Fiscal Deficits and Inflation in Nigeria

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Abstract: The broad objective of this study was to investigate the effects of fiscal deficit on inflation in Nigeria using annual time series data from 1981 to 2019. The specific objectives include, to examine the short run effect of fiscal deficit on inflation in Nigeria; examine the long run effect of fiscal deficit on inflation in Nigeria; and ascertain the nature and direction of the causal relationship between fiscal deficit and inflation in Nigeria. The Autoregressive distributed lag (ARDL) and cointegration bound test estimation technique was adopted for the study. The ARDL results reveal that there is a significant and negative long run relationship between fiscal deficit and inflation. There is also a significant and positive relationship between exchange rate and inflation in the long run. However, there was an insignificant long-run relationship between money supply and inflation. On the direction of causality, unidirectional causality running from fiscal deficit to inflation was recorded. The study, therefore, concluded that chronic deficit spending over time is the root cause of inflation in Nigeria. As a result, the answer to Nigeria's price instability falls under the scope of the fiscal policy framework, as such policies targeted at inflation control could be best achieved if geared towards controlling budget deficit and exchange rate in Nigeria. The study therefore recommended a sustained budget deficit in order to provide the infrastructure needed to harness untapped and underutilized human and material resources.

Keywords: Fiscal Deficits, Inflation, Fiscal Theory of Inflation, Budget Deficit.

1 INTRODUCTION

Scholars have debated why developing countries have struggled to maintain single digit inflation rates over the years, and this has been a fundamental macroeconomic issue in establishing steady growth in these countries. Meanwhile, a low and stable inflation rate boosts the economy's growth rate, regardless of its structure. However, different people have different ideas about what is causing the differences in inflation rate figures. According to Irving Fisher's quantity theory of money, an upsurge in money supply instigates inflation. John Maynard Keynes (1936), in contrast to the classical, claimed that increasing the money supply enhances aggregate demand and supply while also creating employment prospects. This is why, during the Great Depression of the 1930s, he advocated for government action to address the fiscal deficit. In order to attain macroeconomic objectives, Keynes argued that some form of government involvement was required.

This government intervention involves the adoption of fiscal policy measures, which entails the use of the government's spending, taxation, and borrowing policies to achieve macroeconomic goals such as full employment, price stability, external balance etc. The government uses her fiscal deficit to assess the fiscal policy direction of the economy. Over the years, Nigeria has had massive fiscal deficits on account of amplified government expenditure relative to revenue generated. For a country that lacks the necessary managerial skills, the impact of this deficit on the economy could be negative. Fiscal deficits can escalate the supply of money in an economy, and when there is an excess supply of money, it can lead to higher general prices, which can have a negative impact on the purchasing power per unit of money spent, reducing the amount of goods and services that a naira can buy.

Deficits in the budget are not a new problem. Even developed countries like the United States, the United Kingdom, Sweden, and others have had fiscal deficits at one time or another. The sharp rise in public sector deficits could be attributed to increased government spending and falling government revenues. The usual economic effect of government deficits is expansionary in the short run, according to the traditional Keynesian theory. When the government borrows to fund recurrent expenditure (or boost transfers), it stimulates aggregate demand, which leads to a rise in production (when supply is elastic and prices and/or wages are sticky). This is called the short-run effect.

Consistent with the neoclassical viewpoint, the effect could be contractionary in the long run. This is because, over time, real interest rate must rise to bring the securities market back into equilibrium, and accordingly, investment becomes crowded out, and capital and output shrink (Okoro and Oksakei, 2020). To achieve its developmental goals, the Nigerian economy has primarily used a deficit budget strategy over the years. The fiscal deficit stretches back to 1961, when the first deficit financing exercise was done, according to the nation's economic management trend over the years. During the immediate post-independence era, deficit budgeting appeared to be rising, owing to the necessity to build the economy. This culture appears to have become entrenched through time.

Until 1970, the country operates a fiscal balance despite a high level of governmental spending. However, mishandling of the early 1970s oil boom resulted in a return to deficits in 1975. The reduction in gains from crude oil exportation continued from 1982 drop, resulting in the recurrence of fiscal deficits, which were funded through significant borrowing once the nation's reserves were depleted. Until 1995, this trend persisted uninterrupted (Isenmila and Okolie, 2005). In 1997, fiscal deficits resurfaced, and persisted into the early 2000s. The world economic crisis, its spillover effect on the Nigerian economy, and the bank crisis have

thrown the financial-real sector connection into disarray. Between 2008 and 2010, the fiscal deficit increased as a result of this. Given the massive resources required to accomplish Vision 2020, Nigeria's federal government went back to the adoption of deficit budgeting in 2010, with the budget deficit rising to 5.8% (CBN, 2011). The budget deficit decreased between 2011 and 2012, but grew between 2012 and 2013, possibly due to the expansionary budget; nevertheless, on account of an upsurge in oil prices in 2013, the growth rate was pushed up to 5.49 percent. Since 2013 to date, Nigerian fiscal deficit on the average, has been on an increase.

Currently, the Nigerian economy is facing unfavorable domestic and global economic developments, owing to the decline in the global crude oil price and the problem of insurgency in the Northern part of the country, amongst other issues. So, the government's revenue has decreased and economic activity has slowed, resulting in increased exchange rate volatility and inflation. Annual consumer price inflation in 2019 was 11.7 percent, up from 9.4 percent in 2015. Annual consumer price inflation in 2014, 2013, 2012, and 2011 was 8.06 percent, 8.48 percent, 12.22 percent, and 10.84 percent, respectively (WDI, 2019). In 2016, year-over-year consumer price inflation was 15.68 percent; in 2017, it was 16.455 percent (WDI, 2019). The exchange rate of the Naira against the dollar, on the other hand, has being fluctuating and has being moving back and forth in favor of the Dolar over time, even as the country's fiscal deficits have grown.

In light of the foregoing, Nigeria's federal government approved a budget of N6.08 trillion in 2016, with the estimated revenue of N3.86 trillion and outlays of ₦4.49 trillion, resulting in a deficit of ₦2.22 trillion or 2.16 percent of GDP. The ₦1.884 trillion deficits were to be covered by a mix of ₦984 billion in domestic borrowing and ₦900 billion in international borrowing (FGN, 2015). Given the foregoing circumstances, the Nigerian economy's monetary and fiscal management has become a challenge, causing some concern among policymakers. Thus, the most important question here is whether there is a long-run relationship between Nigeria's fiscal deficits and inflation. What is the effect of fiscal deficits on inflation? This matter deserves to be investigated

The role of price stability in achieving sustainable growth and development has been widely acknowledged by scholars both in developed and developing economies (Goyal, 2013). This is due to a number of factors, including the unfavorable consequences of persistently rising general prices. Inflation has the potential to strip money of all of its fundamental properties in addition to the unfair re-distributive effects it has on those with fixed incomes, creditors, and owners of savings deposits. Hyperinflation causes a sharp decline in living standards and can result in serious balance of payments issues. Governments, particularly in developing nations, have recognized price stability as a key objective of their stabilization policies over the years in an effort to reduce these negative effects. Inflation is often brought on by changes in a variety of monetary aggregates, including the money supply, interest rate, and exchange rate, as well as fiscal aggregates, including the deficit budget, tax cuts, and subsidies.

Imobighe (2012) claims that Nigeria's inflation issues began after the conclusion of the country's civil war in the 1970s and the adoption of the Udoji Salary in 1974, which came about as a result of the oil boom. Inflation was a natural outcome of the period's excessive governmental spending, which increased overall demand and led to an inelastic domestic production supply. Among other things, these circumstances led to Nigeria having an inflation rate of 33.96% in 1975, which then increased to 54.51% in 1988 and 50.47% in 1989. From 1991 through 2000, Nigeria barely managed to keep inflation in the single digits, with rates of 8.53 percent in 1997, 6.62 percent in 1999, and 6.93 percent in 2000. During this decade, the country saw its highest inflation rate in history, hitting 72.8 percent in 1995. (NBS, 2019).

In recent years it shows that inflation rates are still revolving around double digits. For instance, in 2010, inflation rate stood at 13.72%. It decreased to 10.84% in 2011, and in 2012, it increases to 12.22% before falling to 8.48% in 2013, and 8.06% in 2014. In 2015, inflation rate increased to 9.01%, and further increased to 15.6% in 2016 and 16.52% in 2017. In 2018, it fell slightly to 12.09% and in 2019, it fell further to 11.701%. While fiscal deficit on the flipside, has been fluctuating with no consistency. In 2010, fiscal deficit stood at -₦1.105trillion. It increased to -₦1.158trillion in 2011, and fell drastically to -₦975.78billion in 2012. In 2013, it increased to -₦1.153trillion, and fell again in 2014 to -₦835.71billion. In 2015, in increased to -₦1.557trillion, and further increased to -₦2.673trillion in 2016 and -₦3,609trillion in 2017. Nigeria's fiscal deficit was -₦3.628 trillion in 2018, and it grew to -₦4.913 trillion in 2019 (CBN, 2019). For the past years, fiscal deficits have been the cause of most of Nigeria's debt crisis, high inflation, and poor economic growth (Onwioduokit, 1999).

As stated by Odim, Ngozi, and Lawrence (2014), attempts to restore macroeconomic stability in Nigeria through fiscal adjustment have achieved little or no success, raising concerns about the macroeconomic effects of fiscal deficits and fiscal stabilization. Unless empirically proven differently, this worrying pricing volatility cannot be separated from Nigeria's ongoing fiscal imbalance over the years. As a result, the long-run and short-run rapport amid fiscal deficit and inflation in Nigeria will be examined empirically in this study.

The study's broad objective is to investigate the effect of fiscal deficit on inflation in Nigeria using annual time series data from 1981 to 2019. The study's specific objectives are to:
   i.   examine the short run effect of fiscal deficit on inflation in Nigeria;
   ii. examine the long run effect of fiscal deficit on inflation in Nigeria; and
   iii. ascertain the pattern and course of the causal association amid fiscal deficit and inflation in Nigeria.

The findings of this study will provide knowledge and comprehension of the Nigerian economy, as well as direct fiscal management. Also, it will give direction on government policies on budget deficit management in Nigeria economy. This study will also give insight to the federal government on how to manage the inflation situation of the country through its expenditure. It will also serve as a reference material to students and scholars who wish to carry out further research on the topic.

This research looks at Nigeria's fiscal deficits in relation to inflation. The study covers the period 1981-2019. In this study, only the federal government's deficit will be given due attention while the financial profile (revenue and expenditure) of the other two tiers of government, that is, local and state governments will not be considered. In this study, we'll also look at the number of years the federal government has had a budget deficit.

2 LITERATURE REVIEW

2.1 Conceptual Literature Review
2.1.1 Fiscal Deficit

The limited resources of governments make them to frequently run budget deficits in order to fund economic and social infrastructure (Duokit and Ekong, 2016). There are a few different techniques to calculate the traditional fiscal deficit. The most widely accepted metric of the fiscal deficit used by governments throughout the world is the amount of resources used by the government in a fiscal year that must be financed after revenues have been deducted from expenditures (Duokit and Ekong, 2016). Fiscal deficit is the difference between total government revenue and expenditure. Fiscal deficit depicts a situation where government\s total expenditure outbalances its revenue (Agu, 2010). It represents the total amount of money government will need to borrow.

Different researchers have varying opinions on the definition of fiscal deficit; however, this study will use the IMF definition, which is Fiscal deficit = (revenue + grants) – (expenditure on goods and services + transfers) – (loans – repayments). It can be simply put as the excess of government expenditure over income for an annual period of time. Domestic borrowing and external borrowing can be used to fund Fiscal deficit. If fiscal deficit is correctly managed, it is envisaged that will result in infrastructural and human capital development, as well as a decrease in unemployment and recovery from depression/recession, will occur, raising the average standard of living of the population and promoting economic growth. However, when fiscal deficit takes up to 3 percent of GDP, which is the international benchmark, then it can adversely affect the rate of interest, inflation rate, deficit balance of payment, and deter economic growth (Anyanwu, 1997). It decreases national savings which would have been used for private investment. It crowds out private domestic investment. This will lead to reduction in capital stock and national output. Government should only borrow when there is recession or high unemployment, a decrease in a private sector savings. It can also be detrimental to development when a larger percentage of deficit budget is used to finance current consumption (Adegboyo *et al.*, 2020)

2.1.2 Inflation

Inflation simply means a continuous rise in the general price level within the economy which dampens the value of the domestic currency. "It is not once and for all upward price movement but has to be sustained over time and affect all goods and services within the economy" (Fatukasi, 2012). Inflation in Nigeria is caused by a number of different variables. Demand-pull inflation arises as a result of excess aggregate demand, cost push inflation is normally due to an increase in the cost of production, and structure inflation is as a result of the constraints facing productive sectors of the economy such as inefficient manufacturing, marketing, and distribution networks (Fatukasi, 2012). Imported, open, and seasonal inflation are examples of other types of inflation in developing countries. Inflation is transmitted through internationally traded products and services, resulting in imported inflation. This occurs when the economy buys items from nations where inflation is already present. Seasonal inflation is connected with off-season in output when supply restrictions pervade the economy as a result of a drop in production, particularly farming produce, while open inflation arise as a result of uninterrupted market mechanisms. Other causes of inflation in Nigeria can be as a result of the nature of the country's economy, plus its historical fiscal and monetary policy direction (Olu and Idih, 2015).

2.2 Theoretical Literature Review

2.2.1 Monetarist Theory

Money supply, according to monetarists, is what spurs inflation. If monetary policy is favorable to budget deficit, money supply tends to increase continuously. As a result of the deficit financing, aggregate demand rises, forcing output to rise above its natural level. Growing labor demand raises wages, which results the aggregate supply shifting in a downward direction. After a period of time, the economy goes back to its natural level of output level. This, however, comes at the cost of ever-increasing prices.

Budget deficits, according to monetarist theory, can cause inflation, but only to the extent that they are monetised (Hamburger and Zwick,1981). Money supply fluctuations are strongly related to fluctuations in the inflation rate in monetarist (and neoclassical) theories. In general, the budget deficit does not produce inflationary pressures in and of itself; rather, it impacts the price level through its impact on money aggregates and public expectations, which in turn causes price movements.

The money supply causation relationship is based on Milton Friedman's famous money theory, which states that inflation is a monetary occurrence everywhere and at all times. According to the hypothesis, continued and persistent price increases must be preceded or accompanied by a continuous increase in the money supply. The inter-temporal budget constraint operates through the expectations link of causality, which states that a government with a deficit must run future budget surpluses in present value terms (Walsh, 2017). Increased seigniorage revenues could be one strategy to build surpluses, allowing the public to predict future money growth. The direct consequences of inflation on outstanding debts, tax income, and expenditures are also considered when discussing the deficit-inflation link. The dynamic interaction between government deficits and inflation might go either way. Increased seigniorage revenues could be one strategy to build surpluses, allowing the public to predict future money growth. The direct consequences of inflation on outstanding debts, tax income, and expenditures are also considered when discussing the deficit-inflation link. The dynamic interaction between government deficits and inflation might go either way. Either the effect of inflation on reducing the real worth of debts predominate, or inflation worsens the government's fiscal position due to lag collection, lowering real revenue (Dornbusch *et al.*, 1990). By raising the money supply to finance these inflation-induced deficits, this drop in revenue is recognised as a contributing factor in the inflationary process (Tanzi, 1991; Aghevli and Khan, 1978).

2.2.2 Fiscal Theory of Inflation

There are two primary variations of the fiscal theory of inflation. The first version is based on Sargent and Wallace's (1981) seminal study, "unpleasant monetarist arithmetic," which stated that the pace of inflation is determined by the coordination of monetary and fiscal authorities. They conceptually explain how, even when the money base and price level are closely linked, as in the monetarist perspective, the monetary authority's power over inflation is limited under specific conditions using two coordination mechanisms. When the monetary authority has the upper hand, it is free to define monetary targets for the present and future. In this approach, the monetary authority determines the amount of seigniorage income that can be delivered to the government, leaving the fiscal authority to balance the rest of the budget through public bond sales. According to Sargent and Wallace (1981), inflation is totally under the control of the monetary authorities in this coordination framework. When the fiscal authority is in charge, it establishes the present and future budget balances as well as the amount of seigniorage income that the monetary authority must provide.

As a result, under the second coordination model, the monetary authority may not only produce more money, but also more inflation, weakening its price stability control. As a result, while this interpretation does not dispute that money expansion is the immediate source of inflation, it emphasizes the necessity of the fiscal power in regulating inflation. This approach is known as the weak-form of "fiscal theory" in the literature (Carlstrom and Fuerst 2000) and is widely acknowledged as the correct way of interpreting the rapport amid fiscal and monetary policy in determining inflation.

Some scholars established the second version of the fiscal theory of inflation (), often known as the strong-form of fiscal theory (see Leeper, 1991; Sims, 1994; and Woodford, 1995) or the fiscal theory of price level, as described by Carlstrom and Fuerst (2000). The key takeaway from this research is that price levels are solely driven by fiscal variables, such as government debt, current and future revenue and expenditure plans, and that monetary considerations have no bearing on price levels. The adjustment is driven by the wealth effect of individuals, and it ensures the government's inter-temporal budget restriction. In essence, the strong-form fiscal theory advocates for non-Ricardian equivalence, which means that if fiscal deficit should when, people see it as rise in the level of their wealth. So, aggregate demand increases, causing inflation and removing the monetary authority's responsibility. In contrast, Barro (1989) proposed the Ricardian equivalence hypothesis, which states that "an upsurge in the budget deficit has no effect on aggregate demand, interest rate, or price level". However, experimentally identifying Ricardian and non-Ricardian fiscal behavior is significantly more difficult, hence the strong-form of fiscal theory is still viewed with skepticism.

2.2.3 Keynesian Theory

This theory is also referred to as Income Expenditure Approach and Conventional Approach. Along with the Keynesian view, "the fiscal deficit has a beneficial impact on inflation". The upsurge in government spending would be attributed to the growth of the money supply, which explains how the expansion of the money supply occurs. Consistent with the money supply, demand is falling relatively quickly. On account of the increasing money supply, the lending rate will fall. Owing to the reduced lending rate, investment will expand, particularly in the private sector. The Keynesian multiplier will be effective, and investment will rise. The output capacity will increase as investment increases. In addition, Keynesian theory allows for the crowding out of private investment. If the fiscal deficit is covered through debt instruments, lending rates would rise, and private investment will be crowded out due to insufficient funds (Saleh, 2003).

The positive effect of a fiscal deficit on inflation is concealed when the money supply and the crowding out effect are combined. Fiscal deficits, according to Keynesians, can have a detrimental influence on the external sector, as seen by a trade imbalance, but only if the domestic economy is unable to absorb the extra liquidity through increased output. Hence, if the supply of output does not expand in response to the deficit, the surplus spending would only add to the level of imports, thereby resulting inflation and subsequent decrease in the exchange rate (Neaime, 2008).

2.2.4   The Ricardian Theory

Barro (1989) proposed the Ricardian Equivalence Hypothesis, which is a counter-intuitive method (REH). The Ricardian equivalence proposition, also known as the Barro-Ricardo equivalence proposition, is an economic theory that claims government budget deficits have no effect on total demand in an economy. The hypothesis can be summarized in the following way. Governments can fund their expenditures either by taxing current taxpayers or borrowing money. However, they will have to return this debt in the future by raising taxes above what they would have been otherwise.

As a result, the decision is between "tax now" and "tax later." If the government finances some additional spending by running deficits - i.e., taxing later - Ricardo argues that, while taxpayers will have more money now, they will realize that they will have to pay a higher tax in the future and will thus save the extra money to pay the future tax. Consumer savings would exactly equal government spending increases, resulting in no change in overall demand. According to Ricardian Equivalence, government attempts to affect demand through fiscal policy will be futile. He claims that an increase in budget deficits as a result of increased government expenditure must be paid for now or later, with the total present value of receipts equal to the total present value of spending.

As a result, a reduction in current taxes must be offset by a rise in future taxes, leaving real interest rates, and hence private investment, unchanged, as well as the current account balance, exchange rate, and domestic production. As a result, neither macroeconomic variables nor budget deficits are crowded in or out. According to him, the fiscal deficit and inflation have neither positive or negative relationship.

2.3 Empirical Literature Review

Using a vector error correction (VEC) model, Chimobi and Igwe (2010) investigated the long-term link between Nigeria's budget deficit, money growth, and inflation from 1970 to 2005. Their findings demonstrated a long–term link between inflation and the money supply. They also claimed that a one-percentage-point increase in the fiscal deficit (as a proportion of GDP) led to a nearly 0.94-percentage-point increase in M2 growth. In terms of causality, the inflation and budget deficit tests found bi-directional causality, whereas the money supply and inflation tests only revealed a one-way causality from money supply to inflation.

The causal connection between the budget deficit and inflation, as well as the effects of the fiscal deficit on Nigeria's economy, were examined by Oladipo and Akinbobola (2011). Granger Causality pair-wise test was used to gather and analyze secondary data from 1970 to 2005. According to the results, there is a one-way causal relationship between inflation and the budget, with the budget deficit being the cause of inflation.

Ezeabasili *et al.* (2012) used time series data from 1970 to 2006 to study the empirical relationship between budget deficit and inflation in Nigeria. The data collected was analysed using two-stage ordinary least square(2SLS), impulse response analysis and forecast error variance decomposition. According to their findings, there is a positive but negligible association between inflation and Nigeria's budget deficits. Furthermore, previous levels of budget deficits have had no beneficial or negative impact on inflation in Nigeria.

Khumalo (2013) scrutinized "the impact of the budget deficit on inflation in South Africa" using quarterly data from 1980 to 2012 with the purpose of determining the direction of causation and the existence of cointegration. The VAR analysis, Granger causality test, and impulse response functions were used in the research. The study's findings indicated a long-run affiliation amid South African budget deficits and inflation, implying that the VAR model yields meaningful impulse functions and revealing that budget deficits are inflationary. The study also found that a budget deficit adds to inflation in a beneficial way. The study recommended that the government of South Africa should cut the size of its expenditures and to maintain the growth rate of money at the level which will not be inflationary.

Between 1970 and 2010, Inam (2014) aimed to experimentally analyze the long-run causal link flanked by budget deficit and inflation in Nigeria. The presence of a causal long-run bond amid budget deficit and inflation was empirically established using a multivariate co-integration regression technique, with the direction of causation running from budget deficit to inflation. The research argued that policymakers should be primarily concerned with the various routes of financing the deficit and the ability of the economy's productive base to absorb the impact of such financing, rather than the magnitude of the budget deficit.

Lwanga and Mawejje (2014) used the VECM, granger causality test, and variance decomposition approaches to explore the link between budget deficits and chosen macroeconomic indicators in Uganda between 1999 and 2011. Their findings discovered that the variables under investigation are cointegrated and consequently have a long-term link. The VECM findings demonstrated a one-way causal relation amid inflation and the budget deficit.

Jalil *et al.* (2014) used an autoregressive distributed lag model framework to examine the impact of Pakistan's fiscal deficit on inflation from 1972 to 2012. Consistent with the findings, the budget deficit, along with other factors such as interest rates, government borrowing, and private borrowing, is a primary determinant of inflation. The study stated that Pakistan's economy required quick adjustment of fiscal imbalances based on its findings.

Osuka and Achinihu. (2014), explored the upshot of budget deficits on macro-economic variables in the Nigerian economy for the period 1981-2012. The study used the Augmented Dickey-Fuller (ADF) unit root test, Johansen Cointegration test and the Granger causality test to analyze the data collected in the study. The study revealed that the variables were all cointegrated of order

one showing that long-run relationship exists between budget deficits and selected macro-economic variables (GDP, interest rate, nominal exchange rate and inflation rate). The Granger Causality results reveal a uni-directional Granger-causality between Budget deficits and GDP with GDP granger causing budget deficit. Their causality test, however, discovered no link amid budget deficits and inflation.

Abubakar *et al*. (2014) looked at the long-term relationship between Nigeria's budget deficit and inflation using the ARDL) model. Time series data from 1970 to 2011 were used in the study. Their ARDL findings indicate that there is little long-run correlation amid Nigeria's budget deficit and inflation. Additionally, there is no connection flanked by inflation and exchange rate depreciation. However, there is a substantial and positive long-term correlation amid interest rates and inflation. Additionally, their research showed a one-way causal relationship between the budget deficit and inflation. Consistent with the findings, inflation is not caused by a long-term budget deficit. Instead, measures focused at reducing interest rates may be the most efficient strategy to control inflation because they are the main driver of inflation.

Samirkaş (2014) used the Johansen co-integration test and the Granger causality test to analyze the effects of Turkey's budget deficits between 1980 and 2013 on inflation, economic growth, and interest rates. The findings showed that there is no long-term connection amid budget deficits and GDP, inflation, or interest rates. The results also showed a coincidental rapport amid interest rates and budget deficits, with the association flowing from interest rates to deficits. In other words, interest rates significantly affect budget deficits.

Nkalu (2015) used annual time-series data from both economies to investigate the effects of budget deficits on selected macroeconomic variables in Nigeria and Ghana from 1970 to 2013 using the "Seemingly Unrelated Regression" "(SUR) model and Two-Stage Least Squares methods (2SLS). In order to estimate the systems equations, the researchers used the Eagle-Granger Cointegration test, the ADF, and the Phillips-Perron (PP) tests. To explore the study's aims, data from the World Bank, IMF - World Economic Outlook, Central Bank of Nigeria, Bank of Ghana, and others were analyzed using the SUR model with additional diagnostic and specification tests. From the perspective of this study, the empirical findings demonstrated that budget deficit has statistically negative effects on interest rate, inflation, and economic growth.

Aero and Ogundipe. (2018), from 1981 to 2014, this study looked at the impact of fiscal deficits on Nigerian economic development. Using the Threshold Autoregressive model, the study determined the optimal fiscal deficit level. The study found a substantial inverse relationship between fiscal deficits, financial strength, and economic development in Nigeria. The study established a 5% threshold level for the Nigerian economy that, with a one-year lag, is favorable for economic development. According to the analysis, the government should raise capital spending while maintaining a fiscal deficit within the ideal range of 5%.

The effects of the fiscal deficit on GDP, the money supply, and inflation were the main topics of Nwakobi *et al*. (2018)'s investigation of the fiscal deficit's effects on certain macroeconomic indicators in Nigeria. Using time series data from 1981 to 2015, the study employed multiple econometric techniques, such as the unit root test, Johansen co-integration, and Granger causality test, to regress changes in the gross domestic product, money supply, and inflation on the fiscal deficit and exchange rate. The analysis finds that the budget deficit has no meaningful impact on Nigeria's gross domestic product, money supply, or inflation. To reap the benefits associated with fiscal deficit, the study recommended that the Nigerian government allocate and effectively monitor funds sourced as a result of fiscal deficit to providing critical economic infrastructures such as electricity, access roads, health, and communication, among others.

From 2000Q1 to 2015Q4, Okoro and Oksakei (2020) looked at the influence of budget deficits on macroeconomic variables in Nigeria. Using the Auto-Regressive Distributed Lag (ARDL) approach, the study found that there is a significant long-term correlation between fiscal deficit and several macroeconomic indicators in Nigeria. The short-term effects of fiscal deficits on Nigeria's foreign reserves and the long-term effects of fiscal deficits on inflation in Nigeria were both found to be negligible.

Sunday *et al.* (2020) looked into the connection amid Nigeria's budget deficit and macroeconomic factors such as interest rates, inflation rates, and exchange rates in order to determine causality. Data collected from CBN, and the NBS straddling the years 1981 to 2015 were scrutinized using ADF stationarity test, Johansen cointegration technique, and Granger Causality test in the VAR Model to establish the causal bond amid the variables of the study. The ratio of Nigeria's budget deficit financing to actual GDP was not significantly correlated with inflation rates, their data showed.

2.4 Summary of Literature Reviewed

The results of the aforementioned empirical review have clearly shown that there is still room for further research into the empirical relationship between Nigeria's fiscal deficit and inflation because different studies have found a conflicting pattern of both a positive and negative relationship between the two variables. The researcher concluded from the literature analysis that no study has properly looked at the impact of Nigeria's budget imbalance on inflation over the long and short terms. By examining the short- and long-term effects of the budget deficit on inflation in Nigeria, this study aims to close this knowledge gap. Additionally, this study will contribute to the body of knowledge by gathering sufficient data (from 1981 to 2019) and using more trustworthy econometric methodologies like ARDL to produce a solid conclusion that can be used as a tool for policy action.

3 RESEARCH METHODOLOGY

3.1 Research Design

The study used an ex-post facto research design to assess the impact of Nigeria's fiscal deficit on inflation during a thirty-nine-year period, from 1981 to 2019. Secondary data were found from Central Bank of Nigeria (CBN) and National Bureau of Statistic (NBS) official reports. The study will apply the ARDL (Auto Regressive Distributed Lag) / Bounds testing methodology developed by Pesaran *et al.* (2001) to the estimate the econometric time series data. Fiscal Deficit (FD) is the independent variable. The dependent variable is Inflation (INF). Exchange rate (EXR), Money supply (MS), and Gross domestic product (GDP) was included as control variables in the model as they are capable of influencing the level of inflation. Gujarati (2004) stated that the inclusion of control variables in a model helps to avoid simultaneous bias in a regression. Furthermore, in developing economies, such as Nigeria, the exchange rate has a deterministic effect on the level of prices. Because it can explain inflation, it is used as a control variable in this study. In countries like Nigeria, a depreciation (or appreciation) of the currency could raise (lower) the price of imported goods. Because Nigeria's market is heavily reliant on imported goods, a depreciation in the exchange rate might result in an instantaneous increase in the price of the consumer's basket of goods. The level of GDP, which is adversely associated to the level of inflation, is another key explanatory variable.

3.2 Model Specification

We adopted the model of Ezeabasili *et al.* (2012) with slight modifications. The functional form of our inflation-fiscal deficit model is specified as:

INF = f (FD, MS, GDP, EXR)   Equation 3.1

The econometric equation becomes;

$INF = B_O + B_1 InFD + B_2 InMS + B_3 InGDP + B_4 InEXR + e$ Equation 3.2

Where INF= inflation rate, FD= fiscal deficit, MS= money supply, GDP= gross domestic product, EXR= exchange rate, B_O = Intercept of relationship in the model/constant, $B_1 – B_4$ = coefficient of each exogenous variable and e = stochastic or error term.

Based on our apriori expectation, $\beta_1, \beta_2 > 0$, $\beta_3, \beta_4 < 0$

Furthermore, the ARDL model for this paper can be demonstrated as:

$\Delta INF_t = \alpha_0 + \sum_{i=1}^{n} \beta_i \Delta INF_{t-i} + \sum_{i=0}^{n} \delta_i \Delta lnFD_{t-i} + \sum_{i=0}^{n} \varphi_i \Delta lnMS_{t-i} + \sum_{i=0}^{n} \zeta_i \Delta lnGDP_{t-i} + \sum_{i=0}^{n} \phi_i \Delta lnEXR_{t-i} + \lambda_0 INF_{t-1} + \lambda_1 lnFD_{t-1} + \lambda_2 lnMS_{t-1} + \lambda_3 lnGDP_{t-1} + \lambda_4 lnEXR_{t-1} + \varepsilon t$ Equation 3.3

Where αo = represent the constant term, Δ = represent the first difference operator, λ = are the long-run coefficient, β; δ; φ; ζ; θ = are the short-run dynamics and εt = is the white noise.

3.3 Description of Variables in the Model

INF: Inflation is defined as a rise in the overall level of prices of goods and services, resulting in a decrease in purchasing power. Consumer price index (CPI) will be used to proxy inflation in this study. Ezeabasili, Mojekwu and Herbert (2012), Inam (2014) and Osuka and Achinihu (2014) applied this variable.

FD: Fiscal deficit arise when a country total expenditure is higher than revenue that it generates, excluding money from borrowing. A fiscal deficit is regarded by some as a positive economic event. Keynes (1936) believes that fiscal deficit helps countries to climb out of economic recession. Ezeabasili *et al.* (2012), Inam (2014) and Ozurumba (2012) utilized this variable in their works.

MS: This is the total amount of currency and other liquid assets in a country's economy at any given point in time. Cash, coins, and balances in checking and savings accounts are all part of the money supply. The broad money supply (M2) is used as a proxy for money supply in this study. Ezeabasili *et al.* (2012), Chimobi and Igwe (2011) and Onwioduokit and Bassey (2013) used this proxy in their studies.

GDP: This is the monetary worth of all finished goods and services produced within a country's borders over a given period of time. Although GDP is determined on a yearly basis, it encompasses all private and public consumption, government expenditures, investments, and exports (less imports) that take place within a specific territory. Nominal GDP is used to proxy GDP in the study. Ezeabasili *et al.* (2012), applied this indicator.

EXR: This is the price of Naira in terms of other currencies such as US dollars, British pounds sterling, European Euros, Japanese Yen, etc. Exchange rate in this work is the exchange rate of the Nigerian Naira against the United States of America dollar. Ezeabasili, Mojekwu and Herbert (2012) and Nwakobi *et al.* (2018), applied this as control variable.

3.4 Data Sources

The data used for this study will be obtained from secondary sources. Annual time series data from 1981 to 2019 will be obtained from different publications of the central bank of Nigeria (CBN) Statistical Bulletin and National Bureau of Statistic (NBS) in other to achieve the objectives of the study.

3.5 Estimation Techniques

The Auto Regressive Distributed Lag (ARDL) and Bounds testing estimation technique will be used to develop strong, robust, and reliable estimates of the parameters above, and statistical and econometric tests such as stationarity, co-integration, post estimation diagnostic tests such as normality test, autocorrelation test, multicollinearity test, and others will be performed on this model.

4 TRENDS IN FISCAL DEFICITS AND INFLATION IN NIGERIA AND EMPIRICAL FINDINGS

4.1 Trends in Fiscal Deficit in Nigeria,1981 – 2019

Fiscal expenditure in Nigeria is made feasible by extraordinary oil sales revenues, which are frequently followed by periods of oil glut, which result in huge drops in government revenues. In Nigeria, fiscal deficits are typically skewed substantially in favor of recurrent expenditure (60 percent recurrent expenditure and 40% capital expenditure), which does not always encourage economic progress. Because fiscal deficits are one of the most important instruments of fiscal policy, maintaining price stability, per capita income growth, and employment necessitates that the fiscal deficit increase or develop at a low constant rate. Fiscal deficits have been expanding at an alarmingly inconsistent rate. Fiscal deficits grew from 56.4 percent in 1982 to 171.38 percent in 1986 and 3105 percent in 1996, as seen in figure 4.1. In 1997, the fiscal deficit growth rate was negative (-115.60 percent), but it rapidly grew to 2567.78 percent in 1998, then fell to -37.17 percent in 2006. The growth rate of Fiscal deficit increases in to 36.4per cent in 2010 and fell to -27.54% in 2014. It rose to 71.6 in 2016, and in 2019, it stood at 35.4 percent. The rate of increase in the deficit has fluctuated between 1995 and 2019. As a result, the budget deficit in Nigeria has not been expanding at a steady rate.
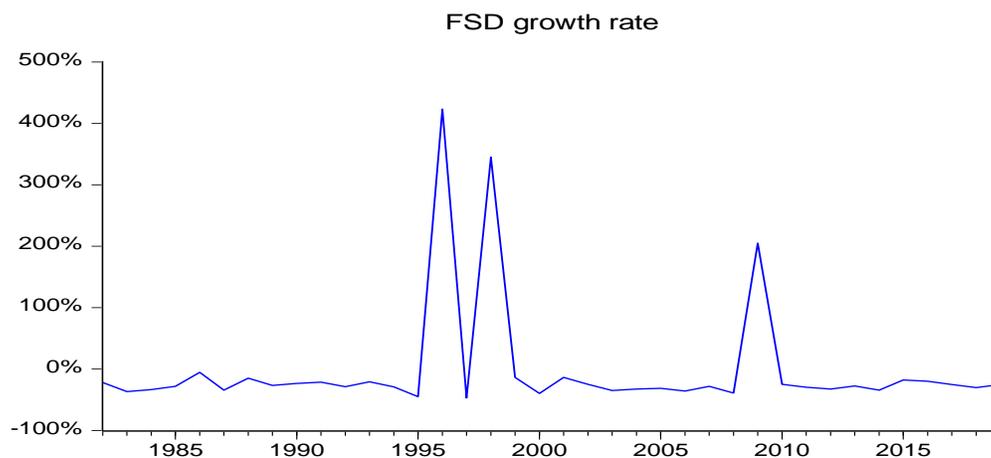

Figure 4.1: Fiscal deficit growth rate in Nigeria from 1981-2019
Source: CBN statistical bulletin 2019

4.2 Trends in Inflation in Nigeria, 1981-2019

High inflation has been one of the primary issues confronting the Nigerian economy. The government's failure to provide a long-term solution to this problem reveals the inevitability of inflation in the economy; hence, it demonstrates that the government lacks the authority to abolish the persistently growing costs of goods and services in the domestic market (Taiwo, 2011). The trend graph in figure 4.2 demonstrates a rise in the country's price level over the years, with the greatest in 1995, with an inflation rate of 72.84 percent. In 1981, inflation rate in Nigeria stood at 20.81 percent, this figure increased drastically to 54.51 percent in 1988 indicating a 161.9 percent increase in inflation rate between 1981-1988. This rate further increased to 57.17 percent in 1993, and an all-time high of 72.84 percent in 1995. Inflation rate in Nigeria fell from an all-time high of 72.84 percent in 1995 to 6.62 percent in 1999. This trend started rising again from 6.62 percent in 1999 to 18.87 percent in 200, indicating a 185 percent increment, before falling to 14.03 percent in 2003. However, in 2004 and 2005, the rate began to grow again, rising from 15 to 17.86 percent, a 19.1 percent increase, before falling to 11.54 percent in 2009. Between 2010 and 2015, the rate fell from 13.72 percent to 9.01 percent, indicating a 34.3 percent decrease, but then jumped from 15.68 percent in 2016 to 16.52 percent in 2017, indicating a 5.4 percent increment. In 2019, the rate fell dramatically to 11.40 percent.

Clearly, inflation in Nigeria has become a serious danger to economic activity, particularly for workers whose quality of living is constantly declining. Inflationary variables contributing to Nigeria's high inflation include continuous rises in fuel prices and exchange rate depreciation/devaluation. Rises in transportation costs, input materials, groceries, rents, and products and services in Nigeria have been blamed on increases in the two components (price of petroleum and exchange rate depreciation), as well as exchange rate depreciation. additional variables such as an increase in power tariffs, VAT increase, and general reductions in subsidies, etc. can also be attributed to increasing inflation rate in the country.
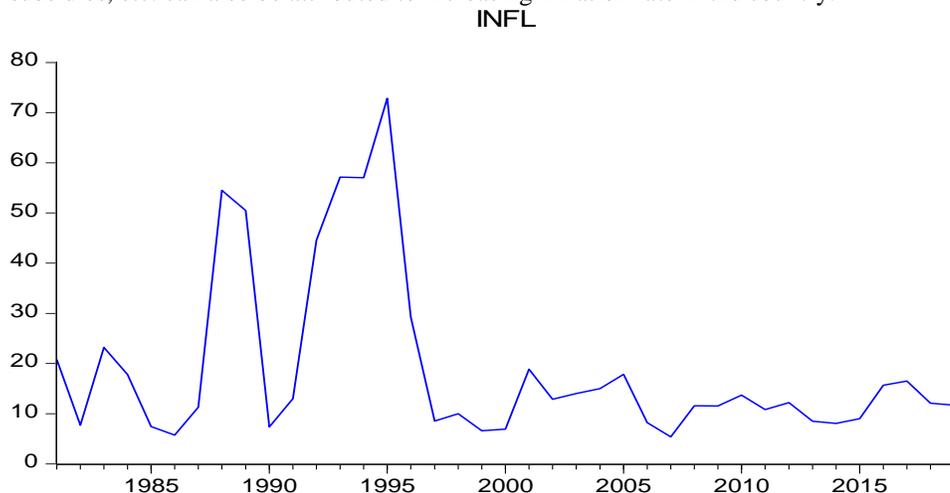

Figure 4.2: Inflation rate in Nigeria from 1981-2019
Source: CBN statistical bulletin 2019

4.3 Fiscal Deficit and Inflation in Nigeria

According to available statistics from CBN (2019), government expenditure in Nigeria has continuously surpassed revenue from 1981 to 2019, with the exception of 1995 and 1996, when the government achieved a budget surplus. Scholars have blamed the ongoing fiscal imbalance on a variety of causes, including decreased tax income as a result of the recession and an increase in debt service payments on public debt (Olomola and Olagunju, 2004). The budget deficit has an impact on macroeconomic variables such as interest rates, exchange rates, inflation, consumption, and investment, among others, which serve as a medium via which the budget deficit influences economic growth. Scholars think that deficit reduction is critical for an economy's future growth, while economists disagree over its implications. Decrease budget deficits are projected to lower real interest rates, boost investment, and boost productivity growth and real income (Cebula, 2000).

Fiscal deficit advocates claim that genuine structural deficits drive significant growth in output, consumption, savings and investment, as well as increased productivity and purchasing power in an economy, hence promoting economic activities. Deficit reduction is financed mostly through borrowing and, on occasion, taxation, both of which are inflationary. Inflation is one of the many issues facing emerging countries that must be addressed. The rate of inflation has been rising, wreaking havoc on the economy by increasing the price of products and services for customers.

Table 4.1 shows the budget deficit/surplus and the corresponding rate of inflation from 1981 to 2019 in Nigeria. Budget deficit stood at ₦3.9 billion in 1981 while the rate of inflation during the same period was 20.81%. Inflation fell from 20.81% to 7.7% in 1982 while budget deficit increased from ₦3.9 billion in 1981 to ₦6.1 billion in 1982. However, budget deficit declined from ₦6.1 billion in 1982 to ₦3.36 billion in 1983. It further declined to ₦2.66 billion in 1984. But inflation increased from 7.7% in 1982 to 23.2% in 1983 and decreased to 17.82% in 1984.From 1985 to 1994, the budget deficit increased, while inflation rates fluctuated, with the highest rate of 57.2 percent in 1993 and the lowest rate of 5.4 percent in 1986. Nigeria, on the other hand, had fiscal surpluses in 1995 and 1996. Nigeria saw the highest rate of inflation of 72.8 percent in 1995, when the country's budget surplus was ₦1 billion. However, when Nigeria had a budget deficit of ₦5 billion in 1997, the inflation rate plummeted from 72.8 percent in 1995 to 8.5 percent in 1997. Between 1997 and 2009, the budget deficit was uncontrolled, despite fluctuating inflation. The budget deficit increased from ₦810.11 billion in 2009 to ₦1.1 trillion in 2010, but the rate of inflation decreased from 27.8% in 2009 to 13.72 percent in 2010. In 2011, the budget deficit climbed to ₦1.2 trillion, although inflation fell to 10.84 percent in the same year.

On the average, fiscal deficit has been on the increase since 2009 to date resulting from the increased Boko Haram attacks in North Eastern Nigeria and Bandits in the other parts of Northern Nigeria. Similarly, Avenger's and other insurgent actions in the Niger Delta are contributing to Nigeria's financial deficit. Because of these insecurity issues ravaging the country, billions of Naira are spent combatting these insurgencies. Fiscal deficit tremendously increased from ₦1.2 trillion in 2011 to ₦3.6 trillion in 2018 and ₦4.9 trillion in 2019. Although inflation fell from 12.09% in 2018 to 11.07% in 2019, on the average, since 2009 inflation has been on the increase as a result of depreciation in Naira leading to the problem of imported inflation in the country.

Table 4.1: Inflation and budget deficit in Nigeria from 1981-2019

Year	Inflation Rate (Annual %)	Fiscal Deficit (₦'billion)
1981	20.81	-3.9
1982	7.7	-6.1
1983	23.21	-3.36
1984	17.82	-2.66
1985	7.44	-3.04
1986	5.72	-8.25
1987	11.29	-5.89
1988	54.51	-12.16
1989	50.47	-15.13
1990	7.36	-22.12
1991	13.01	-35.76
1992	44.59	-39.53
1993	57.17	-65.16
1994	57.03	-70.27
1995	72.84	1.00
1996	29.27	32.05
1997	8.53	-5.00
1998	10	-133.39
1999	6.62	-285.1
2000	6.93	-103.78
2001	18.87	-221.05
2002	12.88	-301.4
2003	14.03	-202.72
2004	15.00	-172.6
2005	17.86	-161.4
2006	8.24	-101.4
2007	5.38	-117.24
2008	11.58	-47.38
2009	27.8	-810.01
2010	13.72	-1,105.40
2011	10.84	-1,158.52
2012	12.22	-975.78
2013	8.48	-1,153.49
2014	8.06	-835.71
2015	9.01	-1,557.83
2016	15.68	-2,673.84
2017	16.52	-3,609.37
2018	12.09	-3,628.10
2019	11.701	-4,913.82

Source: CBN Statistical Bulletin (2019)

5 DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS
5.1 Data Presentation
5.1.1 Unit Root Test

The variables in the models were subjected to unit root tests to determine the stationarity or otherwise of the variables. The test was carried out at levels and first differences of the chosen variables and were performed assuming intercept and trend in ADF specifications. The Null hypothesis states that each of the variables has unit root, that is, each is non-stationary whereas the alternative hypothesis states that each variable does not have unit root, that is, each variable is stationary. The unit root test for our model is presented in Table 5.1.

Table 5.1: Result of Unit Root Test

Variable	ADF stat	5% critical value (*)	Order of integration
INF	-4.286	-3.574	I(0)
FD	-6.573	-3.537	I(1)
MS	-7.128	-3.537	I(1)
GDP	-10.314	-3.537	I(1)
EXR	-4.509	-3.537	I(1)

Source: Author's computation using (EViews 9)

The Augmented- Dickey fuller outcome of the unit root test displays that all the variables used for this study were stationary at level and first difference as shown in Table 5.1. This expression satisfies the researcher's choice of using the Autoregressive distributed lag model to explore the effect of fiscal deficit on inflation with reference to Nigeria.

5.1.2 ARDL Bounds Tests for Cointegration

We use the autoregressive distributed lag (ARDL) cointegration technique to empirically analyze the long-run relationships and short-run dynamic interactions among the variables of interest (inflation rate (INF), fiscal deficits (FD), economic growth (GDP), Money supply (MS), and exchange rate (EXR).

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	6.471317	4

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Author's computed result (EViews 9)

From the result in Table 5.2, the F-statistics of 6.47 falls above the upper bound at 5% critical value. Therefore, we reject the null hypothesis of no co-integration and conclude that there is co-integration amongst the variables. This is to say that though there is no short run equilibrium relationship between fiscal deficit (FD) and inflation rate (INF), in the long run there is existence of equilibrium relationship. Hence the observed long run and short run relationship is given by the ARDL regression results presented in Tables 5.3 and 5.4.

Table 5.3: ARDL Short run model

Variables	Coefficient	t-statistics	p-value
D(INF(-1))	0.300349	2.075105	0.0480
D(FD)	-0.000266	-2.476602	0.0201
D(MS)	-0.734929	-0.876631	0.3887
D(MS(-1))	1.114237	1.387424	0.1771
D(GDP)	4.433975	3.623966	0.0012
D(GDP(-1))	3.083415	2.333317	0.0276
D(EXR)	-0.430901	-2.131990	0.0426
CointEq(-1)	-1.274204	-5.880046	0.0000

Source: Author's computed result (EViews 9)

5.4: ARDL Long run model

Variables	Coefficient	t-statistics	p-value
FD	-0.000209	-2.670188	0.0129
MS	0.087249	0.183512	0.8558
GDP	0.036101	0.065817	0.9480
EXR	0.338173	2.359147	0.0261
Constant	1.748382	1.229410	0.2299
R-squared	0.733081		
Adjusted R^2	0.630420		
f-statistics	7.140797		
Prob(f-statistics)	0.000027		

Source: Author's computed result (EViews 9)

5.2 Interpretation

Results from our ARDL short run model in Table 5.3 showed that the inflation rate in the previous year D(INF(-1)) has a significant influence on the current year inflation rate. A one percent increase in D(INF (-1)) will lead to a 0.3% increase in inflation rate (INF) on the average. Furthermore, both in the short and long run, Nigeria's fiscal deficit (FD) was found to have a negative impact on inflation. In Nigeria, a 1% increase in foreign direct investment will result in a 0.00027 and 0.00021 percent decrease in inflation in the short and long run, respectively. At the 5% level of significance, the negative association between budget deficit and inflation rate is statistically significant in both the short and long term.

Furthermore, in the short run, money supply (MS), which was utilized as a control variable in our model, was found to have a negative and statistically insignificant effect on inflation rate. However, in the long run, the money supply was found to have a positive impact on inflation, albeit one that was statistically insignificant. In Nigeria, GDP had a positive effect on inflation rate (INF) both in the short and long run, but the positive relationship was only significant in the short run, with a probability value smaller than 0.05. In other words, in the short run, a unit rise in GDP will raise inflation by 4.4 percent on average. In the short run, the exchange rate had a statistically significant negative relationship with inflation, but in the long run, it had a significant positive relationship. A one percent increase in Nigerian exchange rate (EXR) will decrease inflation rate by 0.43 percent on the average in the short run. But in the long run, a one percent increase in exchange rate (EXR) will lead to a 0.34 percent increase in inflation rate, ceteris paribus. This might not be unconnected with the fact that as exchange rate rises in the short run it may discourage importers from importing goods from outside the country in the short run, but in the long run, since most goods in Nigeria are inelastic in demand, importers can easily shift the increased cost of the commodity to the final consumers hereby increasing the prices of such goods in the market, which can lead to inflation.

The Error correction term indicates how much of the disequilibrium is being rectified, or how much any past period disequilibrium is being adjusted in the dependent variable in the present period. The error correction term must have a coefficient that is negative and significant. From the result, the error correction term has coefficient of -1.274 and a prob(t-value) of 0.000. This implies that the speed of adjustment is 127.4%.

Our overall model was found significant as the F-statistic value of 7.1408 with a probability value of 0.000027 was found significant at 5% level of significance. That is to say, that our model was well specified. Also, our adjusted R^2 was 0.63, implying that 63% of the total variation in inflation is explained by our independent variables. The remaining 37% is explained by the error term.

5.3 Post Diagnostic test

5.3.1 Test for autocorrelation

Table 5.5: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.317199	Prob. F(2,24)	0.2866
Obs*R-squared	3.659655	Prob. Chi-Square(2)	0.1604

Source: Author's computed results (EViews 9)

The alternative hypothesis, which claims that there is serial correlation, contradicts the null hypothesis's claim that there isn't any. Inferring that there is no serial correlation between the variables from the result in Table 5.5 above, where $0.1604 > 0.05$, we object to rejecting the null hypothesis of "no serial correlation".

5.3.2 Test for heteroscedasticity

This test is basically focused on the variance of the error term. The test helps to ascertain whether the variance of the stochastic term is constant.
H_0: Homoskedasticity
H_1: Heteroskedasticity

Table 5.6: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.816749	Prob. F(10,26)	0.6158
Obs*R-squared	8.844583	Prob. Chi-Square(10)	0.5469
Scaled explained SS	2.983725	Prob. Chi-Square(10)	0.9818

Source: Author's computed result (EViews 9)

From Table 5.6, $0.6158 > 0.05$ and $0.5469 > 0.05$, hence we accept to the null hypothesis of no heteroskedasticity and conclude that "there is no heteroskedasticity" in the model.

5.3.3 Test for Normality

H_0: It follow a normal distribution
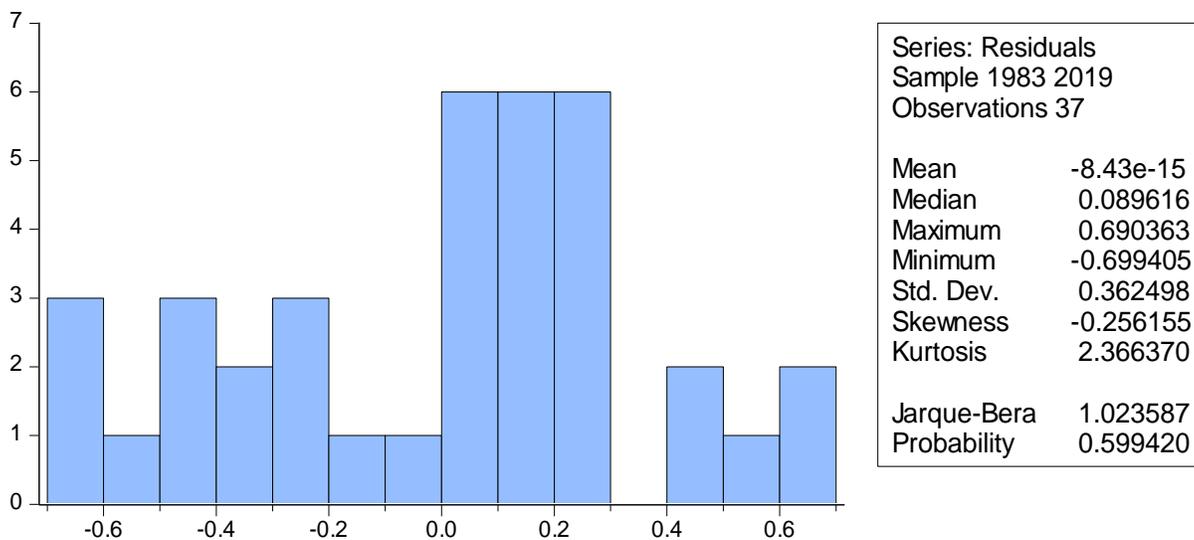H_1: It does not follow a normal distribution

Figure 5.1: Jarque-Bera normality test
 Source: Author's computed result (EViews 9)

Decision rule:

Reject H_0 if the histogram is not bell shaped and the Jarque-bera statistics is significant at 5% level of significance, otherwise we fail to reject H_0.

From Table 4.7, the Jarque-Bera value is 1.023587 with a p-value of 0.599. As a result, we cannot rule out the null hypothesis and come to the conclusion that the model exhibits normal distribution.

5.4 Granger Causality Test

The "Pairwise Granger Causality" test was run in accordance with the third specific objective, which tries to establish the causative link between the budget deficit and inflation in Nigeria, and the results are shown in Table 5.7.

Table 5.7: Granger Causality Result

Null Hypothesis:	Observations	F-Statistic	Probability
INFL does not Granger Cause FD	37	0.36542	0.6968
FD does not Granger Cause INFL		6.70320	0.0037

Source: Author's computed result (EViews 9)

Two lags for each of the variables were used to estimate the Granger causality model. The null hypothesis, according to the Granger-causality results in Table 5.7, that "the fiscal deficit (FD) does not Granger cause inflation" (INF), is rejected since the result is significant with a probability lower than 0.05. This suggests that an inflationary fiscal deficit may exist. However, no feedback mechanism was demonstrated, leading to the acceptance of a one-way causal relationship between the budget deficit and inflation.

5.5 Discussion of findings

The empirical analysis has shown clearly the likely implication of fiscal deficits on the general price levels. The finding implies that policymakers should consider fiscal deficits as both a short-term and long-term tool for inflation control, given the effects they are expected to have on the overall price level of the Nigerian economy in the short and long run, as suggested by our ARDL results. From our ARDL result in Tables 5.3 and 5.4, fiscal deficit was found to have a significant negative effect on inflation rate in Nigeria both in the short run and long run, ceteris paribus. The results of Anayochukwu (2012), Abubakar, Aliero, and Umaru (2014), and Bakare *et al*. (2014), who in their respective publications discovered a substantial inverse link amid the budget deficit and the rate of inflation in Nigeria, concur with this conclusion. This result was at odds with the findings of Khumalo (2013) and Inam (2014), who in their respective publications discovered a favorable and inconsequential link between Nigeria's budget deficit and inflation rate.

Money supply (MS) was found to have a negative and insignificant effect on inflation in Nigeria in the short run and an insignificant and positive effect in the long run. This result conflicts with the findings of Inam (2014), who discovered a short-term, statistically noteworthy link amid money supply and inflation rate in Nigeria. This result also differed with that of Bakare, Adesanya, and Bolarinwa (2014), who discovered a positive but negligible correlation between Nigeria's inflation and budget deficit. GDP which was used as control variable in our inflation model was found to have a positive relationship with inflation both in the short and long run. But this positive relationship was only significant in the short run. This finding contradicted the work of Bakare, Adesanya, and Bolarinwa (2014), who found a negative and statistically inconsequential bond amid GDP and inflation rate in Nigeria. The variable exchange rate (EXR) was found to have a substantial and negative upshot on inflation rate in Nigeria in the short run and a positive effect in the long run. This result was at odds with that of Abubakar et al. (2014), who in their study discovered a short- and long-term negative but minor link amid the exchange rate and inflation in Nigeria.

The outcomes of our analysis have great policy implication which the federal Government of Nigeria cannot afford to overlook. The significant influences of fiscal deficit on inflation goes to show that fiscal policy is a critical tool for controlling inflation in Nigeria. But the adverse rapport found amid fiscal deficit and inflation from our ARDL analysis portrays that the inflationary effect of government deficits depends on the means by which the deficit is financed and the impact of the deficit on aggregate demand. Therefore, this goes to say that in Nigeria, what should be of paramount concern to policy makers as regards inflation should not so much be the level of fiscal deficits but the sources of its financing as well as the absorptive capacity of the economy. Furthermore, given the long-term positive correlation between exchange rate and inflation, the large impact of inflation on Nigeria's exchange rate indicates that there is an issue with imported inflation in Nigeria.

6 SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Summary

The study investigated "the effect of fiscal deficit on inflation rate in Nigeria" by employing yearly data straddling from 1981 to 2019. The explicit objectives of the study include, to inspect the short run effect of fiscal deficit on inflation in Nigeria; scrutinize the long run effect of fiscal deficit on inflation in Nigeria; and ascertain the pattern and course of the causal association amid fiscal deficit and inflation in Nigeria. The study employed the ARDL method, Bounds test and the Granger causality test as its analytical technique. Specifically, the study found that;

i.   The ARDL Bound test for cointegration revealed that the F-statistics of 6.47 falls above the upper bound at 5% critical value. Suggesting that there exists a long-run association amid the variables.

ii. The ARDL result indicated that the coefficient of fiscal deficit is negative and significant both in the short run and long run. Money supply (MS) was found to have a negative and insignificant effect on inflation in Nigeria in the short run and an insignificant and positive effect in the long run. GDP was found to have a positive relationship with inflation both in the short and long run. But this positive relationship was only significant in the short run. The variable exchange rate (EXR) was found to have a negative and significant effect on inflation rate in Nigeria in the short run and a positive relationship in the long run.

iii. The result of the granger causality test demonstrates that fiscal deficit has a causal bond with inflation in Nigeria. However, no feedback mechanism was discovered, implying that there is a one-way causality concerning fiscal deficit and inflation in Nigeria.

6.2 Conclusion

From our findings listed above, we can conclude that chronic deficit spending over time is the root cause of inflation in Nigeria. As a result, the answer to Nigeria's price instability falls under the scope of the fiscal policy framework. In Nigeria, the exchange rate is also a source of inflation. As a result, measures aimed at reducing inflation would be most effective if they were also aimed at regulating the budget deficit and the exchange rate. Furthermore, the lack of a significant connection between inflation and money supply suggests that inflationary pressure in Nigeria is not a function of monetary policy.

6.3 Recommendations

It has been empirically demonstrated that Nigeria's fiscal deficit and exchange rate are two significant determinants of inflation. As a result, we recommend;

i.   A budget deficit that is sustainable in order to provide the infrastructure needed to harness untapped and underutilized human and material resources. Since fiscal deficit has a negative effect on inflation, there is a lot to benefit from maintaining fiscal discipline because excessive deficit budget financed through domestic sources may put pressure on interest rate and eventually have secondary effect on inflation.

ii. Furthermore, going by the uni-directional causality result running from fiscal deficit to inflation, we recommend that whenever the monetary authority is making policy on the general level of price, it must make use of the important information contained in the previous values of its fiscal balances, this is because these past values have significant effect on inflationary tendencies in the future.

iii. Also, the presence of a significant relationship between inflation and exchange rate implies that inflationary pressure in Nigeria is a function of exchange rate which implies the presence of imported inflation in Nigeria via exchange rates. Government should adopt a fixed exchange rate policy to avoid fluctuations that may lead to the problem of imported inflation

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