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THE EFFECT OF MACROECONOMIC VARIABLES ON INFLATION IN NIGERIA

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Abstract

This study was designed to investigate the effect of Macroeconomic variables on Inflation in Nigeria. Secondary data source was employed. Data for the study were drawn from the Central Bank of Nigeria Statistical Bulletin (2022). Ordinary least squares method of multiple regressions was applied. The study has revealed that inflation is significantly affected by some of the selected macroeconomic variables in Nigeria. The study further noted that inflation has serious implications on economic growth in Nigeria. The study also identified various factors that influence inflation rate in Nigeria with their direction of influences. The research has emphasized the need to stimulate the level of consumption and production so as to further ensure price stability and economic growth in Nigeria. It was also recommended that Government should use both fiscal and monetary policies to control inflation in Nigeria.

KEYWORDS: MACROECONOMICS VARIABLES ON INFLATION IN NIGERIA

Introduction

In order to observe that there is inflation there should be a persistent rise in the general price level. This rise must exceed the available goods and service and the country. There should the substantial increase in the gene price level of goods and services. Rise in prices may be of various magnitudes accordingly different names have been given to inflation depending upon the rate of rise in price. the prices of goods and service rise this in just saying that the value of money has fallen because less goods and service can now be

obtained in exchange for a given sum of money. Prices vary inversely with the value of money. The value of money is this shown by the level of prices a general fall in process indicates rise on the value of money. The price of a commodity is the amount of money that has to be paid for it. The value of money is the quality of goods and service it will buy. The market price is the indicator of relative value of goods and service in terms of money (Nzotta, 2015).

Managers of economies around the world strive strenuously to keep inflation rates at low and stable levels. The managers of the Nigerian economy desire a low and stable inflation environment. But a retrospective look at the performance of the economy, for example, from 1990 which was the year the country' s monetary policy regime changed from exchange rate targeting to the direct monetary targeting framework in response to the inflationary pressure resulting from increased public expenditure as a result of the reconstruction works after the civil war (CBN, 2014) and the monetization of the petrodollars, to 2013 shows that the Nigerian economic environment may be anything but a low and stable inflation one. study. In fact, it reached an all-time high of almost 80% in 1994.The story is not any different when core inflation (a more restrictive measure of inflation which excludes food and energy price movements) is considered. Figure 1 also shows that in 11 out of the 18 years of observation of this measure, the Nigerian economy experienced double-digit inflation with the highest figure

There have been some studies on Nigeria which investigated the effect of exchange rate depreciation (a traditional cause of inflation) on the country' s domestic inflation (see for instance, Ogundipe & Egbetokun, 2013; Boamah, 2013). But studies on institutional causes of inflation (causes emanating from product market and labour market sources) on Nigeria are not very visible.

The specific objectives of this study are to: identify the traditional and institutional macroeconomic inflation variables which are responsible for this phenomenon, determine the magnitude of the contribution of each variable to the rise in general price level, explain the mechanism through which the identified variables influence the general price level and make recommendations on how best to tackle the scourge of persistent inflation in the county.

Statement of the problem

During inflationary periods the value of money which is the purchasing power of money Falls inflation increase the earnings of business shareholders and other whose income are fixed in money terms but in spite of these there are complained that it reduced the standard of living of the people whose income are fixed thus increasing their cost of education welfare and culture facilities available. This situation however makes it difficult for the poor masses with fixed income difficult to survive in the economy.

Inflation will also lead to a balance of payment deficit. The rise in the prices of home goods will make more consumer goods to be imported thereby making the county to spend more foreign currency that what it will received abroad from exportation.

Rise in prices may be of various magnitudes accordingly different names have been given to inflation depending upon the rate of rise in price. the prices of goods and service rise this in just saying that the value of money has fallen because less goods and service can now be obtained in exchange for a given sum of money. Prices vary inversely with the value of money. The value of money is this shown by the level of prices a general fall in process indicates rise on the value of money. The price of a commodity is the amount of money that has to be paid for it. The value of money is the quality of goods and service it will buy. The market price is the indicator of relative value of goods and service in terms of money.

One of the fundamental goals of a modern economic system is to keep prices of goods and services stable at rates that would not be detrimental to the economic system. The attainment of this goal, of ensuring that prices do not rise continuously, is very crucial in that non-attainment of the goal carries with it dire micro and macroeconomic consequences. At the microeconomic level, the unfair wealth redistribution that may accompany an upward movement of prices could encourage hoarding of unspent income, increase the cost of borrowing and therefore constrain investment spending by businessmen. At the macroeconomic level, an upward inflationary pressure may make the export of goods and services in an economy to dwindle because the prices of tradable may become less competitive in the international markets thereby discouraging foreign

purchases and consumption of such tradable. An offshoot of this is that the national income of the economy may fall with attendant adverse consequences on the economy' s employment (increased unemployment), economic growth and possibly development.

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Objectives of the study

The general objective of the study is to find out the Effect of Selected Macroeconomic variables on Inflation in Nigeria. The specific objectives of this study are to:

1. To determine the effect of money supply on Inflation Rates in Nigeria.
2. To evaluate the effect of interest rate on Inflation Rate in Nigeria.
3. To examine the effect of Consumer spending on Inflation Rates in Nigeria.

The study is divided into sections Section is introduction, Section two (2) literature review Section three (3) is Methodology, Section four (4) is Data presentation and analysis and Section five (5) is Conclusions and Recommendations.

Literature Review

Inflation

Inflation is one of the most frequently used terms in economic discussions, yet the concept is variously misconstrued.

There are various schools of thought on inflation, but there is a consensus among economists that inflation is a continuous rise in the prices. Simply put, inflation depicts 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)’ . Inflation is frequently described as a state where “ too much money is chasing too few goods” . When there is inflation, the currency loses purchasing power.

The purchasing power of a given amount of naira will be smaller over time when there is inflation in the economy. For instance, assuming that N10.00 can purchase 10 shirts in the current period, if the price of shirts double in the next period, the same N10.00 can only afford 5 shirts.

Interest rate:

An interest rate refers to the additional amount charged by a lender on top of the principal amount borrowed by the borrower. On the recipient's side, individuals who deposit money in banks or financial institutions also earn additional income called interest, taking into account the time value of money. Interest rates are usually expressed as a percentage of the borrowed amount (principal) for a specific duration, such as days, weeks, months, or years. The rates for borrowing and deposits may vary depending on the purpose and recipient of the funds.

Money supply

The money supply in an economy refers to the total amount of currency in circulation at a specific point in time. This includes physical cash such as currency notes and coins, as well as bank deposits. It is a crucial concept that has a significant impact on a country's financial and economic conditions. The supply of money is closely linked to inflation and consumption. Therefore, governments, particularly central banks, regulate the circulation of money through their monetary policies.

The management of money supply is a delicate balancing act for policymakers. They aim to ensure an adequate money supply to facilitate economic transactions and promote growth while avoiding the negative consequences of inflation. Central banks use various

tools such as open market operations, reserve requirements, and interest rate adjustments to control the money supply and achieve their monetary policy objectives.

Government Expenditure:

Government expenditure refers to the utilization of funds by the public sector for the procurement of goods and the provision of services such as education, healthcare, social protection, and defense. In terms of national income accounting, when the government acquires goods and services for immediate consumption to directly meet the individual or collective needs of the community, it is categorized as government final consumption expenditure.

When the government acquires goods and services for future use, it falls under the category of government investment. This encompasses public consumption, public investment, and transfer payments that involve income transfers.

Theoretical review

This study is anchored on the Fisher's quantity theory of money. Fisher's quantity theory of money, an old classical economic doctrine, links the general price level to changes in the supply of money in circulation. According to this theory, the quantity of money in circulation determines the inflationary or non-inflationary state of an economy. The equation MV = PT represents the quantity equation, where M is the money supply, V is the velocity of circulation, P is the price level, and T represents transactions or the level of output.

Methodology

This study utilizes a quantitative research design, which is a methodology commonly employed in social sciences and various other fields. It involves the gathering and examination of numerical data to test hypotheses and address research inquiries. This approach incorporates statistical and mathematical techniques to analyze data and derive conclusions from the findings. Quantitative research designs are frequently employed to explore cause-and-effect relationships and validate hypotheses. They find applications in

diverse domains such as banking and finance, psychology, sociology, economics, marketing, and education.

The time series data utilized in the study was obtained from two sources, namely the Central Bank of Nigeria statistical bulletin and the Nigeria Bureau of Statistics. In addition to inflation, the study incorporated other variables that have a direct correlation with inflation, including interest rate, money supply, government consumption, and expenditure. Time series data represents a collection of observations or measurements that are recorded at regular intervals throughout a specific timeframe. This type of data is commonly employed in various fields such as economics, finance, engineering, and environmental science to examine patterns, trends, and behavior over time.

Model specification

Our model is given thus:

MODEL 1

INFR = f (CONEX, MS, INTR) ……. (1)

$INFR = b_o + b_1CONEX + b_2 MS + b_3 INTR + U$……(2)

Where: INFR represents the inflation rate, b_o = Contact, b_1-b_3= Slopes of the model, U= Stochastic Error Term, CONEX represents consumption expenditure, MS represents the money supply.

1. Data Presentation, Analysis and Discussion of findings

The data were collected in line with the stated objectives of the study as shown in chapter one. Data are presented in tabular format. The essence is for easy presentation and quick understanding. The discussion of data for each table was done before the tabular presentation as displayed below:

Table 4.1: The showing Inflation Rate (INFR), Consumption Expenditure (CONEX), Broad Money Supply (M2), and Interest Rate (INTR)

Year	INFR (%)	CONEX (₦Billion)	MS(₦ Billion)	INTR (%)
1991	13.01	590.06	75.40	20.01
1992	44.59	906.03	111.11	29.80
1993	57.17	1257.17	165.34	18.32
1994	57.03	1768.79	230.29	21.00
1995	72..84	3100.24	289.09	20.18
1996	29.27	4086.07	345.85	19.74
1997	8.53	4418.71	413.28	13.54
1998	10.00	4805.16	488.15	18.29
1999	6.62	5482.35	628.95	21.32
2000	6.93	7062.75	878.46	17.98
2001	18.87	8234.49	1,269.32	18.29
2002	12.88	11501.45	1,505.96	24.85
2003	14.03	13556.97	1,952.92	20.71
2004	15.00	18124.88	2,131.82	19.18
2005	17.86	23121.88	2,637.91	17.95
2006	8.23	30375.18	3,797.91	17.26
2007	5.39	34675.94	5,127.40	16.94
2008	11.58	39954.21	8,643.43	15.14
2009	12.56	43461.46	9,687.51	18.99
2010	13.72	55469.35	11,101.46	17.59

2011	10.84	63713.36	12,628.32	16.02
2012	12.22	72599.63	15,503.41	16.79
2013	8.48	81009.96	18,743.07	16.72
2014	8.06	90136.98	20,415.61	16.55
2015	9.01	95177.74	20,885.52	16.85
2016	15.68	102575.42	24,259.00	16.87
2017	16.52	114899.25	28,604.47	17.56
2018	12.09	129086.91	29,774.43	19.33
2019	11.40	145639.14	34,257.90	15.53
2020	13.25	154252.32	36,038.01	12.32
2021	16.95	176075.50	40,318.29	115.55
2022	16,80	210440.46	45,000.50	28.09

Source: Central Bank of Nigeria (2022).

Data analysis

Summary of regression Results showing Inflation Rate (INFR), Consumption Expenditure (CONEX), Broad Money Supply (M2), and Interest Rate (INTR)

Dependent Variable: INFR
Method: Least Squares
Date: 11/23/23 Time: 13:06
Sample: 1991 2022
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONEX	0.029509	0.008317	3.547908	0.0014

MS	-0.115732	0.035558	-3.254705	0.0031
INTR	-1.808027	2.563444	-0.705311	0.0067
C	-141.1446	78.44925	-1.799184	0.0832

R-squared	0.647798	Mean dependent var	70.25065
Adjusted R-squared	0.586443	S.D. dependent var	299.0425
S.E. of regression	234.2397	Akaike info criterion	13.87048
Sum squared resid	1481442.	Schwarz criterion	14.05551
Log likelihood	-210.9925	Hannan-Quinn criter.	13.93080
F-statistic	7.298393	Durbin-Watson stat	0.966270
Prob(F-statistic)	0.000979		

Source: Author' s computation 2023.

Transforming the model, we have:

$INFR = b_o + b_1 CONEX + b_2 MS + b_3 INTR + U \ldots\ldots(2)$

INFR= -141.144 +0.029509CONEX -0.115732MS -1.80802INTR + U ….(5)

The regression results as shown above revealed that CONEX was statistically significant at 5%, MS is statistically significant at 5% while INTR was not statistically significant at 5%.

Therefore, constant co-efficient of -141.144 means 1.41% of the change in INFR was recorded irrespective of the changes in the independent variables (CONEX, MS, and INTR). CONEX co-efficient of 0.029509. means 100% change in CONEX, changes INFR by 2.9, %, MS co-efficient of -0.115732 means that 100% change in MS, changes INFR by 11.57.%. INTR negative co-efficient of -1.80802 means that 100% increase in INTR in, INFR changes by 1.80%, keeping every other factor constant.

R^2 (co-efficient of multiple determinations) of 0.64779 means 64.77% of total variation in the dependent variable (INFR) is explained by the independent variables (CONEX, MS, and INTR) and it stood at 58.64% after adjusting for degrees of freedom.

DW (Durbin-Watson) statistic of 0.966270 shows that there is a linear relationship between GDP and the independent variables (CONEX, MS, and INTR). The t-values for

CONEX, MS, and INTR showed that the independent variables significantly affect the dependent variable (INFR).

Generally, since the value of F-calculated is larger than the critical value of F or Table value of F, we reject the null hypothesis and then accept the alternative hypothesis; therefore, Inflation is significantly affected by some independent variables.

In testing our hypothesis, we note the followings:

1. Consumption Expenditures (CONEX) has significant effect on financial stability and economic growth with the period under study.

2. Consumption Expenditures (CONEX) has positive effect on inflation within the period under study.

3. Money Supply (MS) has significant effect on inflation within the period under study.

4. Money Supply (MS) has negative effect on Inflation within the period under study.

5. Internal Rate (LR) has negative effect on inflation within the period under study.

6. Internal Rate (LR) does not have significant effect on inflation within the period under study.

4.3 Discussion of finding

It is necessary to discuss the following issues relating to our findings

1. Broad money Supply (M2) has significant effect on Inflation Rates in Nigeria within the period under study. It expected that both demand for money and the supply of money (Broad Money Supply) affect inflation rates within an economy.

2. Money Supply (M2) has negative effect on inflation rates within the period under study. This is expected. Broad Money Supply is the aggregation of currencies in

circulation plus demand deposits and time deposit. It is necessary to note that broad money Supply affects inflation rates in an economy.

3. Consumption Expenditures has significant effect on Inflation with the period under study.

4. Consumption Expenditures (CONEX) has a positive relationship on Inflation rates in

5. Interest Rates has a negative relationship on Inflation rates in

Nigeria.

6. Interest Rates has a significant relationship on Inflation rates in

Nigeria.

Conclusion/Recommendations

The study examined the effect of macroeconomic variables on inflation rates in Nigeria. The study attempted to estimate the relationship between macroeconomic variables and inflation in Nigeria. The findings of the research revealed and confirmed that various macroeconomic variables have different impacts on inflation rates in Nigeria. The study also identified various factors that influence inflation rate in Nigeria such money supply, consumption expenditures(spending), interest rates, etc. The application of both monetary and fiscal policies will help to check the rising inflationary rates in Nigeria.

In conclusion, the inflation has gross implication on the Nigerian economy. Hence, the administration and control of the various macroeconomic variable has become necessary to control the level of inflation in Nigeria.

The following policy recommendations are necessary as established in our study thus: -

1. This research has emphasized the need to stimulate the level of consumption and production so as to further ensure price stability and economic growth in Nigeria.

2. Government should use both fiscal and monetary policies to control inflation in Nigeria.
3. There is also an urgent need for the Nigerian monetary and regulatory authorities to review the rising monetary policy rate vis-a-as the lending rates to further deepens the Nigerian financial system stability vis a vis price stability.

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