence

Extensive work has been done in an attempt to establish the effectiveness of monetary policy and fiscal policy instruments on economic growth, yet with little consensus to date. Some studies have confirmed limited or no impact of monetary policy with much attention given to fiscal policy and vice-versa. Some researchers find support for the monetarist view, which suggests that monetary policy has a greater effect on economic growth and dominates fiscal policy in terms of its impact on investment and growth. Chaudhry et al. (2012) investigated long-run and short-run relationships between monetary policy, inflation, and economic growth in Pakistan using the cointegration technique and the Error Correction Model (ECM) for the period from 1972 to 2010. They found that the monetary policy variable of call money was insignificant in the short run but positively significant in the long run. Mugume (2011) utilized the five-variable non-recursive VAR to estimate monetary transmission mechanisms in Uganda using quarterly data between 1999q1 and 2009q1. Using broad money and three-month T-bill rate (lending rate) as proxies of monetary policy, the results showed that a shock to interest rate (91-day T-bill rate) was considered as the monetary shock and it was found that a contractionary monetary policy reduced economic growth lasting up to two quarters while innovation in broad money supply (M2) had no statistically significant effect on output.

Jawaid et al. (2011) probed the effect of monetary, fiscal, and trade policy on economic growth in Pakistan, using the annual time series data from 1981 to 2009. They employed the co-integration and ECM revealing the existence of positive significant long-run and short-run relationships between monetary policy (money supply)

and economic growth. Senbet (2011) also investigated the relative impact of fiscal versus monetary action on output in the USA using the VAR approach and revealed a positive significant impact of money supply on economic growth. Their findings are congruous with Adefeso and Mobolaji (2010) who also studied the relative effectiveness of fiscal and monetary policy on economic growth in Nigeria using the co-integration technique and error correction mechanism, based on annual data from 1970-2007.

Oziengbe (2011) examined the relative effectiveness of monetary and fiscal policy in Nigeria using quarterly time series data from 1981-2009. He employed co-integration and error correction methodology. His results showed a significant positive relationship between real gross domestic product and government expenditure and a positive relationship between real gross domestic product and one-quarter lagged value of money supply. He further discovered that the impact of monetary policy action was delayed till the next quarter while fiscal policy action in the current quarter was observed to impact positively economic activities in the current quarter. The result also showed that the positive impact of monetary policy action on economic activities was more significant than that of fiscal policy within the period covered by the study. He concluded that both policies should be seen as complementary demand management policies and each should be implemented in economic situations for which they are best suited.

Ajayi (1974) emphasized that in a developing economy of which Nigeria is a typical example, the emphasis is always on fiscal policy rather than monetary policy. In his work, he estimated the variables of monetary and fiscal policies using the ordinary least square (OLS) technique and found out that monetary influences are much larger and more predictable than fiscal influences. This result was confirmed with the use of beta coefficients that changes in monetary action were greater than that of fiscal action. In essence, greater reliance should be placed on monetary actions. As noted by Ajisafe and Folorunso (2002), the monetary rather than fiscal policy exerts a great impact on economic activity in Nigeria, and the emphasis on fiscal action of the government has led to greater distortion in the economy...

RESEARCH METHODOLOGY

The methodology used in this research work is the autoregressive distributed lag (ARDL) model. The level form model to be employed in this study is given as:

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Where,

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It is assumed that the econometrical expression of equation 1 follows a Cobb-Douglas equation;

$$= A * GOV_t^{\alpha_1} * MS_t^{\alpha_2} * INT_t^{\alpha_3} * EXR_t^{\alpha_4} * e^{u_t} \quad \ldots \ldots 2$$

Where,

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The log-linearized version of equation 2 is presented as equation 3 below;

$$\ln = 5_{>} + 5_{@}\ln + 5_{A}\ln + 5_{B}\ln + 5_{C}\ln + \$ \ldots \ldots 3$$

The coefficient of GOV signifies the government spending elasticity of national income while the coefficient of MS represents the money supply elasticity of national income. However, since the variables in Equation 3 above are trending variables, it has to be defined clearly that Equation 3 above is a long-run (co-integrated) equation that explicitly the linear relationship between the dependent and the independent variables. Ideally, there is always a short-run dynamic that drives a particular system to a steady state (long-run) if exists, and since we are interested in the growth model, it necessitates that we transform equation 3 into a growth form by first differencing it. However, doing this throws away rich information in the long run. In this sense, there is a need to represent the equation in an error correction form so that both short-run and long-run information are retained. Based on applied econometric literature, the ultimate single equation model to achieve this objective is the ARDL model; hence equation 3 is presented in an ARDL form below;

$$\nabla\ln = \sum_{6J@}^{I} G_{@6}\nabla\ln_{H6} + \sum_{6J>}^{K} G_{A6}\nabla\ln_{H6} + \sum_{6J>}^{L} G_{B6}\nabla\ln_{H6} + \sum_{6J>}^{L} G_{C6}\nabla\ln_{H6} + \sum_{i=0}^{L} G_{M6}\nabla\ln_{H6} + N\ln_{H@->} - {}_{@}\ln_{H@-} - {}_{A}\ln_{H@-} - {}_{B}\ln_{H@} - a_4\ln EXR_{H@} + \$ \ldots \ldots 4$$

Since a change in the log of expression is equivalent to the growth of such an expression; hence, equation 4 above is now the growth model that shows the relationship between real GDP, government expenditure, and money supply which are proxies for fiscal and monetary policies respectively both in the short and long runs.

Unit Root Test

Table 1 Phillip-perron Unit root test

Variables	**Level**		**First difference**		**I(d)**
	T-Statistics	**Prob.**	**T-Statistics**	**Prob.**	
LNGDP	-3.971532	0.0184**	-3.932558	0.0204**	**I(0)**
LNGEX	-0.815417	0.9549	-7.544021	0.0000***	**I(1)**
LNINT	-2.037759	0.5621	-6.164718	0.0001***	**I(1)**
LNM2	-1.593783	0.7762	-3.016593	0.0428**	**I(1)**
LNEXR	-1.237596	0.8879	-5.556381	0.0003***	**I(1)**

Source: Author's computation
Note * (**) (***) denotes null hypothesis at 10%, 5% and 1% respectively

From the above all the variables have unit roots. These variables were different and they were all integrated in different order.

ARDL bound test

Table 2: ARDL Bound test result

F-statistics	7.92	
K (dof)	4	
Significance	I(0)	I(1)
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Authors' computation

Since the f-statistics value of 7.92 is higher than the upper bound critical value (5.06) at 1%. Thus we conclude that a long-run relation exists among the variables.

Llong run impact of the dependent variable on independent variables

Table 3: Estimated Long-Run Coefficients using the ARDL Approach

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGEX	-0.575686	0.100271	-5.741298	0.0000
LNEXR	0.238624	0.103194	2.312380	0.0335
LNINT	0.065426	0.151791	0.431027	0.6719
LNM2	0.528322	0.063719	8.291386	0.0000
C	19.239623	1.594689	12.064815	0.0000

Source: Author's computation

Short run impact of the dependent variable on independent variables

Table 4: Estimated Short-Run Error Correction Model using the ARDL Approach

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNGEX)	0.047704	0.054699	0.872113	0.3953
D(LNGEX(-1))	0.108524	0.053852	2.015231	0.0600
D(LNGEX(-2))	0.066614	0.046706	1.426252	0.1719
D(LNEXR)	-0.048905	0.034325	-1.424786	0.1723
D(LNEXR(-1))	-0.009486	0.040984	-0.231452	0.8197
D(LNEXR(-2))	-0.079505	0.032818	-2.422562	0.0269
D(LNINT)	0.185794	0.077329	2.402652	0.0280
D(LNINT(-1))	0.002277	0.072361	0.031468	0.9753
D(LNINT(-2))	0.156100	0.060617	2.575205	0.0197
D(LNM2)	0.092536	0.083168	1.112643	0.2813
D(LNM2(-1))	0.093098	0.111849	0.832347	0.4168
D(LNM2(-2))	-0.195721	0.077448	-2.527136	0.0217
ECM	-0.438226	0.130455	-3.359220	0.0037

Source: Author's computation

CONCLUSION AND RECOMMENDATION

The adoption of one of the policies to stimulate the growth of the economy will only be effective in the short run while the combination of both policies would be a necessity for development in the long run for economic stability. In conclusion, both monetary and fiscal policy are relevant to economic growth and development. Absolute reliance should not be on any one of these major economic management policies at all times. They should be implemented in economic situations for which they are best suited. The combination and coordination of both policies are highly recommended.

Finally, the Government should direct efforts towards improving the level of development of the money and capital market. This is because a well-developed money and capital market with a wide range of both short-run and long-term finance is necessary for the efficiency of the monetary system.

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