

Interest Rate Channel and Household Consumption: Evidence from the West African Monetary Zone

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ABSTRACT

In order to achieve macroeconomic stability, monetary authorities in the West African Monetary Zone (WAMZ) adopted an inflation targeting framework. The policy was facilitated by various monetary stability and control measures. The outcome of the policy effort was not significantly felt by the economies because the concentration was majorly on improving aggregate output with little or no attention to its important components such as household consumption. Thus, this study examines the effect of interest rate channel on household consumption in the WAMZ from 1986 to 2021. Based on the unit root results, the study employed the panel autoregressive distributed lags approach for regression analysis. And found that interest rate channel has no significant effect on household consumption expenditure in the short-run. But in the long-run, the interest rate channel significantly affected household consumption expenditure in the West African Monetary Zone. Therefore, the study concluded that in the long-run, the interest rate channel through nominal lending and deposit rates significantly affected household consumption in the Zone. In view of our findings, some policy implications were made to guide both the government and the monetary authorities in the Zone.

KEYWORDS: *household consumption, interest rate channel, Panel Autoregressive Distributed Lag, West African Monetary Zone.*

JEL CLASSIFICATION: *E21, E52, C33, F45.*

1. INTRODUCTION

In most economies of the world, including the West African Monetary Zone (WAMZ), household spending is a major component of the gross domestic product (GDP). Furthermore, the economic literature recognises that household spending is one of the primary drivers of aggregate economic activities, since it makes a significant contribution to aggregate demand (Iheonu & Tochukwu, 2020). In West Africa, household consumption accounts for at least 60% of GDP on the average (UNCTD (2020)). This is an affirmation that household consumption is a major contributor to aggregate output in the WAMZ economies. Household consumption can be met through the individual's respective incomes. This has been established in basic theories of consumption. However, if income is inadequate to meet consumption needs, individuals and household may borrow to argument their respective incomes. The importance of improved consumerism as an aid to economic growth potential and the need to determine how nominal interest rate affects improvement in consumerism is one of the major motivations of the study. In other to affirm the effect of changes in the bank

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retail rates on household consumption in the West African Monetary Zone (Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone), the main aim of the study is to examine how consumption expenditure responds to nominal interest rate channel in the Zone. Other subsidiary objective is to determine the short-run and long-run relationship of nominal interest channel and household consumption in the Zone. Due to the importance of consumption expenditure to the economic growth process in WAMZ economies, policy measures aimed at promoting its expansion are crucial for achieving stable domestic prices, attaining improvement in youth employment, and sustaining growth. Through other monetary transmission channels such as exchange rate channel, credit channel, equity prices channel, and expectation channel, monetary policy influences macroeconomic aggregates (Mishkin, 1996). However, the interest rate channel is an important transmission route, as bank credit is one of the major sources of consumer credit for households. But the effects of the cost of obtaining credit and the drive to improve savings with commercial banks if deposit rates rise have not been accorded the in-depth research efforts in spite of the importance of household consumption to the aggregate gross domestic product potential in the Zone.

Research efforts on how household consumption respond to the interest rate channel in the WAMZ are very terse despite its importance on growth prospects. In other words, studies on how interest rate affects consumption have been scarcely conducted in the Zone. For example, in Nigeria, Mukhtar et al. (2020) found that interest rate affected consumption. Manasseh et al. (2018) investigated the effect of interest and inflation rates on private consumption. The study also found that amongst other aggregate variables interest rate affected private consumption. Osei-Fosu et al. (2014) found a short-run relationship between deposit rate and household consumption. A recent study in Sierra Leone by Abraham et al. (2023) emphasised the effect of interest rate channel on retail interest rates. The study did not consider household expenditures.

Therefore, due to the scarce literature, it is important to augment the research efforts on how nominal interest rate channel affects consumption in the WAMZ for policy guide, if the economic growth stimulating impact is to be enhanced through household consumption in the Zone. This study fills the research gap by investigating how the interest rate channel affects household consumption in the West African Monetary Zone in both the long and short term periods. The rest of the paper is arranged as follows. Section two presents the literature review while section three focuses on methodology. Section four presents the results and discusses the empirical findings, while conclusion is drawn with policy implications in section five.

2. LITERATURE REVIEW

Irving Fisher (1930) used the inter-temporal budget constraint consumer choice model in his book "Theory of Interest", which examined the theoretical relationship between consumption and interest rate. Irving Fisher's model demonstrated on how rational forward-looking consumers chose consumption for the present and future to optimise their lifetime satisfaction, in contrast to Keynes (1936), who linked consumption to current income. According to Fisher, since a consumer might borrow money between two periods, the interest rate can affect consumption in a two-period scenario (current and future horizon) (Hall, 1988). The New Keynesian perspectives, grounded on the model with nominal rigidities, argue that the nominal interest rate influences current consumption more than future consumption against the backdrop of Fisher's perspective (Cloyne et al., 2020). According to this theory, the slope of the consumption profile is changed by changes in short-term nominal interest

rates, so that lower interest rate leads to more current consumption than future consumption (Cloyne et al., 2020).

However, a correlation between consumption and household income was confirmed after Irving Fisher's hypothesis, which was spearheaded by Keynes in 1936. Keynes (1936) proposed the absolute income hypothesis, which holds that income is the primary factor influencing consumption expenditure. The hypothesis expresses the relationship between current consumption and current disposable income. Duesenberry (1949) introduced the theory of relative income. He emphasised that since consumption is based on relative income, the income of nearby households has a significant impact on consumption spending. Milton Friedman (1957), the proponent of Permanent Income Hypothesis contends that a consumer's purchasing habits at a certain time frame are influenced by both their income during that time frame and their expectations for future income. He separated income and consumption into two categories as a result: permanent and transient components. Ando and Modigliani (1963) used the life-cycle hypothesis, which proposed that people make judgments about their consumption based on their lifetime savings. And the sources of savings are from their financial wealth, real capital, and human capital as well as current income, respectively. The linkage between human capital and consumption unlike other sources of savings posited by life cycle hypothesis is that as household invest in human capital it enhances professionalism, and such households enhances consumption efficiency being a high-skilled individual. Therefore, as the investment in human capital increases, marginal return on consumption rises (Robert, 1972).

Additionally, Bernanke and Gertler (1995) derived a function that explains how monetary policy actions affect the provision of credit. They developed a model of the monetary transmission mechanism within the framework of the Keynesian IS-LM model. They realised that, particularly in developing economies, monetary policy might affect aggregate demand through credit aggregates by reacting to changes in short-term nominal interest rate. Bernanke and Blinder (1992) posit that the economy is affected by the changes in the nominal interest rate through the actions monetary policy makers, when securities are bought and sold in the open market. According to the theory, the availability and cost of credit (interest rate), which is set by the monetary sector, has a significant impact on economic agents such as households and small businesses (Agarwal et al., 2021).

Empirical evidence on how household consumption pattern reacts to interest rate channel in developed, emerging, developing, and WAMZ economies suggests differing outcomes. Wilcox (1990) employed the United States of America (USA) data on how nominal interest rate affected real consumption expenditure. He found that nominal interest rate is much more significant in determining consumption of both durable and non-durable consumption goods rather than the real interest rate. Yener et al. (2018) investigated the cointegrating relationship among consumption, interest rate, and income, as well as housing and stock wealth in 11 advanced economies (Finland, New Zealand, Sweden, Switzerland, Australia, Canada, France, Italy, Japan, the United Kingdom, and United States of America). They found that a long-run relationship exists among the study variables. But the primary source of consumption growth in advanced economies covered by the study is housing wealth.

In another study, Cloyne et al. (2020) employed household survey data for the United States of America (USA) and the United Kingdom (UK). They found that consumption responded to the adjustment of the interest rate. The study was aimed at determining the intermediate role of mortgage in interest rate driven-consumption. Households were categorised into three

namely; the home owners, the renters, and the mortgagors. It was observed that as interest rate changes, the house owners' consumption remains the same but renters' consumption changes proportionately less than changes in households with a mortgage. This implies that consumption response to changes in interest rate is majorly connected to the mortgagors spending behaviour. The study also found that a reduction in interest rate stimulates investment. Because households had more income to finance housing consumption. The outcome of the study by Cloyne et al. (2020) corroborates an earlier study by Georgarakos and Tatsiramos (2019), which affirmed that mortgagors are mostly affected by monetary policy actions with a particular reference to those with low accessibility to finance and those having high ratio of debt to income. The study concluded that changes in interest rate affect consumption spending of mortgagors more significantly than home owners and renters.

Owusu-Sekyere (2017) examined household credit and consumption patterns in order to better understand how monetary policy is transmitted in South Africa through the interest rate channel. Using quarterly data from 1994Q1 to 2012Q4, the time-varying parameter vector autoregressive (TV-VAR) technique was applied. The findings indicated that household credit and consumption in South Africa decreased and remained negative after the transition and inflation targeting periods of monetary tightening or interest rate hike, but increased during the global financial crisis. This demonstrated the impact of monetary policy's cost of lending on South African households' spending. Arapova (2018) used panel data analysis to examine the determinant of private consumption expenditure in three East Asian countries and nine ASEAN countries from 1991 to 2015. The author found that, while some of the variables under investigation had a favourable impact on consumer spending, others have a negative influence. The author arrived at the conclusion that initiative to adjust interest rate downward could result in a considerable rise in final consumer spending.

Onanuga and Tella (2020) assessed the relationship among lending rate, exchange rate, and household spending in Sub-Saharan Africa (SSA). The authors used panel data from 2008 to 2017 and applied the mean group estimator. The study's findings demonstrated that lending rate and exchange rate in Sub-Saharan Africa induced an improvement in household spending. Iheonu and Tochukwu (2020) conducted a study that examines the macroeconomic factors that influence household spending in a few West African countries, providing evidence to support of the idea that lending rate promotes consumption for a period of 1989-2018. The author employed the pooled mean group (PMG) technique, which accounts for variability and cross-sectional dependence. They found that both lending to the private sector and GDP considerably increased household spending. Agarwal et al. (2021) examined the impact of interest rate on consumption in Turkey. The empirical strategy adopted was based on variation in households' belief in Islamic laws against interest rate earning. Interest-rate-sensitive families were found to significantly reduce their overall spending in order to boost their total savings following the unexpected announcement of an increase in deposit rate.

In Ghana, Osei-Fosu et al. (2014) investigated the relationship between household consumption and the deposit interest rate 1970 - 2009. The GDP per capita and the rate of inflation were other factors taken into account. The authors used the ARDL bound testing approach to ascertain co-integration among the study variables. The findings indicate that there are both long-run and short-run relationship between household consumption and deposit interest rate. However, it was found that the relationship was not significant in the long run, in contrast to the short run. Using the ARDL estimating method, Yusuf et al. (2017) examined how interest rate affects private spending behaviour in the Nigerian economy from 1981 - 2014. Deregulation dummy were all included as explanatory variables in the study.

The findings from study indicate that there is a weak association between private consumption expenditure, and the interest rate and the deregulation dummy. The interest rate, according to the study, did not actively influence private consumption expenditure in Nigeria during the study period. Abdelgany (2020) on Egypt assessed how interest rate shocks affected household income and consumption for the period 1980-2018. The study found that consumption reduces in response to a positive shock in the real interest rate but the effect was lasted for 3 years and it started to die out.

3. METHODOLOGY

3.1 Theoretical Framework

Taylor (1995) formulated a model of the monetary transmission mechanism within the context of the IS-LM model by assigning a role to the nominal interest rate and its transmission effect on consumer expenditures. The study avers that monetary policy tends to impact aggregate demand, especially in developing economies, as consumer spending reacts to changes in the nominal short-term interest rate. Mishkin (1996) supported Taylor's (1995) theory regarding the impact of nominal interest rate on output growth via consumer spending. Mishkin (1996) argues that if the monetary authority adopted an accommodating monetary stance, raising the money supply, nominal interest rate would fall, causing consumer spending to rise, and ultimately improving output growth and aggregate demand. This theory suggests that the nominal interest rate set by the monetary sector has a significant impact on consumption and business decisions (Agarwal et al., 2021).

Relying on the theoretical postulations of Taylor (1995) and Mishkin (1996) consumption can be written as a function of nominal interest rate as stated in (1)

$$C = f(r) \dots \quad (1)$$

Where C is consumption and r is the nominal interest rate. The relationship between consumption and interest rate can be expressed as follows after including the autonomous consumption coefficient in (2)

$$C = \alpha + \beta r + \mu_t \dots \quad (2)$$

Where, C is consumption, α is autonomous consumption, r is the nominal interest rate, β is the coefficient that captures the effect of interest rate on household consumption, μ is error term that is white noise and t is the time series component of the error term.

3.2 Empirical Model

Based on the theoretical postulations of Taylor (1995) and Mishkin (1996) the empirical model for the study is expressed in equation (3) as follows;

$$HHC_{it} = f(IR_{it}) \dots \quad (3)$$

Where; HHC is the household consumption IR is the interest rate channel i,t , represent the cross section of WAMZ countries and the time series component respectively. The interest rate channel is further decomposed in equation (4) as follows:

$$IR_{it} = LIR, DIR, MS \dots \quad (4)$$

Where; IR is as previously defined, LIR is the lending nominal interest rate, DIR is the nominal deposit lending rate and MS is the money supply. Making equation (4) as a function of equation (3) gives;

$$HHC_{it} = f(LIR_{it}, DIR_{it}, MS_{it}) \quad \dots \quad (5)$$

Where; all notations of (5) are as previously defined. Equation (5) is written in a panel analysis econometric form in equation (6) as follows;

$$HHC_{it} = \alpha_0 + \beta_1 LR_{it} + \beta_2 DIR_{it} + \beta_3 MS_{it} + \mu_{it} \quad \dots \quad (6)$$

All notations are as previously defined.

3.3 Empirical Strategy

Equation (6) captures the transmission effect of the nominal interest rate channel on household consumption in WAMZ. In order to evaluate the effect of the nominal interest rate channel on household consumption (HHC) in the WAMZ the study relies on Taylor (1995) and Mishkin (1996) and employ the lending interest rate (LIR), deposit interest rate (DIR), and money supply (MS) in tracing the interest rate transmission route to household consumption.

Consequently, equation (7) is a compact form of a Panel Autoregressive Distributed Lag (PARDL) model for the study.

$$Y_{it} = \mu_{it} + \theta(L)Y_{it} + \varepsilon_{it} \quad \dots \quad (7)$$

Where; Y_{it} is matrix of endogenous variables; μ_{it} is the Vector of time-invariant country effects; $\theta(L)$ is a matrix polynomial in the lag operator L; ε_{it} is the error terms; i represent the cross-section of countries; t is the time series component of the study data. Equation (6) is transformed into the PARDL model as follows;

$$\begin{aligned} \Delta \ln HHC_{it} = & \alpha_1 + \sum_{i=1}^p \beta_1 \Delta \ln HHC_{t-1} + \sum_{i=1}^p \alpha_{2,i} \Delta \ln LIR_{t-1} + \sum_{i=1}^p \theta_3 \Delta \ln DIR_{t-1} + \sum_{i=1}^p \sigma_4 \Delta \ln MS_{t-1} + \\ & \omega_1 \ln HHC_{t-1} + \omega_2 \ln LIR_{t-1} + \omega_3 \ln DIR_{t-1} + \omega_4 \ln MS_{t-1} \\ & + \varepsilon_t \dots \end{aligned} \quad (8)$$

Equations (9) and (10), respectively, estimate the long-run and short-run coefficients of the variables (Pesaran et.al.,2001).

$$\ln HHC_t = \alpha_1 + \sum_{i=1}^p \beta_1 \Delta \ln HHC_{t-1} + \sum_{i=1}^p \alpha_{2,i} \Delta \ln LIR_{t-1} + \sum_{i=1}^p \theta_3 \Delta \ln DIR_{t-1} + \sum_{i=1}^p \sigma_4 \Delta \ln MS_{t-1} + \varepsilon_{1t} \quad (9)$$

The coefficients of the level variables over the long run at the optimal lag are provided by equation (9). It displays how household consumption (HHC) is impacted by the interest rate channel (LIR, DIR and MS) throughout a period of time up to p.

$$\Delta \ln HHC_t = \alpha_1 + \sum_{i=1}^p \beta_i \Delta \ln HHC_{t-1} + \sum_{i=1}^p \alpha_{2,i} \Delta \ln LIR_{t-1} + \sum_{i=1}^p \theta_3 \Delta \ln DIR_{t-1} + \sum_{i=1}^p \sigma_4 \Delta \ln MS_{t-1} + \Delta ECM_{t-1} + \epsilon_{1t} \tag{10}$$

Equation (3.10) is comprised of an error correction model (ECM). The coefficient of the ECM, represented by λ in equation (3.10), determines how quickly a deviation from equilibrium due to shocks is adjusted or re-equilibrated to the equilibrium position.

3.4 Data and Sources

Annual panel data used for this study were obtained from the United Nations Conference on Trade and Development (UNCTAD) and World Bank's Development Indicators (WDI) databases. The countries covered are; Gambia, Ghana, Guinea, Liberia, Nigeria, and Sierra Leone for the period 1986-2021. The HHC is the household consumption expenditure. It is expressed as a measure of annual household consumption expenditure as a percentage of GDP. Other explanatory variables are the LIR, which is the nominal lending rate. DIR is the nominal deposit rate. The choice of the nominal interest rates against the real interest rate is due to its immediate effect on borrowing decisions of households (Wilcox, 1990). In situations where the monetary authorities adjust the policy rate, the pass-through effect is felt by the deposit money banks (commercial banks) in the WAMZ. And subsequent adjustment of the nominal interest rate up or down might have an effect on the borrowing decisions of households for consumption. MS is the proxy for the money supply. The (M2) is chosen as proxy because it is a broader measure of money supply compared to M1, which is a narrow definition of money supply in the WAMZ. The inflation variable was not included in the baseline model for estimation. This is because the main aim of the study primarily is to trace the effects of changes in the nominal interest rates on consumption decisions of households in WAMZ and not to determine how changes in commodity prices affect consumption decisions of households in the Zone. The theoretical expectation for the model variables expect the slopes of lending interest rate and deposit interest rate to be negative and the slope of money supply to be positive:

$$\frac{\partial HHC}{\partial LIR} < 0, \frac{\partial HHC}{\partial DIR} < 0, \frac{\partial HHC}{\partial MS} > 0$$

4. RESULTS AND DISCUSSION

4.1 Panel Unit Root Results

4.1.1 Panel Unit root tests' results

Table 1. Results of Panel Unit root tests

Null Hypothesis: Panel data have unit root (Assume common unit root process)					
Series	Level		First Difference		Remarks
	Statistics	P-Values	Statistics	P-Values	
HHC	-10.1047	0.0000*	NA	NA	I(0)
LIR	-2.15098	0.0157*	NA	NA	I(0)
DIR	-1.00288	0.1580	-7.54967	0.0000*	I(1)
MS	-6.67797	0.0000*	NA	NA	I(0)

Source: authors

{ * } Indicates 1% level of significance.

Table 1 depicts the results of panel unit root tests based on Levin, Lin, and Chu and from the results, HHC, LIR and MS were stationary at level with probability values less than 1% level of significance. Contrarily, the result of the unit root test for DIR indicates that the variable was not stationary at level. But after differencing the variable, it was stationary at first difference with probability value less than 1% level of significance. Thus, HHC, LIR and MS are integrated with order I(0) while DIR is integrated with order I(1). Since the variables were integrated of order zero, one and none was integrated of order two, that is, as none of the variables is stationary at second difference, the series can be analysed using the panel autoregressive distributed lags (PARDL) estimation approach.

4.2 Regression Results

4.2.1 Effect of the Interest Rate Channel on Household Consumption in the WAMZ

Sequel to the panel unit root results revealing that the model variables were stationery at level, at first difference while non was stationery at second difference, the study applied the Panel Autoregressive Distributed Lags (PARDL) model in assessing the research hypothesis. The panel autoregressive distributed lags (PARDL) findings for the long-run, short-run, and error correction model (ECM) outputs are in Table 4.2:

Table 2. Panel (ARDL) Short-Run and Long-Run Estimates

Short-Run Equation				
Dependent: HHC				
Variable	Coefficients	Standard Error	t-stat	P-Value
COINTEQ01	-0.233535	0.172795	-1.351515	0.0083*
D(LLIR)	-0.233005	0.351053	-0.663732	0.5077
D(LDIR)	0.165563	0.171335	0.966312	0.3352
D(LMS)	0.010651	0.040042	0.265993	0.7906
Long-Run Equation				
LLIR	1.894628	0.080497	23.53654	0.0000*
LDIR	-0.515134	0.110149	-4.676698	0.0000*
LMS	0.059323	0.053239	1.114281	0.2667

Source: authors

{*} indicates 1% level of significance.

In Table 2, the short-run coefficient for the lending interest rate (LIR) is (-0.233005). This indicates that for every percentage point increase in the lending interest rate (LIR), household consumption (HHC) in the WAMZ will fall by -0.23 percentage points. This outcome agrees with the theory that consumption is expected to decline with a rise in the lending rate. Also, deposit interest rate (DIR) with a coefficient of (0.165563) indicates that a percentage increase in deposit interest rate (DIR) will generate a rise of household consumption to 0.17 percentage points. This outcome contradicts the theory as consumption is predicted to drop with a higher deposit interest rate (DIR). Furthermore, the money supply (MS) which has a coefficient of (0.010651) implies that an increase of 0.01 percentage points in household consumption results from a percentage higher in the money supply. This result is in consonant with theoretical postulation as consumption is expected to be higher as the money supply

increases in the economy. Meanwhile, the p-value associated with lending interest rate (p-value:0.5077), deposit interest rate (p-value: 0.3352) and money supply (p-value: 0.7906) at 1% and 5% level of significance show that the coefficients of lending interest rate, deposit interest rate and money supply are not significant in the short run. The short-run results affirm that nominal interest rate channel does not affect the household consumption in the WAMZ.

The obvious reasons why nominal interest rate does not affect consumption in WAMZ in the short-run may be due to some factors such as the difficulty of households in obtaining credit through the banking institutions in cases of policy shift by the monetary authorities. Also, the failures of households to provide acceptable securities and meet conditions for consumer credits in the short-run could be another factor. Third, the possibilities of obtaining credit facilities for consumer credit through non-banking sources such as cooperative societies, friends, and relations in the short-run to augment household consumption spending. The results suggest that the long-run results affirm that the nominal interest rate significantly affected household consumption. This may be due to the fact that in the long-run consumer credit conditions are well known and can be met by households. The main details of the long-run results are discussed in the next paragraph.

The long-run results affirm that interest rate channel affects the household consumption in the WAMZ as follows: lending interest rate (LIR) coefficient, as shown in Table 4.2, is 1.894628. This indicates that a per cent increase in the lending rate will result in 1.89 percentage point increase in household consumption (HHC) in the WAMZ. This finding contradicts the theory which asserts that consumer spending will decline as the loan rate rises. The inference of the result is that in low income countries where income is grossly inadequate to meet current expenditure, households would borrow at any rate to meet their current consumption. In respect of deposit interest rate (DIR), in the long-run, the result suggests a coefficient value of -0.515134, meaning that a percentage increase in (DIR) will cause household consumption in the Zone to drop by -0.52 percentage points. The result of the deposit rate conforms to theory. Because as nominal deposit rate rises household will reduce consumption and make additional savings in order to make additional return from savings. Finally, in the long-run money supply (MS) has a coefficient value of 0.059323, meaning that for a percentage increase in money supply, the member countries' household consumption (HHC) will rise by 0.06 percentage points. This is in conformity with economic theory that an increase in money supply will depress interest rate and households can improve their consumptions through both an increase in money supply and borrowing. As a result, the money supply (MS) and deposit interest rate (DIR) findings are consistent with theoretical expectations. However, the coefficients are not significant.

The error correction coefficient (COINTEQ01 = -0.233535) falls between the typical range of 0 and 1 and exhibit the predicted negative sign. The speed of adjustment, which is precisely -0.23, indicates that around 23% of the disequilibrium in the model are corrected in a year. In cases of any disequilibrium, it takes an average of 5 years before equilibrium condition is achieved in the Zone. This takes a reasonable time for the Zone to return to a stable condition in cases of any disequilibrium.

4.2.2 Diagnostics Wald Tests Result

Table 3 contains the Wald Test diagnostic result of the coefficients of the explanatory variables for the PARDL technique used for the analysis. The Wald test determines whether or not an estimated coefficient in a model is significant. It is also computed to check if the coefficients have shared significance. Table 3 affirms that the F-statistic is 7.523813 and the associated p-value is 0.0001. The result implies that the null hypothesis of zero coefficients is

rejected (not significant) in favour of the alternative hypothesis at one 1 per cent level of significance.

The estimated joint coefficients for the lending interest rate (LIR), deposit interest rate (DIR), and money supply (MS) are not zero and are significant in the given model at a 1% level of significance; it can be inferred that the rejection of the null hypothesis and acceptance of the alternative hypothesis confirmed that the model's coefficients significantly affected household consumption expenditure in the long-run.

Table 3. Results of Wald Test

Test Statistic	Value	D.f	Prob
F-Statistic	7.5238	(3, 135)	0.0001*
Chi-square	22.5714	3	0.0000*

Source: authors
{*} 1% level of significance

4.3 Discussion of Findings

This section highlights the finding of this study in connection with previous empirical findings from the literature. This study's primary objective was to assess the impact of nominal interest rate channel on household consumption in the WAMZ. The proxies for interest channel are the nominal lending rate (LIR), deposit interest rate (DIR), and money supply (MS). The Panel Autoregressive Distributed Lags (PARDL) estimation method was used because the study variables were integrated at I(0) and I(1) respectively. The study found that interest rate channel does not affect household consumption in the short-run while the channel significantly affected household consumption in WAMZ in the long-run.

The findings on lending interest rate and consumption in the long run validate the findings of earlier researches conducted by Onanuga and Tella (2020) and Iheonu and Tochukwu (2020). As observed by these authors, the lending rate has considerable influence on consumption behaviour. In the same manner, the current study revealed that, given an upward adjustment in the nominal lending rate, consumers in the Zone initially maintain the same level of consumption but eventually increase consumption substantially by relying on borrowing even at higher cost. Furthermore, the long-term deposit interest rate and consumption result was consistent with an earlier study by Agarwal et al. (2021). The authors demonstrate that, over time, deposit rate has a negative and major impact on household consumption. They discovered that household spending declines considerably with a hike in interest rate on deposit. Meanwhile, in the contrary, Osei-Fosu et al. (2014) had previously observed that the linkage between consumption and deposit rate though negative but not significant in the long-run. Meanwhile, the current study shows that consumers in the Zone were initially passive in responding to an increase in deposit rate but with time cut down on consumption in order to save for the future.

5. CONCLUSIONS AND POLICY IMPLICATIONS

The study used the Panel Autoregressive Distributed Lags (PARDL) econometrics technique to analyse the transmission effect of interest rate channel on household consumption in the West African Monetary Zone. The findings of the study are that none of the model variables has a major effect on household consumption in the short-run while in the long run, lending and deposit interest rates significantly affected the household consumption expenditure in the Zone. The basic findings of the study are as follows: In the short-run, there is no significant short-term impact of nominal interest rates on household expenditure in the WAMZ. But in the long- run, both the nominal lending and deposit interest rates have significant effects on

household consumption spending in the WAMZ. Analysis of speed of adjustment for any divergence also revealed that, 23.3 per cent of any disequilibrium due to interest variation is corrected within one year in the Zone. This implies that the interest rate channel requires about 4.3 years to adjust from any departure to equilibrium, moving from short-run to long-run equilibrium. The study concluded that the nominal interest rate channel significantly affected household consumption in the long-run in the WAMZ.

The policy implications of our findings for the countries in the WAMZ are as follows: Due to the long-run effect of nominal interest rate on household consumption the government of the respective countries through the regulatory authorities should emphasise the stability of nominal interest rate (especially consumer credit), because any negative shock in the nominal lending rate will have a significant declining effect on HHC expenditure in the Zone. Thus, a significant reduction in consumerism may have a deleterious effect on the economic growth potential. Second, the monetary authorities should avoid upward review of nominal deposit rate, which does not encourage savings but preference for consumption in the Zone. Therefore, changes in the savings rate may not likely enhance savings but preference for HHC due to low income in the region. Third, the evidence from the study suggests that the aggregate money supply is not significant in both the long-run and the short-run. This infers that the use of the nominal interest rate (monetary authority discount rate) as a major instrument of monetary policy should be given preference rather than changes in the aggregate money supply in the Zone.

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