POLAC ECONOMIC REVIEW (PER)
DEPARTMENT OF ECONOMICS
NIGERIA POLICE ACADEMY, WUDIL-KANO

EFFECTS OF MONETARY POLICY ON HOUSEHOLD CONSUMPTION EXPENDITURE IN NIGERIA

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Abstract

The study examines the impact of monetary policy on household consumption expenditure within the Nigerian context using data spanning the period 1981-2019Household consumption expenditure was regressed against interest rate (INT), exchange rate (EXCHR), broad money supply (BMS2), and monetary policy rate (MPR). Data was sourced from the annual publication of the Central Bank of Nigeria for 2019. The work deployed ordinary least squares (OLS) as its major analytical technique. The result showed that an increase in broad money supply values over the period led to a corresponding rise in household consumption expenditure. Conversely, exchange rate showed a negative relationship with household consumption expenditure, and interest rate exhibited a negative effect, predicting a 4.24% decrease in household consumption expenditure over time with an increase in interest rate values. The study recommends an increase in the quantity of broad money in circulation, setting a moderate exchange rate by the government through the Central Bank of Nigeria to stimulate household consumption expenditures, an ensuring effective management of interest rate volatility by monetary authorities in Nigeria. The study concludes that monetary policies remain integral to the economic backbone, influencing household welfare performance in the nation.

Key words: Household Consumption, Expenditure, Interest Rate, Exchange Rate, Broad Money Supply, Monetary Policy Rate

1. Introduction

The Nigerian economy has grappled with a myriad of challenges persistently over the years. Despite the implementation of numerous and frequently changing fiscal, monetary, and other macroeconomic policies, Nigeria has struggled to fully tap into its economic potentials for rapid development (Ogbole, 2010). Adeoye (2016) underscores the inconclusive nature of the debate surrounding the effectiveness of fiscal policy as a tool for fostering growth and development, citing conflicting results from current studies.

The pursuit of macroeconomic goals, including full employment, price level stability, sustainable household consumption expenditure, and external balance, has been a longstanding policy priority for economies worldwide, whether developed or developing (Akannian & Osinowo, 2013). The realization of these goals necessitates intentional policy guidance, encapsulating the overarching objective of economic policy.

Individual spending habits are intricately influenced by a complex set of interrelated factors such as age, sex, family size, and current income. However, if an individual's current income is subject to various windfalls, their consumption pattern becomes more closely aligned with long-range circumstances than immediate income. In such cases, there may be a need to redefine the entire concept of income for predicting consumption and savings behavior (Dernburg & McDougall, 2016). On an aggregate level, household behavior mirrors national trends in income, illustrating the functioning of the overall economy and manifesting as national consumption trends. Understanding consumption behavior is crucial for deciphering both short-term

business cycles and long-term household consumption expenditure (Samuelson & ordhaus, 2014).

Furthermore, the objectives of monetary policy extend to maintaining relative stability in domestic prices, achieving a high rate of full employment, and fostering a high, rapid, and sustainable household consumption expenditure. Despite the scarcity of empirical studies confirming the relationship between monetary policy and household consumption expenditure trends in the country over time, studies such as Ufoeze, Odimgbe, Ezeabalisi, and Alajekwu (2018) and Abdulazeez (2019) have linked monetary policy instruments to economic growth. This study endeavors to shed light on monetary policy in the context of household consumption expenditure trends in Nigeria, establishing the interlink between the monetary policy rate and consumption expenditure, as well as examining the relationship between broad money supply and household consumption expenditure.

2 Literature Review

2.1 Conceptual Issues

Monetary Policy and Consumption Expenditure

Monetary policy constitutes the intentional deployment of monetary instruments, direct and indirect, wielded by monetary authorities, typically central banks. Its primary objective is to attain macroeconomic stability, serving as a pivotal tool for executing the mandate of ensuring monetary and price stability (Dwivedi, 2015). This strategic program of action, executed by monetary authorities, predominantly central banks, aims to regulate and control the supply of money within the public domain and the flow of credit. The ultimate goal is to achieve predetermined macroeconomic objectives.

Essentially, monetary policy operates as a mechanism for managing money supply in a nation's economy, a key function undertaken by monetary authorities to foster desirable economic growth. Governments engage in this control mechanism due to the belief that the rate of money supply growth exerts influence on inflation rates. Consequently, monetary policy encompasses government actions crafted to shape the behavior of the monetary sector. Its efficacy becomes apparent in economies characterized by well-developed money and financial markets, particularly observed in advanced economies globally, where intentional adjustments to monetary variables trigger cascading effects on various other elements within the monetary sector (Hall, 2015)

Shifting focus to consumption expenditure, it pertains to the market prices of all goods and services acquired by households to fulfill their needs and desires, encompassing both food and non-food expenditures. In the context of a developing country like Nigeria, households allocate over 60 percent of their spending on food items and approximately 40 percent on non-food items, which may include expenses related to education and medical care (Yakubuan & bbas, 2012).

According to Chigbu and Ajudua (2015), the examination of consumption behavior assumes a central role in both macroeconomics and microeconomics. Macro-economists are particularly intrigued by aggregate consumption for two primary reasons. Firstly, aggregate consumption determines aggregate saving, as the portion of income not consumed flows through the financial system, contributing to the national supply of capital. Consequently, the aggregate consumption and saving behavior wield a potent influence on the long-term productive capacity of the economy.

Monetary Policy Rate and Household Consumption Expenditure

The broad objective of central bank monetary policies in Nigeria has been the stability of general price level and achievements of spelt out economic objectives over time, however in Nigeria, these objectives are often overwhelmed by inflation and currency devaluation, while the general public remains at the receiving ends of rising gas and fuel prices. To review the relationship between monetary policy rate and household consumption expenditure in Nigeria, the graphical trend capturing the movement of MRP and household consumption expenditure is presented below;

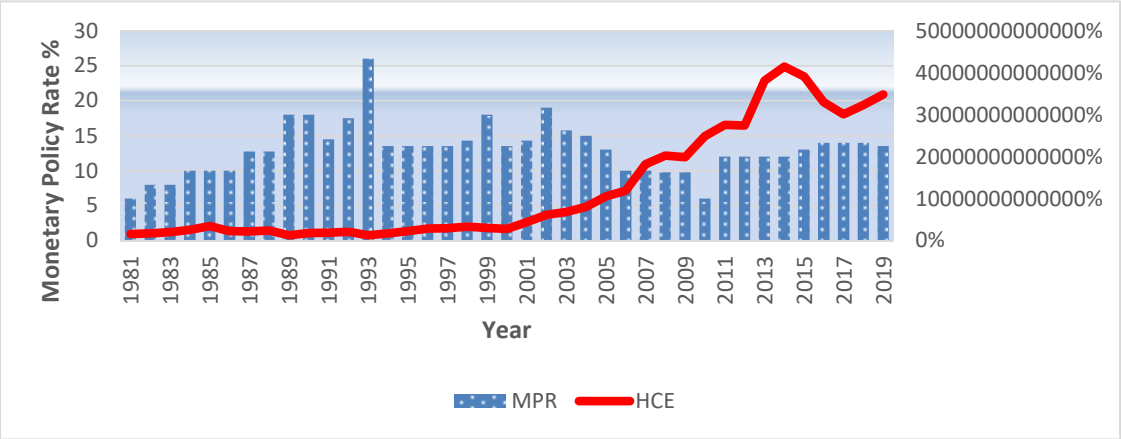

Figure 1: Monetary policy and Household consumption expenditure.
Source; Central Bank of Nigeria (CBN) 2024

The graphical representation above depicts the movement of monetary policy trend in Nigeria from 1981 through 2019, with the bar plots capturing movement in household consumption expenditure trend for the same duration, while the trend line shows the movement of monetary policy rate in the country for the study period. Vividly we see an inverse relationship between household consumption expenditure and monetary policy as displayed above, we notice from 1981 through 2005 when the apex bank maintained relatively low monetary policy rate, this policy movement improved the available income to households and improved their consumption expenditure for the same period.

More practically, we notice that in, 1981 when money policy rate was 6%, household consumption expenditure stood at 161746660000000. A slight increase from 6% to 8% in monetary policy rate resulted in household spending more on consumption, following the upward review of consumption expenditure from 1617466000000 in 1981 to 1763499000000 the following year. the trend clearly shows, increasing MPR was always met with more proportionate increase in household consumption expenditure in the country over time. This finding aligns with the study carried out by Krishnamur and Jorgensen (2011) who investigated the effects of monetary policy on real activity through monetary credit channels and obtained a strong evidence that conventional and unconventional policies directly impact borrowing costs for businesses and households through changes in corporate bond yields and mortgage rates. This supports the transmission channel where higher interest rates lead to reduced borrowing and consumption.

Also, the study by Federal Reserve Board (2022) on Financial Stability Considerations for Monetary Policy: "Empirical Evidence and Challenges" While focusing on various aspects, it acknowledges the evidence that shows lower interest rates encourage increased leverage at highly levered banks, potentially raising financial stability concerns. This empirical background strongly suggest that increased monetary policy rate in Nigeria have always translated to increased household consumption expenditure.

Money Supply and Household Consumption Expenditure

While the relationship between monetary policy rate and household consumption expenditure does not literally indicate a positive relationship over the years in Nigeria, but the effect of increased money supply on household consumption expenditure shows a positive trend as clearly indicated on the trend below.

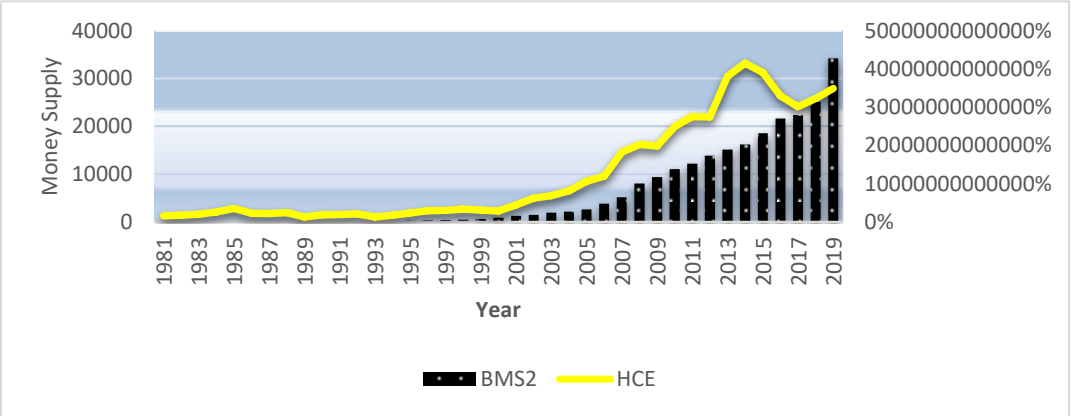

Figure 2: Money supply and Household consumption expenditure.

Source; authors compilation 2024

The graphical representations above show the relationship between broad money supply and increased household consumption expenditure over the last three decades in Nigeria. The bar represents household consumption expenditure, while the trend line shows the movement of broad money supply in the country for the same duration of empirical considerations. Graphically, in Nigeria, increased money supply implied increased household consumption expenditure over time; this trend clearly aligns with economic principles which expect increased money supeply to induce inflation and thereby negatively impact on house hold consumption expenditure. According to Cardenas and Zelner (2003), there is a negative relationship between inflation (driven by money supply) and consumption in Latin American countries, but acknowledged its dependence on economic circumstances. Also, Bordo andFilson (2003) who analyzed historical data from the US and identified periods where increased money supply led to higher inflation and reduced consumption.

2.2 Theoretical Literature

The Keynesian theory is rooted on one notion of price rigidity and possibility of an economy setting at a less than full employment level of output, income and employment, this model assumes a close economy and a perfect competitive market with fairly price- interest aggregate supply function (Onyiewu, 2013). From the Keynesian mechanism, fiscal and monetary policy works by influencing interest rate, taxes which influences standard of living through investment decision and consequently, output and income and the multiples process (Amacher & lbrich, 1989).

In the Keynesian theory, fiscal and monetary policy plays a crucial role in affecting economic activity, it contends that the change in the supply of money can permanently change such variables as the rate of interest, the aggregate demand and the level of employment, output and income (Jelilov, Gylych; Onder, Evren,2016). Keynes believe in the existence of unemployment equilibrium, this implies that an increase in money supply can bring about permanent increases in the level of output and as well the ultimate influence of money supply on the price level depends upon its influence on aggregate demand and the elasticity of the supply of aggregate output (Jhingan, 2010).

2.3 Empirical Literature

According to Onwumere (2005) a research design is kind of blue print that guides the researcher in his/her investigation and analysis. It is a format in which the researcher employs in order to systematically apply the scientific method in the investigation of problem. The researcher designed employed in this research is the ex-post facto research design. The Keynesian IS-LM function serves as a platform on which the

empirical model is formulated as follows. Following McCallum (1991), equation (1). Is then derived

HCE = f(BMS2, EXCHR, INT, MPR) …(eq1)

Monetary policy rate (MPR): MPR is the **interest rate** at which CBN lends to the commercial banks. The MPR is the benchmark against which other lending **rates** in the economy are pegged and is usually used as an instrument to moderate inflation in the economy

i. Money supply: This is the money supply is the total value of money available in an economy at a point of time. There are several ways to define "money", but standard measures usually include currency in circulation and demand deposits

ii. Interest rate: Interest rate is the amount a lender charges for the use of assets expressed as a percentage of the principal. The interest rate is typically noted on an annual basis known as the annual percentage rate (APR).

iii. Household Consumption Expenditure*:* Household consumption is the spending by a household on goods and services to satisfy their needs and wants. It encompasses everything from essential items like food and housing to discretionary purchases like entertainment and travel.

iv. Exchange rate: An exchange rate is the relative price of one currency to another. In simpler terms, it's the rate at which you can exchange one currency for another.

Obinna (2020) studied the effect of inflation on household final consumption, using the OLS estimation method found out that there is a positive, significant, and long-run relationship between inflation and household consumption therefore he recommended that should reduce the adverse effect of inflation on private

In another study Ihugba, Metu, Ezenekwe (2021), examined the effect of expansionary monetary policy on Nigeria household consumption for the period spanning 1981-2019. Their instrument of analysis was the vector autoregressive technique and the Error correction model. They found out that money supply impacts positively on household consumption hence they recommended that for Government use money supply to control household consumption, there is need to ensure price stability in the economy at all times.

In a similar study, Usman (2022) investigated the effect of Government final consumption expenditure and financial deepening on households, non-profit institutions, etc spanning the period 1981-2019 using the vector error correction model. He found a positive relationship between government final consumption expenditure and household consumption expenditure which implied that increased Government expenditure and credit to investment will result in increased household consumption as this is an indication of improved standared of living and welfare in the economy.

Onwe, Metu, Obi, Benedict, and Kelechi (2023) examined the impact of monetary policy on household consumption expenditure I Nigeria using the ARDL model for the period 1981-2021. Their findings showed that interest rate, money supply, treasury bills, reserve requirement and inflation all had significant positive impacts on consumption expenditure.. They recommended that monetary authority should use policy instruments to influence consumption in the desired direction

Alynkulova and Ohaegbu (2023) in their own study studied how interest rate and. Exchange rate and output growth in Nigeria responds to monetary shocks. Using the VAR model, they found out that monetary shocks were significant in determining output growth and hence consumption in the Nigerian economy.

A close look at recent studies in the Nigerian economy shows that researchers tend to agree that monetary policy variable affect the consumption pattern in the economy. This study sets out to examine the relationship between money supply and household consumption expenditure.

3. Methodology

This study focused on analyzing the impact of monetary policy on household consumption expenditure in Nigeria, The period under study spans

between 1981 and 2019. Data needed for the study were sourced from the Central bank of Nigeria (CBN) statistical bulletins and the National bureau of statistics (NBS). The Augmented Dickey-fuller test was used to determine the stationarity of the data. To determine whether there is a long- run relationship among the variables, the Error correction model was deployed. The variables were then subjected to a multiple regression analysis using the OLS method to determine the nature of relationship existing among the variables

4. Results and Discussion

4.1 Stationarity Test Result

Augmented dickey and fuller test criterion was used to assess the presence of unit root in the statistical properties of individual variables in the model for the period of this investigation.

Table 1: Unit Root Result

Variable	ADF Test Statistic at Level Form	Critical Values @ 5%	ADF Test Statistic at First Difference Form	Critical Values @ 5%	ADF Test Statistic at Second Difference Form	Critical Values @ 5%	Prob**	Order of Integration
BMS2	7.556034	-1.952910	3.469587	-1.953381	-7.867160	-3.587527	0.0000	1(2)
EXCHR	4.231067	-1.949856	-4.803603	-3.536601	********	*******	0.0023	1(1)
HCE	-5.253906	-3.568379	********	********	********	*******	0.0010	1(0)
INT	-0.718215	-1.949856	-5.320362	-3.540328	********	*******	0.0006	1(1)

Source: E-views 10

A unit root test for stationarity was employed to scrutinize the viability of individual variables within the model by examining the absence of a unit root in their respective statistical properties during the investigative period. The statistical outcomes substantiate that the coefficient for broad money supply (BMS2) achieved stationarity only subsequent to the application of the second difference, incorporating a determistic trend and intercept in the equation line. This conclusion is drawn from the attainment of statistically significant probability values of 0.00000%, coupled with the observation that our trace statistics surpass the critical values at the 0.05% level of significance.

The exchange rate, on the other hand, attained stationarity without a unit root at the first difference, accompanied by a probability value of 0.0023%. Examining household consumption expenditure over the study period, positive probability values were observed, reinforcing the absence of a unit root at the level, with satisfactory probability values of 0.0010%.

Interest rate demonstrated stationarity subsequent to the first difference in the regression line, registering a probability value of 0.0006%. Simultaneously, the coefficient for monetary policy rate during the period achieved statistical stationarity at various levels, evident from the probability values of 0.0156%. Consequently, we proceed to evaluate the nature of relationships among the variables meticulously incorporated in the analysis.

4.2 Cointegration Test Result

Table 2: Test of Long Relationship (Johansen Test Criterion

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical. V	Prob.**
None *	0.675208	85.89245	69.81889	0.0015
most 1	0.564413	44.28333	47.85613	0.1042
At most 2	0.212394	13.53410	29.79707	0.8657
At most 3	0.114430	4.700071	15.49471	0.8398
At most 4	0.005490	0.203695	3.841466	0.6518

Source: E-views 10

The result of johansen test of long run association ship in the model estimate shows the presence of a long run relation among the variables in the regression line at the trace statistics values of 85.89245 being greater than the critical values at 47.85613 with a corresponding probability values of 0.0015%,

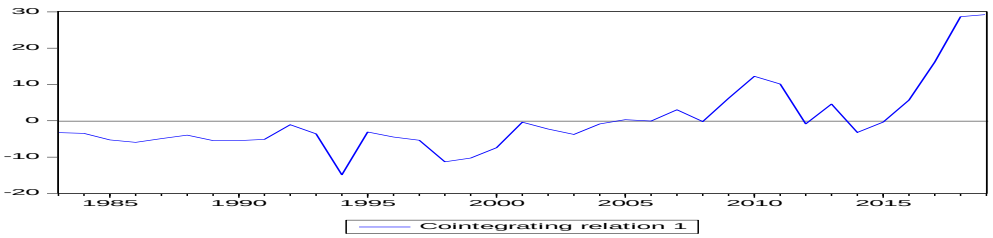

Figure 3: Trend analysis

The visual evidence presented above elucidates the intricate relationship between the two cointegrating equations within the regression line. The visual representation serves as compelling evidence, shedding light on the trend association between the two distinct trend lines. A discernible pattern emerges, showcasing instances where the trend lines intersect in a series of occasions, as vividly illustrated in the accompanying diagram.

This convergence of trend lines serves as a robust validation, affirming the existence of a cointegrating long-run relationship among the variables encapsulated in the model estimate for the entire duration of this investigative period. The recurring intersections underscore the sustained and interconnected nature of these variables over time, further solidifying the foundation of the cointegrating relationship under scrutiny.

4.3Error Correction Estimate (VECM Criterion)

To ascertain the speed of adjustment back to short run in an event of a long run relationship among the series, vector error correction model is used.

Table 3: Error Correction Estimate

	Coefficient	Std. Error	t-Statistic	Prob.
ECM(-1)	-0.026299	0.127534	-0.206210	0.8384

The value of error correction coefficient is negative, which is desirable. The system provides that in an event of long run disequilibrium, the speed of adjustment back to short is 30.53% per annum. It therefore implies that the system self-adjust back to short run 30.53% times per annum back to short run equilibrium

Table 4: Regression result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	**9.28E+10**	**3.29E+10**	**2.821623**	**0.0079**
BMS2	**13237585**	**2581242.**	**5.128379**	**0.0000**
EXCHR	**-23004400**	**2.45E+08**	**-0.093887**	**0.9257**
INT	**-4.24E+09**	**3.19E+09**	**-1.326619**	**0.1935**
MPR	**3.17E+08**	**3.90E+09**	**0.081245**	**0.9357**

R-squared 0.855910, Adjusted R-squared 0.838958F-statistic50.49082, Prob(F-statistic) 0.000000
Source:E-views 10

$$HCE = 13.24BMS2 - 23EXCHR - 4.2INT + 3.17MPR$$

The classical multiple regression results above illustrate the relationship between monetary policy indicators and household consumption expenditure in Nigeria during the study duration. The findings reveal that Nigeria maintains an active consumption-oriented stance, driven by a rapid population explosion. The study indicates that with the continued maintenance of the monetary structure for the specified period, consumer behavior remains positively and significantly oriented. Consequently, for the study period, ensuring the maintenance of broad money supply, exchange rate stability, interest rate control, and a stable monetary policy rate would lead to an average household consumption expenditure of 9.28% of their respective incomes.

The position of broad money supply in the regression aligns seamlessly with the empirical assertions of Chen, Kashyap, and Levison (2015) and Cochrane (2013) identified a positive linkage between broad money supply and consumption expenditure. The study reinforces this by revealing a significant positive relationship between broad money supply and household consumption expenditure in Nigeria. Specifically, an increase in broad money supply by one significant percent would result in a 13.23% rise in household consumption expenditure. However, it is crucial to acknowledge the potential adverse effect of inflation, as increasing the quantity of money is known to correlate with an increased inflationary trend (Ejelonu & Mgbemena, 2023).

The exchange rate also exhibits a negative relationship with household consumption, which is economically plausible in a country where most consumer-related goods and services are imported. A decline in the value of USD would appreciate the volume of imported goods, positively impacting the supply side and leading to a decrease in general prices of goods and services in adherence to economic demand and supply principles (Alamba & Ejelonu, 2023). These findings align with results obtained by Muhammad, Shahbaz, and Irfan (2015), who found a negative association between exchange rate and real consumption in selected Asian countries.

Interest rate shows a negative deductive association with household consumption expenditure over time. Increasing the interest rate charged by commercial banks on loans would correspond to a 4.24% decline in household consumption expenditure over the same period. This pattern is reflective of the Nigerian experience, where high-interest rates imposed by commercial banks hinder individuals' access to capital for businesses. This result is supported by Andrea Annicchiarico, Francesco, and Alessandro (2023), who examined the effect of interest rate changes on consumption and found a negative impact on consumption expenditure.

The coefficient of determination further

substantiates these findings, indicating that 83.89% of variations or changes in household consumption expenditure are influenced or caused by the regressors in the model. The model remains significantly fit, as evidenced by F-statistics probability values of 0.00%.

3.5 Stability Test

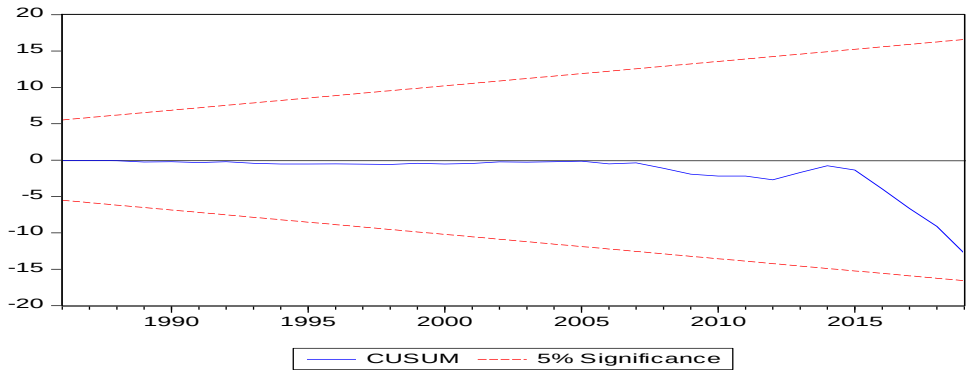

Figure 4: CUSUM Stability Test
Source; Author's computation

Recursive Cusum test at 0.05% level of significance for the study period shows that, the trend line stayed within the boundary meaning that the model is statistically stable.

5. Conclusion and Recommendations

The study embarked on a direct mission to forge a tangible connection between monetary policy tools and household consumption expenditure in Nigeria during the scrutinized period. The outcomes unravel a profound understanding, as the Jarque-Bera statistics, reflected in the probability values, unveil the nuanced distributions inherent among the variables meticulously employed in constructing the regression line.

Empirically and visually, the statistical tapestry of broad money supply in the model emerges as a testament to normal distribution throughout the examined period, with a strikingly low probability value of 0.000073%. Delving deeper into the findings, compelling narrative shows that augmenting the values of broad money supply during this time frame corresponds to a concurrent escalation in household consumption expenditure, underscoring a positive correlation. However, the intricate dance of variables continues as the exchange rate reveals a contrary tale, exhibiting a negative relationship with household consumption expenditure in the country. Moreover, the interest rate wields a suppressive effect on household consumption expenditure, with an increase in interest rate values during the period forecasted to yield a consequential 4.24% decrease in household consumption expenditure over time.

These revelations beckon thoughtful policy considerations, advocating for the formulation of an economic framework that vigilantly monitors monetary aggregates. The imperative lies in maintaining exchange rate stability, judiciously regulating the quantity of money in circulation within Nigeria. Such measures are envisioned not only to curb inflationary trends but also to bolster consumption by fortifying the purchasing power of the Naira over time. In essence, these findings illuminate a roadmap for policy interventions geared towards fostering economic stability and sustained growth in Nigeria.

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