



The Impact of Inflation and Household Consumption in Nigeria

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Abstract

This research examines the relationship between Inflation and Household Consumption in Nigeria Using secondary data for the period 1990 - 2022. Estimation technique employed is the Auto Regressive Distributed Lag (ARDL) model. The results indicated a negative relationship between Inflation and Household Consumption in Nigeria. Inflation rate (INFL) has an estimated coefficient of -0.511835 with a P-Value of 0.0158 meaning that a unit increase in inflation rate will decrease Household Consumption growth rate by 0.51 unit and it is statistically significant at 5%, indicating that higher Inflation rates tend to reduce household consumption. The study recommends that policy makers should implement price control strategies to curtail inflation, government could focus on stabilizing prices through supply-side measures, such as increasing production and reducing supply chain bottlenecks. Interest rate should be lowered and policies be put in place for borrowing this will help stimulate household consumption.

1. Introduction

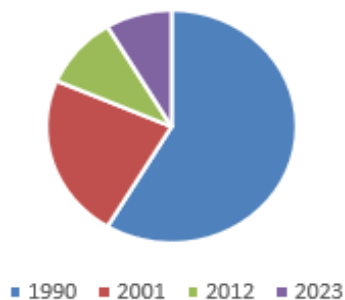
According to Milton Friedman (1994) inflation can be defines as a continuous rise in general price level of goods and services in an economy. Economic stability of country is a major challenge for all governments in the world. Government policy, national consumption rate, inflation, etc. have major impacts on the economy of a country. Considering such adverse impacts of inflation on the economy, there is a consensus among the world's central banks that

price stability should be the prime objective of monetary policy. The global rise in prices, particularly in food and energy, has significantly impacted economies worldwide. For instance, global inflation rates have surged, with the average annual inflation rate increasing from 2.4% in 2020 to 4.2% in 2022 (IMF,2023). The FAO food price index rose by 28% in 2021, reaching its highest level since 2011. (FAO, 2022). the average annual price of Bent crude oil

increased from \$42.3/barrel in 2020 to \$71.6/barrel in 2023 (EIA 2020). Governments have faced increased fiscal deficits, with the global average deficit rising from 3.3% of GDP in 2020 to 4.4 in 2023 (IMF, 2023). Consequently, the maintenance of price stability continues to be the overriding objective of monetary policy in Nigeria. The emphasis given to price stability in the conduct of monetary policy is with a view to promoting the purchasing power of the domestic currency, amongst others. The effect of inflation on consumer spending is both direct and indirect (Katona, 1975).

Household consumption expenditures generally account for 60% of the gross domestic product of the countries (National Bureau of Statistics 2023). household consumption expenditures include payments and fees made to all goods and services products, especially durable goods (Ichiue & Nishiguchi, 2015). There exists a Negative relationship between inflation and household consumption expenditures in Nigeria both in the short and the long term, Obinna (2020). Inflation can influence consumer spending in several ways (Borisov, 2022). The most straightforward explanation is that inflation has a negative impact on consumer confidence (Batrancea, 2021).

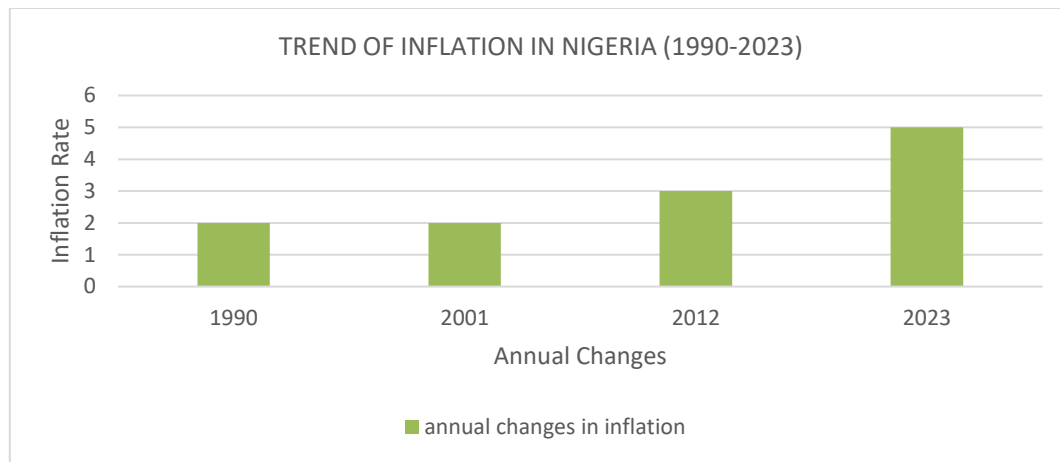
Trend of Household Consumption Expenditure(1990-2023)



Source: National Bureau of Statistics 2023.

In Nigeria, an attempt to carry out a study on the relationship between inflation and household consumption expenditure is a right step in right direction considering the fact that household consumption expenditure constitutes the largest component of total consumption expenditure and accounts for the more than 60% of the Gross Domestic Product, GDP. (National Bureau of Statistics 2023). Central bank Nigeria (CBN) Statistical bulletin 2024 revealed that annual inflation rate grew from 2.09% in 1990 to 12.88% in 2002 to about 14.03% in 2003 and further increase to 15% and 17.86% in 2004 and 2005 respectively before falling to 8.23% and 5.39% in 2006 and 2007 respectively. The inflation rate further rise to 11.58%, 12.54% and 13.74% and then increase to 12.22% in 2012. Decrease was experienced in 2013, 2014 to 8.5% and 8.05% respectively. The annual rate jumped up to 13.25% in 2020 and further increased to 16.95% and 18.85% in 2021 and 2022 respectively. The inflationary rate significant lose to 28.92% at the end of 2023 in Nigeria.

Despite great effort to empirically examining the impact of inflation on economic growth in Nigeria, very few studies to the best of our knowledge have attempted to examine the effect of inflation on household consumption expenditure. Therefore, in this study, we attempt to fill the gap by investigating the link between inflation and household consumption expenditure. Household consumption expenditure include the market value of all goods and services, plus durable products (such as cars, refrigerators, and television) purchased by households. (Bawa and Ibrahim 2016)



Sources: Central bank Nigeria (CBN) Statistical bulletin 2024.

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2. Literature review

The theory reviewed is Keynesian theory of inflation, this is because it lay emphasis on relationship between aggregate demand and inflation

2.1 Keynesian Theory of Inflation

Keynesian theory of inflation, rooted in the ideas of John Maynard Keynes, focuses on the relationship between aggregate demand and inflation. According to Keynesian economics, inflation is primarily driven by demand- pull factors, which occur when aggregate demand in

an economy outpaces aggregate supply. Keynesian theory of inflation emphasizes the role of aggregate demand in driving price levels and suggests that government policies can help manage inflation by influencing demand.

2.2 Theoretical Framework

In the Keynesian framework, the economy's output and price level are determined by the intersection of aggregate demand (AD) and aggregate supply (AS). Aggregate demand (AD) represents the total demand for goods and services in the economy at different price levels. It is composed of consumption, investment, government spending and net export. The aggregate supply (AS) represents the total output of goods and services that firms are willing and able to produce at different price levels. In the short run, AS is relatively elastic, but in the long run, it become inelastic as the economy reaches full employment. Demand pull inflation occurs when aggregate demand exceeds aggregate supply. This can happen due to increased consumer spending, higher investment by businesses, increased government expenditure, or rise in net export. As AD increases, it pushes the economy towards or beyond its full employment level of output. When demand exceeds the economy's capacity to produce,

prices begin to rise. According to Keynes, cost push inflation occurs when production cost increase, leading to a decrease in aggregate supply. This can result from rising wages, increased prices of raw materials, higher taxes on business, or supply chain disruption.

2.3 Empirical literature

Several studies have been carried out to examine the impact of inflation on economic growth with only a few examining the impact on private consumption. We explore the existing literature first on global perspective and on the Nigerian case.

2.3.1 Foreign Evidence

On global scene, Ibrahim and Muhammed (2023) examined the effects of inflation and production on household consumption in Poland for the 1980 – 2019 period. The study used the Autoregressive Distributed Lag boundary for its analysis. Household consumption is the dependent variable, and food production and inflation are used as independent variables. Result shows that food production in Poland negatively affected household consumption and this effect was statistically significant. However, it was concluded that inflation did not have a statistically significant effect on household consumption.

Weida and Peng (2012) assessed the impact of inflation on house prices in 35 major cities in China. The study developed four sector general equilibrium model of consumers, developers, firms and Central bank to illustrate the relationship of house prices with inflation. The study uses panel database of 35 major cities in China during the period of 1996 – 2010. The finding shows that the association between house prices and inflation is asymmetric.

Babalola et al. (2022) explored the impact of Inflation Rate on Private Consumption Expenditure and Economic Growth using the case of Ghana. The study used the Ordinary Least Square econometric method, the study

empirically assessed the impact of inflation on private consumption expenditure and economic growth between 1990 and 2020. The data were first analyzed using the Augmented Dickey-Fuller (ADF) test which indicates that all the variables of interest were stationary after their first differencing. The study found cointegration relationship between private consumption expenditure, inflation rate, interest rate and gross domestic product rate. The study shows that in the long run, INF has a negative significant effect on PconX, while INTR and GDPR have positive significant effects on PconX.

Alem and Soderbo (2022) examined household level consumption in urban Ethiopia: the impact of food price inflation and idiosyncratic shocks using panel data. The result of their study showed that household with low levels of assets was adversely affected by food price inflation. They also found out that households headed by casual workers were more vulnerable to food shock. Carrying out an econometric study on private consumption function in Lebanon. Using real factors rather than nominal variables and a data set covering the period 1975 to 2007 the study explored the main determinants of the real private consumption in Lebanon. The result of the study indicated that in the long run, real private consumption is affected by current disposable income, anticipated inflation and wealth.

2.3.2 Nigeria evidence

Sani and Adamu (2016) examined the dynamics of inflationary process in Nigeria over the period 1981 – 2015 using the bounds testing approach. The empirical results indicated that inflation in Nigeria proxied by CPI exhibited a strong degree of inertia. The econometric results showed that past inflation and average rainfall appeared to have been the main determinants of inflationary process in Nigeria over the study period.

Ogu et al (2018) analyzed the impact of inflation on economic growth in Nigeria, utilizing time series data sourced from CBN for the period

spanning from 1999 to 2017. The study has two objectives. To determine the impact of inflation on economic growth in Nigeria and to also determine the impact of interest on economic growth in Nigeria. The study adopts the Ordinary Least Square (OLS) regression technique and established that inflation has positive but not significant on economic growth in Nigeria. The result shows that interest rate has negative and significant effect on economic growth in Nigeria.

Gisaor (2020) investigated the impact of household consumption expenditure on the price level between 1970 and 2019 using annual time series data in an Autoregressive Distributed Lag model (ARDL) and other accompanied econometrics test. The result shows household consumption expenditure in Nigeria to be deficient just as excessive negative effects of interest rate and exchange rate on the price level was noticed.

Felicia et al (2021) examined the impact of unemployment, inflation and household's Consumption on economic growth for 1960 to 2018. OLS estimation technique was adopted. From the findings, unemployment, inflation and household's consumption impacted on economic growth in Nigeria.

Anidiobu et al (2018) examined the effects of inflation on economic growth in Nigeria covering the period 1986 to 2015, which were obtained from the Central Bank of Nigeria (CBN) statistical Bulletin of various issues.

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. The regression results shows that INFR had a positive and non- significant effect on economic growth (measured by RGDP) in Nigeria for the period studied.

Chimobi (2010) analyzed the relationship between inflation and economic growth using annual data for the period 1970 – 2005. The study found a non- integrating relationship between the two variables. Using Granger causality tests, however, the study established unidirectional causality running from inflation to economic growth.

3. Methodology

This section comprises the series econometric methods and techniques employed to carry out analysis on the impact of inflation on household consumption expenditure in Nigeria.

3.1 Data and Variables

The study used time series data from 1990 to 2022. This study relied essentially on secondary data from Central Bank of Nigeria (CBN) and statistical Bulletin 2024 edition. Below are brief explanations of variables.

Table 1: Explanation of variables

Variables	Type	Measurement/Definition	Data Source	
HCE	Dependent	market value of all goods and services expenditure growth rate	CBN	1990-2022
INF	Independent	Inflation rate (Measured by Consumer price index)	CBN	1990-2022
INT	Independent	Real effective exchange rate	CBN	1990-2022
GDPR	Independent	Gross Domestic Product Growth rate) (Economic Growth)	WDI	1990-2022

3.2 Model Specification

For us to estimate the impact of inflation on household consumption expenditure in Nigeria, the linear regression model based on the Ordinary Least Square (OLS) technique would be employed. Household consumption expenditure (HCE) served as the dependent variable while consumer price index a proxy for inflation rate (INF) served as the independent variable. In order to obtain robust estimates the study include interest rate (INT) and gross domestic product growth rate (GDPR) as related control variables. The general functional form of the linear regression model is stated below:

$$HCE = f(INF, INT, GDPR) \quad 1$$

where

HCE = Household consumption expenditure growth rate

INF = Inflation rate (Measured by Consumer price index)

INT = Interest rate.

GDPR = Gross Domestic Product Growth rate (Economic Growth)

The econometric form of equation (1) above is represented thus:

$$HCE = b_0 + b_1INF + b_2INT + b_3GDPR + e \quad 2$$

where b_0 = Intercept of relationship in the model/ constant; $b_2 - b_3$ = coefficient of each independent or explanatory variables; e = stochastic Error term.

Table 1, shows the summary of a descriptive statistics test the variables of interest such as; HCGR, GDPR, INFL and INTR has mean values of 6.503030, 4.288485, 10.14746 and 7.671818 respectively within the study period. The mean values indicate the average levels of each variable, with GDP growth rate (GDPR) averaging around 4.29% which the lowest, while the inflation rate (INFL) is notably higher at 10.15%. The standard deviations highlight the variability in the data, with inflation and GDP growth showing substantial fluctuations. The Jarque-Bera test results and corresponding p-values indicate that GDPR and inflation significantly deviate from a normal distribution, whereas the interest rate is closer to normality but still shows some deviation

Table 2. Descriptive statistics

	HCGR	GDPR	INFL	INTR
Mean	6.503030	4.288485	10.14746	7.671818
Median	3.600000	4.230000	0.157000	11.50000
Maximum	57.90000	15.33000	72.84000	24.85000
Minimum	-14.00000	-2.040000	0.053900	-31.50000
Std. Dev.	14.61184	3.958651	19.45984	12.18254
Skewness	1.556264	0.465021	2.070181	-1.313675
Kurtosis	6.223520	3.389201	6.051209	4.717061
Jarque-Bera	27.60850	1.397625	36.37215	13.54550
Probability	0.000001	0.497175	0.000000	0.001145
Sum	214.6000	141.5200	334.8661	253.1700
Sum Sq. Dev.	6832.190	501.4694	12117.93	4749.254
Observations	33	33	33	33

Source: Authors' computation using E-views 9

The result of ADF unit root test above showed that the entire variables (i.e. Household Consumption Growth Rate, Gross Domestic Product Growth Rate and Inflation) except interest rate was stationary at levels, while

interest rate was stationary at first difference. As such, the appropriate estimation technique to be employed is the Auto Regressive Distributed Lag (ARDL) Model,

Table 3. The ARDL Regression Result

Dependent Variable: HCGR = Household Consumption Growth Rate

Coiteq = HCGR - (3.0130*GDPR -0.5118*INFL -1.1797*INTR + 8.3162)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPR	3.013030	0.931594	3.234274	0.0056
INFL	-0.511835	0.188228	-2.719234	0.0158
INTR	-1.179719	0.497254	-2.372466	0.0315
C	8.316231	2.616472	3.178414	0.0062
R-squared	0.843619	Mean dependent var		4.173548
Adjusted R-squared	0.765429	S.D. dependent var		3.783755
Log likelihood	-55.97141	Hannan-Quinn criter.		4.486603
F-statistic	10.78931	Durbin-Watson stat		2.188983
Prob(F-statistic)	0.000005			

Source: Author's computation using

From the ARDL Model above, the r^2 of 84% suggest that the independent variables explained about 84% variation in the dependent variable, while the remaining 16% may be attributed to variables not included in the model. The result further revealed that all the independent variables significantly impacted Household consumption growth rate in Nigeria.

Based on the long run model, GDPR has an estimated coefficient of 3.013030 and a probability value of 0.0056, which implies that a unit increase in Gross Domestic Product Growth Rate (GDPR) will lead to 3.01 unit increase in Household Consumption Growth Rate (HCGR) and it is statistically significant of 5%. Inflation rate (INFL) has an estimated coefficient of -0.511835 with a P-Value of 0.0158 meaning that a unit increase in inflation rate will decrease Household consumption

growth rate by 0.51 unit and it is statistically significant at 5%. Lastly Interest rate (INTR) coefficient stood at -1.179719 with a P-Value of 0.0315, implying that a unit increase in interest rate will lead to 1.17 unit decrease in house hold consumption growth and it is also statistically significant at 5%. Durbin-Watson statistic of 2.1 showed that the model is free from auto correlation. The prob. f-stat. of 0.005 suggested that the overall model was a good fit, even at 1% and 5% significant level.

4. Discussion of Result

The results of the regression analysis presented indicate that the growth rate of household consumption in Nigeria is influenced by several macroeconomic variables: GDP growth rate (GDPR), inflation rate (INFL), and interest rate (INTR). The coefficients suggest the sensitivity

of household consumption to these variables. The positive coefficient of GDPR (3.013030) with a significant p-value (0.0056) indicates that as the economy grows, household consumption tends to increase. This study aligns with economic theories and the findings of Ogunleye (2015), Akinlo & Adejumo (2013) and Osinubi (2002). They attribute the positive relationship between GDP growth rate and Household consumption to increased economic opportunities and higher income levels during periods of economic growth.

On the other hand, the inflation rate (INFL) has a negative coefficient (-0.511835) with a significant p-value (0.0158), indicating that higher inflation rates tend to reduce household consumption. This result agrees with the findings of Akinbobola (2012), Olajide, Ogunrinola, and Osabuohien (2012) and Dauda, Akinyemi, and Ogunleye (2013), who found out that inflation erodes the purchasing power of households, leading to a decrease in real consumption. The negative impact of inflation on household consumption can also be linked to uncertainties and the rising cost of living, which discourage spending.

Moreso, interest rate (INTR) showed a significant negative impact on household consumption, with a coefficient of -1.179719 and a p-value of 0.0315. This suggests that higher interest rates may lead to reduced household consumption as borrowing costs increase, this study is similar to the findings of Odior (2013), Maku (2015) and Adegboye et al. (2017), who all asserted that households tend to reduce their consumption in the face of high interest rate as cost of credit makes it more expensive to finance consumption.

5. Conclusion/Recommendations

Based on the regression result the study concludes that GDP growth rate increases household consumption. Also, higher inflation and interest rates reduces household consumption, likely due to the increased cost of

living and borrowing. Hence the study recommends that policymakers should implement strategies to sustain and enhance economic growth. Furthermore, to curtail inflation, government could focus on stabilizing prices through supply-side measures, such as increasing production and reducing supply chain bottlenecks. And lastly, interest rate should be lowered and policies implemented to make borrowing accessible as this will help stimulate household consumption.

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