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Empirical Examination of Sources of Inflation in Nigeria

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Abstract
The paper focused on identifying major factors that cause inflation in Nigeria using secondary data for 1981-2016. It specifically examined how the dynamics of key economic fundamentals like external debt, exchange rate, output growth rate, interest rate, fiscal deficits and money supply explain inflationary trend in Nigeria. Based on the result of the unit root test, the econometric technique of ordinary least squares was adopted in the study. The study produced strong empirical support for positive effect of exchange rate, fiscal deficits and money supply on inflation. However, there is no evidence from the study that output growth rate, external debt, and interest rate cause significant changes in inflation rate in Nigeria. Within the scope of our study, there is substantial evidence to conclude that inflation in Nigeria is driven by exchange rate dynamics, fiscal deficit and money supply.

Keywords: Inflation, Economic fundamentals, Econometric technique

Introduction
Inflation is a commonly used but often misconstrued economic term and has remained quite topical at various academic fora. As a macroeconomic phenomenon, its impact pervades all segments of the economy. In spite of its macroeconomic importance, its nature and causes remain largely debatable. Inflation refers to an economic condition characterized by a sustained or continuous rise in the general price level. This implies that for a price rise to qualify as inflation, it should not be an isolated case of increase in one or a few items in a particular location but should be operative at the aggregate level. It must have economy-wide impact. It should also not be a momentary increase in price but must be sustained or continuous in nature. During periods of inflation, prices are unstable with adverse implications for planning, budgeting, production and other forms of economic activities. Maintenance of price stability is a major objective of monetary policy and it is a condition for attainment of sustainable economic growth.

Inflation is a complex economic phenomenon that results from dynamic interactions of a number of economic and non-economic factors. Okoye, Olokoyo, Ezeji, Okoh, and Evbuomwan (2019) assert that inflation is both the result and cause of certain policy actions of government. In an open economy, inflation can be caused by both domestic and foreign influences (Naseem, 2018). One intriguing aspect of inflation that presents it as a complex phenomenon is that some policy actions that target low inflation may have unintended adverse consequences and vice versa. For instance, Phillips (1958) shows that policies aimed at reducing the level of unemployment cause inflation. This
implies that growth-enhancing initiatives of government can be inflationary while initiatives designed to lower inflation can be growth-retarding.

Another important implication of an inflationary condition is that it diminishes the purchasing power of the domestic currency thereby adversely impacting the economic well-being of citizens, especially the fixed income earners. By lowering the quality of life, through its impact on the purchasing power of economic agents, inflation perpetuates poverty. Through its impact on cost of production, inflation reduces investment thereby lowering capacity utilization in home industries and ultimately retarding economic growth (Orubu, 2009). Empirics have however shown non-linear relationship between inflation and growth (Bawa and Abdulahi, 2012; Ahmed, and Mortaza, 2005, Khan and Sanhedji, 2001). The non-linear relationship indicates that inflation supports growth up to a level (threshold) and beyond this level it is an impediment to growth. Ellahi (2017) sees mild inflation as natural and harmless to economic activities but posits that high inflation is an impediment to economic performance. A major challenge to macroeconomic management derives from the ability of the authorities to determine inflation threshold compatible with growth.

Opinions are divided on factors that cause of inflation but the diversity becomes even more prominent when comparison is made between developed and developing economies. Totonchi (2011) contends that monetary growth is considered a major driver of inflation in developed economies whereas monetary factors do not exclusively influence inflationary trend in developing economies. Developed economies are characterized by full employment of resources while under-employment of resources is a feature of developing economies. The implication is that increase in money supply does not lead to output growth in developed economies but merely produces proportionate increase in price level. On the other hand for developing economies, part of the money increase contributes to output growth while part leads to price increase. Also, following from the argument of structural economists, structural inequities in developing economies create a mismatch between money supply and output growth, leading to high output prices.

Studies have shown that non-economic factors also contribute to inflation. Evidence presented in some of the studies shows that agro-climatic conditions have significant effect on inflation (see for example, Moser, 1995; Fakiyesi, 1996; Suliman, 2012; Bawa, Abdulahi and Ibrahim, 2016). These results suggest that adverse weather conditions lead to low agricultural production. The resultant supply gap leads to increase in the prices of available goods, and hence inflation.

Economic literature is replete with theoretical arguments as well as empirical results on sources of inflation. Different analytical techniques have been used to explain how selected variables (economic and non-economic) correlate with inflation. These studies have produced mixed results. Also, while some variables (like money supply, output growth, exchange rate, etc.) have been extensively used in inflation studies, variables like external debt, interest rate and fiscal deficits have not received as much attention, particularly with respect to Nigeria. Inflation in Nigeria has been in the double digit bracket and fiscal deficits and external borrowing have become recurring irritants in the nation’s fiscal operations. This study extends the body of literature in this area by examining how these variables (external debt, interest rate and fiscal deficits) among others (money supply, output growth and exchange rate) explain inflation in Nigeria.

**Theoretical Foundation**

Theories have been put forward by scholars at different times to explain causes of inflation. However, owing to its complex nature, opinions differ on the real cause(s) of inflation. According to the classical school, inflation is the result of excessive growth in money supply. They contend that movements in monetary aggregates lead to changes in general price level. The classical economists however did not factor supply of goods and services into their argument since money is demanded for transactions. Though the theory has been criticized on this and other grounds, Ireland (2014) asserts that it enjoys more empirical support than any other economic theory, aside from the basic economic theory of demand and supply.

The monetary theory provides a framework that integrates inflation, money supply and output. The theory tries to show how the variables (inflation, money supply and output) connect to one another. According to the monetarists, inflation is often the result of a more rapid expansion in money supply over an increase in output. This implies that when there is more money to spend relatively to supply of goods and services, prices are raised.
Keynesian economists, however, argue that inflation is driven by demand rather than supply factors. They argue that inflation results from excess of aggregate demand over aggregate supply at full employment level of resources. According to the Keynesian argument, the severity of inflation depends on the magnitude of the gap between demand and supply for goods and services. This implies that when an increase in demand for goods and services cannot be matched by supply, any increase in money supply leads to increase in inflation.

The structural theory explains inflation, with respect to developing economies, as an outcome of structural imbalance in economic, political and social systems. Proponents of the theory argue that structural imbalance in these systems lead to disproportionate response of output to increase in investment spending and money supply. They explain that owing to structural constraints in developing economies, money supply produces less proportionate increase in output thereby fuelling inflationary pressure.

**Review of Related Literature**

Inflation is a complex phenomenon and it is often the result of dynamic interactions of a number of factors which may be economic or non-economic in nature. In an open economy, inflation can be caused by both domestic and foreign influences (Naseem, 2018). Over the years, studies have been conducted by scholars across different climes to ascertain the underlying causes of inflation. This section reviews some of these studies.

The work of Ammama, Mughal and Khan (2011) examined the effect of fiscal deficit on inflation in Pakistan using data for 1960-2010. The study used co-integration and Granger causality estimation methods to determine long-run and short-run interactions between the variables. The co-integration test shows evidence of long-run relationship between fiscal deficit and inflation. Estimates from the Granger causality test show that fiscal deficit is a source of inflation in Pakistan.

Using Granger causality estimation method, Ozurumba (2012) shows evidence of causality from fiscal deficit to economic growth. The study further examined the long-run effect of fiscal deficit on inflation in Nigeria using the auto-regressive distributed lag (ARDL) method. The result indicates strong negative impact of fiscal deficit on inflation.

Kundu (2017) examined the nexus between selected macroeconomic variables and inflation in Bangladesh. The study analyzed how exchange rate, money supply, interest rate and government expenditure affect inflation using the Bounds Test and Granger causality estimation methods. The study shows long-run positive effect of government expenditure on inflation as well as negative effect of exchange rate on inflation in Bangladesh. The result of the Granger causality test shows uni-direction causality from government expenditure and interest rate to inflation. Using the method of ordinary least squares, Hossain and Islam (2013) examined the sources of inflation in Bangladesh. The study shows that money supply and lagged interest rate significantly affect inflation in Bangladesh. The result of the Granger causality test shows uni-direction causalities from government expenditure and government revenue to inflation.

Barnichon and Peiris (2008) used heterogeneous panel co-integration method to examine sources of inflation in Sub-Saharan Africa. It specifically examined how output gap and real money gap affect inflation in 17 Sub-Saharan African countries. The result indicates that though both gaps play key roles in inflation, of money gap plays a major role.

The work of Bashir, Yousaf and Aslam (2016) examined demand and supply factors that cause inflation in Pakistan over the period 1972-2014 using the ARDL estimation method. The result of the study indicates that government expenditure, imports, government revenue, external debt and roads (kilometres) fuel inflationary pressure while foreign direct investment (FDI), electricity generation, and population reduce the level of inflation in Pakistan.

Bashir, Newaz, Yasin, Khursheed, Khan and Qureshi (2011) used Johansen co-integration and vector error correction model (VECM) to determine the causes of inflation in Pakistan between 1972 and 2010. Causation was also examined among the variables using the Granger causality test. Results from the study show significant long-run positive effect of money supply, output growth, imports, government expenditure on inflation. There is also evidence of negative effect of government revenue on inflation during the period. The Granger causality estimates show bi-directional causality between broad money supply and inflation and between GDP and inflation. Unidirectional causality was also observed from government expenditure and government revenue to inflation. Though
there is no evidence from the study that increase in export raises the level of inflation, it was however observed that inflation affects growth of export.

Following the high level of economic performance amid rising trend in inflation in Pakistan, Khan, Ahmed and Hyder (2007) studied the trend in inflation to ascertain whether expansionary economic policies of the government and Central Bank of Pakistan contributed to recent inflation in the country using data from 1972-73 to 2005-06. Result of the ordinary least squares (OLS) estimation method shows that inflation in the 2005-06 period was largely the result of adaptive expectations, high import prices and credit to the private sector. Government fiscal policy did not play significant role in inflation during the period.

Ellahi (2017) explored major causes of inflation in Pakistan using data set for 1975 to 2015. Model estimation was based on the method of autoregressive distributed lag (ARDL). The result shows that national expenditure and imports have strong long-run positive effect on inflation while money supply and GDP growth have significant negative effect on inflation during the period.

The work of Liu and Adedeji (2000) provides empirical support for strong positive impact of money supply on inflation in Iran. The result indicates that increase in money supply prompts an increase in inflation, leading to high demand for foreign exchange thereby weakening the domestic currency. Khandan and Husseini (2016) also provide empirical support for positive impact of money supply on inflation in Iran. The study further reveals that financing of budget deficits through increased money supply indirectly raises the general price level.

In the work of Ayinde, Olatunji, Omotesho and Ayinde (2010) which examined the major causes of inflation in Nigeria. It was observed that lagged values of export have negative effect on current level of inflation while lagged values of import contribute to rising level of current inflation rate. Using a model composed of level lagged variables, Udoh and Isaiah (2018) analyzed the sources of inflation in Nigeria based on quarterly data for the period 1995-2016. The result shows that lagged values of interest rate and money supply strongly affect inflation, and could therefore be used to predict future trends in inflation in Nigeria.

The work of Ndidi (2013) investigated major factors that cause inflation in Nigeria based on annual data between 1970 and 2010. The study captured the short-run and long-run interactions between the dependent and independent variables using the error correction model and Engle and Granger and Philip and Quiliaris co-integration tests. Evidence from the study indicates that lagged inflation, and money supply significantly affect inflation. There is however no evidence from the study that trade openness (proxy for imported inflation), income level, exchange rate and interest rate significantly affected inflation during the period.

To determine whether inflation is caused by the same set of factors across all nations, Lim and Sek (2015) classified countries into low and high inflation countries and thereby selected a sample of 14 countries from each group. Using annual data between 1970 and 2011, the study analyzed how selected macroeconomic variables (money supply, gross national expenditure, imports of goods and services and GDP growth) affect inflation in each of the groups. Estimation was based on the method of auto regressive distributed lag (ARDL). The result shows that GDP growth and imports of goods and services have significant long-run effect on inflation in low inflation countries while money supply and government expenditure impact inflation in high inflation countries over the lon-run. However, while none of the explanatory variables significantly predict inflation in high inflation countries in the short-run, money supply, imports of goods and services and GDP growth have significant short-run impact on inflation in low inflation countries.

Bawa, Abdulahi and Ibrahim (2016) used the Bounds Testing method to examine the dynamics of inflation in Nigeria based on data for the period 1981-2015. The study shows money supply, lagged inflation and average rainfall as major determinants of inflation in Nigeria. The work of Nazer (2016) examined the causes of inflation in Saudi Arabia. The regression estimates indicate significant positive effect of money supply and Saudi imports on inflation as well as negative effect of real output on inflation. Further analysis of the nexus between the dependent and independent variables using the Granger causality test shows uni-directional causality from money supply, imports and oil prices to inflation.

Uddin, Chowdhury and Hossain (2014) investigated key determinants of inflation in Bangladesh using data set for 1972-2012. Evidence from the ARDL estimation method shows that GDP, money supply, and interest rate as major drivers of inflation. It further shows that lagged exchange rate and interest rate have significant positive effect on
current inflation. The result also presents negative effect of exchange rate and lagged money supply on current inflation in Bangladesh.

Bayo (n.d) examined factors that cause inflation in Nigeria between 1981 and 2003. From the result of the study; it was observed that fiscal deficits, money supply and interest rate have significant positive effect on inflation. The result further shows exchange effect on inflation in Nigeria to be negative. The negative effect of exchange rate on Nigeria’s inflation may derive from persistent devaluation of the Nigerian currency and its adverse implications for the country’s imports.

Using co-integration and error correction estimation techniques, Suliman (2012) studied the sources of inflation in Sudan based on quarterly data for the period 1970-2002. The study shows significant long-run impact of foreign price and exchange rate on inflation. With regard to short-run interactions, the result indicates existence of feedback effect of exchange rate, foreign price, drought shocks and deterioration in expectations on inflation.

Okoye, Olokoyo, Ezeji, Okoh and Evbuomwan (2019) used the autoregressive distributed lag (ARDL) to examine major drivers of inflation in Nigeria between 1981 and 2016. Estimates from the study show that external borrowing, exchange rate movements, fiscal deficits, money supply and economic growth as well as lagged inflation rate significantly affect current trends in inflation in Nigeria.

Naseem (2018) examined the cause of rising prices in Saudi Arabia between 2000 and 2016. Regression estimates from the study show that money supply, exchange rate (pegged to the US dollar) imports, exports and oil price significantly drive inflation in the country.

The work of Ramady (2009) which examined external and internal factors associated with rising inflationary trend in Saudi Arabia present evidence that money supply, interest rate and depreciation of the Saudi currency (riyal) are major drivers of inflation in Saudi Arabia. Since the riyal was pegged to the US dollar, the author concludes that depreciation of riyal derives from the depreciation of the US dollar, thereby importing inflation into Saudi Arabia.

The work of Edward and Ramayah (2016) used ordinary least squares method to estimate the causes of inflation Southeast Asian economies. The selected countries (Singapore, Malaysia and Indonesia) have similar financial and sectoral characteristics. These countries are also exposed to similar regional shocks. A major finding of the study is that money supply is a major determinant of inflation in the study sample. The result further shows oil price as a significant predictor of inflation in Singapore and Indonesia, a result which the authors attribute to the nations’ status as net importers of oil.

Using an error correction model, Moser (1995) shows that inflation in Nigeria is largely the result of expansionary fiscal policies which leads to increase in money supply. The study also shows depreciation of the domestic currency, and agro-climatic conditions as equally important determinants. Bakare (2011) further validates evidence that money supply fuels inflationary pressure in Nigeria. The work of Iya and Aminu (2014) also shows money supply, government expenditure, exchange rate and interest rate as major causes of inflation in Nigeria. The study specifically indicates that increase in money supply and interest rate raise the level of inflation while government expenditure and exchange rate have an opposite effect.

The work of Mohamadu and Philip (2003) which examined the nexus between monetary growth, exchange rate and inflation in Ghana using the error correction model indicates a positive association between money supply and inflation. Oppong, Abreuquah, Agyeiwaa, Owusu, Quaye, and Ashalley (2015) also examined the major determinants of inflation in Ghana but used monthly data covering a period of 180 months, from 2000 (January) to 2014 (December). The result shows that crude oil price, exchange rate, and electioneering spillover quaternary effects (for each post-election year covered by the study, only first quarter was considered for this variable) strongly predict the trend of inflation in Ghana.

Alexander, Andow and Danpone (2015) used the vector autoregressive (VAR) method to estimate the predictors of inflation in Nigeria for the period 1986-2011. The study shows that fiscal deficits, exchange rate, domestic imports, money supply, interest rate, and agricultural production are significant in predicting the trend of inflation in Nigeria. It further shows that lagged inflation contributes to current level of inflation.
Okoye, Evbuomwan, Modebe, and Ezeji (2016) examined the causal relationship between macroeconomic performance and government fiscal deficits in Nigeria between 1981 and 2014. The result shows that increase in fiscal deficits leads to increase in inflation. This result aligns with Moser (1995) that expansionary fiscal policy fuels inflationary pressure. Okoye, Modebe, Taiwo, and Okorie (2016) also present uni-directional causality from GDP growth rate to inflation.

The work of Inimole and Enoma (2011) also shows that exchange rate depreciation, money supply, and GDP growth strongly affect inflation in Nigeria. The authors used autoregressive distributed lag (ARDL) to examine how inflation is affected by exchange rate depreciation in Nigeria. This result validates the finding in Fakiyesi (1996) that monetary growth, exchange rate depreciation, real GDP growth significantly affect inflation in Nigeria. Fakiyesi (1996) further shows that rainfall and level of anticipated inflation are good predictors of inflation in Nigeria. Odu sola and Akinlo (2001) also present output growth and exchange rate as significant predictors of inflation in Nigeria. The study employed the estimation technique of vector auto-regression (VAR).

In a study on the nexus between unemployment and the rate of change of money wages in the United Kingdom, Phillips (1958) shows that inflation and unemployment are negatively correlated, which implies that policies that target low unemployment (high output growth) cause inflation.

Laryea and Sumaila (2001) examined the causes of inflation in Tanzania using quarterly data for the 7-year period, 1992(Q1)-1998(Q4). The result shows that output and monetary factors affect inflation in the short-run while parallel exchange rate, output and monetary factors predict long-run inflation trend in Tanzania. However, the finding in Ayubu (2013) indicates that inflation responds more to output than monetary factors in Tanzania. Ayubu (2013) analyzed quarterly data covering the period 1993(Q4) to 2011(Q4) using impulse response function based on structural vector auto-regression as well as vector error correction mechanism. Mbongo, Mutasa and Msigwa (2014) used ordinary least squares, vector auto-regression and vector error correction mechanism to analyze how money supply affects inflation in Tanzania. The ordinary least squares and vector error correction mechanism tests show that exchange rate and money supply significantly predict inflation in Tanzania.

**Scope and Methodology**

The study was designed to determine major factors that cause inflation in Nigeria. It covered the period 1981-2016. Data on these variables were obtained from different issues of the Central Bank of Nigeria Statistical Bulletin. The ex-post facto research method was adopted for the study because it offers considerable degree of convenience in the use of historical data to explain economic phenomena. Being an event study, the methodology developed by Campbell and Mackinlay (1977) was adopted. The regression estimates were obtained using the econometric technique of the ordinary least squares (OLS). Estimations were done at 10 per cent level of significance.

**Model Specification**

The model adopted in this study is an extension of that employed by Hussain and Islam (2013) to examine the determinants of inflation in Bangladesh. The model in Hussain and Islam (2013) is presented below:

\[
INF = \beta_0 + \beta_1 IR + \beta_2 M2 + \beta_3 NER + \beta_4 FD + \varepsilon_t
\]  \hspace{1cm} (i)

Where:
INF = Inflation rate
IR = Interest rate
NER = Nominal exchange rate
FD = Fiscal deficit
\beta_0, ... \beta_4 = Parameters to be estimated.
\varepsilon_t = Stochastic variable or error term.

The above model was extended by introducing output growth rate (GDPR) and external debt (EXD). The extended model is presented below:

\[
INF = f (EXD, EXR, GDPR, IR, FD, M2)
\]  \hspace{1cm} (ii)
This economic relationship is explicitly presented as:

\[ \text{INF} = \beta_0 + \beta_1 \text{EXD} + \beta_2 \text{EXR} + \beta_3 \text{GDPR} + \beta_4 \text{IR} + \beta_5 \text{FD} + \beta_6 \text{M2} + \epsilon_{it} \quad \ldots \quad (\text{ii}) \]

Where:
- \( \text{INF} \) = Inflation rate
- \( \text{EXD} \) = External debt, measured as ratio of external debt to GDP.
- \( \text{EXR} \) = Nominal exchange rate.
- \( \text{GDPR} \) = GDP growth rate.
- \( \text{IR} \) = Interest rate.
- \( \text{FD} \) = Fiscal deficit.
- \( \text{M2} \) = Broad money supply
- \( \beta_0, \ldots, \beta_6 \) = Parameters to be estimated.
- \( \epsilon_{it} \) = Stochastic variable or error term.

**Discussion of Results**

The result of the econometric tests are presented, analyzed and discussed in this section of the paper. The Augmented Dickey Fuller (ADF) and Ordinary Least Squares (OLS) tests were used in the study.

**Unit Root Result**

**Table 1: Unit Root Test using the ADF Test Statistics**

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF Test Stat</th>
<th>Critical Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFR</td>
<td>-4.102828</td>
<td>-3.544284**</td>
<td>Stationary at level (1(0))</td>
</tr>
<tr>
<td>EXD</td>
<td>-4.540483</td>
<td>-4.252879*</td>
<td>Stationary at level (1(0))</td>
</tr>
<tr>
<td>LEXR</td>
<td>-4.349448</td>
<td>-4.262735*</td>
<td>Stationary at level (1(0))</td>
</tr>
<tr>
<td>FD</td>
<td>-3.923883</td>
<td>-3.544284**</td>
<td>Stationary at level (1(0))</td>
</tr>
<tr>
<td>IR</td>
<td>-5.112328</td>
<td>-4.243644*</td>
<td>Stationary at level (1(0))</td>
</tr>
<tr>
<td>M2</td>
<td>-4.000794</td>
<td>-3.544284**</td>
<td>Stationary at level (1(0))</td>
</tr>
<tr>
<td>GDPR</td>
<td>-5.747051</td>
<td>-4.262735*</td>
<td>Stationary at level (1(0))</td>
</tr>
</tbody>
</table>

Note: * Critical value at 1 per cent; ** Critical value at 5 per cent
Source: Researchers' compilation from E-Views 10

The result of the ADF unit root test (table 1) conducted to determine the time series properties of the data shows that all the variables are stationary at their levels. They are therefore integrated of order zero. This suggests evidence of long-run relationship among the variables included the model.

**Ordinary Least Square Regression Result**

**Table 2: Ordinary Least Squares Regression Result**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>T-Statistics</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFD</td>
<td>3.898479</td>
<td>1.909462</td>
<td>2.041663</td>
<td>0.0511</td>
</tr>
<tr>
<td>EXD</td>
<td>0.095291</td>
<td>0.200634</td>
<td>0.474951</td>
<td>0.6386</td>
</tr>
<tr>
<td>LEXR</td>
<td>0.199270</td>
<td>0.085235</td>
<td>2.337889</td>
<td>0.0271</td>
</tr>
<tr>
<td>LM2</td>
<td>3.607973</td>
<td>1.243178</td>
<td>3.489048</td>
<td>0.0688</td>
</tr>
<tr>
<td>LR</td>
<td>1.109155</td>
<td>0.707488</td>
<td>1.567737</td>
<td>0.1286</td>
</tr>
<tr>
<td>LGDPR</td>
<td>-0.734515</td>
<td>0.695355</td>
<td>-1.056317</td>
<td>0.3002</td>
</tr>
</tbody>
</table>
The ordinary least squares (OLS) regression result shows evidence of significant positive effect of fiscal deficits (FD), exchange rate (EXR) and money supply (M2) on inflation. These results lend support to the findings of earlier studies. For instance, the significant positive impact of fiscal deficits on inflation is consistent with the finding in Okoye et al (2019), Alexander et al (2015), Okoye, Evbuomwan, Modebe and Ezeji (2016), Khandan and Husseini (2016) among others. The outcome of these studies indicates that increase in fiscal deficits leads to increase in inflation. The result of this study however contradicts the long-run result in Ozurumba (2012) which produce negative effect of fiscal deficit on inflation but not the short-run causality result.

On a similar note, evidence significant positive impact of exchange rate on inflation confirms the result of studies by Moser (1995), Alexander et al (2015), Inimole and Enoma (2011), Fakiyesi (1996), Odusola and Akinlo (2001), Oppong et al (2015), Iya and Aminu (2014), among others. These studies lend support for the cost-push theory of inflation which maintains that inflation derives from high cost of production. For a country that depends on importation for industrial and consumer goods and whose currency has consistently depreciated against those of its major trading partners, the result indicates that inflation in Nigeria is partly imported. However, the finding of this research does not support the Kundu (2017), Uddin et al (2014), Bayo (n.d) which show negative effect of exchange rate on inflation.

Finally, significant positive impact of money supply presented in the study aligns with the outcome of several studies reviewed in this work (see for example studies by Iya and Aminu, 2014; Mohamadu and Philip, 2003; Alexander et al, 2015; Bakare, 2011; Inimole and Enoma, 2011, Khandan and Husseini, 2016), Bashir, Newaz, Yasin, Khursheed, Khan and Qureshi, 2011; Liu and Aidedeji, 2000; Bawa et al, 2011; Nazer, 2016; Uddin et al, 2014, Bayo (n.d); Okoye et al, 2019; among others. These studies also support the classical theory of inflation which posits that inflation is the result of increase in money supply. The result indicates that expansionary monetary policy is a major source of inflation in Nigeria. Economy managers in Nigeria prefer to throw money at problems rather than create institutions to solve the problems.

The respective $R^2$ and adjusted $R^2$ values of 66.03 per cent and 61.82 per cent indicate that the independent variables jointly explain the inflation in Nigeria to a significant extent. The Durbin Watson (D-W) statistic (2.042) suggests no evidence of serial autocorrelation in the model.

### Summary of Findings, Conclusion and Recommendations

The study shows empirical support for significant positive impact of exchange rate, fiscal deficits and money supply on inflation. However, the study produced no evidence that output growth rate, external debt, and interest rate cause significant changes in inflation rate in Nigeria.

Based on the result of the study, the study concludes that exchange rate, fiscal deficit and money supply are significant determinants of inflation. Following from this finding, it is recommended that (i) government should aim at achieving low exchange rate regime (possibly exchange rate appreciation) in order to lower the cost of domestic production (ii) there should be paradigm shift from deficit financing of government budgetary operations to maintenance of, at least, balanced budgets (iii) the monetary authorities should put in place strict regulatory controls over expansion of monetary aggregates so as to ensure productive deployment of financial resources while at the same time emphasizing institutional development and capacity building rather than the current practice of cash gifts and stipends in form of empowerment schemes.

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