Original Research Article

Impact of Budget Deficit Financing on Money Demand in Nigeria

Abstract

This study empirically investigates the impact of budget deficit financing on money demand in Nigeria with an objective of finding the effect of budget deficit financing indicators such as external debt financing, domestic debt as well as debt servicing on money demand. The study is modeled using a framework of Keynesian theory of budget deficit financing and Richadian Equivalent hypothesis. An auto redistributive lag model (ARDL) was adopted which shows the existence of long run relationship between money demand and indicators of financing budget deficit and ordinary Least Square. However, the general findings revealed that external source of financing budget deficit; internal source of financing budget deficit as well as debt servicing has a significant effect on money demand in the Nigerian context. Base on this findings, the study recommend that external and internal source of financing deficit should be encouraged for effective demand that will lead to economic stability reasons and not for political reasons and it should be properly channeled to productive sector of the economy that will enhance economic stability.

Keywords: Budget, Deficit Financing, Money Demand

1. Introduction

Deficit financing arises each time the government has budget deficit. However, for the economy to grow as planned in a budget, shortfall of revenue resulting from excess expenditure has to be financed by raising fund from other sources available to the government. Deficit financing can be seen as the practice of seeking to stimulate a nation's economy by increasing government expenditures beyond revenue sources (CBN, 2018). This means that deficit financing can be defined to mean financing undertaken by a corporation or government to make up for a shortfall

in revenue. Government or corporation may undertake deficit financing in order to provide an economic stimulus**,** Onwe (2014). When government expenditure tends to exceed public income, the government may resort to deficit financing to meet the deficit in the budget.

Keynes theory recognizes the idea of deficit financing as a compensatory spending meant to solve the problem of unemployment and depression. Modern economists prescribe deficit financing for developmental purposes. Keynesian economist's theory states that deficit is financed in order to increase economic activity and reduce unemployment in a nation. On the other hand, demand for money is determined by the behavior of economic agents, especially by households and firms. Keynes (1936) highlighted three motives for the demand for money namely; transactionary, precautionary and speculative motives. According to him while the transactionary motive for holding money is premised on economic agents need to meet daily contractual obligations, the precautionary motive is related to the need to hold money for emergencies and other unforeseen situations.

As a store of value or wealth, money is held for speculative purposes so as to take advantage of prevailing market opportunities. In other words, during regimes of high interest rate, bond prices would rise, making it more attractive to hold bonds than money. Similarly, during a low interest rate regime, bond prices fall making it more attractive to hold money than bonds. Money demand, therefore, is inversely related to the interest rate under the speculative demand. Money held for transactions and precautionary purposes is primarily a function of income, while speculative demand for money is a function of both income and the rate of interest. Therefore, the total demand for money can be expressed as a function of the level of income and the rate of interest. The demand for money is the demand for real money. Money is held to finance transactions and, therefore, demand for money increases with real output.

Government adopts different measures to overcome budgetary shortfall. Budget deficit can be financed by printing new currency, domestic borrowing and external borrowing (Fischer & Easterly, 1990). The process of financing deficit through printing new currency notes by central bank is known as seigniorage. It increases money supply, creates inflationary pressure and decrease interest rate. The second way of financing budget deficit can be through domestic borrowing, sale of treasury bills, short term federal bonds, defense saving certificates, etc. This type of deficit financing increases interest rate and crowds out private investment. Large deficits

can also be financed through government borrowing from external resources. External borrowing is a widely used method to finance fiscal deficit in many developing countries because in most of the developing countries, domestic capital markets are too small and internal borrowing possibilities are also limited, that's why government borrow from the external resources to finance fiscal deficit (Fischer and Easterly 1990).

The contending views on the link between financing budget deficit and money demand have remained at the centre stage for decades. There are two variant views on this relationship. The first are the proponents of a positive impact of budget deficits on money demand championed by the Neoclassicals and Keynesians. The proponent of this view argued that an expansionary fiscal policy, either by increasing government expenditure or by tax cut will widen the budget deficit (Bovenberg 1998; Laumas, 1989; and Dua, 1993). This increase in budget deficit will affect aggregate demand positively depending on the size of the multiplier. The rise in aggregate demand will in turn increase the demand for money for transaction purposes. Besides, when government decide to finance its budget deficit by issuing bond rather than through taxation, the net worth of holders of government bond rises thereby changing the consumption pattern of the holders of this bond since their net worth has improved. The rise in consumption expenditure will stimulate growth in national income which in turn increases demand for money for transaction purposes. The overall effects of budget deficits are to increase money demand which in turn leads to increase in interest rate. The rise in interest rates ultimately crowd out private investment.

The second view is the Ricardian Hypothesis' which advocate that budget deficits have no effect on money demand in the short or long run (See, for example, Barro, 1989; Darrat, 1990; and Cheng, 1998). They assume that government keeps its expenditure level fixed over time. Therefore, a cut in taxes by government implies a rise in budget deficit. But, this cut in tax at present time indicate a rise in taxes in the future which is the same in terms of value with the initial tax cut because governments often equate its total spending in each period with its total revenues from all sources. Invariably, government expenditure at present time, determines the value of taxes and other revenues at the same present time. Thus, the current value of taxes and other revenues will not change as long as the current value of government expenditures remains unchanged (Barro, 1989).

1.1 Problem Statement

Many developing countries undertake deficit financing as a means of achieving some macroeconomic objectives. In conventional settings, deficit financing is seen as a strategy which is mostly undertaken to address macroeconomic quagmires like depression and low output (Anyanwu, 1997). On the other hand, deficit financing still appears to be a strategy that has the tendency of aggravating inflationary pressure and crowding out private sector investments, and thereby worsening unemployment problems (Anyanwu, 1997).

In Nigeria, despite the fact that actual revenues realized are often above the budgeted estimates, huge budget deficits have been recorded over a the years (Anyanwu, 1997). Evidences from deficit financing in Nigeria shows that fiscal operations have been characterized by poor policy implementation, inconsistency of Government macroeconomic policy, low growth of private investments, decline in real sector growth, and fiscal indiscipline in the public sector

Consequently, Nigerian governments have since implemented several national development plans and programs such as Debt management strategy (DMS) and Debt Management Office (DMO) which was thus established on October 4, 2000 to centrally co-ordinate the management of Nigeria's debt for all the tiers of government aimed at boosting productivity, as well as diversifying the domestic economic base through deficit financing. This goal of the various developmental plans has been the attainment of high levels of economic development that would translate into an improvement in the living standards of the populace and hence a reduction in poverty through an increase in the domestic output and the creation of employment and thereby the maintenance of a favorable balance of payments position was led to inefficiencies resulting in fundamental challenges.

However, the Keynesian economics opined that there is a positive relationship between financing budget deficit and economic performance. They however argue that financing budget deficit stimulate domestic production, trigger aggregate demand, increase level of savings , promote investment trends at any given level of interest rate and hence crowd in private investment. At this point, increased unemployment is presumed in the economy and that of the sensitivity of interest rate to investment is very slow (Momodu et al, 2017). Given this theoretical postulations, One maybe thinking why empirical evidence and theoretical underpinning justify the fact that

financing budget deficit stimulate growth in national income which in turn increases demand for money for transaction purposes? Well, it is good to know that the reverse is the case in the Nigeria context because of the previewed high rate of unemployment and inflation in the economy which is contrary to proposed Keynesian policy of fiscal deficit financing.

Secondly, much empirical research focused on the relationship between debt financing and key macroeconomic variables such as growth, consumption and interest rates. By contrast, empirical research on the effects of financing budget deficit on other variables such as money demand and money supply to macroeconomics are few. However, the related empirical research on debt financing and money demand uses debt as single explanatory variable to explain changes in money demand and also did not inculcate debt servicing as part of the strong indication of financing budget deficit. This approach may not give a clear picture on how financing budget deficit can affect money demand in Nigerian economy. More so, given that government finances its deficits through external borrowing and domestic borrowing; these variables including debt servicing were known as the major indicators of budget deficit financing and can give true variations in money demand.

It is for this reason that this research work attempt to assess the effectiveness of domestic debt and external debt as a true indicators of financing budget deficit as well as debt servicing on money demand in the Nigeria economy from 1980 to 2019, which covers a period of 39years.

2. Conceptual and Theoretical Literature Review

2.1. Concept of Deficit Budget Financing

The issue of deficit financing has been in focus among scholars because whenever there is budget deficit in any country, what comes to the mind of experts in finance is the remedy for financing such budget deficit so as to obliterate the negative effects on the economy. Financing represents government's sources of remedying deficit or utilizing surplus. Deficit financing arises each time the government has budget deficit (Onwe 2014). However, for the economy to grow as planned in a budget, shortfall of revenue resulting from excess expenditure has to be financed by raising fund from other sources available to the government. Deficit financing can be seen as the practice of seeking to stimulate a nation's economy by increasing government expenditures beyond revenue sources (CBN, 2018). This means that deficit financing can be defined to mean financing undertaken by a corporation or government to make up for a shortfall

in revenue. Government or corporation may undertake deficit financing in order to provide an economic stimulus.

2.2 Concept of Money demand

Demand for money refers to total amount of money balances that people want to hold for certain purposes. Keynes maintained that **the desire for liquidity arises because of three motives:** The transactions motive, the precautionary motive, and the speculative motive. The transactions motive relates to the demand for money or the need for money balances for the current transactions of individuals and business firms. Individuals hold cash in order "to bridge the interval between the receipt of income and its expenditure". In other words, people hold money or cash balances for transaction purposes, because receipt of money and payments do not coincide. Precautionary motive for holding money refers to the desire of the people to hold cash balances for unforeseen contingencies. People hold a certain amount of money to provide for the danger of unemployment, sickness, accidents, and the other uncertain perils. The amount of money demanded for this motive will depend on the psychology of the individual and the conditions in which he lives.

The speculative motive of the people relates to the desire to hold one's resources in liquid form in order to take advantage of market movements regarding the future changes in the rate of interest (or bond prices). The notion of holding money for speculative motive was a new and revolutionary Keynesian idea. Money held under the speculative motive serves as a store of value as money held under the precautionary motive does. But it is a store of money meant for a different purpose. The cash held under this motive is used to make speculative gains when dealing with bonds that whose prices fluctuate. If bond prices are expected to rise which, in other words, means that the rate of interest is expected to fall, businessmen will buy bonds to sell when their prices actually rise. If, however, bond prices are expected to fall, i.e., the rate of interest is expected to rise, businessmen will sell bonds to avoid capital losses.

2.3. Keynesian Theory of Financing Budget Deficit

Keynesian theory states that public expenditures can contribute positively to economic growth by increasing government consumption through increase in employment, profitability and investment. The theory also states that government can reverse economic downturns by borrowing money from the private sector and returning the money to private sector through various spending. This theory believes that active government intervention in the market place through deficit financing was the only method for ensuring growth and stability by ensuring efficiency in resources allocation, regulation of markets, stabilization of the economy and harmonization of social conflicts. Keynes states that in the short run, economic growth through economic stability is strongly influenced by total spending in the economy. This theory regards the economy as being inherently unstable and required active government intervention through spending to achieve economic stability.

Deficit financing whether through domestic resources or foreign borrowings involves the absorption of real resources by the public sector that otherwise would be available to the private sector (Okelo et al, 2013). Keynesian theory stimulates the economy, reduces unemployment and makes households feel wealthier using government spending (Usher, 1998). In another view, Okpanachi et al (2007) opine that budget deficit stimulates economic activities in the short run by making households feel wealthier and hence, raising total private and public consumption expenditure. This means that Keynesian theory causes money demand to rise and interest rate will also increase which will make investment to decline. Keynesian economists often argue that private sector decisions sometimes lead to inefficient macroeconomic outcomes which require active policy responses by the public sector, in particular, monetary policy actions by the Central Bank of Nigeria and fiscal policy actions by the federal Ministry of Finance, in order to stabilize output over the economy.

2.4 Ricardian Equivalence Hypotheses

Ricardian Equivalent Hypothesis assumes that people will save in anticipation of a hypothetical future tax increase. It also assumes that they will not find it necessary to use the windfall. It even assumes that the capital markets, the economy in general and even individual incomes will all remain static for the foreseeable future. It has it that Income Life-cycle hypothesis – Consumers

wish to smooth their consumption over the course of their life. Thus, if consumers anticipate a rise in taxes in the future, they will save their current tax cuts to be able to pay future tax rises which they believe will rise.

Ricardian economists argue that the above seemingly sensible assumption is incorrect. Although a debt-financed tax cut would increase current disposable income, it would also imply that at some point in the future, the government must raise taxes to pay off the debt and accumulated interest. As a result, the tax cut would merely give consumers a transitory increase in income that would eventually be taken back. If consumers understand this, then they would know that their permanent, or lifetime, resources had not changed.

Hence, the tax cut would have no effect on consumption, and households would save all of their extra disposable income to pay for the future tax liability. Because there would be no effect on consumption, there would also be no effect on national saving. If national saving did not change, then financing budget deficit would not have the effects the Keynesian economists listed. In particular, output, employment, foreign debt, and interest rates would be unaffected in both the short run and the long run. The tax cut would have no effect on economic wellbeing. Many researchers have invoked the Ricardian equivalence hypothesis to argue that financing budget deficits mainly result from tax cuts that tend to reduce both public revenues and public savings.

While these tax cuts have the effect of reducing public savings and enlarging the budget deficit, they increase private savings by an equivalent amount. Proponents of this view argue that alterations in the composition of public financing i.e., debt versus taxes have no effect on real interest rates, aggregate demand and private spending. The Ricardian Equivalence Hypothesis states that a deficit financed tax cut will lead to a decrease in public savings and an increase in private saving. Such decline in public savings is fully offset by increase in private saving and thus, national income is unaffected as it will remain the same. The general principle is that government debt is equivalent to future taxes, and if consumers are sufficiently forward-looking, future taxes are equivalent to current taxes. Hence, financing the government by debt is equivalent to financing it by taxes. Let us assume that government purchases remain constant and that the government decides a cut in taxes.

2.5 Overview of Nigeria's Public Debt

Nigeria's indebtedness dates back to pre-independence era. The debts incurred before 1978 were relatively small and mainly long-term loans from multi-lateral and official sources such as the World Bank and Nigeria's major trading partners. The loans were majorly obtained on soft terms and therefore did not constitute a burden to the economy. However, due to the fall in oil prices and oil receipts, the country in 1977/78 raised the first jumbo loan to the tune of US$1.0 billion from the international capital market. The loan was used to finance various medium to long-term infrastructural projects (Sunday N. Essien, 2016). Domestic debt management in Nigeria had hitherto been carried out by the CBN through the issuance of government instruments, such as the Nigerian Treasury Bills (NTBs); Nigerian Treasury Certificates; Federal Government Development Stocks; and Treasury Bonds.

The debt management strategy adopted at that time led to inefficiencies resulting in fundamental challenges. In consideration of these numerous difficulties, the government established an autonomous debt management office in order to achieve efficient debt management practices. The Debt Management Office (DMO) was thus established on October 4, 2000 to centrally co-ordinate the management of Nigeria's debt for all the tiers of government. While the state governments' external borrowing is guaranteed by the Federal Government (FG), their domestic borrowings required analysis and confirmation by the FG based on clear criteria and guidelines that the states can repay based on their monthly allocations from the Federation Account Allocation Committee (FAAC) and internally generated revenue (IGR) (Sunday N. Essien, 2016).

Current debates on fiscal consolidation emphasized the crucial role of prudential limits on public debt-to-GDP ratios. A debt-to-GDP ratio of 60 per cent is quite often noted as a prudential limit for developed countries, while for developing and emerging economies, a ratio of 30.0 per cent was maintained before 2008 and 40 per cent was being applied since 2009 (DMO, 2013). However, these ratios are not sacrosanct as countries are encouraged to adapt different strategies to achieve fiscal consolidation (IMF, 2016).

According to the DMO, Nigeria's debt stock profile (both domestic and foreign loan) stood at NGN22.7 trillion as at March 2017. While the stock of external debt was USD22.07 billion, the

domestic debt was USD52.21, billion. Statistics from the DMO shows that there has been a consistent increase in the volume of domestic debt from around 5.6NGN trillion in 2011 to over 12.5NGN trillion as at December 2017, more than double fold increase within a space of six years. More worrisome is that of the external debt had a consistent increase from USD8.82 billion as at December 31, 2013, to a whopping USD22.07 billion as at March 31, 2018. The data in figure 1 below show that the growth rate of external debt stock in the country leapfrogged from 10.17 in 2015 to 15.72 in 2016, a 43.23% increase within one year.

Information from the Debt Management Office shows that the sources and as well, the instruments of government debt in the country vary. Before 2016, the government borrowed internally using only three instruments which were the Nigerian treasury bills, treasury bonds and federal government bonds. In 2017 however, the government introduced three new instruments called the Federal Government of Nigeria (FGN) Savings Bond, FGN Sukuk, and the Green Bond. The sources of external debt to the country include multilateral, bilateral, commercial and others.

The Q3, 2020 Total Public Debt Stock released by the Debt Management Office (DMO), revealed that the Total Public Debt Stock stood at N32.223 Trillion or USD84.574 Billion. The Debt Stock is made up of the Domestic and External Debt Stocks of the Federal Government of Nigeria (FGN), the 36 State Governments and the Federal Capital Territory (FCT). The breakdown of the Public Debt Stock showed that 37.82% was External, while the balance of 62.18% was Domestic. Compared to the Total Public Debt Stock of N31.009 Trillion as at June 30, 2020, the Debt Stock in Q3 2020 increased by N1.214 Trillion or 3.91% The FGN, State Governments and the FCT all recorded increases in their Debt Stock due to borrowings to enable them respond appropriately to the COVID-19 Pandemic and to meet revenue shortfalls.

Issuance of Promissory Notes by the FGN to settle inherited liabilities have also contributed to the growth in the Public Debt Stock since the year 2018 when they were first issued. While N20.136 Billion of Promissory Notes were issued in Q3, 2020, as at September 30, 2020, the Promissory Notes Outstanding, which are all included in the Domestic Debt Stock, stood at N971.878 Billion.

The figure below shows the trend of Nigerian public debt as dated from 1981 to 2020.

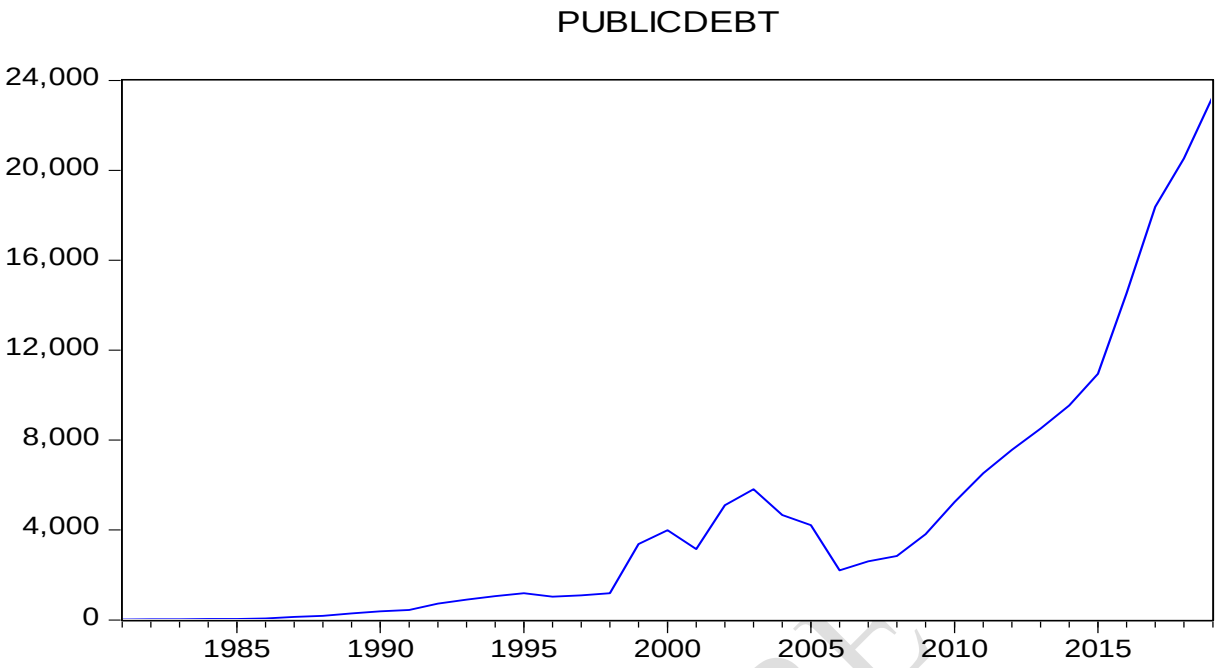

Figure 1: Trends of public debt in Nigeria

Source: Author's Compilation, (2020)

The past couple of decades have witnessed rising concern on the increase in Nigeria's public debt. The first most significant rise in Nigeria's public debt occurred in 1987 when the total debt rose by 96.9 per cent to N137.58 billion. From then, the rise in Nigeria's public debt continued unabated such that as at 2004, total public debt stood at N6, 188.03 million. In 1986, total debt which was hitherto driven largely by the domestic debt witnessed a reversal and was being driven by the external debt. Thus, the dominance of the external debt as well as the steady rise in total debt remained till 2005 when the country was granted debt pardon by the Paris Club. The debt forgiveness saw Nigeria's total debt and external debt plummeting by 59.0 per cent and 90.8 per cent, respectively between 2004 and 2006 to N2,533.47 billion and N451.5 billion. Incidentally, as external debt shrunk, domestic debt continued to grow unabated such that by 2011, total debt which was being driven by the domestic debt had exceeded the 2004 level and stood at N6, 519.65 billion. By 2012, Nigeria's total debt had hit an all-time high between 2006 and 2012, the domestic debt had accounted for 82.2 to 87.2 per cent of the total debt (Ngozi .T. I. Agboegbulem, 2016).

The 2018 Fiscal Sustainability Analysis for the Federation (federal, states and FCT) as reported by the DMO through its Director General in Vanguard of July 26, 2018, show that the ratio of total public debt-to-gross domestic product remained below its threshold of 19.8% throughout 2017. They, however, warned that Nigeria's high debt service to revenue ratio, which deteriorated in 2016, could trigger a debt crisis if there are any prolonged shocks on the revenue. The report has it that for the country to remain in the proposed country-specific threshold of 25% borrowing limit, the total domestic and external borrowing for the 2018 fiscal year should not go beyond USD6.25 billion or NGN1,906.37 billion, which should be divided in the 50:50 ratio. Also in Vanguard of April 19, 2018, an Assistant Director in IMF described the country's debt to revenue ratio, which she put at 64% as "extremely high", stating that there is a need for Nigeria to build revenue to have more space to spend for infrastructure, social safety nets etc. to avoid interest eating up most of her revenue.

2.6 Review of Empirical Literature

Nwaeke and Korgbeelo (2016) examined the relationship between deficit financing and selected macroeconomic variables such as economic growth (proxied by real GDP); Inflation Rate (INFR) and Unemployment Rate (UNPR) in Nigeria. They adopted ordinary least squares (OLS) method of the multiple regressions analysis in their study. Their findings shows that deficits financed from external loans have insignificant negative influence on economic growth while deficits financed from domestic sources (e.g. DBS and NBP) stimulate economic growth in Nigeria. Also, that deficit financing have no significant influence on inflation, and that, domestic sources of financing deficits aggravate unemployment in Nigeria. They recommended among other things, that Nigeria should diversify and broaden its revenue base so as to reduce the country's vulnerability to negative shocks from oil revenue, and so as not to resort to deficit budgeting. However, their study centers on ascertaining the impact of deficit financing on some macroeconomic variable such as inflation, unemployment and growth. But money demand posits a positive relationship with budget deficit, on this account, this current research work try to emphasize more on money demand as a dependent variable to deficit financing indicators.

Essien, Agboegbulem, Mba and Onumonu (2016) examined the impact of public sector borrowings on prices, interest rates, and output in Nigeria. Their study adopted Vector Autoregressive framework, the Granger causality test, impulse response, and variance

decomposition of the various innovations to study the impact. They found out that shock to external debt stock increases prime lending rate, but with a lag. However, the level of external and domestic debt over the period of this study had no significant impact on the general price level and output. Their study recommends that the current approach of borrowing from the long-term market by the government through the DMO should be sustained. Also, there is also the need to encourage the adoption of the same approach by the lower tiers of governments for this will help in minimizing the crowding effect of government borrowing on the private sector. However, their study focuses studying debt on macroeconomic variables such as growth, lending rate and inflation rate while focuses on money demand as explained variable and incorporates some analytical technique such as error correction mechanism in ascertaining short run dynamics and long run changes of public sector borrowings and it's financing on money demand in the Nigerian economy

Eze and Ogiji (2016) investigate the Impact of deficit financing on economic stability in Nigeria economic growth from 1970 to 2013. The study adopted regression analysis. The study revealed that External Source of Deficit Financing (EXF), Non-banking Public Source of Deficit Financing (NBPF) and Exchange Rate has significant and positive implications on Economic Stability proxy for Gross Domestic Product (GDP), while Ways and Means Source of Deficit Financing (WM), Banking System Source of Deficit Financing (BSF) and Interest Rate (INTR) has negative implications on economic stability in Nigeria. The implication is that government deficit financing through External Source of Deficit Financing (EXF) and Non-banking Public Source of Deficit Financing (NBPF) will maintain economic stability while government deficit financing through Banking System Source of Deficit Financing (BSF) and Ways and Means Source of Deficit Financing (WM) will reduce economic growth thereby causing instability in the economy. The study recommends that deficit financing in Nigeria should be focused on the productive sectors of the economy. This is because deficit financing has merely resulted in economic instability indicating that sound policies are needed to achieve economic stability in Nigeria. This study focuses on ascertaining the impact of financing budget deficit for the stability of Nigerian economy using Gross Domestic Product (GDP) as the explained variable while the current study focuses on the money demand.

Momodu and Monogbe (2017) examined the impact of budget deficit on performance of the Nigeria economy. Their study adopted VAR estimation and multiple regression between the periods 1981 to 2015. From the foregoing statistical output, findings established that Budget deficit significantly stimulate economic performance. The output of the granger causality test shows that budget deficit statistically granger cause economic performance and viz versa while the result of the multiple regression of the ordinary least square report a significant but negative relationship to economic performance. Their study recommends that Policy makers should ensure effective utilization of borrowed fund and maintain a sporadic evaluation and supervision of such project in which borrowed fund are channeled into in order to achieve a profitable returns which will help in servicing of such debt and also stimulate economic performance. Their work uses budget deficit as a single variable on the growth of Nigerian economy while this research work looks at different indicators of financing deficit such as external debt financing, domestic debt financing and their impacts on money demand in Nigerian economy.

Ibrahim (2017) worked on the Budget deficit-money demand nexus in Nigeria: A myth or reality? An important question often asked is whether an increase in budget deficit is able to change the money market equilibrium. The study utilized co-integration analysis and ECM methodology to ascertain the short and long-run effect of budget deficit on money demand. The results of the co-integration test confirmed the existence of a strong and stable long-term relationship among the variables in the money demand model. Also, the estimates of the ECM model indicate the existence of a short- and long term, positive and significant relationship between money demand and budget deficit suggesting that the Keynesian and Neoclassical views hold for Nigeria. Therefore the study suggests that there should be increased emphasis on productivity and efficiency of government expenditure since it impact positively on aggregate money demand via increase in aggregate demand. However, the former focuses on budget deficit and uses budget deficit as a single variable in ascertaining its effectiveness in money demand while the later focuses on financing budget deficit on money demand thereby using external debt financing and local debt financing as indicators to budget deficit.

3. Theoretical framework and model specification

The link between money demand and the budget deficit financing has been investigated through determining a money demand balance equation using the IS-LM framework within the context of

the Keynesian and the Ricardian equivalence models. According to the Keynesian model, an increase in budget deficit either through higher government spending or tax cuts, or both will impact positively on aggregate demand. However, budget deficits financed through the issuance of bonds increases the wealth level of the bondholders which, in turn, stimulate consumption and consequently aggregate demand. The multiplier effect of the expansion of aggregate demand leads to higher national income. The increase in national income increased the demand for money transactions. Thus, according to the Keynesian proposition, since the budget deficit is financed by issuing government bonds, the resultant expansionary fiscal policy will make the IS curve to shift to the right. The LM curve on the other hand will shift to the left if the increase in budget deficit affects money demand positively. This policy mix bring about a new equilibrium point for IS and LM schedules, where both the output and the interest rate will be higher. Thus at equilibrium, the money market suggests that real money supply equals real money demand. This gives the equation:

$M^d = Ms$ or $Md/p = Ms/p$ (1)

Demand for money is determined by the behavior of economic agents, especially by households and firms. Keynes (1936) highlighted three motives for the demand for money namely; transactionary, precautionary and speculative motives According to him while the transactionary motive for holding money is premised on economic agents‟ need to meet daily contractual obligations, the precautionary motive is related to the need to hold money for emergencies and other unforeseen situations. As a store of value or wealth, money is held for speculative purposes so as to take advantage of prevailing market opportunities.

In other words, during regimes of high interest rate, bond prices would rise, making it more attractive to hold bonds than money. Similarly, during a low interest rate regime, bond prices fall making it more attractive to hold money than bonds. Money demand, therefore, is inversely related to the interest rate under the speculative demand. Money held for transactions and precautionary purposes is primarily a function of income, while speculative demand for money is a function of both income and the rate of interest. Therefore, the total demand for money can be expressed as a function of the level of income and the rate of interest. The demand for money is the demand for real money. Money is held to finance transactions and, therefore, demand for

money increases with real output. Thus, the real money demand balance is expressed functionally as:

$M^d = F(int, gdp(y)$ (2)

Where: Y is real income, and INT is the nominal interest rate.

In line with the study of Taofik Ibrahim (2019) whose model was given as

$M^d = M^s\ f(ir, y, inf\ l, bd, ge)$ (3)

Where; Md = Dependent Variable and interest rate, GDP, inflation, government expenditure as well as budget deficit are independent variables and μt = Error or disturbance term. Equation (3) is augmented to disembody budget deficit to various indicators such as total external debt and total domestic debt as well as debt servicing. External debt which is the amount of budget deficits financed from foreign loans; total domestic debt, i.e. budget deficits financed from the domestic banking system which comprises of the Central Bank of Nigeria and the deposit money banks and deficit financed from the non bank public sources which include insurance companies, pension and provident funds, savings and loans associations, leasing companies, unit trust, development finance institutions, discount houses, individual private investors, money and capital markets, etc so as to capture its effect and a disposition on the conventional money demand equation. The functional form of the model is given below as:

$$\boldsymbol{M^d = M^S = f\ (\ EXTD,\ TDD,\ DS,\ RGDP(Y),\ INTR)} \quad \textbf{(4)}$$

Equation (4) implies that money demand is a function of nominal interest rate, real GDP at constant price, external debt, total domestic debt and debt servicing. Nominal interest rate and real GDP was added in the model as an existing variables in the conventional money demand equation, though will also serve as a control variables to financing deficit indicators. By building an econometric model of the functional model above, the model is specified thus:

$$\mathbf{M^d = M^S = \beta_0 + \beta_1\ EXTD + \beta_2\ TDD + \beta_3\ DS + \beta_4\ RGDP + \beta_5\ INTR + \mu_1}$$

Where; M^d = Money Demand, M^S = Money Supply, EXTD = External Debt, TDD = Total Domestic Debt, DS = Debt Servicing, RGDP = Real Gross Domestic Product, INT = Interest

rate, μ = Disturbance term/error term, β_0 = Constant term, β_1 β_2 β_3 β_4 β_5 are parameters to be estimated.

4. Empirical results and discussion of findings

4.1 Unit root Test

The ADF results comprising of the t- statistics and 5% critical value as originally generated are represented below in the table below

Table 1 Unit root (ADF test)

Variables	ADF Test	5% critical value	Order of integration	Remarks
MD	-9.039655	-3.536601	1 (1)	Stationary
TDD	-4.550500	-3.568379	1 (0)	Stationary
TEXD	-4.008651	-3.536601	1 (1)	Stationary
RGDP	-9.278286	-3.536601	1 (1)	Stationary
DS	3.7788769	-3.533083	1 (0)	Stationary
INTR	-8.515384	-3.533083	1 (1)	Stationary

Source: Researcher's compilation (2021)

Decision Rule: Reject H_0 if ADF test value is greater than 5% critical value, otherwise accept. From the above result, the ADF test value of total domestic debt TDD (-4.550500) and debt servicing (3.788769) are greater than 5% critical value of -3.568379 and -3.533083 therefore total domestic debt and debt servicing are stationary at its level. At first difference, the ADF test value of money demand MD (-9.039655), total external debt TEXD (-4.008651), real gross domestic product RGDP (-9.278286) and interest rate INTR (-8.515384) are greater than their critical values of (-3.536601), (-3.536601), (-3.536601) and (-3.533083) at 5% respectively. Therefore, we reject H_0 of MD, TEXD, RGDP and INTR and then conclude that they are stationary at first difference.

4.2 ARDL Bound Co-integration Test

ARDL approach was developed by Pesaran et al (2001) to estimate the link among the variables. The logics behind the use of this approach are: first ARDL can be applied regardless of whether

the series are stationary at level value I(0) or after first difference I(1) or combination of two mutually.

Null hypothesis (H_0): there is no co-integration among the variables.

Alternative hypothesis (H_1): there is co-integration among the variables

The result verifies that there is an evidence of co-integration among the variables. This is due to the fact that the F-Statistics value (12.24117) is greater than the lower and upper critical bounds for all the significant levels. This as a matter fact has lead to the rejection of null hypothesis of no co-integration. The result is summarized and presented in Table 1.

Table 2: ARDL Bounds Test		
F-Statistics = 12.24117		
Critical Value Bounds		
Significance levels	**I(0) Bounds**	**I(1) Bounds**
10%	2.26	3.35
5%	2.68	3.79

Source: Researcher's compilation (2021)

Since the bounds test indicated the presence of long run relations among the variables, we then go further to estimate the long run model to ascertain the long run coefficients of the variables of the model.

4.3 Evaluation of Estimates

The satisfactory results obtained from the unit root and co integration tests motivated the estimation of an over-parameterized model using 3 lags of each variable in the equation. The ordinary least square (OLS) regression result of this study is presented below

Table 2 Result of Long Run Model (Ordinary Least Squares)

Table 3: Dependent Variable: MD

Variable	**Coefficient**	**Std. error**	**t-statistics**	**p-values**
TDD	1.913497	1.714087	7.333061	0.0000
EXTD	0.548993	0.166732	-3.292672	0.0024
DS	3.984637	1.714087	2.324641	0.0264
RGDP	0.057034	0.021542	2.647592	0.0123
INTR	-40.57197	38.95873	-1.041409	0.3053
C	-577.6300	737.7054	-0.783009	0.4392
ECT(-1)	-0.973193	0.289011	-3.367323	0.0050
R^2 = 0.994	Adj.R^2 =0.993	F-stat= 1112.823	Prob(f-stat)= 0.0000	D.W= 2.25

Source: Researcher's compilation (2021)

The result shows that he sign of the coefficient of TDD is positive and is 1.91, which implies that with the influence of all other variables held constant, an increase in the total domestic debt by one percent on the average, will lead to an increase in Money demand by about 1.91 Percent. The sign of the coefficient conforms to economic a priori expectation. More so, the sign of the coefficient of EXTD is positive that is 0.54, this suggest that all things being equal, as EXTD increases by one percent on the average, Money demand will increase by about 0.54 percent. Also, the sign of the coefficient of DS is positive that is 3.98, this suggest that all things being equal, as DS increases by one percent on the average, Money demand will increase by about 3.98 percent.

This means that government financing its deficit through local and external Source of deficit financing as well as servicing the debt will increase money demand in Nigerian economy. This assertion was based on the fact that financing budget deficit will stimulate domestic production, trigger aggregate demand, increase level of savings, promote investment trends at any given level of interest rate and hence crowd in private investment. This is to say therefore, that the

Keynesian and Neoclassical views on the relationship between money demand and budget deficit financing holds for Nigerian economy.

In addition, the coefficient of changes in real GDP has the right signs and statistically significant. This implies that in the long run, changes in real GDP do impacted meaningfully on money demand to bring about a positive/negative change. The coefficient of INTR is -40.57 and it is negative, which suggest that over the period of study, as INTR goes up by 1 percent on the average, Money demand decreases by about 40.57 percent, other factors held constant. However, during regimes of high interest rate, bond prices would rise, making it more attractive to hold bonds than money. Similarly, during a low interest rate regime, bond prices fall making it more attractive to hold money than bonds. Money demand, therefore, is inversely related to the interest rate under the speculative demand. Given the above assertion, this result was in line with the theoretical postulation of interest rate to money demand in the Nigerian economy.

The ECM (-0.971) which measures the speed of adjustment towards long-run equilibrium carries the expected negative sign and significant at 5 percent level. The coefficient of the ECM indicates a feedback of 97.1% of the previous year's disequilibrium. This also implies the speed with which MD adjust from short-run disequilibrium to change in TDD, EXTD, DS, RGDP and INTR in order to attain long-run equilibrium of 97.1% within one year.

5. Conclusion and recommendations

Having examined the impact of financing budget deficit on money demand in Nigeria using OLS technique to test some explanatory variables, the researcher concludes that a positive relationship exists between indicators of financing budget deficit and money demand in Nigeria. Also, that there exists an insignificant relationship between interest rate to money demand though with rightful sign. This is due to policy indiscipline, misappropriation as well as corruption and poor policy implementation and monitoring. It is also good to know that the positive impact of external debt financing (EXTD) and debt servicing on money demand implies that EXTD and DS in Nigeria are one of the factors affecting money demand.

Hence, an increasing level of EXTD as well as debt servicing is an important source of deficit financing in Nigeria, it is recommended that external source of financing deficit should be encouraged for effective demand leading to economic stability reasons and not for political reasons and it should be properly channeled to productive sector of the economy that will enhance economic stability. More so, effective and productive debt servicing should be encouraged so as to offset debt burden at the appropriate time. The research findings suggest that the Keynesian and Neoclassical propositions hold for Nigeria, therefore the study suggests that there should be increased emphasis on productivity and efficiency of government expenditure since it impact positively on aggregate money demand via increase in aggregate demand.

References

Anyanwu, J.C. (1997). Nigerian public finance. Onitsha: Joanne Educational Publishers Ltd.

Barro, R. J. (1989). Government spending, interest rates, prices, and budget deficits in the United Kingdom, 1701-1918. *Journal of Monetary Economics,* Vol. 20, pp. 221- 247.

Bovenberg, L. A. (1998). Long–term interest rates in the United States: An empirical analysis, *IMF Staff Papers,* Vol. 35, No.2, pp .382-90.

Central Bank of Nigeria (CBN). (2018). *Annual report and statement of accounts*. *Central Bank of Nigeria, 2018*

Debt Management Office (DMO). (15th, January 2020). DMO News. https://www.dmo.gov.ng.

Eze, O.R., and Ogiji, O.F. (2016). Impact of deficit financing on economic stability in Nigeria: Analysis of economic growth. Journal of Applied Finance & Banking, vol. 6, no. 1, 2016, 111-125 ISSN: 1792-6580 (print version), 1792-6599 (online) Scienpress Ltd, 2016

Fischer, S., and Easterly, W. (1990). The economics of the government budget constraint. Oxford

Ibrahim, T. (2017). Budget deficit-money demand nexus in Nigeria: A myth or reality? Journal of Economics and Political Science. Vol. 28, No. 4

International Monetary Fund (IMF). (2016). *Public sector debt statistics (PSDS). Guide for Compilers and Users*. *Journals, 5*(2), 127-142.

Keynes, J. M. (1936). *The general theory of employment, interest, and money*. London and New York Macmillan.

Momodu, A. and Monogbe, T. (2017). Budget deficit and economic performance in Nigeria. *Journal of Business and Management Studies,* Vol, 10. No. 21276.

Monogbe, T.G., Dornubari, I.G. and Emah, D.S. (2015). Deficit finance and the Nigeria economic performance: *International Journal of Advanced Academic Research of Social Sciences and Education*, 1(3), (December).

Nwaeke, G.C. (2016). Budget deficit financing and the Nigeria economy. *European Journal of Business and Management* www.iiste.org ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online) Vol.8, No.22 2016

Onwe, B.U. (2014). Implication of deficit financing on economic growth in Nigeria. *European Centre of Research Training and Development UK*, 2(10), 122-135.

Sunday, N. E., Ngozi, T., Agboegbulem, M. K., Mba, N. and Ogochukwu, O. (2016). An empirical analysis of the macroeconomics impact of public debt in Nigeria. *Journal of Applied Statistics*, Vol. 7, No. 1(a)