EXCHANGE RATE DYNAMICS AND HOUSEHOLD CONSUMPTION IN NIGERIA

Udedi Uchenna Collins[1]; Amaka G. Metu[1, 2]; Chris U. Kalu[1]
[1]Deapartment of Economics, Nnamdi Azikiwe University Awka, Nigeria
[2]Centre for Policy and Development Research, Covenant University Ota, Nigeria
Email of corresponding email: collinsuche001@gmail.com

Abstract
This study investigated the impact of exchange rate dynamics on household final consumption in Nigeria from 1981-2021. This period covered the most turbulent exchange rate dynamics in Nigeria as well as the periods of economic recessions in Nigeria. Theoretical framework underpinning the study was the life cycle hypothesis (LCH) and purchasing power parity (PPP). Final household consumption, disposable income, inflation, nominal exchange rate, nominal interest rate and trade openness were used for the analysis. The collected data were analyzed using both the autoregressive distributed lag (ARDL) and structural vector autoregressive (SVAR) techniques. The findings of the study revealed that nominal exchange rate through transmission channel of inflation and trade openness had long run negative and positive impacts on final household consumption in Nigeria respectively. The study concludes that since the factors causing exchange rate dynamics may be difficult to control, attention should be on curbing its impacts through its transmission channels. Based on the findings, the study recommends an increase in the use of fiscal policy to curb the impact of inflation and to spur the economy into production for export.

Keywords: Household consumption, exchange rate, inflation, trade openness
JEL Classification: *F31, C22, E31, E51*

Introduction

Household consumption summarises the people's use of goods and services to meet their material wants and needs for food, shelter, social activities and so on (Organization for European Economic Cooperation [OECD], 2013). According to Pistaferri (2015), investment demand depends more on expectations about the prosperity of the economy than on interest rate but the prosperity of the economy is largely determined by household consumption and government policies. And it is only consumption (household and public), which gives the primary thrust to production (Campbell & Mankiw, 1989; Saha & Zhang, 2013). This assertion shows how critical household consumption is to any economy. The concept of dynamics in macroeconomics variables is nearer to reality to the households since the households are also dynamic in nature. It is in this context of dynamics that most economic laws are defined as general statements based on assumptions and not on rigid rules. Dynamic variables such as household consumption, income, investment, exchange rate, interest rate etc. are mostly considered dynamics variables because they are viewed at point in time. Esra and Unal (2019) asserted that dynamics of exchange rate, interest rates or equity prices may lead to low consumption through the transmission channel of interest rate or wealth but Manchard (2017) was of the opinion that it is through inflation channel. Also, exchange rate is a sin qua non for international trade which Nigeria engages in and through it exchange dynamics could also be transmitted Mohammed (2013). Therefore, the need for not only investigating the variables and their dynamics could not have been needed more than now, were Nigeria economy has continuously over the last decade, experiencing high instability in exchange rate, high increase in general price level and high unemployment rate. Therefore an understanding of the dynamics of this instrument of stability will give a better guide and broader perspective for policymakers and other economic agents.

Exchange rate dynamics is the path followed by exchange rate in response to changes in economic variables such as economic policies, financial news (shocks), money supply etc. According to Dornbusch (1976) the dynamic of exchange rate was induced through the influence of interest rate differentials. It is a measure of risk, whether in asset pricing, portfolio optimization, option pricing, or risk management (Azid, Jamil, & Kousar, 2013). David, Reuben and Gulumbe (2016), opines that it is difficult to measure this dynamics since the factors causing the fluctuations are not constant and also depends on structure and the market dynamics. Evans (2011) stated that understanding these dynamics of the exchange rate is one of the greatest challenges of international economics since the foreign exchange

market influence all aspects of the world economy. However, quite noticeable especially in Nigeria are its impacts through weak financial system and stricken poverty, as Nigeria consumption per capita $2,196 is the lowest as compared to some of her trading partners, China $4,497, South Africa $3,933 and USA42,732 respectively (World Bank, 2021). This is clear indications that households' consumption requires a critical investigation in Nigeria.

Inflation is continuous rise in general price level of goods and services in an economy. It is a manifestation of the effects of micro and macro-economic policies of that economy. Inflation's importance in the economy is based on the premised that high inflation can exert distortions capable of derailing the economy from the path of sustainable economic growth and development. It has also been identified as one of the major variables that can affect household consumption. The uncertainty of inflation may discourage savings; promote consumption, and poses serious threat to macroeconomic stability (Bawa & Abdullahi 2012). However, inflation will not have an adverse effect on household's consumption if the income increases at the same rate with inflation. Conversely, if income remains at the same level, while inflation keeps rising, the purchasing power of households will reduce and hence their consumption (Onodje 2009). The stability of the general price level has continued to be core objective of monetary policy considering the adverse impacts of high inflation to other economic variables. Therefore, good understanding of this factor on other economic variables with the view of promoting sustainable economic growth and development as well as strengthening the purchasing power of the domestic currency, amongst others is required.

Trade openness is the ratio of import and export to GDP of the country. In orher word, it is import plus export divided by the GDP. Marchand (2017) asserted that exchange rate dynamic is inevitable as policies and other economic factors are not constant hence the dynamics but whether or not households benefit from such policies, depends on the relative magnitude and the impact of its transmission variable. Mohammed (2013) found that there is a direct relationship between exchange rate and domestic consumer prices through imported goods while indirect through the prices of imported intermediate goods. Therefore, when the domestic currency depreciates, it will not only lead to higher import prices that are transmitted to final consumer prices but also increases the marginal cost of producers. Pointing to the fact that trade openness is another channel through which the impact of exchange rate dynamics can influence households' consumption.

Exchange rate is one of the monetary policy stability and economic growth instruments. However, Nigerian economy has over the decades experienced and continues to experience turbulent on her macroeconomic variables, including high price instability, high rate of unemployment, high dynamics in exchange rate and continuous decline in per capita income (Umaru & Zubairu, 2012). These may have impacted negatively on final households' consumption in Nigeria, and might have contributed in no small way, to the sliding of the economy into two recessions (2016 and 2020) within a decade. One would then question the effectiveness of this monetary policy over the decade. However, the monetary policy may not be the problem but its transmission mechanisms. Therefore, there need for further investigation into the dynamics of this policy instruments and their dynamics. The dynamics of exchange rate may have contributed to the unfavourable state of the Nigeria economy. So, there is a need for economic agents especially (households) making a critical decision on how to allocate their meager income towards consumption or savings. Siddiqui & Akhtar (1999) opined that household may save more and consume less to preserve their standard consumption level in future. But Arize and Malindretos (1997) argue that households may consume more and save less to beat the future expected inflation. This decision requires empirical facts and not by intuition. But the dynamics of the exchange rate and household consumption as well as their responses to economic shocks is not much highlighted in literature.

Few available empirical studies on the topic had narrowed their objectives of establishing the relationship among exchange dynamic and final household consumption without recourse to its responses to dynamics of the variables. Among these studies are Ozigbu, Ezekwe, and Morris (2019) who investigated the nexus between exchange rate volatility and private domestic consumption in Nigeria. Edeme and Okafor (2017) investigated the impact of exchange rate fluctuations on private domestic consumption in Nigeria with emphasis on the household welfare (poverty reduction). Establishing the relationship may neither be sufficient for household making informed decision on her consumption nor the firms on its production plan. As much as establishing the relationship is important, household consumptions responses to the inevitable dynamics of exchange rate are much more to provide a better insight and understanding of the variables.

Moreover, in terms of methodology, previous studies used vector autoregressive model (VAR), and ordinary least squares (OLS) (Edeme & okafor 2017; Ozigbu et al. 2019). These methods may not be robust for analyzing the dynamic of exchange rate and household consumption. On one hand, Edeme and okafor (2017) used ordinary least squares (OLS) method to establish the long run relationship between the exchange rate volatility and final household consumption, but failed to analyze its responses to economic shocks. In their model household welfare, exchange rate, Per capita income, interest rate and foreign direct investment were used leaving out inflation or trade openness which is theoretical recognized channels of its transmission (Manchand, 2017). On the other hand Ozigbu et al. (2019) was

able to analyze the impulse responses of endogenous variable over time to a given shock, but fail to highlight the transmission impacts through its channels, also the inclusion of public recurrent expenditure in his model seems not be appropriate when investigating private consumption.

This study will not only took a new route of investigating the dynamic of exchange rate and household final consumption in Nigeria, from perspective of its transmission variables over the period of 1981 to 2021 using quarterly data but also incorporating their responses to shocks. It also used multiple econometric techniques of Autoregressive Distributed Lag (ARDL) to analyze the long and short run relationship and structural vector autoregressive SVAR model to analyze the feedback impacts. This will gives an improved and broader appreciation of exchange rate dynamics and household consumption in Nigeria.

From the foregoing, research questions were sort to be answered by this study. These include the impact of exchange rate dynamics on household consumption in Nigeria. But knowing the impact may not satisfactory measured the really impact without the impact of its transmission channels; hence the study also included two channels of exchange rate dynamics transmissions (inflation and trade openness) in the questions it sort to answer. The investigation was not just to find the relationship between them but also to evaluate their feedback effects on household consumption. The study also enquires if these two channels of exchange rate dynamics re-enforces or diffuses one another which may cause the household to be unaffected by the net impact of the dynamics.

Review of the Related Literature

Conceptual Literature

All the consumption theories are conceptualized on the household been rational, and will always want to maximize utility given her income and knowledge of commodity prices both domestically and abroad. Keynes (1936), defined consumption as the part of income that was not saved, thereby distinguishing between purchases that satisfy wants directly and investments that became assets in the absence of a satisfactory means of measuring the goods actually consumed, thus monetary measure of consumption has been widely accepted and used as a basis for predicting economic trend. But Friedman, (1975), opined that consumption represents the total quantity of goods and services bought and consumed by household during a period of time, that is, it is the expression of total household demand. Furthermore the concept of consumption is important to the theory of income and employment. In economics, the word consumption simply means the using up of goods and services which may include the purchase of durable goods such as furniture or vehicles, as well as works of art that may increase in value over a period of time.

The concept of exchange rate implies an open economy where international trade operates. It can be defined in different contexts, but the underlying element is that it is the price of one currency in terms of another. The choice of an appropriate exchange rate policy is a crucial component of macroeconomic policy in a country (Jhingan, 2011). Obadan (2006), asserted that exchange rate is one of the most important macroeconomic variables necessary for the conduct of general economic policy making. Apart from connecting the price systems in different countries and enabling businessmen to compare prices directly, they are important in promoting exports and discouraging imports, thereby achieving healthy balance of payments position.

Exchange rate dynamic is conceptualized by Sachs & Warner (2005) as one of the monetary policy instrument that if not managed can influence other macroeconomic variables negatively. Ozturk (2006), conceptualized it as the risk factor associated with unexpected movement of exchange rate. In other words, exchange rate dynamic is the risk associated with currency depreciation or appreciation. Hence, exchange rate dynamics discourages investment and impedes productivity in an economy. Exchange rate dynamic as conceptualized by Ozturk (2006) has its impacts through trade and investment. The finding of the study indicates that exchange rate dynamic leads to unfarvourable trade since it generate uncertainty.

Theoretical literature

Ando Franco Modigliani and Richard Brumberge (1954) in life cycle theory opined that household spending decisions are not only based on the assessments of current income but also the expected income over the remainder of their lives. They consumed less of their income in their working years, therefore making a positive savings, which they invest in assets accumulating wealth that they will consume in the future years. After retirements, the households again dissave as they will be consuming more than their income. The lifecycle hypothesis highlighted the inclusion of dynamic variable of wealth into the household consumption function.

The purchasing power parity theory can be traced back to Ricardo (1817) but was systematically developed by Swedish economist Cassel (1916). The theory stated that equilibrium exchange rate between two inconvertible papers currencies is determined by the equality of the purchasing power of two inconvertible paper currencies. Put differently, the value of a foreign currency in terms of another depends mainly on the purchasing power of the two

currencies in their respective countries. The theory was built on direct functional relationship between exchange rate and purchasing powers, the equi-proportionately of prices of two categories of goods and in the same direction in both the countries and Free international trade and laissez faire among other assumptions. Frankel (1985) summarized the important of this theory as indisputably and high sensible explanation of rate of exchange in such countries where the price movements have a major impact on the exchange rate. They went further to assert that the theory can explain the determination of rate of exchange not only under inconvertible paper standard but under every possible monetary system. This makes the theory very important for this study that will investigate both the long and short run impact of the exchange rate (monetary policy) on household consumption.

Muhammad and Hafiz (2019) study on exchange rate dynamics did not only emphasize the important of final household consumption to the developing economy but also pointed out the need for other macro-economic variables apart from the traditional variable of income, interest rate and inflation been added to the investigation of household consumption. This standpoint of the study aligned with the objective of this study in understanding the other variables that may have direct or indirect impacting on the final household consumption. The study made it conspicuous that exchange rate dynamic may affect final household consumption through direct and indirect channels.

Empirical Literature Review

Domestic consumption and uncertainty of exchange rate in a monetary union was investigated by Okafor and Lokossou (2021) using panel mean group and pooled mean group approach. It also use GARCH (1,1) model for measurement of the uncertainty of exchange rate. Findings of the study show that there is a negative long run impact of exchange rate volatility on consumption in Euro zone while it has a mixed effect on the short run. The study recommended that the policymakers should focus more on permanent uncertainty. This, the policymakers can do by concentrating attention and resources on minimizing the permanent exchange rate volatility.

Esra & Seven (2019) investigated the dynamics of household final consumption: The role of wealth channel in Turkey. The study used ARDL and VEC in determining the long run relationship and the impulse response to the shock of interest rate through wealth channel. Housing wealth, income and credit are positively associated with consumption while interest rate and equity market wealth are negatively associated with consumption. Interest rate shock is negatively affected the assets prices and consumption through wealth. Therefore, the study concluded that interest rate dynamics affects consumption through wealth channel.

Mohamed (2019) investigated the impact of interest rate movement on consumption and output, using Structural Vector Autoregressive Model (SVAR) for the analysis. The study discovered that one standard deviation shock in interest rate reduces consumption insignificantly, while income positively responses to the shock and increases consumption. The study came to conclusion that an increase in interest rate negatively affects investment and consumption. The study recommended a good policy on interest rate for policy makers to boast investment and consumption.

Oriavwote and Omojimite (2012), investigated exchange rate pass-through and domestic prices in Nigeria using the Vector Error Correction Model, to find that their exist significant strong relationship between exchange rate pass-through and domestic prices in Nigeria. The scope of their study covered 1970 to 2009. It further revealed that exchange rate volatility induces domestic inflation in Nigeria. The study therefore, recommended for efficient monetary policies for terming down inflation should be adopted by the managers of the economy.

Furthermore, Oladipo (2012) study of exchange rate pass-through effects on sectorial performance reveal that high prices resulting from exchange rate fluctuation could spill over to other sectors of the economy, thereby raising the overall domestic production costs. It also revealed an evidence of incomplete pass-through at varying degrees across sectors. The stufy found that adjustment in relative prices is unattractive. It also reduces considerably the incentive for consumers to switch expenditure from foreign to domestic goods. The study came to conclusion that exchange rate policy may not be the most appropriate instrument to be used in dealing with external imbalances.

Research Methodology

From Life Cycle Theory of Consumption emphasis on factors other than income which may affect household consumption were highlighted. Furthermore, theoretical literatures such as Ando and Modigliani, 1963; Hall, 1978; Campbell and Mankiw, 1991 had also emphasized the role of disposable income, inflation and household wealth in shaping consumption decisions which is incorporated in this model.

Hence, the Nigerian consumption function can be model in this form:

$$HHFCt = f\ (HDYt, Zt) \qquad 3.1$$

Where HHFCt = Household final consumption at time period, HHDYt = Household disposable income at time period, and $Z_t = s \times 1$ vector of deterministic variables. It is a set of other determinants which captures fiscal policy, monetary policy, liquidity constraints, substitution effects, consumption effect and macroeconomic uncertainty. For a developing economy like Nigeria, there is need to extend the traditional consumption model to incorporate other variables that are peculiar in the determination of household consumption (Irefin & Yaaba, 2012). Hence, equation 3.1 is expanded thus:

$$HHFCt = f\ (HHDYt, INFRt, nEXRt, nINTRt, TROPt) \qquad 3.2$$

Where nINTR*t* = nominal interest rate at time period, *TROPt* = Trade openness at time period, nEXR= nominal exchange rate at time period and INFR*t* = inflation rate at time period, the other variable are as explained in Equation 3.1.

Model Specification

All variables for determination are incorporated in equation 3.2. This function can be expressed econometrically thus:

$$HHFCt = \beta 0 + \beta 1 HHDYt + \beta 2 nEXRt + \beta 3 INFRt + \beta 4 nINTRt + \beta 5 TROP + \omega_t \qquad 3.3$$

Where β0: is intercept (constant) term β1, β2, β3, β4 and β5: are coefficients of independent variables ω_t: is the stochastic error term, t: is the period. The nominal exchange rate entered the model as deterministic covariates. It is assumed that nEXR is uncorrelated in the model.

In other to capture the linkages among these variables as specified in the econometric model 3.3, the ARDL model by Pesaran, Shin and Smith (2001), is specified in equation 3.4:

The generalized ARDL (p, q) model is specified as

$$Y_t = \gamma_{0i} + \sum_{i=1}^{p} \delta_i Y_{t-i} + \sum_{i=0}^{\square} \beta_i X_{t-i} + \varepsilon_t \qquad 3.4$$

Where Y_t is a vector and variables in (X_t) [1] are allowed to be purely I (0) or 1(1) or co-integrated; β and δ are coefficients; γ is the constant k; ί = 1, p, q are optimal lag orders; ε_t is a victor of the error terms, unobservable zero mean white noise vector process (serially uncorrelated or independent).

ARDL (p, q) has consistent estimates of the long run normal coefficients irrespective of whether the underlying regressors are stationary at I (*1*) or I (*0*) or a mixture of both (Pesaran et al. 2001). It provides unbiased estimates of the long run model as well as valid t-statistics even when some of the regressors are endogenous (Harris & Sollis, 2003). The size of the data especially if small will not affect the outcome of the result. It also allows dependent and explanatory variables to have different optimal lags. It has also be used by other researchers in determination of dynamics of macroeconomic variables (Esra & Unal, 2019).

Therefore, an empirical model is specified as:

$$\Delta HHFC_t = \beta 0_1 + a_{1i} HHFC_{t-i} + a_{2i} HHDY_{t-i} + a_{3i} nEXR_{t-i} + a_{4i} INFR_{t-i} + a_{5i} nINT_{t-i} + a_{6i} TROP_{t-i} + \sum_{t=1}^{p} \beta_{1\iota} \Delta HHFC_{t-i} + \sum_{i=1}^{q} \beta_{2\iota} \Delta HHDY_{t-i} + \sum_{i=1}^{q} \beta_{31\iota} \Delta rEXR_{t-i} + \sum_{i=1}^{q} \beta_{41\iota} \Delta INFR_{t-i} + \sum_{i=1}^{q} \beta_{51\iota} \Delta nINTR_{t-i} + \sum_{i=1}^{q} \beta_{61\iota} \Delta TROP_{-1} + \varepsilon_t \qquad 3.5$$

$$\Delta HHDY_t = \beta 0_2 + a_{12i} HHDY_{t-i} + a_{22i} HHFC_{t-i} + a_{32i} rEXR_{t-i} + a_{42i} INFR_{t-i} + a_{52i} nINTR_{t-i} + a_{6i} TROP_{t-i} + \sum_{t=1}^{p} \beta_{12\iota} \Delta HDY_{t-i} + \sum_{i=1}^{q} \beta_{22\iota} \Delta HHFC_{t-i} + \sum_{i=1}^{q} \beta_{32\iota} \Delta rEXR_{t-i} + \sum_{i=1}^{q} \beta_{42\iota} \Delta INFR_{t-i} + \sum_{i=1}^{q} \beta_{52\iota} \Delta nINTR_{t-i} + \sum_{i=1}^{q} \beta_{62\iota} \Delta TROP_{-1} + \varepsilon_t \qquad 3.6$$

$$\Delta rEXR_t = \beta 0_3 + a_{13i} rEXR_{t-i} + a_{23i} HHDY_{t-i} + a_{33i} HHFC_{t-i} + a_{43i} InINFR_{t-i} + a_{53i} nINTR_{t-i} + a_{63i} TROP_{t-i} + \sum_{t=1}^{p} \beta_{13\iota} \Delta rEXR_{t-i} + \sum_{i=1}^{q} \beta_{23\iota} \Delta InHHDY_{t-i} + \sum_{i=1}^{q} \beta_{33\iota} \Delta HHFC_{t-i} + \sum_{i=1}^{q} \beta_{43\iota} \Delta INFR_{t-i} + \sum_{i=1}^{q} \beta_{53\iota} \Delta nINTR_{t-i} + \sum_{i=1}^{q} \beta_{63\iota} \Delta TROP_{-1} + \varepsilon_t \qquad 3.7$$

$$\Delta INFR_t = \beta 0_4 + a_{14i} INFR_{t-i} + a_{24i} rEXR_{t-i} + a_{34i} HHDY_{t-i} + a_{44i} HHFC_{t-i} + a_{54i} nINTR_{t-i} + a_{64i} TROP_{t-i} + \sum_{t=1}^{p} \beta_{14\iota} \Delta INFR_{t-i} + \sum_{t=1}^{p} \beta_{24\iota} \Delta rEXR_{t-i} + \sum_{i=1}^{q} \beta_{34\iota} \Delta HHDY_{t-i} + \sum_{i=1}^{q} \beta_{44\iota} \Delta HHFC_{t-i} + \sum_{i=1}^{q} \beta_{54\iota} \Delta nINTR_{t-i} + \sum_{i=1}^{q} \beta_{64\iota} \Delta TROP_{-1} + \varepsilon_t \qquad 3.8$$

$$\Delta nINTR_t = \beta 0_5 + a_{15i} nINTR_{t-i} + a_{25i} INFR_{t-i} + a_{35i} rEXR_{t-i} + a_{45i} HHDY_{t-i} + a_{55i} HHFC_{t-i} + a_{65i} TROP_{t-i} + \sum_{t=1}^{p} \beta_{15\iota} \Delta nINTR_{t-i} + \sum_{t=1}^{p} \beta_{25\iota} \Delta INFR_{t-i} + \sum_{t=1}^{p} \beta_{35\iota} \Delta rEXR_{t-i} + \sum_{i=1}^{q} \beta_{45\iota} \Delta HHDY_{t-i} + \sum_{i=1}^{q} \beta_{55\iota} \Delta HHFC_{t-i} + \sum_{i=1}^{q} \beta_{65\iota} \Delta In\, TROP_{-1} + \varepsilon_t \quad 3.9$$

$$\Delta TROP_t = \beta 0_6 + a_{16i} TROP_{t-i} + a_{26i} nINTR_{t-i} + a_{36i} rEXR_{t-i} + a_{46i} HHDY_{t-i} + a_{56i} INFR_{t-i} + a_{66i} HHFC_{t-i} + \sum_{t=1}^{p} \beta_{16\iota} \Delta TROP_{t-i} + \sum_{t=1}^{p} \beta_{26\iota} \Delta nINTR_{t-i} + \sum_{t=1}^{p} \beta_{36\iota} \Delta rEXR_{t-i} + \sum_{i=1}^{q} \beta_{46\iota} \Delta HHDY_{t-i} + \sum_{i=1}^{q} \beta_{56\iota} \Delta HHFC_{t-i} + \sum_{i=1}^{q} \beta_{66\iota} \Delta In\, TROP_{-1} + \varepsilon_t \quad 3.10$$

SVAR Model

Our further objective is to analyze characteristics of the dynamic effects of the exchange rate shock on the endogenous variables. Therefore, both variance decompositions and impulse response functions are estimated using Structural Vector Autoregressions (SVARs) model thereinafter. SVARs are multivariate linear representation of a vector of observables on its own lags. It is used for analyzing and recovering economic shocks from observables by imposing minimum assumptions compatible with a large class models. SVAR was adopted based on its unique properties which conform to the data and the objectives of the study. Such properties includes it contemporaneous variables been treated as explanatory variables without imposing several highly specific restrictions on the parameters in the coefficient and residual covariance matrices. It also has best unbiased estimate when the data frequency is relatively long (i.e. quarterly). Therefore, these properties would allow the researcher to evaluate the effect of an independent shock, when the off-diagonal elements in the residual covariance matrix are set to zero. This model has also been arguably the best over other traditional large-scale macroeconometric models, since the results are not hidden by a large and complicated structure (the *black box*), but easily interpreted and available. It was on this premise that Sims (1980) argued that SVAR models provide a more systematic approach to imposing restrictions. These imposing restrictions could enable for empirical regularities which remain hidden in the techniques that were previously applied.

From the perspective that dynamic economic models can be viewed as restrictions on stochastic processes, then an economic theory is a mapping between a vector of k economic shocks w_t and a vector of n observables y_t

This can be represented in Equation (3.12)

$$yt = d(\omega^t) \quad 3.12$$

Where w^t is the history of the shocks w^t up to period t, economic shocks are those shocks that are fundamental elements of the theory such as exchange rate dynamics. The variables that are available to the researcher are the observables. Often, yt. The product of the equilibrium behavior of the agents in the model are captured through the mapping D (·). It can also be interpreted as the impulse response of the model to an economic shock D (·).

If the model is solved by linearizing its equilibrium conditions after making sure that the productivity shocks are normally distributed, we obtain a mapping of the form

$$yt = D(L)\, w_t \quad 3.13$$

If k = n, i.e., many economic shocks as observables, and |D (L)| has all its roots outside the unit level, we can differnce the mapping D (L) Fernández-Villaverde, Rubio-Ramírez, and Sargent, (2005) and obtain:

$$A(L)\, y_t = w_t \quad 3.14$$

Where $A(L) = A^0 + \sum_{k-1}^{\infty} A L^K$ is a one-sided matrix lag polynomial that embodies all the (usually non-linear) cross-equation restrictions derived by the equilibrium solution of the model. In general, A (L) is of infinite order. This representation is known as the SVAR representation.

The impulse response function shows the optimal behavior of agents in equilibrium under constraints. But the shocks can be divided into:

a. The anticipated systematic shocks by rational household will have having no impact on the economy (Lucas, 1976).
b. Unanticipated nonsystematic shocks will be expected to have impact to the economy and this is the objective of this analysis using SVAR. Model for analysis of the so, in this research, we are going to use a structural VAR (SVAR) model to study this unexpected changes in Y_t. is specified below:

$$A_0yt = \gamma_0 - b_1y_t + b_2y_{t-1} + b_3y_{t-2} + b_3y_{t-4} + \ldots\ldots\ldots b_py_{t-p} + \boldsymbol{\mu}\square \quad 3.15$$

Where A_0 is the contemporaneous relationships between endogenous variables, yt is a vector of endogenous variables, i.e yt = (*HHFCt , HHDYt , nINTRt , nEXRt, TROPt*). The γ0 is a vector of intercepts, b_1 is a vector of parameters in 5 equations, and $\boldsymbol{\mu}\square$ Denotes structural innovations imposed on endogenous variables and must be serially uncorrelated and uncorrelated by each other with mean zero and variance covariance matrix I (identity matrix). The coefficients in A_0 and b are the parameters of interests.

Reduced form representation, normalization, and identification

In a case where there is no access to the SVAR representation. Then the reduced VAR will be accessed and it is represented in the form of yt. If there are multiply equations in both sides by $A^{0\ -1}$, we get the following equation:

$$Y_t = c_0 - \square_1y_t + \square_2y_{t-1} + \square_3y_{t-2} + \square_3y_{t-4} + \ldots\ldots\ldots \square_py_{t-p} + \boldsymbol{\mu}\square \quad 3.16$$

Where: $c_0 = A_0^{-1}\gamma_0$, $\Phi s = A_0^{-1} b_s$ *for s = 1; 2; 3; ⋯; p and* $\square_t = A_0^{-1}\boldsymbol{\mu}\square$

However, there is possibility of the number of parameters in SVAR exceeding sampling information (Gottschalk, 2001).

In order to identify the sampling information in the data set. We estimate the parameters with unrestricted VAR. The unrestricted VAR can be written as follows:

$$Y_t = c_0 - b_1y_t + b_2y_{t-1} + b_3y_{t-2} + b_3y_{t-4} + \ldots\ldots\ldots b_py_{t-p} + \varepsilon\square \quad 3.17$$

Then restrictions we will be imposed since the number of known parameters estimated from unrestricted VAR is fewer than the number of parameters in SVAR. So, restrictions placed on matrix A^0 (the matrix of the contemporaneous relationships among endogenous variables of the structural model). Therefore, if VAR has m endogenous variables, we are going to impose m (m-1)/2 restrictions in order to estimate SVAR.

Definition, Description of Variables, Derivation, Measurement Unit and Data

The study used quarterly data from 1981 to 2021 obtained from CBN 2021 statistical bulletin and World Bank Development Indicator 2021. The variables for which data was collected are household disposable income (HHDY) which is gross household income less tax liabilities. It is used by Odionye et al. (2015), in the study of the effect of financial wealth on household consumption in Nigeria. It is also measured by dividing the real income with the population hence income per capita as it was used by Ozigbu et, al. (2019) study on vector autoregression (var) analysis of the nexus between exchange rate volatility and private domestic consumption in Nigeria. The prior expectation of household disposable income is that it will be positively related to household consumption. The variable is proxy by total income less total non-oil tax divide by total population (Odionye et al., 2015). It is measured in billions of Naira (₦' Billion). The data was sourced from the Central Bank of Nigeria Statistical Bulletin (2021)

Household final consumption (HHFC) is the selection, acquisition and use of goods and services for the satisfaction of wants (Thomas, 2013). It is used and measured as household final consumption in this study as was used by Keho, 2021. It is measured as households final consumption (constant 2015 US$) and was sourced from world bank development indicator 2021. Nominal exchange rate (nEXR) is used in the model since we are interested on the short run dynamics. It is computed with the official Naira/Dollar nominal exchange rate (NER) multiplied by the ratio of consumer price indices in United States and Nigeria. A decrease in nEXR indicates an appreciation while an increase denotes depreciation. The nEXR was sourced from the central bank of Nigeria statistical bulletin 2021. It is used by Essien, Uyaebo and Omotosho (2017) on their study of exchange rate misalignment under different exchange rate regimes in Nigeria. It is measured in naira

Inflation rate (INFR) is the measure of general prices of goods and services purchased or otherwise acquired by economic agents, which households use directly, or indirectly, to satisfy their needs and wants. As the prices of different goods and services does not all change at the same rate, a price index can only reflect their average movement? The theory of demand postulated that household consumption is inversely proportional to the prices of goods and services. Therefore, inflation is a prior in-deterministic since some level of inflation can boast economic performance. It is also used in this model of exchange rate transmission mechanism as was use by Alexander 1957. It is measure in naira and sourced from CBN statistical bulletin 2021.

Nominal interest rate (nINTR)is interest rate for deposits. It is used in this model since it is an impotent variable to the households when taking decision on either to consume more or save more with their meager disposable income. Higher interest rate leads to lower consumption in two ways: i) higher cost of borrowing and higher alternative cost of consumption and ii) lower asset prices and asset wealth. It has been used by most researchers in trade openness related studies to determine the impact of exchange rate and it dynamics. Among the researcher is Bahmani-Oskooee and Xi (2012) who use it to examine the domestic consumption in Japan, USA and Canada. It is sourced from CBN Statistical Bulletin 2021.

Trade openness (TROP) is a variable used to captures the globalization and integration of Nigeria economy. It is derived by summation of the import and export divided by real GDP (OPN = M+X/Real GDP) it is measured in billions of naira. It has been widely used in in trade and globalization related studies. It has been used as one of an explanatory variable in determination of real exchange rate Volatility in Nigeria (Ajao, 2015). It is indeterminate statistically since it is determine by the exchange rate, household taste, preference, etc. In this study it will be used to determine the exchange rate transmission impact on household consumption in Nigeria, since it captures factors other than prices of the commodities in the country. It is also sourced from CBN statistical bulletin 2021.

Empirical Results and Discussions

The empirical results of the regression were subjected to various economic and econometric tests and presented as well as discussed under this subsection.

Table 1: Descriptive Statistics

Variables	Mean	Max	Min	SD.	Obs.
HHDY	500728.9	734683.6	109656.1	124038.9	161
HHFC	54.834	81.535	9.834	16.379	161
INFR	15.621	54.511	5.3880	9.193	161
nEXR	83.706	209.552	0.742	56.678	161
nINTR	6.437	11.064	0.3167	2.621	161
TROP	29.103	51.460	9.140	10.849	161

Source: Researchers' Computation (2023)

The descriptive statistics result indicated that the mean and the median values of most of the series in the distribution are averagely of the same value, as this is one of the assumptions of normal distribution, thus the series can be said to be normally distributed. From the ρ-value of the Jacque-Bera test, a test for normality; since most of the ρ-values are greater than the significant level of 5 per cent, thus the null hypothesis which states that the series are not normally distributed can be rejected. Also, the Kurtosis value of 3 or close to 3 indicates a normal distribution. In conclusion, the results of the standard deviation, skewness, Kurtosis and Jacque-Bera confirmed the normality of the series in the distribution.

Table 2: Correlation Matrix

Variables	*HHDY*	*HHFC*	*INFR*	*nEXR*	*nINTR*	*TROP*
HHDY	1.000	0.191	-0.321	0.183	0.053	-0.336
HHFC		1.000	-0.186	0.449	0.622	0.242
INFR			1.000	-0.412	-0.072	0.012
nEXR				1.000	0.149	0.060
nINTR					1.000	0.408
TROP						1.000

Source: Researchers' Computation (2023)

A correlation coefficient indicates the strength of relationship among pairs of values. The correlation coefficient of the values of -1 or 1 indicates a strongest linear relationship among the variable but correlation coefficient of zero 0 indicates a weakest or no linear relationship. The coefficient also means that an increase (+) or decrease (-) in one of the variables will cause a fixed proportion change in the other variable. From the result of the correlation matrix in table 2 there are a positive (0.191, 0.242) weak linear relationship between the household final consumption HHFC, household disposable income HHDY and trade openness respectively. The result also shows a strong (0.449, 0.622) linear relationship between HHFC and nominal exchange rate nEXR and nominal interest rate nINTR respectively. The result also shows no strong correlation among the independent variables, which implies that all the variable, is fit to be used in the analysis without a problem of multicollinearity and unreliable statistical inferences.

Table 3: Unit root (ADF)

Variables	ADF test at levels	5% critical value at level	ADF test (first diff)	5% critical value (first diff)	Order of integration	Conclusion
HHFC	*(*-2.730816*)*	(-2.880088*)*	*(*-3.785019)	*(*-2.880088)	*I(1)*	*Stationary*
HHDY	(-1.681025)	(-2.881123)	*(*-4.759965)	*(*-2.879610)	*1(1)*	*Stationary*
nEXR	(-0.978141)	(-2.879610)	(-3.783178)	(-2.879610)	*I(1)*	*Stationary*
INFR	(-5.63907)	(-2.879610)			*I(0)*	*Stationary*
nINTR	(-3.069793)	(-2.879610)			*I(0)*	*Stationary*
TROP	(-2.928543)	(-2.879610)			*I(0)*	*Stationary*

Source: Researcher's Computation (2023)

From the above results in Table 3 the household disposable income HHDY, nominal exchange rate (nEXR) and households final consumption HHFC are greater than their 5% critical value at level *I(1)* as indicated in Table 3 while inflation rate INFR, trade openness TROP and nominal interest rate nINTR are greater than their 5% critical value at first difference level *I(0)*. These unit roots results reveal that the variable have mix order integration of *I(0)* and *I(1)*. In such context, the ARDL bounds test approach is suitable to examine if there are long run relationship among the variables.

Test for Co-integration

Given that the series are integrated of order zero and one that is 1(0) and 1(1), auto redistributed lag co-integration approach is found most appropriate in ascertaining if there is a long run relationship existing between the variables of the model. The theory of co-integration, was pioneered by Granger (1981), Engle and Granger (1987), addresses this issue of integrating short-run dynamics with Long-run equilibrium. This study makes use of ARDL bound test approach developed by Pesaran et al (2001) to evaluate if there is a co-integration among the variables. Null hypothesis to be tested (H_0): there is no co-integration among the variables.

Table 4: ARDL Bounds Test result

Test Statistics	**Value**	Critical Value Bounds	
F-Statistics	**4.619262**	**I(0) Bounds**	**I(1) Bounds**
Significance levels	5%	**2.62**	**3.79**

Source: Researcher's Computation (2023)

The co-integrating was evaluated through ARDL Bounds Test. The result as shown in Table 6 indicated that the F-Statistics value (4.619262) is greater than the lower and upper critical bounds at 5% significant value. This result indicates an evidence of co-integration among the variables. The conclusion from the result is rejection of null hypothesis of no co-integration. Since the variables are co-integrated, we estimate the long run consumption function and the short run dynamic using ARDL technique as suggested by Stock and Watson (1993).

Lag selection Criteria

Akaike information criterion and Schwarz criterion was used to ascertain the optimal autoregressive lag length that is suitable for the best model to adopt. It was stipulated that the best model to choose is the one with lowest Akaike information criterion and Schwarz criterion. The lag was selected using the software (EVIEW 12)

Table 5: Lag Length

Lag	LogL	LR	FPE	AIC	SC	HQ
0	53.563	NA	0.031	-0.639	-0.539	-0.598
1	275.63	426.606	0.002	-3.548	-3.428	-3.499
2	327.197	98.379	0.001	-4.213	-4.073	-4.156
3	327.927	1.385	0.001	-4.209	-4.050	-4.145
4	329.800	3.524	0.001	-4.221	-4.042	-4.148

5	333.796	7.467	0.001	-4.260	-4.061	-4.180
6	342.955	16.993*	0.001*	-4.367*	-4.149*	-4.279*
7	342.961	0.010	0.001	-4.354	-4.116	-4.258
8	343.051	0.163	0.001	-4.342	-4.084	-4.238
9	343.406	0.645	0.001	-4.334	-4.056	-4.221

Source: Researcher's Computation (2023)

From table 4 the least value between Akaike information criterion and Schwarz criterion is -4.035388 so the best lag length to be used is 6.

Table 6: Long Run Model

Dependent Variable: log of Household Final Consumption (HHFC)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HHDY	0.564	0.323	1.744	0.084
nEXR	0.084	0.060	1.410	0.161
INFR	-0.274	0.195	1.401	0.164
nINTR	0.096	0.097	0.996	0.164
TROP	0.091	0.146	0.620	0.536
C	-4.812	4.506	-1.068	0.287
R^2 = 0.995	Adj.R^2= 0.994	F-stat= 901.977	Prob(F-stat) = 000	D.W= 2.112

Source: Researcher's Computation (2023)

Table 7: Analysis of the Short-Run Dynamisms

Dependent Variable: log of Household Final Consumption (HHFC)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(HHDY)	0.010	0.035	0.296	0.768
DLOG(nEXR)	0.012	0.010	1.259	0.210
DLOG(INFR)	0.145	0.020	7.310	0.000
DLOG(nINTR)	-0.075	0.021	-3.474	0.001
DLOG(TROP)	-0.129	0.042	-3.068	0.003
ECM(-1)	-0.040	0.008	-4.767	0.000

Source: Researcher's Computation (2023)

Table 6 and 7 reveals the long-run and short run relationship of households' final consumption and all the explanatory variables.

Evaluation Based on Statistical Criteria

R^2 and Adjusted R^2

The R^2 = 0.995168 indicates that the independent variables explains the dependent variable up to 99%, meaning that about 99% of the variation in household consumption is explained by HHDY, nEXR, INFR, nINTR and TROP. The remaining 0.005% is explained by variable not included in this model. The adjusted R^2 is reported as the multiple coefficient of determination adjusted to take into account the degrees of freedom associated with the sum of squares. The Adjusted R^2 result is 0.994. This implies that about 99% of the fluctuations in the dependent variable (HHFC) are jointly explained by the fluctuations in the explanatory variables (HHDY, nEXR, INFR, nEXR and TROP). F-stat. = 901.978, Prob. F-stat = 0.000 shows that the variable are collectively significant. The Dubin Wastin, D.W= 2.112 indicates that there is no problem of autocorrelation between the variables since the coefficient is to 2.

F-Statistic Test

The table below summarizes the significance of the overall regression

Table 8: Summary of the F-Statistics Test

F-statistics	$F_{0.05}(2,18)$	Decision	Rule	Conclusion
F-stat.= 901.978	3.493	$F_{cal}>F_{tab.}$	Reject H_0	Statistically Significant

Source: Researcher's Computation (2023)

Since F_{cal} = 901.978 is greater than the $F_{0.05}$ (2, 18) = 3.493, we reject H_0. Thus, we conclude that the slope coefficients are not simultaneously equal to zero; hence, there is a joint significance of the variables used in the model, which implies that there is a strong relationship between the regressand (HHFC) and the regressors (HHDY, nEXR, INFR, nINTR and TROP).

Student t-statistic Test

The table below summarizes the statistical significance of each of the variables at 5% level.

Table 9: Summary of the t-test

Variable(s)	t-statistic	Critical-Value	Decision Rule	Conclusion
HHDY	1.744	2.04	Accept H_0	Statistically Insignificant
nEXR	1.410	2.04	Accept H_0	Statistically Insignificant
INFR	0.164	2.04	Accept H_0	Statistically Insignificant
nINTR	0.164	2.04	Accept H_0	Statistically Insignificant
TROP	0.620	2.04	Accept H_0	Statistically Insignificant
C	-1.068	2. 04	Accept H_0	Statistically Insignificant

Source: Researcher's Computation (2023)

From the results displayed in the table 4.10 above, shows that none of the variables are statistical significant hence HHDY, nEXR, INFR, nINTR and TROP are all statistically insignificant at 5% level meaning that none of the variable except can significantly explain the change in household consumption in Nigeria individually.

Serial Correlation Test Result

Table 10: Breusch-Godfrey serial correlation LM test

F- Statistics	9.279	Prob. F (4,123)	0.000
Obs* R-squared	36.395	Prob. Chi-square (2)	0.000

Source: Researcher's Computation (2023)

Serial correlation is defined as correlation between members of series of observations ordered in time (Gujaratti and Sangeetha (2007). The test is to check if there are residuals that are correlated with each other.
Decision rule is based on the probability of the chi-square. Ho: There is no serial correlation among the independent variable.

Decision rule: Reject H_o if the probability of the chi-square is greater than 0.05 critical values, then no serial correlation. From the serial correlation LM tests, the chi-squared probability (0.0000) is less than 0.05, we accept H_0. This means that there is no serial correlation between the independent variables. This can be seen in table10.

Table 11: Heteroscedasticity Test:

F- Statistics	0.722	Prob F(29,127)	0.8846
Obs* R-squared	22.231	Prob. Chi-Square(29)	0.8105

Source: Researcher's Computation (2023)

According to Gujaratti (2009), Heteroscedasticity means unequal measures of an observed value of the dependent variable around the regression line.

H_0: there is no Heteroscedasticity

H_1: there is Heteroscedasticity. Decision rule: Reject H_0 if Obs* R-squared of probability chi-square is less than 5% critical value. From the result above, since the Obs* R square probability chi-square is greater than 0.05 i.e. 0.8105 > 0.05, we therefore accept H_0 and conclude that errors in the regression have constant

Discussion of Findings

The findings through ARDL model revealed that nominal exchange rate nEXR elasticity (0.084, 0.012) has an insignificant (0.1610, 0.2104) positive relationship with final household consumption in the long and short run. Such that a percentage (1%) increase in nominal exchange rate will increase the final household consumption by 8% in the long run and 1% in the short-run. These imply that households can positively change their consumption in both the long run and short run however this change will insignificant to alter their life long consumption plan. It conforms to the a priori expectation of exchange rate but was at variance with the findings of Ozigbu et, al. (2019) that exchange rate has a negative impact on household final consumption. But agreed with Adedeji & Adegboye (2013) that exchange rate is positively related to the household consumption. The inflation INFR coefficient of (-0.274, 0.0.145) with an insignificant value of (0.1636, 0.000) in the long run and short run respectively shows that inflation INFR has a negative relationship to final household consumption in long run but positive in the short run. A percentage (1%) increase in prices of goods and services as measured by inflation will lead to decrease of 27% of household consumption in the long run but an increase of 14% in the short run; however the long run is insignificant while the short run have a significant impact. Therefore, a rational household will prefer to consume than to save in the long run if there is a persistent general increase of price level. The finding also resonates with the finding of Alexander in 1957 that was the first to propagate that exchange rate dynamics affect household consumption negatively through inflation.

The result of trade openness TROP shows insignificant bi-directional relationship with household final consumption. It is positive (0.091) and insignificant (0.5361) in the long run but negative (-0.129) and significant (0.0026) in the short run. This means that one percent (1%) increase in trade openness will lead to an increase of 9.1 % and decrease of 12.9% in the short run respectively of final household consumption in Nigeria. However, it is significant in the short run, means that households in Nigeria can benefit from trade openness but have little or nothing to trade in the short run, since it takes time to acquire skills which the household can trade. This result was in line with the findings of Vasiliki (2006) study on trade openness on economic growth, where he concluded from his finding that trade openness have a positive relationship with economic welfare but differs with the study on the significant of the findings of the result.

In our further analysis of the second and third objectives of the study, structural vector autoregressive model was employed (SAVR). However the variables of interest in the second and third objectives HHFC, INFR, nEXR and TROP were selected and the result displayed below:

Table 13: Variance Decomposition of the selected macroeconomic variables

Variance Decomposition of DLOG(HHFC):					
Period	S.E.	Shock1	Shock2	Shock3	Shock4
1	0.029254	100.0000	0.000000	0.000000	0.000000
2	0.038190	99.48369	0.406441	0.079042	0.030825
3	0.043365	99.21684	0.566069	0.122211	0.094876
4	0.046597	99.07732	0.553611	0.126423	0.242650
5	0.046860	98.05278	0.548457	0.125498	1.273269
6	0.046963	97.67962	0.646295	0.125048	1.549036
Variance Decomposition of LOG(INFR):					
Period	S.E.	Shock1	Shock2	Shock3	Shock4
1	0.108724	13.23389	86.76611	0.000000	0.000000
2	0.196315	13.85109	85.98970	0.035356	0.123858
3	0.276057	13.93274	85.60801	0.070720	0.388526
4	0.348680	13.98335	85.16822	0.086831	0.761594
5	0.403732	13.01440	84.83478	0.249842	1.900982
6	0.442687	11.91919	83.51100	0.737508	3.832301

Variance Decomposition of LOG(TROP):					
Period	S.E.	Shock1	Shock2	Shock3	Shock4
1	0.048121	0.573828	12.39558	87.03060	0.000000
2	0.099202	0.503993	12.11477	87.36897	0.012266
3	0.154055	0.414756	11.81883	87.72098	0.045435
4	0.210045	0.318410	11.58346	87.99856	0.099576
5	0.249169	0.249080	11.24758	88.34997	0.153368
6	0.280073	0.208408	10.83621	88.73253	0.222861
Variance Decomposition of DLOG(NEXR):					
Period	S.E.	Shock1	Shock2	Shock3	Shock4
1	0.234615	0.083922	0.759933	0.055684	99.10046
2	0.238626	0.145325	0.735710	0.067461	99.05150
3	0.239381	0.184917	0.772137	0.120282	98.92266
4	0.239716	0.271316	0.827890	0.235100	98.66569
5	0.242471	0.282818	1.975560	0.234116	97.50751
6	0.243070	0.309538	2.229185	0.339775	97.12150
Structural VAR					

Source: Researcher's Computation (2023)

The variance decomposition indicates how much of the forecast error variance of each of the variables that can be explained by exogenous shocks to the other variables. It helps to highlight the areas researchers can focus their attention to explain the phenomena. Therefore, from table 13 which show similar results like those of the ARDL were also found through the structural VAR variance decompositions result. The result indicated that a unit shock on final household consumption will be explained by 99.4% variation of final household consumption HHFC (shock 1). While a unit shock in inflation (INFR) will explain 86.7% variation of final household consumption HHFC (shock 2). While a unit shock in Trade openness (TROP) will explains 88.7% variation of final household consumption HHFC (shock 3). In addition, the nominal exchange rate (nEXR) explains the variations in final household consumption by 99.1% variation of final household consumption in Nigeria (shock 4). The result clearly highlighted the shock in exchange rate explaining the much variation among the variables on household final consumption.

Conclusion and Recommendations

The results of the analysis show that final households' consumption responds more to shocks in exchange rate dynamics than its transmission channels. In evaluation of the impacts of the two channels of transmission of the exchange rate dynamics (inflation and trade openness), the study found that both channels have a mixed impacts on final household consumption, while inflation is negative, trade openness is positive. The last objective of study was to find if these identified channel(s) were re-enforcing or diffusing one another. The study found that the impact of inflation channel is negative and higher than that of trade openness positive, therefore they are diffusing one another. However, the impact of inflation channel outweighed that of trade openness thereby making the overall impact of exchange rate dynamics on households' consumption in Nigeria negative. Therefore, two prong pragmatic approaches should be applied by the policy makers. First, is to curb the high inflation and secondly is to improve our exports of goods and services to maximize the trade openness channels. Sequel to the findings, the study recommended an increase in the use of fiscal policy to curb inflation and spurring the economy for export. Also, strengthening the existing use of made in Nigeria goods policy will reduce the pressure on exchange rate. Furthermore, the export promotion council of Nigeria should rise up to make export processes seamless by not only removing the bureaucratic bottle neck in exports but also ensure that quality exportable goods are produced.

References

Abubaker, R. (2016). Consumption and money uncertainty at the zero lower bound. *Economics Bulletin,* 36(1), 449–463.

Adedeji, A. & Adegboye, A. A (2013). The determinants of private consumption spending in Nigeria . *International Journal of Business and Economic Research*, 1(2), 103-116.

Alexander, S. S. (1952). Effects of a devaluation on a trade balance. *International Monetary Fund*, 2(2), 263. Retrieved from doi:10.2307/3866218

Ando, A., & Modigliani, F. (1963). The life cycle hypothesis of saving: Aggregate implications and tests. *American economic review*, 53(1), 55–84.

Apergis, N., Simo-Kengne, B., & Gupta, R. (2014). The Long-Run Relationship Between Consumption, House Prices, and Stock Prices in South Africa: Evidence from Provincial-level Data. *Journal of Real NEstate Literature*, 22(1), 83–99. https://doi.org/10.1080/10835547.2014.12090371

Ayobami, O. T. (2019).Exchange rate volatility and the performance of manufacturing sector in Nigeria (1981-2016). *African Journal of Economic Review*, 7(2).

Azeez, B. A., Kolapo, Funso T., & Ajayi, L. B. (2012). Effect of exchange rate volatility on macroeconomic performance in Nigeria. *Interdisciplinary Journal of Contemporary Research in Business*, 4(1), 49-155.

Azid, L., Jamil, N, & Kousar, P. (2013). Impact of exchange rate volatility on growth and economic performance: A Case study of Pakistan 1973–2003. *The Pakistan development review,* 44(4), 749–775.

Bawa, S. & Abdullahi, I.S. (2012). Threshold Effect of Inflation on Economic Growth in Nigeria, *CBN Journal of Applied Statistics*, 3(1), 43–63

Cassel, G. (1916). The present situation of the foreign exchanges. *Economic Journal*, 26, 62–5.

Campbell, J. Y., & Mankiw, N. G. (1989). Consumption, income and interest rates: Reinterpreting the time series evidence. In *NBER Macroeconomics Annual*. 4, 185-246, MIT Press.

Campbell, J. Y., & Mankiw, N. G. (1991). The response of consumption to income: A crosscountry investigation. *European Economic Review*, 35(4), 723-756.

Central Bank of Nigeria, (2021). *Statistical bulletin*. Retrieved from https://www.cbn.gov.ng/documents/Statbulletin.asp

David, R. O. Dikko, H. G & Gulumbe, S. U. (2016), Modelling Volatility of the Exchange Rate of the Naira to major Currencies. *CBN Journal of Applied Statistics*, 7(2).

Dornbusch, R. (1976). Expectations and exchange rate dynamics. *Journal of political Economy*, 84(6), 1161-1176.

Edeme, R., K., & Okafor, C., O. (2017). Exchange rate fluctuations and household welfare in Nigeria. *International Journal of Economics, Business and Management Research*,1 (2017). Retrieved from http://ijebmr.com

Engle, R. F. & Granger, C. (1987). *Cointegration and error-correction: Representation estimation and testing, econometrica,* l(55), 251–276.

ssien, S. N., Uyaebo, S.O. & Omotosho, B. S. (2017). Exchange rate misalignment under different exchange rate regimes in Nigeria, *CBN Journal of Applied Statistics (JAS*), 8(1). Retrieved from https://dc.cbn.gov.ng/jas/vol8/iss1/1

Esra, A. & Unal, S. (2019). The dynamics of household final consumption: The role of Wealth Channel. *Central Bank Review*, 19, 21-32.

Evans, M.D.D. (2011). *Exchange-Rate Dynamics*. Princeton: Princeton University Press.

Fernández-Villaverde, J., Rubio-Ramirez, J. F., & Sargent, T. J. (2005). A, B, C's, (and D's) for understanding VARs. *FRB Atlanta Working Paper*. Retrieved from https://ideas.repec.org/p/fip/fedawp/2005-09.html

Frenkel, J. A. (1976). A monetary approach to the exchange rate: doctrinal aspects and empirical evidence. *The scandinavian Journal of economics*, 2(5), 200-224.

Friedman, M. (1957). *A Theory of Consumption Function*. Princeton: University Press.

Gottschalk, J. (2001). An introduction into the SVAR methodology: identification, interpretation and limitations of SVAR models (No. 1072). *Kiel working paper*.

Hall, R.E. (1978). Stochastic implications of the life-cycle permanent income hypothesis: Theory and evidence. *Journal of Political Economy*, 86(2), 971-987. Retrieved from https://doi.org/10.1086/260724

Harris, H., & Sollis, R. (2003). Applied time series modelling and forecasting. *Journal of Finance and Economics*, 2(3),44-50.Wiley:WestSussex.

Irefin, D., & Yaaba, B. (2012). Determinants of foreign reserves in Nigeria: An autoregressive distributed lag approach. *CBN Journal of Applied Statistics*, 2(1), 269.

Iyke, B.N., & Sin-Yu, H. (2017). Real exchange rate volatility and domestic consumption in Ghana. *MPRA (Munich Personal RePEc Archive) Paper* 78852. Munich: University of Munich.

Jhingan, M.L. (2011). *International economics* (6th Ed.). India: Vrinda Publications Ltd.

Kabundi, A. (2012). Dynamics of Inflation in Uganda, *ADB Working Paper* Series No. 152, African Development Bank, Tunis, Tunisia.

Keho, Y. (2021). Effects of real exchange rate on trade balance in Cote D'Ivoire: Evidence from threshold nonlinear ARDL Model. *The Theoretical Economics Letter, s* 11: 507–521. Retrieved from doi:10.4236/tel.2021.113034

Keynes J. M. (1936). *The General Theory of Employment, Interest and Money*. London: Macmillan.United Kingdom: Palgrave Macmillan. ISBN: 978-0-230-00476-0

Lucas Jr., R.E., (1976). Econometric policy evaluation: a critique. In: Carnegie Rochester (ed) *Conference Series on Public Policy*, 1, North-Holland, 19-46.

Marchand, B., U. (2017). Tariff pass-through and the distributional effects of trade liberalization. *Journal of Development Economics*, 99(2), 265–281.

Muhammad, Z. C., & Hafiz, S. M. A. (2019).Comparative study of developed, developing and emerging economies. *International Journal of Accounting and Financial Reporting*, 9(3), 164. Retrieved from https://doi.org/10.5296/ijafr.v9i3.15248

Obadan, M.I. (2006). Overview of exchange rate management in Nigeria from 1986 to date: In the dynamics of exchange rate in Nigeria. *Central Bank of Nigeria Bulletin*, 3 (30).

Odionye, J. C., Ugochukwu, S. U., & Ibeleme S. N. O. (2015). The effect of financial wealth on private consumption: Evidence from Nigeria. *British Journal of Economics, Management & Trade* 6(4), 300-307. Retrieved from https://doi.org/10.9734/BJEMT/2015/13289

OECD (2013). *Household consumption in OECD framework for statistics on the distribution of household Income, Consumption and Wealth*, OECD Publishing, Paris. Retrieved from https://doi.org/10.1787/9789264194830-8-en

Okafor, N., S. & Lokossou, S., J. (2020). Domestic consumption and uncertainty of exchange rate in a monetary union: Evidence from the euro area. *European Journal of Applied Economics*, 18(1), 151– 172

Oladipo, O. S. (2012). An analysis of sectoral exchange rate pass-through effects on a small open economy using the Leontief Input-Output technique. *International Journal of Economic Policy in Emerging Economies*, 5(1), 47–65. Retrieved from https://ideas.repec.org/a/ids/ijepee/v5y2012i1p47-65.html

Omojimite, B. U., & Oriavwote, V. E. (2012). An Empirical Assessment of the Real Exchange Rate and Poverty in Nigeria. *Asian Economic and Financial Review*. Retrieved From https://www.semanticscholar.org/paper/An-Empirical-Assessment-of-the-Real-Exchange-Rate-Omojimite-Oriavwote/0ca8cd37bc96cd29f30eee57fda5be0bbc996a70

Osuji, O. (2020). Effect of inflation on household final consumption expenditure in Nigeria. *Journal of Economics and Development Studies*. 8(1), 104-111.

Ozigbu, J., Chukwuma, E., Christopher, I., & Morris, R, E. (2019). Vector Auto Regression (VAR) Analysis of the Nexus between exchange rate variations and private domestic consumption in Nigeria. *International journal of business and management*, 7 (8), 1-15. Retrieved from https://www.eajournals.org/journals/international-journal-of-business-and-management-review-ijbmr/vol-7-issue-8-december-2019/vector-autoregression-var-analysis-of-the-nexus-between-exchange-rate-volatility-and-private-domestic-consumption-in-nigeria/

Ozturk, I. (2006), Exchange rate volatility and trade: A literature survey. *International Journal of Applied Econometrics and Quantitative Studie*s, 3, 85-102.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bound testing approaches to the analysis of level relationship, *Journal of Applied Econometrics*, 2, 12.

Ricardo, D. (1817). *Principles of Political Economy and Taxation*. London: G. Bell & Sons.

Saha, S., & Zhang, Z. (2013). Do exchange rates affect consumer prices? A comparative analysis for Australia, China and India. *Mathematics and computers in simulation*, 93, 128-138.

Siddiqui, R., & Akhtar, N. (1999). The impact of changes in exchange rate on prices: a case study of Pakistan. *The Pakistan development review*, 1059-1066.

Sims, C. A. (1980). Macroeconomics and Reality. *Econometrica*, 48(1), 1. https://doi.org/10.2307/1912017

Umaru, A & Zubairu, A. A. (2012). Effect of inflation on the growth and development of the Nigerian Economy (an empirical analysis). *International Journal of Business and Social Science*. 3 (10), 183-191.

Vasiliki P. B. (2006).The impact of trade openness on economic growth. A Masters thesis presented at the Erasmus School of Econimics, Erasmus Universitiet Rotterdam

World Bank (2021). *World development indicators*. Retrieved from http://data.worldbank.org/data-catalog/worlddevelopment-indicators

Wolde-Rufael, Y. (2008). Budget Deficits, Money and Inflation: The Case of Ethiopia. *The Journal of Developing Area*s, 42(1), 183–199. https://doi.org/10.1353/jda.0.0028