MULTIDISCIPLINARY JOURNAL OF MANAGEMENT AND SOCIAL SCIENCES (MJMSS) VOL 2 NO. 2, 2025 (ISSN: 3043-6427; E-ISSN: 3043-6419),
Indexed in Google Scholar (Email: mjmss242@gmail.com) Nnamdi Azikiwe University, Awka, Nigeria

INFLATION AND ECONOMIC GROWTH IN NIGERIA

Idongesit Ukere[1], Ame Ekpenyong[2]
[1-2]Department of Business Administration and Management, School of Business, Akwa Ibom State Polytechnic, Nigeria.

Corresponding Author: Idongesit Ukere, 08065128583, ukereidy@gmail.com

Abstract
In this research, we examined the effect of inflation on output growth in Nigeria utilizing annualized data covering the period 1990 – 2023, which were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin of various issues. This study employed ex-post research design. Some preliminary tests were performed to ensure data stationarity, and also ascertain how well the series were distributed. While Augmented Dickey-Fuller (ADF) was adopted for the former, descriptive statistics explained the latter. Ordinary Least Square (OLS) technique was used to estimate the variables. Real Gross Domestic Product (RGDP) formed the dependent variable, Inflation Rate (INFR), Interest Rate, domestic investment and Exchange Rate (EXCHR) made up the independent variables. Statistical outcomes were interpreted based on a 5 percent level of significance. The regression results indicated that inflation and investment had a negative and non-significant effects on output growth (measured by RGDP), while interest rate and exchange rate had a positive effect for the period studied. We, therefore, recommend that government should adopt a sound monetary policy measure to control inflation, low interest rate to encourage domestic investment, managed float exchange rate for import dependent economy like Nigeria to improve GDP.
Keywords: Inflation rate, Real Gross Domestic Product and OLS

1. INTRODUCTION

The developing and developed economies are affected by certain key macroeconomic factors such as output level, investment, per capita income, interest rate, exchange rate, price stability (inflation rate), among others. One of the main objectives of macroeconomic policy is to attain a desired level of growth while maintaining a low and sustained inflation rate (Azam and Khan, 2020). However, to achieve these economic policy objectives it is crucial to determine the existing relationship between inflation and output growth.

Even though this relationship has been widely researched on, it is not well established, and the argument on the exact nexus between these two variables is still open. In the existing literature, studies such as Cameron et al. (1996) are of the view that inflation has no effect on economic growth. Also, studies including (DorranceGraeme, 1966; MukokaShame and Mukoka, 2018; Sidrauski, 1967; Wai, 1959) opined that inflation has a positive impact on economic growth. While studies including (Benhabib and Spiegel, 2009; Lily et al., 2021; Rapach, 2003) are of the view that inflation has a negative impact on economic growth.

Moreover, research on the inflation threshold for panels of countries has found different thresholds but reflecting the same realities. That is, there is an inflation threshold of less than 5% for developed countries and a double-digit threshold for developing countries, Nigeria inclusive (Azam and Khan, 2020).
However, the primary objective of the Central Banks of countries, including Nigeria is to stabilize prices (inflation, interest rates, and exchange rates) at a level that corresponds with the desired level of economic growth (CBN, 2021). Above all, evidence has shown that sustained growth can only be achieved when the general price level remains stable (Olatunji, 2017).

Specifically, in Nigeria, available data suggests that there is no obvious evidence of a reasonable level of inflation as inflation remains a serious threat to Nigeria's economic growth, despite the CBN's various monetary regimes over the years. From the early 1980s, there have been six major yearly episodes of high inflation above 30 percent which were; 54.4 percent in 1988, 50.47 percent in 1989, 44.59 percent in 1992, 57.17 percent in 1993, 57.03 percent in 1994 and 72.28 percent in 1995 (CBN, 2007).

However, from evidence, CBN's various monetary regimes, specifically from the early 1990s, to 2023, inflation has been fluctuating and rising, mostly maintaining a double-digit figures, except for 1990, which it was 7.36%, 1997, 8.53%, 1999, 6.62%, 2000, 6.93%, 2013 and 2014, 8.50% and 2015, it was 9.01%. (CBN, 2023). Inflation did hit 18.55 in 2016, 15.37 in 2017, 11.44 in 2018, 11.40% in 2019 and 14.9%, 15.63 and 21.34% in 2020, 2021 and 2022 successively.

Regardless of whatever parameter earlier used, the inflation figure of 24.66% in 2023 (CBN, 2024) (that is, the figure at the cut-off of this research) is double-digit, and any double-digit inflation is considered high. The failure of the monetary authorities in curbing price instability has caused growth instability in Nigeria as the country's record of real output growth has been fluctuating, slow and mostly declining. In 1990, it was 11.78 per cent, but declined to 5.02 percent; in 2000; in 2010, it was 8.01 percent. In 2011, the real GDP grew by 5.31 percent, and in 2013 it was 6.67 percent. In 2016 it was -1.62 percent (recession) and went back upward to 1.92 percent and -1.79 percent in 2018 and 2020, respectively, then, 2.74 per cent in 2023 (CBN, 2024). Given the above inflation – growth figures, it is possible that inflation growth often appears to be higher than real growth.

According to the foregoing research, despite the continual increase in the money supply, Nigeria's output growth has been relatively low, low investment, depleting national reserve, low per capita income, high interest rate, volatile exchange rate, hyper inflation rate, among others. Thus, in this study, we generally seek to investigate the effect of inflation on economic growth, and specifically, investigate the effect of inflation on domestic investment, examine the effect of inflation on exchange rate, and ascertain the relationship between inflation and interest rate.

2. REVIEW OF RELATED LITERATURE

2.1 Conceptual Literature

Concept of Inflation

Inflation is described as a recurrent rise in the overall level of prices for goods and services. It is measured as an annual percentage increase. As inflation rises, every naira one owns buys one a smaller percentage of a good or service. The value of a naira does not remain constant during inflation. The value of a naira is measured in terms of purchasing power, which is the real, tangible goods that money can buy. When inflation rises, there is usually a decline in the purchasing power of money. Inflation is measured by the consumer price index, which reflects annual percentage change in the cost borne by an average consumer when he or she buys a basket of goods and services that may be fixed or varied from time to time usually on annual basis. The Laspeyres formula is generally used (Anyanwaokoro, 1999). There are a few causes of inflation where aggregate demand rises faster than aggregate supply, thereby increasing the cost of goods and services. The imbalance of aggregate demand and supply is associated with government's deficit, expansion of bank's interest rates and increase of foreign demand. Considering the influence of inflation on economic growth, Hossain, Ghosh and Islam (2012) posit that besides high inflation level which constrains economic performance or zero inflation that actually stagnates it, mild (single digit) inflation rate is sine qua non for economic prosperity. In spite of that the problem posed by inflation is a global phenomenon since it cuts across both developed and emerging economies; therefore, its control remains a "nightmare" to economic policymakers throughout the world. Nowadays in Nigeria, concerns have been raised over the persistent rise in inflation rate with attendant eroding of value of naira and general price instability. In that regard various scholars hold diverse views on inflation and growth relationship some of which are summarized below: Barro (2013) observed that the severity of inflation on growth in the short run is insignificant, but adversely affects living standards. Likewise, Kasidi and Mwakanemela (2013) argue that inflation has a negative impact on growth stressing that there is no long run relationship with growth. Furthermore, Bruno & Easterly (1998) affirm that growth declines significantly during high inflation periods, adding that inflation nevertheless promotes growth when its rate is at lower levels. This means that high inflation does not promote growth; it affects economic growth negatively after attaining a certain threshold (i.e. the level at which effect begins).

Jones and Manuelli (2001) trace lull in economic activities cum growth to inflationary pressures, which manifest in several respects: waste in time and resources by individuals and businesses while trying to safeguard their wealth from inflation. This phenomenon likely brings about inefficient allocation of production resources with a general decline in macroeconomic performance. Also, decreased savings brings about decreased investments, which ultimately diminishes growth level. General uncertainty about future price levels discourages investment and likely lower capital formation in the economy. Besides, the returns on investments are reduced by inflation; for this reason, investors may invest in short-term capital rather than making long-term investments. Investors would rather invest in assets that can hedge against inflation (property, equity) instead of productive assets such as plant and equipment (Jones and Manuelli, 2001). This may further weaken the production capacity of the economy, incessant labour negotiations waste resources and rise in nominal wages resulting in unproductiveness and lower growth. Ambler (2003) posits that higher inflation discourages competitiveness in international trade with trading partners, affecting export-import trading relations, thereby resulting in disequilibrium in the balance of payments in form of a current account deficit. Reduced foreign exchange capacity in any economy over time will limit a country's ability to enhance its current account deficit. In addition, with the relaxed competition in international markets, profits accruing to merchandise sector will decrease. In essence, resources will move away from the merchandise sector into the non-merchandise sector. Inflation understates the real value of depreciation (that is, the amount or percentage by which goods or services decrease in value over time, usually one year). In

this case, higher profits are declared resulting in higher tax paid on profits. This situation is likely to be unfavourable to companies desiring to make additional investments. Consider an economy where an individual splits his wealth into two parts, namely: capital stock and money. Of course, money is earmarked for consumption and investment. A higher inflation level could result in decreased consumption rate, while investment may increase because investment, ceteris paribus, brings in a higher return. However, with the low return on money, the net return becomes low, and because of that investment and capital stock level drop. In consequence, economic growth drops on account of lower consumption, lower investment and lower capital stock. During higher inflationary pressures, there are likely outcomes: First is an increase in the growth rate because, as depreciation rises, the tax paid on capital is reduced. Secondly, there is a decrease in growth rate. As the volume of money enlarges likewise does the nominal interest rate.

Unfortunately, inflation rate creates confusion with regard to buying, selling, borrowing, investing, and so on. For any of these, one needs to anchor one's decisions on current and future prices. Uncertainty creates confusion about these prices, thereby discouraging investment with accompanying decreased capital stock in an economy. This brings about a higher chance of correctly forecasting shorter-term prices than longer-term ones. However, willing investors will expect to be compensated for their risk due to the increased uncertainty making investing more costly for borrowers.

Concept of Output Growth

Another essential concept that engages the attention of this paper is economic growth. Nell in Munyeka (2014) refers to output growth as the most important single measure of the performance of an economy. Output growth connotes an increase in the capacity of a country to produce goods and services by comparing contemporary output level with previous ones. Thus, the comparison may result in a positive or negative growth. Conventionally, it is measured as the percent rate of increase in real gross domestic product, or RGDP. Growth is normally calculated in real terms such as inflation adjusted terms so as to minimize the effect of inflation on the price of an economy's total production. Jhingan (2002) affirms that growth becomes noticeable when an economy's productive capacity increases, and subsequently used to produce more goods and services. Nigeria's economy is a mono-product economy because it relies heavily on crude oil production in commercial quantity. This implies that crude oil serves as a major source of government revenue as well as foreign exchange, and thus account for more than 80 percent of the total revenue that accrues to the country. In view of the state of Nigeria's economy, experts asserted that: "the Nigerian economy slipped into recession in the second quarter of 2016, the first in over two decades, due mainly to policy uncertainties, foreign currency shortages occasioned by declined crude oil receipts, low power generation and weak investor confidence."

However, following the recent National Bureau of Statistics (NBS) report, Nigeria appears to be experiencing marginal recovery from recession. Unfortunately, this outlook is yet to be felt materially in virtually all sectors of our economy.

2.2 Theoretical Review

The Quantity Theory

Turning first to supply-side determinants of inflation, the money supply theory of inflation is perhaps the oldest theory of inflation. It is believed to have been first proposed by Nicolaus Copernicus in 1517. In the present day this theory has taken on the moniker of 'the quantity theory of money', and this is how it is generally referred to in modern textbooks. Proponents of this theory such as the celebrated economist Milton Friedman, have been labeled 'Monetarists' for the contention that inflation is predominately caused by expansions in the money supply. Milton Friedman is widely known for his famous quote that, "Inflation is always and everywhere a monetary phenomenon." Why did he state this? This is because under a fiat currency regime where money cannot be redeemed for any commodity - the regime exclusively practiced by all organized governments today, it is the case that the money supply is the most mutable determinant of the price level, and therefore has historically had the most influence on it.

Demand-pull theory

Demand-pull inflation happens when there is an increase in aggregate demand, caused by factors such as an expanding economy, increased government spending, or economic growth overseas. It is categorized by the four sections of the macroeconomy: households, business, government, and foreign buyers. Demand-pull inflation does not have to be caused by policy. As the prominent political commentator John Maynard Keynes would say, the "animal spirits" of society could become more positive with regards to the future, resulting in more current spending, and rising prices (Meyer, 2022).

Keynes (1940) introduced demand-pull inflation via a model of the economy where price rigidities combined with an unexpected increase in aggregate demand led to an increase in the price level. This model was later taken up

by a number of economists including G. Ackley, S. Maital, A. Smithies, and J.A. Trevithhick. These and other so-called 'Keynesians' treat demand factors as the primary cause of inflation. However, this work is largely theoretical and scant empirical analyses of the real world exist. The researchers identified in this review adopting an empirical approach failed to find an effect, and others such as Jorgensen and Ravn (2018) find that increased demand in the form of government spending actually reduces inflation. Still other authors may blur the lines between demand-pull inflation and the quantity theory. Barth and Bennett (1975) for instance make the inference that increases in the supply of money translate into an increase in demand, and as such, this and similar papers would more correctly be classified as belonging to supply-side inflation theories rather than demand-pull inflation. The confusion here arises from the fact that the money supply in part determines the demand for goods, and this is the 'demand' to which Barth and Bennett refer.

Inflation expectations

Inflation expectations refer to the public's belief about what inflation will be in the future. Inflation expectations have a contemporaneous impact on the economy since these will affect people's present economic behavior. When a person has high inflation expectations, demand for goods (and to get rid of cash) increases, leading sellers to increase their prices, thereby contributing to still higher rates of inflation. In this sense, when inflation expectations are high, actual rates of inflation are impacted.

Empirical studies of inflation expectations have found it to be one of the more important determinants of inflation. A literature review by Kapoor and Kar (2003) for instance found 514 papers over the past forty years using this variable as a determinant of inflation. In studies regarding the inflation expectations in households, it has been suggested that respondents in inflation expectations surveys usually act consistently with the expected utility theory (Armantier et al., 2013). There is a strong correlation between expected inflation and realized inflation, though that correlation may weaken over short periods of time, such as during the Great Depression, the Great Inflation, and the Great Recession. This illustrates the importance of policy regime changes in inflation realization (Binder and Kamader, 2022). During the Great Recession specifically, inflation expectations were much lower over long-term timeframes while higher over short-term timeframes, and the long-term rates were closer to realized inflation (Church, 2019).

Fiscal theory of inflation

The fiscal policy theory of the price level states that inflation results when people do not expect the government to fully repay their debts. More precisely, prices adjust so that the real value of government debt equals the present value of taxes less spending. This theory is directly related to the now discredited Real Bills Doctrine. The Real Bills Doctrine is essentially a variation of the fiscal theory, as it relates to the credibility of the issuing institution, in particular that issuing institution will be able to redeem notes issued against some commodity. However, this theory has been disproved since the permanent abolishment of gold and silver standards. As, according to this theory, all fiat money should have then become worthless, which has not been the case for 90 years in the United States.

However, fiscal policies have been shown to have a direct impact on inflation. Sujaningsih et al. (2012) found that "the negative effect of positive government spending shock to the inflation can be explained by the possibility of greater multiplier effects of government spending on investments (including infrastructure) than routine expenditures". The spending that the government does on infrastructure is predicted to lower the costs of the distribution of goods and services, therefore, contributing to the decline in inflation. On the other hand, the effect of an increase in inflation due to a positive tax shock could possibly be triggered by an increase in production costs as a response of tax costs increasing.

2.3 Empirical Review

Hussain, Shabir and Kashif (2016) explored the impact of macroeconomic indicators such as inflation rate, exchange rate and interest rate on GDP of Pakistan covering a sample period of 32 years from1980 to 2011. The research made use of secondary data sourced from website of the State Bank of Pakistan and the World Bank. Descriptive statistics and multiple regressions were used for analysis. The variables contained in the model consisted of GDP as dependent variable, while the explanatory variables were interest rate, exchange rate and inflation rate. The study revealed that inflation rate and interest rate had a significant negative impact on GDP, while exchange rate related significantly and positively with GDP. Based on the results and analysis, it was recommended that the government should adopt tight monetary policy measures to control inflation.

Olu and Emmanuel (2015) examined the inflation rate and economic growth in Nigeria between the period 1980 and 2013. The main objective of the study was to investigate the nature of relationship between inflation rate and economic growth rate. The study made use of secondary data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin and the National Bureau of Statistics (NBS). The Ordinary Least Square (OLS) logged multiple

regression was employed with Gross Domestic Product (GDP) as the dependent variable and Inflation Rate (INFR), Exchange Rate (EXCHR), Input of Labour and Input of Capital served as the explanatory variables. Our results showed that inflation rate in line with apriori expectations had a positive relationship but non-significant with the economic growth rate. This suggested that as the GDP rises inflation also rises, suggesting that there has been no effectiveness in the monetary policies aimed at tackling or controlling inflation rate in Nigeria. We recommended that for sustainable economic growth to be achieved in Nigeria, the level of inflation should be stabilized by the monetary authorities.

Doguwa (2022). This paper re-examines the issue of the existence and the level of inflation threshold in the relationship between inflation and growth in Nigeria, using three different approaches that provide appropriate procedures for estimating the threshold level and inference. While Sarel's (1996) approach provides a threshold point estimate of 9.9 per cent that was not well identified by the data, the technique of Khan and Senhadji (2001) identifies a 10.5 per cent inflation threshold as statistically significant to explain the inflation-growth nexus in Nigeria. Also, the approach of Drukker et al (2005) suggests a two threshold point model with 11.2 and 12.0 per cent as the appropriate inflation threshold points. These results suggest that the threshold level of inflation above which inflation is inimical to growth is estimated at 10.5 to 12 per cent for Nigeria. Using the estimated two threshold point model, this paper did not find enough reasons to accept the null hypothesis of the super neutrality of money, and therefore, suggest that there is a threshold level of inflation above which money is not super-neutral. Agalega, and Antwi (2013) examined the impact of macroeconomic variables on GDP in Ghana covering from 1980 – 2010. Annualized time series data were obtained from Bank of Ghana publications and bulletins, Ghana Statistical Service, the Institute of Statistical, Social and Economic Research (ISSER). The study applied multiple linear regressions to prove that there existed a fairly significant positive correlation between GDP, Interest rate and inflation, but inflation and interest rate could only achieve causation in GDP by mere 44 percent. The paper also proved that there existed positive relationship between inflation and GDP, while interest rate was negative. It was suggested among others that the government together with the Bank of Ghana should develop and pursue prudent monetary policies that could target lowering and stabilizing both the micro and selected macroeconomic indices in order to positively drive the economy.

Akinsola and Odhiambo (2017) studied the impact of inflation on economic growth in Tanzania. Annual time-series data for the period 1990 - 2011 were employed for analysis. Correlation coefficient and cointegration technique established the relationship between inflation and GDP and coefficient of elasticity were used to measure the degree of responsiveness of change in GDP to changes in general price levels. Findings indicated that inflation had a negative effect on economic growth. The study further established that there was no co-integration (absence of long-run relationship) between inflation and economic growth in Tanzania within the period studied. Osuala, Osuala and Onyeike (2013) examined the impact of inflation on economic growth in Nigeria utilizing annualized time series data sourced from the Central Bank of Nigeria Statistical Bulletin covering the period 1970 – 2011. Preliminary tests for stationarity of the variables were ascertained using Augmented Dickey Fuller (ADF) and Philip-Perron (PP) techniques. Also, the Granger causality test was conducted to determine direction of causality between inflation and economic growth. The findings indicated a statistically significant positive link between inflation and economic growth. On the contrary, the scholars discovered that there was no prominent variable in the relation between inflation and economic growth. In that regard, the authors concluded that the impact was contemporaneous.

Umaru and Zubairu (2012) applying ADF and Granger causality techniques studied the effect of inflation on economic growth and development in Nigeria for the period 1970 – 2010.The ADF test determined the stationarity of the variables while Granger causality tested causal relationship between inflation and GDP (proxy for economic growth and development). Result of the study affirmed a unidirectional causal link between GDP and inflation rather than between inflation and GDP. This means that GDP influences inflation and not the other way round. The policy implication is that inflationary pressure can be put in check in an economy by boosting productivity so as to curb prices of goods and services. In other words, lower inflation rate can solely be achieved by increasing productivity.

Anidiobu Okolie and Oleka (2018) examined the effect of inflation on economic growth in Nigeria utilizing annualized data covering the period 1986 – 2015, which were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin of various issues. This study employed ex-post research design because the variables were based on events that had already taken place, which the researcher could neither control nor manipulate. Some preliminary tests were performed to ensure data stationarity, and also ascertain how well the series were distributed. While Augmented Dickey-Fuller (ADF) was adopted for the former, descriptive statistics explained the latter. Ordinary Least Square (OLS) technique was used to estimate the variables. Real Gross Domestic Product (RGDP) formed the dependent variable, Inflation Rate (INFR), Interest Rate (Interest Rate) and Exchange

Rate (EXCHR) made up the independent variables. Statistical outcomes were interpreted based on a 5 percent level of significance. The regression results indicated that INFR had a positive and non-significant effect on economic growth (measured by RGDP) in Nigeria for the period studied. The study recommended that government should adopt tight monetary policy measures to stabilize tide of inflationary pressures on our economy

2.4 Gap in Literature

From the literature reviewed, it was established that some studies including Cameron et al. (1996) were of the view that inflation has no effect on output growth. But, studies including (DorranceGraeme, 1966; MukokaShame and Mukoka, 2018; Sidrauski, 1967; Wai, 1959) opined that inflation has a positive impact on output growth. While studies including (Benhabib and Spiegel, 2009; Lily et al., 2021; Rapach, 2003) found the reverse to be true.

Moreover, research on the inflation threshold for panels of countries has found different thresholds but reflecting the same realities. That is, there is an inflation threshold of less than 5% for developed countries and a double-digit threshold for developing countries, Nigeria inclusive (Azam and Khan, 2020). Based on the incongruities that exist in the reviewed literature, in the study, we will make a modest attempt to fill the existing gaps.

3. METHODOLOGY

This paper utilized data gathered entirely from secondary sources. Sourcing published data that is acceptable is a sine qua non for obtaining extremely reliable results. We obtained data from the National Bureau of Statistics and Central Bank of Nigeria Statistical Bulletins covering the period 1990 – 2023. Our regressed is the real GDP, while the inflation rate is our regressor. Moreover, interest rate, investment and exchange rate are our control variables. Our model was estimated using ordinary least square (OLS) method. Since we are making use of annualized time-series data and the study cover a long sample period, we made sure our data set were not impaired by unit root; hence we tested for stationarity of the series by employing the Augmented Dickey-Fuller (ADF).

3.1 Model Specification

This research paper adopted the economic model previously used by Chughtai, et al (2015) that assessed the macroeconomic variable-growth nexus of Pakistan, we remodeled it by adding the variable, domestic investment to reflect the Nigerian situation. The study, which had earlier been reviewed in the preceding section are specified below:

$Y_t=\alpha+\beta1X1_t+\beta2X2_t+\beta3X3_t+\beta4X4_t+\varepsilon i_t$…….....(1)

The model is rewritten as

$GDP_t=\alpha+\beta1INTR_t+\beta2INFR_t+\beta3EXCHR_t+\beta4INV_t+\varepsilon i_t$.....(2)

Where GDP is gross domestic product, α = constant, β1, β2, β3 and β4 are coefficients, t is time lag. INFR is inflation rate, INTR is interest rate, EXCHR is nominal exchange rate, INV is domestic investment and ε is error term. However, this study attempted to modify the scholars' work by using GDP at current price (Real GDP, which has been adjusted for inflation) as dependent variable rather than just GDP at constant price to measure economic growth. In that regard, our regression model is specified thus:

$lnRGDP_t=\alpha0+\beta1INFR_t+\beta2INTR_t+\beta3EXCHR_t+\beta4INV_t+\varepsilon i_t$ ....(3) Where RGDP is real GDP and other acronyms in the model (INFR, INTR, EXCHR, INV and ε) remain as explained above.

4. RESULTS AND ANALYSES

4.1 Unit Root Test Table 1: Augmented Dickey-Fuller (ADF) Unit Root Test Results

Variables	ADF Stat	Critical Value			P Value	Remarks
		1%	5%	10%		
InRGDP	-7.844416	-4.284580	-3.562882	-3.215267	0.0000	I(2)
INFL	-9.952153	-4.323979	-3.580623	-3.225334	0.0000	I(1)
EXCHR	-4.477182	-4.296729	-3.568379	-3.218382	0.0065	I(1)
INTR	-3.621873	-4.262735	-3.552973	-3.209642	0.0432	I(0)
INV	-7.241511	-4.284580	-3.562882	-3.215267	0.0000	I(1)

4.2 Descriptive Statistics

	LNRGDP	INTR	INFR	EXCHR	INV
Mean	10.62092	24.71158	18.21606	161.2170	22.79054
Median	10.65633	23.55125	12.72659	130.2483	19.10253
Maximum	11.26364	36.09000	72.87322	645.1900	35.37855
Minimum	9.984155	18.36250	5.420366	8.038285	13.78732
Std. Dev.	0.486755	4.354884	15.89687	143.1961	8.594756
Skewness	-0.087534	0.494107	2.206938	1.426724	0.369720

Kurtosis	1.357305	2.542016	6.965215	5.185365	1.395657
Jarque-Bera	3.866221	1.680615	49.87408	18.30049	4.420975
Probability	0.144697	0.431578	0.000000	0.000106	0.109647
Sum	361.1113	840.1939	619.3460	5481.379	774.8784
Sum Sq. Dev.	7.818712	625.8455	8339.450	676669.0	2437.705
Observations	34	34	34	34	34

Table 2 shows individual characteristics of the proxied variables, viz. RGDP averaged N10.62092 between 1990 and 2023. The maximum RGDP was in 2004 at N11.26364, while it recorded lowest in 1987 at N9.984155. INTR, INFR, EXCHR and INV averaged N24.71158, N18.21606, N161.2170 and N22.79054 respectively, over the 33-year study period. Also, the mean and median of the variables can be observed to be approximately equal – an indication that the series seem normally distributed.
Since the variable has higher order of integration (up to the second difference), the FMOLS is utilized.

Table 4.3 Fully Modified Ordinary Least Squares (FMOLS) Estimation Technique

Dependent Variable: LNRGDP
Method: Fully Modified Least Squares (FMOLS)
Date: 04/12/25 Time: 07:46
Sample (adjusted): 1991 2023
Included observations: 33 after adjustments
Cointegrating equation deterministics: C
Long-run covariance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INTR	0.008787	0.004533	1.938656	0.0627
INFR	-0.001933	0.001247	-1.550219	0.1323
EXCHR	0.000478	0.000192	2.490650	0.0190
INV	-0.047086	0.003191	-14.75454	0.0000
C	11.45032	0.126712	90.36499	0.0000

R-squared	0.953207	Mean dependent var	10.64022
Adjusted R-squared	0.946522	S.D. dependent var	0.480916
S.E. of regression	0.111213	Sum squared resid	0.346316
Long-run variance	0.009585		

RGDPt = 11.45032 -0.0019INFRT + 0.0087INTRt + 0.0004EXCHRt – 0.047INVt

Bearing the focus of this study in mind, which relates to the effect of inflation on economic growth, Table 4.3 indicated that INFR has a negative and non-significant effect on RGDP in Nigeria for the period under review. This is described by the negative coefficient value (-0.0019) of our independent variable (INFR) and the corresponding probability value of (0.132) that is greater than 0.05 critical value (i.e. 0.132 > 0.05). This implies that a 1% rise in RGDP is caused by 0.19% fall in inflation and insignificant at 5% level of significance. Also, interest rate is positively related to GDP by 0.008 units, and insignificant at 5% level. It implies that a 1% fall in GDP is caused by 0.8% increase in interest rate.

Furthermore, a 1% rise in exchange rate (fall in domestic currency) caused 0.04% fall in GDP and significant at 5% level. This is against convention, because devaluation/depreciation is expected to boost export according to Marshal Lenner (1944). In addition, a 1% fall in GDP is caused by 4% fall in investment and significant at 5% level. Considering the value of R^2, 95% total variation in RGDP growth was caused by the explanatory variables, while the remaining 5% variation in RGDP is traced to some other factors unexplained. The adjusted R^2 records account of a greater number of independent variables if included, and it still explains 94% variations in the dependent variable. The F-statistic is used to check the overall significance of the model.

4.3 Discussion of Results

The results presented in Table 4.3 means that INFR related negatively and non-significantly with economic growth measured by RGDP in Nigeria within the period studied. This finding implies that a fall in inflation does not actually impact on economic growth as it should be expected since the elasticity is very weak and insignificant, meaning that GDP is not only affected by inflation but other factors like investment which is negatively related to GDP in the study, meaning low domestic investment caused by high interest rate which showed an increase with

a positive value against economic theory. In addition, a rise in exchange rate (fall in domestic currency) should increase GDP as export is encouraged, but Nigeria being import dependent as our industries import most of their inputs making our products have more import contents make our products price inelastic. And mostly, our export remains at the primary level (raw materials) and imports it at finished level, thereby making imports more expensive than exports and leakage to the economy.

5. CONCLUSION AND RECOMMENDATIONS

Broadly speaking, inflation has been examined empirically. Generally, inflation is known to diminish the purchasing power of currency as a result of a rise in prices across an economy. Most of the existing studies in this area mainly assessed how macroeconomic factors affect economic growth. One of the primary objectives of macroeconomic factors is to gauge the health condition of a domestic economy as a whole with regard to how a specific factor affects overall performance of such economy. For this reason, we considered it sufficiently beneficial to disaggregate the factors with the ultimate goal of exploring how inflation has influenced the RGDP. Similar studies in country specific are superficial; hence the necessity to fill the knowledge gap really inspired this study. Assorted analytical approaches were used to accomplish our objective. Inflation rate (causal variable) together with interest rate, investment and exchange rate (control variables) were all regressed on real GDP (effect variable) in Nigeria. This study found that INFR had a negative but non-significant influence on RGDP. This paper concludes that high inflation rate is inimical rather than beneficial to the economy. We, therefore, recommended that government should adopt a sound monetary policy measure to control inflation, such as play with interest rate to encourage green and portfolio investments domestically, managed float and selective unified exchange rate since Nigeria is import dependent in order to improve GDP.

References

Anidiobu, G.A.1 Okolie, P.I. and Oleka, D.C. (2018) Analysis of Inflation and Its Effect on Economic Growth in Nigeria. *Journal of Economics and Finance* 9(1), 28-36.

Akinsola, F. A., and Odhiambo, N. M. (2017), 'Inflation and economic growth: *A review of the international literature'*.

Azam, M., and Khan, S. (2020). Threshold effects in the relationship between inflation and economic growth: Further empirical evidence from the developed and developing world. *%J International Journal of Finance, and Economics*, 27(4), 4224–4243.

Doguwa, S. I. (2022Inflation and Economic Growth in Nigeria: Detecting the Threshold Level. *CBN Journal of Applied Statistics 3 (2), 99 – 124.*

Olu1, J. F. and Emmanuel O. I (2015). Inflation and economic growth in Nigeria. *Journal of Economics and International Business Management* 3(1), 20-30.

Bakari, S., & Tiba, S. (2022). Determinants of economic growth: The case of the United States of America. *%J Journal of Developing Economies*, 7(1), 29–44.

Ball, R. J. (2017). *Inflation and the Theory of Money*. Routledge).

Bawa, S., & Abdullahi Ismaila, S. (2012). Threshold effect of inflation on economic growth in Nigeria. *%J CBN Journal of Applied Statistics*, 3(1), 43–63.

Behera, J., & Mishra, A. K. (2017). The recent inflation crisis and long-run economic growth in India: An empirical survey of threshold level of inflation. *%J South Asian Journal of Macroeconomics, and Finance Public*, 6(1), 105–132.

Benhabib, J., & Spiegel, M. M. (2009). Moderate inflation and the deflation–depression link. *%J Journal of Money, Credit, andBanking*, 41(4), 787–798.

Burton, D., & Fischer, S. (1998). *Moderate Inflation: The Experience of Transition Economies* (pp. 15–96).

Cameron, N., Hum, D., & Simpson, W. (1996). Stylized facts and stylized illusions: Inflation and productivity revisited. *%J Canadian Journal of Economics*, 29(1), 152–162.

C G F, V. (2003). Inflation and economic growth in the long run. *%J Economics Letters*, 80(2), 167–173. https://doi.org/10.1016/S0165-1765(03)00085-5

Dammak, T. B., & Helali, K. (2017). Threshold effects on the relationship between inflation rate and economic growth in Tunisia. *%J International Economic Journal*, 31(2), 310–325. https://doi.org/10.1080/10168737.2017.1289546

David, O. N. (2021). An econometrics analysis of the impact exchange rate on economic growth of Nigeria'. *%J African Journal of Economics and Development, Sustainable*, 4(3), 185–198. https://doi.org/10.52589/AJESD-EY7IWKD2

Dinh, D. V. (2020). Optimal Inflation Threshold and Economic Growth: Ordinal Regression Model Analysis'. *%J Journal of Asian Finance, Economics and Business*, 7(5), 91–102. https://doi.org/10.13106/jafeb.2020.vol7.no5.091

DorranceGraeme, S. (1966). Inflation and growth: The statistical evidence. *%J Staff Papers*, 13(1), 82–102. https://doi.org/10.2307/3866409

Eggoh, J. C., & Khan, M. (2014). On the nonlinear relationship between inflation and economic growth. *%J Research in Economics*, 68(2), 133–143. https://doi.org/10.1016/j.rie.2014.01.001

Ekinci, R., Tüzün, O., & Ceylan, F. (2020). The relationship between inflation and economic growth: Experiences of some inflation targeting countries. *%J Financial Studies*, 24(1 (87), 6–20.

Engle, R. F., & Yoo, B. S. (1987). Forecasting and testing in co-integrated systems. *%J Journal of Econometrics*, 35(1), 143–159. https://doi.org/10.1016/0304-4076(87)90085-6

Esen, O., et al. (2016), 'Inflation threshold effect on economic growth in Turkey', 7, 1983.

Fei, C. J., Siok, K. S., & Mohd, T. I. (2019). Threshold effects of inflation on economic growth: Evidence from dynamic panel threshold regression analysis for 18 developed economies.

Fischer, S. (1993). The role of macroeconomic factors in growth. *%J Journal of Monetary Economics*, 32(3), 485–512. https://doi.org/10.1016/0304-3932(93)90027-D

scher, S., & Modigliani, F. (1978). Towards an understanding of the real effects and costs of inflation. *%J Review of World Economics*, 114(4), 810–833. https://doi.org/10.1007/BF02696381

Friedman, M. (Ed.). (1971). The demand for money. In *A Theoretical Framework for Monetary Analysis (NBER)* p. 11–15.

Ganchev, G., & Todorov, I. (2021). Taxation, government spending and economic growth: The case of Bulgaria. *%J Journal of Tax Reform*, 7(3), 255–266.

Gebregergis, C. M., & Mekuria, A. G. (2016). *Do Prices Influence Economic Growth?* University Library of Munich.

Gokal, V., & Hanif, S. (2004). *Relationship between inflation and economic growth*. Economics Department, Reserve Bank of Fiji Suva).

Hansen, B. (1996). Inference when a nuisance parameter is not identified under the null hypothesis. *%J Econometrica: Journal of the Econometric Society*, 64(2), 413–430.

Hansen, B. E. (1999). Threshold effects in non-dynamic panels: Estimation, testing, and inference. *%J Journal of Econometrics*, 93(2), 345–368.

Ibarra, R., & Trupkin, D. R. (2016). Reexamining the relationship between inflation and growth: Do institutions matter in developing countries? *%J Economic Modelling*, 52, 332–351.

Jiranyakul, K., & Jiranyakul, K. (2017). Estimating the threshold level of inflation in Thailand. *Journal of Economics Bibliography*, 4(2), 150–155.

Karahan, Ö. (2020). Influence of exchange rate on the economic growth in the Turkish economy. *%J Financial Assets and Investing*, 11(1), 21–34.

Kelikume, I. (2018). An estimation of inflation threshold for Africa. *%J International Journal of Management, Economics and Sciences, Social*, 7(4), 283–300.

Khan, M. S., Senhadji, A. S., & Smith, B. D. (2001). 'Inflation and financial depth'. *%J Empirical Economics*, 44(2), 861–878.

Koyuncu, C., & Safa, Ü. (2020). 'The link between gdp and household consumption expenditures in the longrun in Turkey: ARDL Analysis. *%J Balkan Ve Near Eastern Journal of Social Sciences*, 6(1), 171–177.

Kremer, S., Bick, A., NautzDieter, & Nautz, D. (2013). Inflation and growth: New evidence from a dynamic panel threshold analysis. *%J Empirical Economics*, 44(2), 861–878.

Lily, J., & Mori, K. (2021). Asymmetric effect of real exchange rates and oil prices into inflation: empirical evidence in asean-5'. *International journal of business and economy*, 3(1), 60–74.

López-Villavicencio, A., & Mignon, V. (2011). On the impact of inflation on output growth: Does the level of inflation matter? *%J Journal of Macroeconomics*, 33(3), 455–464.

Mohammad Hoomani, F., Ghabel Najjar, S., & Mohammadpour, R. A. (2020). The Effect of inflation threshold on financial development and economic growth: A case study of D-8 Countries. *%J Iranian Economic Review*, 25(3), 465–475.

Mosikari, T. J., & Eita, J. H. (2018). Estimating threshold level of inflation in Swaziland: Inflation and growth.

Mubarik, Y. A., & Riazuddin, R. (2005). *Inflation and growth: An estimate of the threshold level of inflation in Pakistan*. Citeseer).

MukokaShame, & Mukoka, S. (2018). An econometric assessment of the impact of inflation on economic growth: A case study of Zimbabwe economy. *%J Economics*, 7(1), 17–22.

Muzaffar, A. T., & Junankar, P. N. (2014). Inflation–growth relationship in selected Asian developing countries: Evidence from panel data. *%J Journal of the Asia Pacific Economy*, 19(4), 604–628.

Nas, T. F., & Perry, M. J. (Eds.) (2018). Turkish inflation and real output growth: 1963-2000'. In *Inflation and disinflation in Turkey* (pp. 145–160).

Ndoricimpa, A. (2017). Threshold effects of inflation on economic growth in Africa: Evidence from a dynamic panel threshold regression approach. *%J African Development Bank Group, Working Paper*, 29(3), 249.

Nyoni, T., & Mutongi, C. (2019), 'Modeling the long-run relationship between inflation and economic growth in Zimbabwe: A bi-variate cointegration (Engle-Granger Two-Step) approach'.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *%J Journal of Applied Econometrics*, 16(3), 289–326.

Phillips, P. C., & Hansen, B. E. (1990). Statistical inference in instrumental variables regression with I (1) processes. *The Review of Economic Studies*, 57(1), 99–125.

Pokhrel, S., & Khadka, C. B. (2019), 'Assessment of Long and Short Run Relationship Amongst Macroeconomic Variables and Economic Growth of Nepal'.

Rapach, D. E. (2003). International evidence on the long-run impact of inflation. *%J Journal of Money, Credit and Banking*, 35(1), 23–48.

Rasyid, M., Kristina, A., & PurwantiPutu, A. P. (2021). Optimal Price Level Under Slowing Economic Performance Using Simple Growth-Inflation Threshold Models. *%J KnE, Social Sciences*.

Rutayisire, M. J. (2015), Threshold effects in the relationship between inflation and economic growth: Evidence from Rwanda (African Economic Research consortium).

Sidrauski, M. (1967). Inflation and economic growth. *%J Journal of Political Economy*, 75(6), 796–810.

Tarawalie, A. B., & Kamara, F. (2022). Inflation and growth nexus: An estimate of the threshold level of inflation in Sierra Leone. *%J Applied Economics, and Finance*, 9(2), 70–78.

Tenaw, D., & Demeke, H. (2020), 'Inflation threshold effects on growth in Ethiopia: Evidence from food and non-food sectors.

Thanh, S. D. (2015). Threshold effects of inflation on growth in the ASEAN-5 countries: A panel smooth transition regression approach. *%J Journal of Economics, Finance and Science administrative*, 20(38), 41–48.

Wai, U. T. (1959). The relation between inflation and economic development: A statistical inductive study. *%J Staff Papers*, 7(2), 302–317.

Watcher, S. (1976). *Latin American Inflation: The Structuralist Monetarist Debate* p. 409. Lexington books.