Inflationary Trends and Its Determinants in Nigeria

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Abstract: *This study explored inflationary trends and its determinants in Nigeria, for the periods of 1985-2021 (37years). Specifically, the study examined the effect of measures of determinants of inflationary trends; Money Supply (MS), Dollar Exchange Rate (DEXCHR), Government Expenditure (GEXP) and National Debt (NDT) on the Inflation Rate (INFLR) in Nigeria. The study made used of aggregate secondary data for a CBN Statistical Bulletin and analyzed with Autoregressive distributed lag model having established that the model exhibited mixed integration. Meanwhile, the Multicollinearity test and Heteroskedasticity test clearly revealed that the model is free from multicollinearity problem and that it is Homoskedastic signaling that the model is fit for prediction. The results showed that MS passed the test of statistical significance only on the long run. This implies that MS is a strong determinant of INFLR in the long run (P-value= 0.0226) but on the short run ((P-value= 0.5056) is not; DEXCHR exerted positive insignificant effect on INFLR on the short and long run, evident with p-values of 0.3842 and 0.3981 respectively; LogGEXP exerted negative significant effect on INFLR on the short and long run, evident with p-values of 0.0362 and 0.0289 respectively and LogNDT exerted positive insignificant effect on INFLR on the short and long run, evident with p-values of 0.2196 and 0.2060 respectively. Hence, the study concluded that determinants of inflationary trends do not have significant effect on INFLR in Nigeria. The study recommended that the central bank should desist from creating cheap currency so as to curb excess supply of money in the economy.*

Keywords: *Inflation, Money Supply, Exchange, Expenditures and Debt.*

Introduction

Inflation (INFL) is a regular phenomenon that every economy experience, though its rate of growth, its causes and the nature of the inflation may differ from one country to the other. In most cases, developed economies make a concerted effort to maintain a low-level inflation, often with a rate targeted of around 2%. This is because INFL reduces the purchasing power in a country (McBride, 2019), and it encourages spending and capital investment while discouraging savings (Ugwulali, Adejuwon, Ojomolade & Ogwulali, 2021). In addition, INFL raises the cost of living in an economy, reduces living standards and raises the cost of borrowing (Inim, Samuel & Abner, 2020). INFL may render prices in the local industry less competitive relative to other countries thereby affecting export sectors and threatening the survival of local industries (Mohseni & Jouzaryan, 2016; Madurapperuma (2016); Boel**,** 2018). If not curtailed, it can lead to even higher INFL which might end up exceeding 100%, i.e., hyperinflation which is currently experience in Nigeria.

The prime objectives of the 21st-century economic system are the stability of prices of products and services at an inflation rate (INFLR) that is not detrimental to the economic, business and financial climate (McBride, 2019). According to Anfofum, Afang and Moses, (2018) single-digit INFLR of 2-6 percent has a positive and significant impact on the economy through increased wages, consumption, investment, creativity, invention, and production. Double-digit inflation hurts consumers and economic growth (EG).

Since the 1970s, inflation (INFL) has plagued developed and emerging economies, particularly Nigeria. Economists agree that INFL is a widespread, continuous, and persistent increase in the price level of goods and services in an economy (Inim, Samuel and Abner, 2020). Okoye, Olokoyo, Ezeji, Okoh, and Evbuomwan (2019) define INFL as a continuous, persistent, and universal price increase. The definition bares the prerequisites of "*general, continuous and persistent*" for price increase in products and services to qualify as inflationary. High inflation diminishes indicators of EG and development globally.

This is a situation that no economy would wish to reach due to the many negative consequential effects that accelerated INFL it has on a domestic economy. The most important concern, here, is what causes inflationary conditions? There have been many cases of economies suffering from INFL of which various reasons have been given by various authors. They attempt to explain what triggers INFL, but the determinants of INFL may vary from economy to economy (Ditimi, Keji and Emma-Ebere, 2018). In Nigeria, there is a belief that INFL is affected by several macroeconomic variables, in particular, the dollar exchange rate (DEXCHR), broad money, national debt, oil prices, government spending, and population (Agyire-Tettey, 2017; Weiseke, 2019).

Inflationary pressures in Nigeria are revealed through increases in prices of commodities in the country and these increases have drawn the attention of those who are in charge of the economy (Okotori, 2017). The foregoing is controlled via macroeconomic

policy which has two basic strands; (i) monetary policy and (ii) fiscal policy, though the International Monetary Fund (IMF) adds structural reforms as a third strand to complete an effective triad for macroeconomic stabilization (Okotori, 2017).

Nigerian economy is under-developed despite the fact that it is richly endowed both in human and natural resources; this is due to INFL, corruption and unemployment (Ojomolade, 2018). Double digit INFL discourages investment, production and increases growth in wages and consumption. It also leads to uncertainty in the value of gains and losses of borrowers and lenders; furthermore, it reduces returns on financial assets (Okotori, 2017; Oni, 2018). High inflation rate erodes the gains from growth and leaves the poor worse off, causing an upward adjustment in government budgets as budgetary imbalances become entrenched causing resurgence of macroeconomic instability.

Importations became expensive as currency was devalued leading to fall in agricultural products. In 1995, INFLR rose to 72.8% as a result of the high level of financial institutions lending to individuals and firms, (Okotori, 2017) as determinants of INFL are not properly controlled, Nigeria was vulnerable to unpredictability inflation rate, disturbing the consumption, investment and production behaviour (Ditimi, Keji & Emma-Ebere, 2018). According to Ugwulali, el al (2021) there are many determinants of INFL which include DEXCHR, broad money, national debt, oil prices, government spending, population and others.

Statement of the Research Problem

INFL has impacts on the cost of living and welfare level of Nigerians. It also has negative consequences on all sectors of the economy such that when cost rises, prices become unbearable and many sectors become dormant or less productive. However, before INFL can be brought under control, Nigeria must be able to identify all variables that significantly affect INFL in the Nigerian economy. In this case, the current study helps to identify some key determinants of INFL using annual historical data from 1985 to 2021. The rising levels of INFL make understanding the major determinants of INFL in Nigeria of greater importance. Few studies have done that, but they used only a limited number of macroeconomic variables, so there is a need to explore further.

In answering questions on inflationary trend and its determinants: Ugwulali, Adejuwon, Ojomolade & Ogwulali (2021); Inim, Samuel & Abner (2020); Sahnoun & Abdennadher (2019); Sasongko & Huruta (2019); explained the determinants of INFL in several ways. They argue that inflation is caused by MS, economic growth (EG), currency depreciation and so on. They established a positive relationship between a number of macroeconomic variables and INFL but with some levels of contradictions. Such contradictions show that there has not been a consensus on the causal relationships between INFL and other economic variables. Hence, in order to know the determinants of INFL in economies, each economy should be studied differently.

The determinants of INFL are different from one country to another. From the economic perspective, these determinants have been classified as supply side and demand side factors. Supply side factors are those economic factors which cause INFL by increasing cost of production. Some important supply side factors are output growth, capital formation, import prices, exchange rate, tax and wage. On the other hand, demand side factors lead to INFL by decreasing the purchasing power of money. Some relevant demand side factors are increment of MS, private consumption and government expenditure (Ugwulali, et al 2021), which are major determinants of INFL in Nigeria.

Over the years, several scholars have examined the impact of INFL on various segments of the economy both in developing and developed nations. Such studies include Modebe and Ezeaku (2016), Okoye, Modebe, Erin, and Evbuomwan (2017), Olokoyo, Osabuohien, and Salami (2019), Adeleye, Osabuohien, Bowale, Matthew, and Oduntan (2017). However, studies on its cause, particularly in developing nations, are rather scant. To contribute to the body of literature in this area, this study sets out to identifying inflationary trends [proxied with INFLR] and it's determinants [proxied with MS, DEXCHR, GEXP and NDT] in Nigeria a using the econometric technique of autoregressive distributed lag (ARDL).

Review of Related Literature
Conceptual Issues
Concept Inflation (INFL)

INFL is one of the most frequently used terms in economic discussions, yet the concept is variously misconstrued. There are various schools of thought on INFL, but there is a consensus among economists that inflation is a continuous rise in the prices, simply put, INFL describes an economic situation where there is a general rise in the prices of goods and services continuously. It could be defined as a continuing rise in prices as measured by an index such as the consumer price index (CPI) or by the implicit price deflator for Gross National Product (GNP). "Too much money chasing fewer products" describes INFL. INFL devalues money (Chude and Chude, 2015).

Inflationary trend and its Determinants

Money supply (MS) and inflation (INFL): INFL occurs when MS expands faster than the economy's production of new goods and services (Ojomolade and Oni, 2018). INFL is a sustained rise in the general price level of goods and services caused by a rapid

increase in aggregate MS in the economy without a matching productivity gain, which increases aggregate demand for goods and services that cannot be met at current prices (Sola and peter, 2017).

Exchange rate and inflation: Exchange rate influences INFL. Eze and Okpala (2018) state that Nigeria's exchange rate policy has moved from a fixed rate in 1960 to a pegged rate between the 1970s and mid-1980s to a form of the floating rate from 1986 with the Structural Adjustment Programme to attain a realistic naira exchange rate and minimise INFL.

Government expenditure and inflation: Government expenditure (GE) funds social services and territorial security. INFL is the economy's sustained price of goods and services (Ugwulali, et al, 2021).

National Debt and inflation: is the central government's total debt, including internal and external debt from the IMF and World Bank in Nigeria. National debt increases will boost inflation. Since Nigeria's national debt has been rising for two decades, we expect it to lower inflation (Okoye, et al, 2019).

Theoretical Review
Structuralist Theory of Inflation (STI)

Myrdal (1968) and Streeten (1972) initially introduced STI (Canavese, 1982) (Ugwulali, et al (2021). Structural factors explain inflation in least developed countries (LCDs). Streeten and Myrdal (Canavese, 1982) referenced in Ugwulali, et al. (2021) opposed applying classical aggregative analysis to LDCs. Orthodox aggregative analysis presupposes balanced and integrated economic systems where production, consumption, backward and forward connections in response to market signals are reasonably smooth and quick, making aggregate demand and aggregate supply reasonable. Most LDCs have unstable economies, underdeveloped agriculture, weak institutions, underutilised natural resources, and frequent war. Aggregative analysis of LDCs is tough.

Structuralists believe LDC INFL is linked to developmental effort and structural deficits in these nations. Literature lists resource, food, foreign exchange, and infrastructure deficiencies. They argue that to understand LDC INFL, one must identify the causes that force various bottlenecks in the normal development process, research how the bottlenecks lead to price rises, and study how these increases extend to the overall economy. Nigeria, a developing nation, follows structuralist theory and advice.
Monetary Theory of Inflation

According to Milton Friedman (1912–2006), "only money matters," making monetary policy a better macroeconomic tool than fiscal policy for stabilising the economy. Monetary economists consider the money supply the "dominant, though not exclusive" driver of long-term and short-term prices and production. Monetarists emphasise money (Jalil, 2011) referenced in Ugwulali, et al (2021). Monetarists believe that "inflation is always and everywhere," therefore when MS INFL exceeds commodity real production interest rates, the price level rises (Chude 2015).
Demand Pull Theory

Keynesians attribute demand-pull INFL to rising aggregate demand. Investment, government, and consumption comprise aggregate demand. INFL increases faster as aggregate demand exceeds aggregate supply. Keynesians believe production factors and constants may raise prices before full employment. According to the demand-pull paradigm, INFL exists when aggregate demand for goods and services exceeds aggregate supply and cannot be fulfilled by running down stockpiles, transferring supplies from the export market to the domestic market, increasing imports, or postponing demand (Abraham, Helen, & Moses, 2015).
Empirical Review

Ugwulali, Adejuwon, Ojomolade, and Ugwulali (2021) examined Nigeria's INFL determinants using co-integration. The CBN statistical bulletin provided secondary data for the study (2012-2018). ARDL analysed this. In Nigeria, real and lagged government expenditure, exchange rate, MS, and crude oil price drive INFL. Exchange rate depreciation lowers INFL, but falling crude oil prices raise it. Real government expenditure and MS growth raise prices. Long-term co-integration and boundaries reveal that INFL and government expenditure are related.

Inim, Samuel, and Abner (2020) used the ARDL approach using quarterly data from January 1999 to December 2018 to evaluate alternative INFL factors in Nigeria. Poor infrastructure, exchange rate, political instability, corruption, and double taxation drive inflation, not only money supply. The data suggest that other causes cause inflation. ARDL reveals a considerable long-short run connection.

Okoye, Olokoyo, Ezeji, Okoh, and Evbuomwan (2019) investigated Nigerian INFL main causes. The study uses ARDL estimation to show that external debt, exchange rate, fiscal deficits, MS, and EG affect INFL. It also indicates that lagged INFLR affects current INFL. The study found no long-term effect of interest rate on Nigerian INFL.

Ditimi, Keji, and Emma-Ebere (2018) examined Nigerian INFL and MS. The study was inspired by curiosity to recheck the immediate reason of Nigeria's worrying INFLR, which is harming the Nigerian population. Co-integration test and error correction were used on annual time series data from 1970 to 2016 to determine the variables' long-term and short-term dynamics. Due to the recession, MS did not significantly affect INFL in the long or short term. The error correction model is significant and negative, correcting 21% of errors annually. MS does not cause INFL in Nigeria during the study period, according to Granger causality.

Hamza and Zunaidah (2017) examined long-term correlations between exchange rate, MS, GDP, interest rate, financial instability, oil price, and INFL. The study used ARDL on annual time series data from 1970 to 2014. This study showed a long-term link between the factors. Additionally, the exchange rate, wide MS, oil price, and INFL had a positive long-term link, whereas financial instability, interest rate, gross domestic product, and MS nominal effective exchange rate irritation term had a negative relationship.

Jonathan and Ezie (2015) analysed Nigeria's 1981–2012 INFL-public expenditure relationship. He used econometric methods including ADF for Unit Root test, Johansen Co-integration test, and Granger Causality test to show a long-term relationship between variables. Government expenditure growth and INFL did not correlate over the period examined.

Literature Gaps: Based on the empirical assessment, few recent research have explored inflationary trends and drivers in Nigeria, but their conclusions are inconsistent. No Nigerian study has combined INFL determinants like this one. So, this study examined inflationary trends and their drivers in Nigeria using an ARDL technique to account for the time-varying nature of the variables, which many researchers have neglected.

Research Methodology

This study used a quasi-experimental design. Quasi-experimental approach was used to investigate the causal influence of INFL determinants on INFLR in Nigeria (i.e., cause-effect relationship between the explained (dependent) variable and the explanatory (independent) variable).

The CBN Statistical Bulletin provided data for the research. Secondary data was chosen because it is speedier, decreases data gathering time, is non-reactive, often available for re-analysis, gives a broad background, and enhances learning curves. The study employed this dependable and accurate data source.

This study uses unit root, ARDL Bound Co-integration, and ARDL Co-integrating and Long form estimation methods. Before executing the analysis, the model was checked for series robustness (diagnostic) using descriptive statistics and trend analysis, correlation analysis, and Variance Inflation factor (to check for the severity of collinearity of the regressors).

Therefore, this study includes; Money Supply (MS), Dollar Exchange Rate (DEXCHR), Government Expenditure (GEXP) and National Debt (NDT) as measures of determinants of inflation affecting Inflation Rate {INFLR} in Nigeria. The modified model will be subjected to ARDL is in order to suit the feature of stationarity of the study variables. The ARDL was specified as:

$$\Delta INFLR = \partial_0 + \partial_1 INFLR + \partial_2 MS_{t-1} + \partial_3 DEXCHR_{t-1} + \partial_4 lnGEXP_{t-1} + \partial_5 lnNDT_{t-1} + \sum_{i=1}^{k} \gamma_1 i\Delta INFLR_{t-1} + \sum_{i=1}^{k} \gamma_2 i\Delta MS_{t-1}$$

$$+ \sum_{i=1}^{k} \gamma_3 i\Delta DEXCHR_{t-1} + \sum_{i=1}^{k} \gamma_4 i\Delta lnGEXP_{t-1} + \sum_{i=1}^{k} \gamma_5 i\Delta lnNDT_{t-1} + \varepsilon_t ------------1$$

K = lag length for the Unrestricted Error-Correction Model (UECM)
Δ = first differencing operator
ε = white noise or disturbance error term

The modified model was subjected to ARDL in order to suit the feature of stationarity of the study variables. The co-integrating long-run relationship will estimated using the specification below:

$$\Delta INFLR = \partial_0 + \partial_1 INFLR_{t-1} + \partial_2 MS_{t-1} + \partial_3 DEXCHR_{t-1} + \partial_4 lnGEXP_{t-1} + \partial_5 lnNDT_{t-1}$$
$$+ \varepsilon_t ………………………………………………………………………..2$$

The short-run dynamic model is specify thus:

$$\Delta INFLR = \sum_{i=1}^{k} \gamma_1 i\Delta INFLR_{t-1} + \sum_{i=1}^{k} \gamma_2 i\Delta MS_{t-1} + \sum_{i=1}^{k} \gamma_3 i\Delta DEXCHR_{t-1} + \sum_{i=1}^{k} \gamma_4 i\Delta LNGEXP_{t-1} + \sum_{i=1}^{k} \gamma_5 i\Delta LNNDT_{t-1} + \varepsilon c_t$$
$$- - - - - - - - - -3$$

Where;
εc_{t-1}= the error correction term lagged for one period
y= the coefficient for measuring speed of adjustment in equation (3)

Result and Discussions
Table 4.1:   Summary of Statistics

	INFLR	MS	DEXCHR	LOGGEXP	LOGNDT
Mean	19.22459	23.02838	136.0344	2.912100	3.393200
Maximum	76.80000	57.78000	401.9847	4.085082	4.545280
Minimum	0.200000	1.290000	6.341667	1.115314	1.655616
Std. Dev.	18.19945	15.53573	96.54444	0.887287	0.730861
Observations	37	37	37	37	37

Source: Econometric Views Version 9.0 Output (2022)

The evidence provided in Table 4.1 show significant variations in the variables given the large differences between the maximum and minimum values of the series. The summary statistics evidenced that the study variables covered a study period of 37 years (1985 to 2021). Again, INFLR reported an average and Std. Dev. value of 19.22 and 18.20 suggesting that INFLR deviate little away from the mean value (MV). Meanwhile, INFLR reported had a minimum and maximum value of 0.20 and 76.80 respectively throughout the study periods. Further, MS reported an average and Std. Dev. value of 23.03 and 15.54 suggesting that MS did not deviate much away from the MV. Meanwhile, MS reported had a minimum and maximum value of 1.29 and 15.54 respectively throughout the study periods. DEXCHR reported an average and Std. Dev. of 136.03 and 96.54 suggesting that DEXCHR deviate much away from the MV. Meanwhile, DEXCHR reported had a minimum and maximum value of 6.34 and 401.98 respectively throughout the study periods. LogGEXP reported an average and Std. Dev. of 2.91 and 0.89 suggesting that OR did not deviate much away from the MV. Meanwhile, LogGEXP reported had a minimum and maximum value of 1.12 and 4.09 respectively throughout the study periods. Lastly, evidenced that LogNDT reported an average and Std. Dev. value of 3.39 and 0.73 suggesting that standard deviation is greater the MV. Meanwhile, LogNDT reported had a minimum and maximum value of 1.66 and 4.55 respectively throughout the study periods.

Table 4.2:   Correlation Matrix

	INFLR	MS	DEXCHR	LOGGEXP	LOGNDT
INFLR	1.000000				
MS	0.290215	1.000000			
DEXCHR	-0.319090	-0.356816	1.000000		
LOGGEXP	-0.384112	-0.201804	0.770345	1.000000	
LOGNDT	-0.279082	-0.198868	0.784819	0.964300	1.000000

Source: Econometric Views Version 9.0 Output (2022)

The correlation matrix reported in table 4.2 above revealed that DEXCHR, LogGEXP and LogNDT exerted negative correlation with INFLR in Nigeria while MS, exerted positive correlation with INFLR in Nigeria. Furthermore, LogGEXP reported a coefficient value of -0.3841 suggesting that the correlation between LogGEXP and INFLR and is high, though is negative. Meanwhile, the rest study variable reported low correlation. Generally, the result from the table shows that problem of multi-collinearity is not anticipated. Though, a further test will be carried out to ascertain this condition.

Table 4.3: Multi-collinearity Test

Variables	Variance Inflation Factor	Tolerance Value
MS	0.026634	1.379272
DEXCHR	0.001852	3.748189
LogGEXP	0.001404	4.615880
LogNDT	0.001142	6.516527

Source: Econometric Views Version 9.0 Output (2022)

From the above Table 4.3, the tolerance level of MS is 0.0266 that of DEXCHR is 0.0019; LogGEXP is 0.0014, LogNDT for 0.0011; which indicates that about 2.66%, 0.19%, 0.14% and 0.11% variance in the predictor variables is not predicted by other predictors' variable. This is because their tolerance values are higher than 0.10 meanwhile the VIF are less than 10. This shows the absence of multi-collinearity problem.

Table 4.4: Data Validity Test

Table 4.4a: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.204307	Prob. F(2,27)	0.3155
Obs*R-squared	2.948460	Prob. Chi-Square(2)	0.2290

Source: E-VIEW, 9.0 Outputs, 2022.

Prior to estimating the models, residuals of the variables were ascertained to check for the presence of serial correlation. This was done using the serial correlation LM test. The serial correlation LM test in Table 4.4a details that there is no element of serial correlation in the models owing to the fact that the p-values of the f-statistics are insignificant at 5% level of significance.

Table 4.4.1b: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.382155	Prob. F(6,29)	0.0641
Obs*R-squared	11.88521	Prob. Chi-Square(6)	0.0646
Scaled explained SS	12.38512	Prob. Chi-Square(6)	0.0639

Source: E-VIEW, 9.0 Outputs, 2022.

Heteroskedasticity occurs when a variable's variability is unequal across a second variable's values that predict it. The Breusch-Pagan-Godfrey heteroskedasticity test ensured model estimation homoscedasticity. The models have no heteroskedasticity because the f-statistics p-values are insignificant at 5% significance level. From the table above, the chi-square P-value was 0.0764. Since it is not significant at 5%, this proves the study lacks heteroskedasticity. Hence, the residuals have no constant variance and zero mean null hypothesis is rejected. The model is Homoskedastic (i.e. it has equal variance). We can confidently say the model is reliable and predictive.

Table 4.4c: Ramsey RESET Test
Equation: UNTITLED
Specification: INFLR INFLR(-1) MS DEXCHR LOGGEXP LOGNDT C
Omitted Variables: Squares of fitted values

	Value	Df	Probability
t-statistic	4.683732	48	0.1701
F-statistic	21.93735	(11, 28)	0.2901

Source: Econometric Views Version 9.0 Output (2022)

From the Table 4.4c above, it confirms that the Durbin Watson stat that our data has no traits of autocorrelation. Indicates that the model is homoskendastic since the probability values of three parameters are greater than 0.05 level of significance. Ramsey test result reveals that our model is correctly specified and is stable.

Table 4.5:   Summary of ADF Test

Parameter	ADF test statistic	Test critical value @ 5%	Prob.*	Decision
ADF test at Levels				
INFLR	-2.980622	-2.945842	0.0463	Stationary
MS	-3.650720	-2.945842	0.0094	Stationary
DEXCHR	2.150722	-2.945842	0.9999	Non-stationary
LogGEXP	-4.229279	-2.948404	0.0021	Stationary
LogNDT	-2.401016	-2.945842	0.1486	Non-stationary
ADF test at Ist Difference				
INFLR	-5.472809	-2.957110	0.0001	Stationary

MS	-8.203152	-2.948404	0.0000	Stationary
DEXCHR	-3.564701	-2.948404	0.0119	Stationary
LogGEXP	-8.132438	-2.948404	0.0000	Stationary
LogNDT	-4.218947	-2.948404	0.0022	Stationary

Source: Econometric Views Version 9.0 (2022)

The research series' stationarity is shown in the table above. All series except DEXCHR and LogNDT were stationary in the ADF test. MS, DEXCHR, LogGEXP, and LogNDT reached stationarity at first difference when treated further. All series reached stationarity at level and first differencing. As our series were stable at levels (1(0)) and first differencing (1(1)), we should evaluate the long-term link between inflationary trends and INFLR in Nigeria.

Table 4.6: ARDL Bounds Test
Date: 01/05/23   Time: 07:59
Sample: 1986 2021
Included observations: 36
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
F-statistic	5.635080	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	4.06

Source: Econometric Views Version 9.0 Output (2022)

From Table 4.6, the F-statistic 5.635080 exceeds the 5% critical values at I(0) and I(1) boundaries, rejecting the null hypothesis and indicating a long-term association between variables. Hence, inflationary tendencies and INFLR in Nigeria are long-term related.

Table 4.7: ARDL Cointegrating And Long Run Form

Dependent Variable: INFLR				
Selected Model: ARDL(1, 1, 0, 0, 0)				
Date: 01/05/23 Time: 07:58				
Sample: 1985 2021				
Included observations: 36				
	Cointegrating Form			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MS)	0.110014	0.163200	0.674108	0.5056
D(DEXCHR)	0.038027	0.043039	0.883558	0.3842
D(LOGGEXP)	-21.633278	9.848047	-2.196707	0.0362
D(LOGNDT)	16.362331	13.040865	1.254697	0.2196
CointEq(-1)	-0.621009	0.136331	-4.555152	0.0001
Cointeq = INFLR - (0.7612*MS + 0.0612*DEXCHR -34.8357*LOGGEXP + 26.3480*LOGNDT + 6.4210)				
	Long Run Coefficients			

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MS	0.761156	0.315905	2.409447	0.0226
DEXCHR	0.061234	0.071394	0.857694	0.3981
LOGGEXP	-34.835717	15.151291	-2.299191	0.0289
LOGNDT	26.347997	20.366732	1.293678	0.2060
C	6.420966	31.880010	0.201410	0.8418
R-squared	0.850388	Mean dependent var		-0.002910
Adjusted R-squared	0.723180	S.D. dependent var		0.136840
F-statistic	17.79952	Durbin-Watson stat		2.001847
Prob(F-statistic)	0.000180			

Source: Econometric Views Version 9.0 Output (2022)

The Error Correction coefficient (cointEq-1) is assessed at -0.6210, meaning the model corrects its past disequilibrium at 62.10% annually. So, raising the determinants of inflationary trends variables at a consistent 62.10% annually will improve them greatly over time. With the coefficient of determination of 0.8504 (85%) and high adjusted R^2 of 72%, it is assumed that the independent variables in this model have been able to determine the variance of INFLR to 72%. The F Probability statistic validates this model's significance. Again, Durbin Watson Statistics showed that the model is not serially linked because its value is within the accepted range.

Table 4.7 shows that a unit increase in MS increases INFLR by 0.1100 and 0.7612 (11% and 76.12%) in the short and long term. Research showed that Nigeria's economy's MS growth may boost INFLR. MS only passed the long-term statistical significance test. MS is a strong long-term predictor of INFLR but not short-term. Ugwulali, Adejuwon, Ojomolade & Ogwulali (2021) found the same, contrary to Okoye, Olokoyo, Ezeji, Okoh, and Evbuomwan (2019) and Ditimi, Keji and Emma-Ebere (2019).

DEXCHR improved INFLR in the short and long term, according to the study. The positive finding implies that 1% DEXCHR will enhance INFLR by 0.0380 and 0.3981 (3.80% and 39.81) in the short and long run. The more the Naira depreciates against the US Dollar, the greater the impact on INFLR. DEXCHR are not substantial enough to influence INFLR in Nigeria. Hence, DEXCHR promotes INFLR. This result matches Ugwulali, Adejuwon, Ojomolade & Ogwulali (2021) but contradicts Inim, Samuel and Abner (2021).

Table 4.7 shows that a unit increase in LogGEXP reduces INFLR by -21.6333 and -34.8357 (2163.33% and 3483.57%) in the medium and long term. Research showed that borrowing more to cover its expenditures could affect Nigeria's INFLR. LogGEXP passed the short- and long-term statistical significance tests. This finding supports Ugwulali, Adejuwon, Ojomolade & Ogwulali (2021) but contradicts Okoye, Olokoyo, Ezeji, Okoh and Evbuomwan (2019) and Jonathan and Ezie (2019).

The regression result showed that LogNDT had a positive insignificant influence on INFLR in Nigeria both short-term and long-term. The good finding implies that 1% LogNDT will only increase INFLR in Nigeria by 16.3623 (1636.23%) and 26.3480 (2634.80%). p-values above 5%. Hence, LogNDT will improve INFLR in Nigeria in the short and long term. Okoye, Olokoyo, Ezeji, Okoh, and Evbuomwan found similar results (2019).

Conclusion and Recommendations

For 1985–2021, this study examined Nigerian inflationary trends and factors (37years). The study explored how MS, DEXCHR, GEXP, and NDT affected INFLR in Nigeria. The study employed aggregate secondary data from a CBN Statistical Bulletin and ARDL to show mixed integration. The model's multicollinearity and heteroskedasticity tests showed that it is homoskedastic and fit for prediction. Hence, inflationary trends do not significantly affect INFLR in Nigeria. This paper recommends:

1. The CBN should desist from creating cheap currency so as to curb excess supply of money in the economy;
2. The government should reduce her outrageous expenditures and control the incessant budget deficit that has been recorded in Nigeria;
3. Government should aim at achieving low exchange rate regime (possibly exchange rate appreciation) in order to lower the cost of domestic production;
4. There should be paradigm shift from deficit financing of government budgetary operations to maintenance of, at least, balanced budgets.

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