
Money Supply, Inflation and Economic Growth in Nigeria

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Abstract

The study empirically investigated money supply, inflation and economic growth in Nigeria. The specific objectives were to; determine the effect of broad money supply, inflation, interest rate, labor supply on the growth of Nigerian economy, using GDP as a proxy. Annualized time series data from the CBN statistical Bulletin, 2018 were obtained for the study. Ordinary least square multiple regression statistical technique was adopted in the analysis of data. Results indicated that money supply had positive and significant effect on economic growth in Nigeria during the period. The study also revealed that inflation, labor supply, interest rate had positive and insignificant effect on economic growth in Nigeria. The implication is that broad money together with price can facilitate economic growth. Based on these results, it was recommended that government should sustain the deepened financial system for continuous flow of funds across the sector of the economy

Keywords: Money supply, Inflation, Interest rate, labor supply, GDP

INTRODUCTION

Money supply in relation to economic growth has received more attention than any other subject matter in the field of monetary economics in recent years. Because of the importance of economic growth among the macroeconomic objectives of developed and developing nations, persistent concern has always been given among monetary economists such as Asinya (2009) to the relationship between money supply and output. Money supply is synonymous with terms such as money stock, quantity of money and stock of money. There are three alternative views regarding measurement of money supply: the most common view is associated with the traditional Keynesian thinking which stresses the medium of exchange function of money and is usually designated by (M_1). M_1 is defined as currency with the public and demand deposit with commercial banks. It can also be called high powered money or narrow money. The second view is designated as (M_2) and is known as broad money. It is associated with modern quantity theorist headed by Friedman and M_2 consist of M_1 plus time and saving deposits. The third view is the broadest and is associated with M_3 . It includes M_2 plus deposits of savings bank, building societies, loan associations and deposits of other credit and financial institutions. (Prasert, Kanchana, Chukiat & Monekeo, 2015).

The Central Bank of Nigeria views money supply in two ways: narrow and broad money that is M_1 and M_2 , since the establishment of the Central Bank of Nigeria in 1959, it has continued to play the traditional role expected of a central bank which is the regulation of the stock of money in such a way to promote the social welfare. The economic environment that guided monetary policy before 1988 was characterized by the dominance of the oil sector, the expanding role of the public sector in the economy and over-dependence on imports. In order

to maintain price stability and a healthy balance of payment position, monetary management depends on the use of direct monetary instruments such as credit ceilings, selective credit control, administered interest and exchange rates, as well as the prescription of cash reserve requirements and special deposits. (Jawaid, Qadri & Ali, 2011). The most popular instrument of monetary policy was the issuance of credit guideline which brought about sectoral allocation of bank credit to stimulate the productive sectors and thereby stem inflationary pressures. The fixing of interest rates at relatively low levels was done mainly to promote investment and growth. Occasionally, special deposits were imposed to reduce the amounts of free reserves and credit creating capacity of the banks. Minimum cash ratios were stipulated for the banks in the mid-1970s on the basis of their total deposit liabilities, but since such cash ratios were usually lower than those voluntarily maintained by the banks, they proved less effective as a resistant on their credit operations. Evidence in the Nigerian economy has shown that since the 1970s, some relationship exist between the stock of money and economic growth. Over the years, Nigeria has been controlling her economy through variations in her stock of money. Consequent upon the effect of the collapse of oil price in 1981 and the Balance of payment deficit experienced during the period, various methods of stabilization ranging from fiscal to monetary policies were used and interest rates were fixed. Also, the Structural Adjustment Programme (SAP) showed that reducing money stock through increased rate would lower gross national product. Thus, the notion that stock of money varies with economic activities which is applicable to the Nigerian economy (Laidler, 1993).

The implication of the stability of the relationship between money supply and economic growth will show the effectiveness of monetary policy following the conventional Hicksian IS-LM analysis. (Twinoburyo & Odhiambo, 2017). Money supply is a basic macroeconomic element that influences economic growth in an economy by ensuring effective running of economic activities in both public and private sectors through liquidity availability. Through money supply, the private sectors are able to obtain credits to carry on businesses at a price being referred to as interest rate. Money supply is a monetary policy tool that is highly essential in boosting economic growth of a nation. On the other hand, monetary policy is an important instrument used by Central bank of the country to maintain economic stability and promote economic growth Nnanna (2001) views monetary policy as a tool at the disposal of the monetary Authorities to influence the availability and cost of credit/money with the ultimate aim of achieving price stability. However, monetary authorities especially in the developing countries have a dual role of ensuring price stability and sustainable growth in an economy by employing instruments of monetary policy (Njimanted, Akume & Mukete, 2016). On the other hand, economic growth shows the percentage increase in GDP and is measured based on the fixed and the market prices .The monetarists believe that money supply is a tool that gives rise to economic growth based on unexpected increase in money stock (Jawaid, Qadri & Ali, 2011) while the Keynesians argue that money supply has a limited influence on economic growth (Twinoburyo & Odhiambo, 2017). The major problem that trigged this work is the recurrence of general feeling that a continuous annual rate of money increases will adversely affect the rate of price level which will directly lead to inflation, and may deny the intended effects of use of monetary policy measure to influence economic growth. Recently, these inflationary pressures have succeeded in bringing about devaluation in Nigeria's value as a result of expansionary measures of money supply. Money is more closely related to aggregate level of spending, prices, income, production and employment than any other single economic variable. An excess supply of money which will result in an excess demand for goods and services, in return leads to increase in price and a deterioration of the balance of payment position. Typically, in the period of high inflation, the horizon of the investor is very short, and resources are diverted from long term investment to those with immediate returns and inflation hedges,

including real estate and currency speculation. In the light of the foregoing, all modern economies now consider monetary management as an integral part of their responsibilities. There is a consensus among researchers and development experts that money supply input is a catalyst for economic growth and development. What is contentious, the combination of factor inputs to engender the desired growth. That is the direction of causality from interplay of factor inputs to economic growth is an ongoing debate especially in an emerging volatile economy such as Nigeria. Money supply does not promote economic growth in isolation in factor inputs such as labor of the financial system is likely to measure the desired growth.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Keynesians view that when there is an increase in money supply, the first impact of this change is to reduce the rate of interest. A lower interest rate has the tendency to increase investment since the latter is a decreasing function of the rate of interest. An increase in investment raises aggregate demand and brings about a rise in income, output and employment. Implicit in the above view is the idea that an increase in money supply affects prices only when the level of full employment has been reached on or before. Fiscalists consider variables other than money supply in their explanation of depressions and inflations. They share the view that depressions are caused by deficiencies in aggregate demand and that the deficiencies could be taken care of by an increase in government expenditure. This expenditure can be financed through issuing bonds, printing more money and borrowing. Borrowing from the domestic financial market has the tendency to increase the cost of credit while printing more money could result in inflation. Other school of thought that the demand for money is a stable function of many variables and that money supply is the most important determinant of interest rate, incomes (output), employment and prices (Woods, 1980). The monetarists contend that all changes in money income can be traced to changes in the supply or demand for money. The central theme in all the views of the monetarists headed by Milton Friedman is that money matters in economic activities and as such monetary policy is a more viable economic stabilization measure than fiscal policy. This contention contrast sharply with the views of the Keynesians, who believe that fiscal policy is a more potent instrument for economic stabilization and aggregate income performance. However the Keynesians and the monetarists agree that both fiscal and monetary policies have significant effects on aggregate demand and general price levels. The major tenets of monetarism could be stated as follows: a) Money supply has a direct and significant impact on national income and expenditure. b) Interest rates have no effect on the supply and demand for money. The demand for money is the transactions demand for money, which is determined by the level of income. c) Change in the general price level is essentially a monetary phenomenon and exogenously determine by the monetary authorities. Monetarist accepts the growth rule, which implies that growth in monetary aggregates affects aggregate economic performance. Thus, the need to focus on money stock as the proper target of monetary policy. Under monetarism, money supply is the target of monetary policy, variations in the aggregate money supply affect the achievement of other macro-economic objectives.

The conventional Hicksian IS-LM model synthesizes the real and monetary component of the economy and enables us to properly understand the effect of money, government expenditure and other macro-economic policies on the level of aggregate output. The IS represent the investment - saving identity, while the LM represent the liquidity demand -money supply equality. The equilibrium in the goods market yields a negative relationship between the level of aggregate output and the interest rate. To derive this, assume a closed three sector economy; with aggregate demand represented by consumption expenditure by households; investment demand by firms and government expenditure on good symbolically. $AD = C + I$

+ G Where AD = Aggregate demand, C = household consumption spending I = Investment G = Government expenditure From our general knowledge of macroeconomics, aggregate demand equal to aggregate income and equal to aggregate supply (AD=AS). Consumption, according to the Keynesian theory, is a function of disposable income, that is, C(Y), and I is a function of interest rate r, and income (y), that is: $I = I(r)$ ($I_y > 0$) $I_r < 0$ In other words, investment is decreasing in interest rate but increasing in income. The IS relationship can therefore be rewritten as: $Y = C(Y) + I(Y, r) + G$ Solving this relationship yields a downward sloping IS curve. The LM curve, on the other hand, represents the money market equilibrium condition: $M_s = M_d$ Where: M_s = Money supply M_d = Demand for real money balances But $M_d = f(y, r)$ economic stability. According to John Maynard Keynes, the public holds money for transaction, precautionary and speculative purpose. These three reasons determine the demand for money and its circulation by the Monetary Authorities of nations, in other words, the absence of these three purposes will make suppress economic growth in a country.

LITERATURE REVIEW

Money Supply refers to the total stock of monetary media of exchange available to a society for use in connection with the economic activity of the country (Ahuja, 2010). According to the standard concept of money supply, it is composed of the following two elements: Currency with the Public and Demand deposits with the Public. Two things must be noted with regard to the money supply in the economy. First, the money supply refers to the total sum of money available to the public in the economy at a point of time. That is, money supply is a stock concept in sharp contrast to the national income which is a flow representing the value of goods and services produced per unit of time, usually taken as a year. Secondly, money supply always refers to the amount of money held by the public (Ahuja, 2010).

Economic growth is an increase in real gross domestic product (GDP) accruing over some time period, or an increase in real GDP per capita occurring over some time period (McConnell and Brue, 2005). Economic growth is calculated as a percentage rate of growth per quarter (3- Month period) or per year. Real GDP per capita (or per capita output) is found by dividing real GDP by the size of the population (McConnell and Brue, 2005). However, for the purpose of this paper, the relevant theory is the neoclassical growth theory. According to traditional neoclassical growth theory, output growth results from one or more three factors: increase in labour quantity and quality (through population growth and education), increases in capital (through saving and investment), and improvements in technology (Todaro and Smith, 2009). The starting point of any theory of growth must be an aggregate production function, a specification of the relation between aggregate output and the inputs in production (Blanchard, 2009). The simple neoclassical aggregate production function expresses Aggregate output (Y) as a function of capital (K) and Labour (L). This can be stated thus:

$$Y = f(K, L)$$

However, for the purpose of this study, the framework is based on the conventional simple neoclassical aggregate production function in which money (M) constitutes an input. Thus,

$$Y = f(L, K, M)$$

Increasing concern in recent literature has been skewed towards the integration of monetary theory with economic growth and the role of money in growth theories. Most research have given little consideration to the theoretical underpinning of a growth model that explicitly takes money growth into consideration. An enormous body of literature, the effects of sustained price inflation on the equilibrium growth path in a neoclassical setting. Subsequent studies have tried to model money demand within the growth framework of Solow. According to Kaldor (2016), the determinant of the money rate of return is the rate of growth of income in money terms, which will exceed or fall short of the real rate of growth accordingly as prices

are rising or falling. This argument is possible if stable price is only consistent with a steadily growing economy when the real rate of growth in the national income is fairly high.

Moroney (2012) develops a long-run version of the quantity theory of money growth, real GDP growth, and inflation and finds that the cross-section inflation rates are explained almost entirely by average broad money growth rates. The author asserts that countries experiencing high money growth and inflation had estimated coefficients of money supply (M_2) growth strikingly close to one, strongly in conformity with the quantity theory. Comparatively, in countries with relatively low money growth and inflation, the estimated money growth coefficient is only 0.69; hence the quantity theory offers a less complete explanation of inflation. Money supply and GDP growth are nearly orthogonal, consistent with long-run monetary super neutrality.

Ireland (2014) found that the effects of inflation on growth are small and the effects of growth on the monetary system are substantial. The results are consistent with evidence that money and asset demands vary systematically within economies as they develop. Lucas (2010) in a survey of the welfare cost of inflation found that the gain from reducing the annual inflation rate from 10 per cent to zero is equivalent to an increase in real income of slightly less than one per cent. An increase in the rate of inflation lowers the real return on money, leading to substitute out of cash and into capital. This is Tobin effect: higher rates of inflation are associated with a larger capital stock and a higher level of output per capita. Sidrauski (2017) proposed another version of the monetary growth theory, with his seminal work on the context of an infinitely-lived representative agent model where money is super neutral⁶. The main result in Sidrauski's study is that an increase in the inflation rate does not affect the steady state capital stock and as such neither output nor economic growth is affected. Savings and money-demand functions are derived from optimizing behavior in this model, rather than postulated and held fixed as in Tobin's work. The long-run stock of capital depends only on its depreciation rate, the population's growth rate.

Money supply can play an important role in economic growth of a country. Money supply is the total amount of money that is in circulation of a country. Monetarists say that it can have an effect on prices but not on GDP. But Keynesian say that changes in money supply can result in changes in prices and real output. Many studies have been done to check the relationship between money supply and GDP. Economists have different view point that money supply can have an impact on economic growth and some consider money supply as an important determinant of economic growth. Increase in demand results in inflation that can be controlled by decreasing the demand through decreasing the money supply growth resulting in reduction of prices and wages growth.

The countries who studied on behavior of money supply over a period of time hardly saw much variations in the economic activities. An economy may not grow in the absence of suitable money supply level and generally suitable financial conditions. There is a strong relationship between money supply and real GDP in Czech Republic (Bednark, 2010). Increasing the supply of money negatively affect the economy of Pakistan because of increasing inflation rate (Ihsan & Anjum, 2013). Money supply has no significant effect on GDP growth as it cannot explain the real GDP growth (Ogunmuyiwa & Ekon, 2010). The Nigerian economy has witnessed substantial growth since the country's attainment of political independence in 1960. The real value of gross domestic product (GDP)¹ jumped from N2, 489 million in 1960 to N4, 219 million in 1970 and therefore heaved to record about N31, 546million in 1980. Following the foreign exchange crisis of 1981–1986, accompanied by the downfall of international crude oil prices, the magnitude of growth skewed from the path it would have otherwise taken. Economic growth witnessed a steady fall between 1980 and 1984 for thereafter regained momentum taking an upward trend there from. Thus, the growth rate of

the Nigerian economy, which had averaged 2.5 per cent annually in the 1960s, climbed to an annual average of 10 per cent between 1970 and 1989. Industrial development is attributable to several factors and these includes amongst others, the rate of capital accumulation and saving, volume of trade, research and development, volume of external trade (exports) and so on. The enormous fiscal expansion overtime is a key factor cannot be overemphasized. Monetary expansion, which reflects either demand for credit by the domestic economy or government fiscal expansion is a major determinant of inflation. Although with a lag, aggregate demand and inflation move in tandem. However an increase in real output, particularly food output, has a dampening effect on the general price level. It is pertinent to note that monetary and fiscal policy in Nigeria is conducted in an environment characterized by uncertainty and frequent economic policy somersaults. Also the development of an adequate framework for sustainable growth and development is complicated by inconsistent policies, bureaucracy and variations in environmental conditions either of a climatic nature or crises. Growth in money supply was substantial as broad and narrow money have exhibited upward trend overtime.

Money supply, M_1 and M_2 grew rapidly from 16.3 and 19.4 per cent in 1995 to 48.1 and 62.2 per cent in 2000, respectively. The growth in monetary aggregates was due to factors such as: rapid monetization of oil inflows, minimum wage adjustments, and the financing of government's fiscal deficits through the banking system. Credit to the private sector, by contrast, declined sharply from 48.0 per cent in 1995 to 23.9 per cent in 1997 and thereafter increased gradually to 30.9 per cent in 2000. However, it stayed within the prescribed limits in only three (3) out of the six-year time frame (1995-2000). Overall, the major source of liquidity was growth in credit to government in most of the years. Generally, inflationary pressure induced by high money supply has been one of the major factors that have consistently undermined the attainment of sustainable growth in Nigeria, even amidst persistent and robust economic reform packages. It will be recalled that amongst the major macroeconomic objectives of Nigeria and other economies is the pursuit of growth and maintenance of price stability. Using this yardstick, the outcome of inflation and money growth in Nigeria has been generally mixed. By definition, price stability in Nigeria refers to the achievement of a single-digit inflation rate on an annual basis.

Indeed, this objective has not been achieved on a sustained basis. For example, in 1995 the rate of inflation was 72.8 per cent while the target of single digit inflation was achieved in only three (3) out of six (6) years, between 1995 and 2000. In fact, the single-digit inflation rate that materialized was attributable to a favourable agricultural harvest³. The performance of the real sector improved in 2001, with the real gross domestic product growing by 3.9 per cent. The major sources of growth were agriculture, manufacturing, merchandise, transportation, finance and insurance and government services. However, inflationary pressures accelerated as a result of the liquidity surfeit fuelled by expansionary fiscal operations and the lingering structural bottlenecks that increased costs of doing business in the economy while the unemployment level remained high. The link between economic growth, money supply and inflation is a universal phenomenon and it is peculiar to every government in the world. There have been various studies that examined the possibility of a causal relationship between money supply, the general price level and economic growth. While most of these studies indicate monetary expansion as a spur to growth and inflation as an obstruction that negate growth, a few others have provided evidence to the contrary. (Imoughele, 2014)

Most researchers of the monetary perspective have argued persuasively that inflation is strictly a monetary phenomenon and that inflation occurs when the rate of growth of money supply is higher than the growth rate of output in the economy. This is the conventional

monetarist linkage from the creation of base money to inflation when monetary authorities issue money at a rate that exceeds the demand for cash balances at the existing price level and the increased demand in the goods market pushes up the price level as the public tries to get rid of its excess cash holdings. It is the contention of these economists that the central banks can bridge the gap between growth and inflation by effectively coordinating monetary expansion in a bid to achieve a balanced interplay between them. In general terms, monetary policy refers to a combination of measures designed to regulate the value, supply and cost of money in an economy, in consonance with the expected level of economic activity (Falaiye, 2011). For most economies, the objects of monetary policy include price stability, maintenance of balance of payments equilibrium promotion of employment and output growth, and sustainable development. These objectives are necessary for the attainment of internal and external balance and the promotion of long-run economic growth (Imoughelle, 2014).

The concept of money supply and its effect, two issues are involved; which is the state of inflationary pressure and the unemployment rate. According to the monetarist, an increase in money supply in an economy causes an increase in general price level of commodities which brings about inflationary in the country. Also related to the issue of inflation is the issue of unemployment which is the primary goal of any economy so as to produce as many goods and services as possible while maintaining an acceptable level of price stability, but this major goal will be very difficult to attain at high inflation rate and price instabilities use to excess money supply in the economy. There has been a lot of rebut in the academia on the effect of money supply on economic growth. Monetarists argue that the changes in the amount of money lead to unexpected changes in nominal income because of the stability of money, where Friedman assumes that it is the most stable function. While the Keynesian assumes that the role of money supply is very limited because of the liquidity trap and the investment elasticity of interest is low, so the positive changes in income leads to raising money demand for transactions and raising the amount of money, and this means, the direction of causality comes from income to money.(Falaiye,2011).

The supply of labor is determined by population, immigration and labour force participation, how many adults are working or actively seeking employment. The supply of labour can be influenced by additional workers entering the labour force, which tends to depress wage rates. The labor supply is the total hours that workers wish to work at a given real wage rate. It is the number of hours people are willing and able to supply at a given wage rate. (Taiwo, 2011). Labor supply involves when a business has forecast what it's future requirements are likely to be, it is then important to determine what number of employees will be needed, with what skills and when the demand and supply of labor are determined in the labor market. In any market, the price of labor, the wage rate, is determined by the intersection of supply and demand. When the supply of labor increases the equilibrium price falls, and when the demand for labor increases the equilibrium prices rises. The labor market includes the supply of labour by households and the demand by firms. Wages represent the price of labor, which provide an income to households and represent a cost to firms, in a hypothetical free market economy, wages are determined by the unregulated interaction of demand and supply. (Ogunmuyiwa, 2010)

An increase in population increases the supply of labor, a reduction lowers it. Labor organization have generally opposed increases in immigration because their leaders fear that the increased number of workers will shift the supply curve for labor to the right and put downward pressure on wages.

EMPIRICAL LITERATURE

Ogunmuyiwa and Ekone (2010) examined the impact of money supply on economic growth in Nigeria for the period 1980 to 2006 using Ordinary Least Squares (OLS), Granger Causality test and Error correction Model. The results revealed that although money supply is positively related to growth, the result is however insignificant in the case of GDP growth rates on the choice between contractionary and expansionary money supply. Nouri and Samimi (2011) investigated the impact of monetary policy on economic growth in Iran with a data spanning the period 1974 to 2008 using the Ordinary Least Squares (OLS). Their findings indicated that there is a positive and significant relationship between money supply and economic growth in Iran. Owolabi (2014) examined the effect of money supply and foreign exchange on Nigeria economy with a data covering the period 1988 to 2012 using Ordinary Least Squares (OLS). The result shows that money supply has positive significant impact on economic growth in Nigeria.

Uduakobong (2014) investigate the role of money supply on economic growth in Nigeria with a data covered the period 1985 to 2012 using augmented Cobb-Douglas production function and relying on Co-integration test and Error- Correction Model. The result shows that money supply does not only have a positive impact on economic growth in Nigeria and such impact is strongly and statistically significant. Similar studies in Nigeria that have found a positive relationship between Money Supply and economic growth. More so, there are a lot of studies that also examined the issue of causality between money supply and economic growth as well as other control variables related to. Isiaka (2011) reviewed the relationship between money supply and economic growth in Nigeria for the period of nine years from (1995-2004) using simple regression technique. The results showed that, there exist long run insignificant positive relationship between money supply and GDP. Contrary to their results, Amassona (2011) investigated effect of money supply on some macroeconomic variables in Nigeria. Using simplified OLS with annual data spanning from (1986-2009), with the conclusion that there exist an inverse relationship between the two variables for the period under review. Looking at the impact of injection and withdrawal of money stock on economic growth in Nigeria, Taiwo (2011) adopted ordinary least square (OLS) as estimation technique over a period of (1970-2008). The results revealed that monetary aggregate injection has positive effect on economic growth while withdrawal of money stock showed a negative impact on the GDP of Nigeria. Inam (2014) examined the role of money supply on economic growth in Nigeria between 1985 and 2012. Using augmented Cobb-Douglas production function and relying on co-integration/error – correction methodology. It is found that money supply does not only have a positive impact on economic growth in Nigeria, but such impact is strongly and statistically significant; others in Nigeria who have confirmed a strong relationship between money supply and growth. El-Seoud (2014) tested the relationship between money supply and GDP in Bahrain for the period of 13 years. Using cointegration, error correction model and granger causality techniques, the findings reveal the existence of a long run equilibrium between real GDP and real money supply while the error term and f-test indicate unidirectional causality running from real GDP to real money supply in the short run as well as in the long run. Ihsan and Anjum (2013) examine the impact of money supply (M_2) on GDP for Pakistan between 2000 and 2011, used economic indicators and they found statistically insignificant and negative impact of money supply on economic growth. Inam and Ime (2017) studied the impact of monetary policy on Nigeria's economic growth from 1970-2012 using Ordinary Least Squares (OLS) method and Granger Causality test. The study found an insignificant positive relationship between money supply and economic growth. Mohamed Aslam (2016) investigated the impact of money supply on Sri Lankan economy from 1959-2013. The study made use of gross domestic product (GDP) as the dependent variable while the independent variables were money supply, exchange rate, export earnings, import outflows and the

consumer price index. The regression results indicated that money supply maintained significant positive influence on economic growth at 1% level of significance in Sri Lanka. He adopted vector Auto-regression (VAR) method to analyze the effect of monetary policy tools on economic growth in the Central African Economic and Monetary Community (CEMAC). CEMAC was set up by a Treaty signed in 1972 by six states which include Cameroon, Chad, Equatorial Guinea, Gabon.

RESEARCH METHODOLOGY

The research design presents the study structure and strategy investigation concerned in order to obtain answer to research questions. The specific structure of this useful guide is described as a research design. Based on the existing theoretical and empirical literature, exploratory designs was adopted to evaluate money supply, inflaon and its effect on the growth of Nigerian economy in Nigeria. Secondary sources of data was used as the method of data collection. The relevant data for this study was obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin. The data were collected on annual basis from 1996 to 2018. Ordinary least square of multiple regression techniques was used in this study to examine the effect of independent on dependent variables.

For the purpose of this study, the empirical model for this study is specified below.

Therefore:

$$GDP = F (BMS, LB, INF, INTR)$$

Where;

$$GDP = b_0 + b_1 BMS_1 + b_2 LBI + b_3 INF + b_4 INTR + \mu$$

Where;

GDP = Gross domestic product

BMS = Broad money supply

LBI = Labor input

INF = Inflation

INTR = Interest rate

μ = stochastic error term

RESULTS AND DISCUSSION

The regression result of money supply, inflation and the growth of Nigeria economy (1996 – 2018)

TABLE 1 (Regression result)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.521504	0.108802	41.55712	0.0000
LBMS	0.984860	0.013095	75.20881	0.0000
LLBI	0.002593	0.002045	1.267800	0.2230
LINTR	0.035682	0.033928	1.051689	0.3086
LINF	0.004424	0.005153	0.858688	0.4032
R-squared	0.999768			
Adjusted R-squared	0.999696			
S.E. of regression	0.020282			
F-statistic	13790.76	Durbin-Watson stat 1.527545		

The coefficient of multiple determinations (R^2) is 0.9997 and an adjusted R^2 of 0.9996. The later indicates that 99 percent of variations in the observed behavior of the economy (GDP) is jointly explained by the independent variables namely: BMS, LBI, INTR, INF, This shows that the model fits the data well and has a tight fit. Also, the f-statistic is used to test for the significance of such good or tight fit. The model report on effectively high f-statistic value of 13790.76 which when compared with the table value, this indicated that the high-adjusted R^2 value is better than would have occurred by chance, therefore the model is statistically robust. Using this criterion, therefore, BMS is significant at 1 percent level. While LBI, INTR, INF are not significant. Specifically, a 1 percent increase in BMS (0.98%), LBI (0.002%), INTR (0.03%), INF (0.004%) will prop up economic growth more than proportionate percentage point. The constant term indicates that if all variables held constant, the growth of the economy will be improved by 4.52. The DW statistic (1.52) is used to test for the serial correlation in the residuals of the model. The decision rule is that if the calculated DW falls outside du and 4-du, then there is a serial correlation in the residuals. This shows that calculated dw falls outside and this indicates that the estimates should be taken with caution. The goodness of fit of the model as indicated by the adjusted R-squared shows a good fit of the model that the model fits the data well; the total variation in the observed behavior of GDP, is used as a measure of growth, is jointly explained by variation in explanatory variables. For the overall significant of the model, the ANOVA on the f-statistic is used. Hence, the model did not occur by chance, it actually confirms that the model fits the data well. To test for the individual statistical significant of the parameters, the t-statistic of the respective variables were considered. The a priori expectations about the signs of the parameter estimates are confirmation to economic theory.

The study empirically examined money supply, inflation and economic growth in Nigeria. Based on the analysis, the following findings were revealed: It was revealed that broad money supply has a positive and significant effect on the growth of Nigerian economy. The finding conforms to the works of Bednark, (2010), who posit that money supply plays an important role in economic growth of a country. Money supply is the total amount of money that is in circulation of a country. Many studies have been done to check the relationship between money supply and GDP. Economists have different view point that money supply can have an impact on economic growth and some consider money supply an important determinant of economic growth. It was revealed that labor supply has a positive and insignificant effect on the growth of Nigerian economy. The finding conforms to the works of Taiwo (2011), who posit that supply of labor is determined by population, immigration and labor force participation, how many adults are working or actively seeking employment. The supply of labor can be influenced by additional workers entering the labor force, which tends to depress wage rates. The labor supply is the total hours that workers wish to work at a given real image rate. It is the number of hours people are willing and able to supply at a given wage rate. Labor supply involves when a business has forecast what it's future requirements are likely to be, it is then important to determine what number of employees will be needed, with what skills and when the demand and supply of labor are determined in the labor market. In any market, the price of labor, the wage rate, is determined by the intersection of supply and demand. When the supply of labor increases the equilibrium price falls, and when the demand for labor increases the equilibrium prices rises. The labor market includes the supply of labor by households and the demand by firms. Wages represent the price of labor, which provide an income to households and represent a cost to firms, in a hypothetical free market economy, wages are determined by the unregulated interaction of demand and supply.

Conclusion and Recommendations

Money supply is a basic macroeconomic element that influences economic growth in by ensuring effective running of economic activities through liquidity availability. Through money supply, the private sectors are able to obtain credits to carry on businesses at a price being referred to as interest rate. Money supply is a monetary policy tool that is highly essential in boosting economic growth of a nation. The study recommended that money supply is a monetary policy tool that is highly essential in boosting economic growth, therefore CBN should devise effective ways in maintaining economic stability and promoting economic growth. Government needs to sustain and improve upon the existing financial system for a continuous flow of funds across the macroeconomic sector of the emerging economy. Finally government should develop the abundant unskilled labor through skills acquisition and knowledge with a view to promoting economic growth

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