

Intra-Temporal Perspective: The Effect of Current Consumption on Future Consumption Opportunities in Nigeria

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Abstract

This study examined the effects of current consumption expenditure on future consumption opportunities in Nigeria. Consumption is one of the determinants of economic wellbeing. Over the past few years, exchange rate volatility which greatly increased exchange rate risk and accelerated inflation has made cost of living extremely high, thereby necessitating this study. The study spanned across 2000-2022. The variables included in the study are: private consumption expenditure, per capita income, exchange rate, interest rate, consumer price index and private domestic saving. Study employed Auto Regressive Distributive Lag technique for the analysis of data. Results indicate that: (1) There was a significant relationship between future consumption opportunities and the explanatory variables in different time periods. (2) There was a negative significant effect of current consumption on future consumption opportunities in Nigerians. (3) Exchange rate, consumer prices and savings had negative significant effect on consumption in Nigeria. (4) Per capita income and interest rate had positive significant effect on consumption in Nigeria. The study recommends *inter alia*, that to reduce the negative effect of exchange rate, consumer prices and savings on consumption in Nigeria, the Central Bank should adopt reasonable Monetary Policy Rate (MPR) that could stimulate investment and reduce cost of living in Nigeria.

Keywords: *Intra-temporal decision, current consumption, future consumption*

JEL Classification Codes: *E21, E31, E43, O15*

Introduction

The Nigerian population stands at approximately 218.54 million people (National Population Commission, 2022). Therefore, Nigeria is the most populous country in Africa and sixth most populous country in the world. Nigeria's real household consumption as a proportion of Gross Domestic Product (GDP) rose to 76 percent in 2021, the highest level since 2010 (FBN Quest, 2024). According to the report, the surge has accelerated economic recovery irrespective of the COVID-19 pandemic. This recovery might have been driven by rapid consumer demand and industrial profit margin resulting from higher product prices by Fast Moving Consumer Goods (FMCG) companies. In recent time, exchange rate volatility which greatly increased exchange rate risk and accelerated inflation has made cost of living to be extremely high and this has greatly affected the current consumption rate as well as future consumption opportunities. Although Naira is currently gaining against the Dollar, Nigerians are yet to feel the impact on the prices of goods and services. Therefore, the average Nigerian consumer is still worse off, with a contracted spending wallet due to high food inflation, and generally very weak real income level which equally discourages savings and investment. Consumption is described as the use of goods and services by households as well as a determinant of wellbeing (Magrabi et al., 1991; Paim, 1995). Goods and services are acquired by households through the use of resources. Thus, the amount and kind of available goods and services consumed by households are determined by the amount and kind of resources at their disposal, the usage of those resources, the number of resources needed to obtain goods and services, and the tastes and preferences of the household (Goodwin et al., 2008; Magrabi et al., 1991).

To access current and future consumption activities and opportunities in Nigeria across time and explain how income and consumption vary in life, the life cycle hypothesis introduced by Modigliani and Brumberg (1954) and further

developed by Ando and Modigliani (1963) exhibits the potentials to provide an excellent guide to the conduct and advancement of this study. This hypothesis suggests that consumers try to maintain a relatively stable level of consumption over their lifetime. In practice, this implies that younger individuals borrow to meet consumption demand, whereas middle-aged individuals save as much income as possible, and the oldest individuals spend down their assets once their financial income declines in retirement. The life cycle hypothesis has been widely used to analyze household consumption-saving decisions. Generally, the life cycle model suggests that individuals save during their working years or before retirement, and deplete it after they retire, using their savings to meet their consumption demand, especially in health care after retirement (Modigliani, 1988). Aggregately, household response to national trends in income show how the overall economy operates. This response manifests as national consumption trends. Consumption trends are known as the predictable manners in which consumers purchase goods or services overtime. Consumption behaviour is also crucial for understanding both short-term business cycles and long-term economic growth (Samuelson & Nordhaus, 1998). Consumption stands out as one of the principal components of GDP and as such, the study of consumption behaviour has become extremely necessary and of paramount importance.

The broad objective of this work is to evaluate the effect of current consumption on future consumption in Nigeria. Specific objectives are to; (a) Determine the effect of exchange rate volatility on consumption in Nigeria (2) Determine the effect of consumer spending on consumption in Nigeria (3) Ascertain the effect of current saving on consumption in Nigeria (4) Determine the effect of current income level on future consumption in Nigeria.

Literature Review

The life-cycle hypothesis (LCH) is a theory of consumption proposed by Brumberg and Modigliani in 1954, developed by Franco Modigliani in 1957 and augmented by Ando and Modigliani in 1963. This theory describes how people plan their consumption and savings over the course of their lives. The LCH posits that individuals seek to smooth their consumption throughout their lifetime by adjusting their spending based on their future income. When their income is low, they borrow to maintain their desired level of consumption and when their income is high, they save for future needs.

This theory assumes that individuals strategically plan their consumption and savings across their entire lives by considering their future income when making financial decisions. It equally posits that younger individuals may borrow while anticipating that their future income will allow them to repay it and that at middle age, people are able to save to maintain their desired level of consumption during retirement. Researchers assume that at each life stage, an individual's consumption level remains relatively stable greatly reducing financial stress both at present and in the future. This theory does not consider the aspect of saving specifically for future generations. However, LCH recognized the finite life of households, focusing on the systematic variations in income and needs which occur over the life cycle as a result of maturing and retiring, and of changes in family size. The LCH was therefore in a position to take into account bequests and the bequest motive (Modigliani 1986). The LCH holds generally those consumers maximize their utility based on the resources available to them in their life time, resulting to a consumption plan that encompasses the resources available, the rate of return on capital and the age of the consumer. These assumptions yielded a model which implies that the saving rate of a country is entirely independent of its per capita income (Fernandez-Corugedo, 2004).

The permanent income hypothesis is a theory of consumer spending which holds that people will spend money at a level consistent with their expected long-term average income. This theory was developed by the American economist Milton Friedman in his 1957 book 'A Theory of the Consumption Function.' The implication of this theory is that consumption depends on individual expectations and that people tend to smooth their consumption over time. The Permanent Income Hypothesis does not agree with the general tradition where economic policies directly translate increased income into higher consumer spending. Instead, it suggests that spending patterns depend on individuals' long-term income expectations and their desire for consumption stability. The permanent income hypothesis assumes that people make consumption decisions based on their anticipated long-term average income rather than their current income and when current income exceeds the expected permanent income, individuals save to guard against future income decline. This theory also assumes that changes in consumption behaviour are not predictable because they depend on individual expectations and that if economic policies increase overall income, it may not necessarily lead to a proportional increase in consumer spending since consumer spending is influenced by anticipated future income

rather than immediate after-tax income. Also, it assumes consumers will rather smooth out their consumption over time while saving any windfall in income. The PIH represents an important development of Keynes's aggregate consumption function. It highlighted the importance of not just the present but also the future. The PIH is rooted on the notion that individuals want to maximize their lifetime well-being (utility) subject to the constraint that all their lifetime resources must be spent and focused on distinguishing between consumption and current expenditure as well as income and current receipts. Because consumers are thought to plan their expenditures not on the basis of income received during the current period but rather on the basis of income expected during their lifetime, consumers plan their expenditure based on a long-run view of the resources that will be available to them.

However, the rational expectations revolution led by Lucas (1976) critiques both the LCH and the PIH. Lucas holds that in the face of rational expectations, structural relationships between variables may not exist as agents should only perceive a structural relationship between permanent income and consumption. But LCH and PIH also assert that a further structural relationship between observed income and permanent income exists, so that consumption is eventually determined by observed current income. Lucas however argued that there was no reason to expect a stable relationship between current and permanent income because changes elsewhere in the economy could alter the optimal way consumers make inferences about permanent income from observed income. Consumption depends on current and expected future incomes. The relationship between past and expected future incomes cannot be properly treated as an invariant feature of the economic environment since it is likely to change whenever changes in policy or other events cause rational agents to change. However, Hall (1978) argued that the structural relationship for consumption did not emanate from the relationship between current consumption and current income but from the ordering of intertemporal preferences. What does not change in the face of expectations is the agent's overall aim to maximize lifetime utility. He considered a permanent income model under uncertainty where households choose a stochastic consumption plan to maximize the expected value of their time-additive utility function subject to a budget constraint.

Again, the LCH-PIH failed empirically, these empirical failures were the result of the impact of the cyclical components in economic variables which gathered momentum as the underlying economic environment became more volatile in the 1970s. Consumption equations based on the PIH or LCH began to underpredict consumption and the previous stable relationship between (current) consumption and (current) income was no longer found in the data. Furthermore, Deaton (1992) generally critiqued all past economic models, stating that they had obvious time-series problems, spurious correlations between integrated regressors, high coefficients of determination coupled with low Durbin-Watson statistics, and an almost complete lack of diagnostic testing. For instance, various empirical studies have noted that a stationary, or long-run equilibrium relationship between current consumption and current income is unlikely to hold since the trending components of these variables tend to exhibit significant divergence. To achieve the statistical stationary condition which describes the long-run behaviour of consumption, one needs to assume that consumption depends on other secondary variables besides income in the steady-state. Personal wealth, relative prices, measures of income or age distribution appear to perform this secondary role successfully (Caballero, 1994;1995).

These weaknesses notwithstanding, the LCH is most appropriate for this study and has been adopted for this study. The LCH is considered the most suitable consumption theory for the study as it accounted for the role of interest rates on consumption decisions, the age distribution of the economy, the age of (compulsory) retirement, life-expectancy and so on. The aforementioned variables have successfully been used by researchers to explain consumption behaviour. It is worthy to note that there is no single consumption theory that can explain consumption behaviour in all economies (Fernandez-Corugedo, 2004), different consumption theories can lead to different policy prescriptions, economists must therefore focus on and work with the variables which they believe explains consumption in their country (Fernandez-Corugedo, 2004). Income is the consumption and saving opportunity gained by an entity within a specified timeframe, which is generally expressed in monetary terms. Income may originate from the sale of services such as wages, interest, profit, and rent. Individuals most often earn income through wages or salary, while businesses earn income from selling goods or services above their cost of production. Ahmed et al. (2015) used an Autoregressive distributed lag approach to estimate the absolute income hypothesis (AIH) and permanent income hypothesis (PIH) in Korea, Singapore, Australia, and New Zealand. They found that unemployment and interest rates have significant relationship with household consumption but only in the short-run, whereas wealth and income possess considerable long-run effects. Similarly, Bakri et al. (2017) using the least square method to access the effects of income on consumption found that income has a rising impact on consumer spending in Malaysia. While investigating the factors that influence household consumer spending, Arapova (2018) carried out a study in Asian nations which revealed that income is a vital expenditure factor. Studies including Obinna (2020), Bakri et al., (2017) and D' Acunto et al (2015)

exclusively considered annual income as a driver of spending. However, Iheonu and Nwachukwu (2020), Sugiarto and Wibowo (2020), and Keho (2019) investigated the factors that influence consumer spending and reported the findings which indicate that household spending is affected by not only income but prices and interest rates.

Al Gahtani et al. (2020), using an ECM approach to investigate the effects of prices, income and interest rates on spending in Saudi Arabia found that money had a more significant effect on spending than other factors. Hall (1988) in analyzing the intertemporal substitution in consumption found that periods of high real interest rates did not yield increased consumption. Okwu et al. (2020), conducted a study aimed at using an asymmetric ARDL model to investigate the asymmetrical short term and long-term impacts of the factors that predict consumer spending in Nigeria. The study concluded that positive oil supply shocks significantly influenced consumer spending. Hok (2020), using Markov Switching Autoregressive (MSAR) approach, investigated the asymmetric effects of government spending, prices, and inflation on consumer spending. The study submitted that income had a strong asymmetric influence on consumer spending and that prices do not influence household consumption expenditures. Bahmani-Oskooee and Nayeri (2020) employed the asymmetric Autoregressive distributed lag model to examine if economic policy uncertainty (EPU) does have a symmetric or asymmetric influence on the level of consumption expenditures. They found that EPU has a nonlinear effect on consumer spending.

Mumtaz and Ali (2022) assessed the impact of exchange rate volatility on consumption in Pakistan and India using the time series data from 1980 to 2018 and models which differentiated between real and nominal variables to isolate the impact of inflation pass-through. The study found that real and nominal exchange rates do not have a significant relationship with consumption in Pakistan. However, in India, an increase in real exchange rate increases consumption while an increase in the nominal exchange rate reduces consumption, indicating inflation pass-through. The results indicate that domestic consumption in India is more prone to external shocks as compared to Pakistan, most probably due to a relatively higher degree of openness, thereby implying that there is a long-run relationship between exchange rate volatility and consumption in both countries. In other words, the stabilization of the exchange rate can smooth or even out consumption in both India and Pakistan.

Uche, Chang, and Effiom (2023) investigated the relative adjustments of household's consumption expenditure to extremely small and extremely large variations in exchange rate in African emerging economies (AEE). They employed modified version of non-linear autoregressive distributed lag (ARDL) and multiple threshold non-linear ARDL models that specifically captures the differential effects of extremely small and extremely large positive and negative variations of the explanatory variable(s). It was found that changes in exchange rate have asymmetric effects on consumer spending in all sampled countries but Nigeria. Again, consumption expenditure in Algeria, Egypt and Morocco increases significantly at the upper quantile of exchange rate appreciation, whereas, it declines significantly at all quantiles of exchange rate depreciation, implying that consumption expenditure in these three North African countries is more sensitive to large positive shocks in exchange rate. On the contrary, in Kenya, Nigeria and South Africa, consumption expenditure was found to be exchange rate inelastic as households maintained their consumption levels regardless of the direction and degree of exchange rate deviations. Manasseh, et al. (2018) examined the effects of interest and inflation rates on consumer spending using granger causality Wald test. The findings suggest that all explanatory variables account for approximately 93.38% variation in consumer spending, indicating interest and inflation rates and other control variables such as per capita income, indirect tax and savings as important determinants of private consumption expenditure in Nigeria.

According to De Laiglesia and Morrisson (2008), besides increasing investment rates in less developed countries, savings is a fundamental tool in the task of lifting rural households to a more sustainable and faster growth development path. Savings at the household level is also needed to finance physical and human capital formation in order to increase output and wellbeing of rural households in developing countries (Bautista & Lamberte, 1990). Thus, savings can be relied upon as an important tool for improving wellbeing, insuring against times of shocks, and providing a buffer to help people cope in times of crisis with little or no external assistance (Miracle et al., 1980; Zeller & Sharma, 2000). Promotion of savings habits among rural households and subsequent mobilisation of savings from them by formal institutions would result in an improvement in rural income distribution provided that such institutions pay positive real rates of interest on deposits and keep transaction costs at low levels (Fernando, 1991).

Nie and Palmer (2016) in their study on the past and future consumer spending in China submitted that increase in the consumption share in China despite slower consumption growth will yield a deceleration in sectors such as exports

and investment. That is, as the shares of other sectors in GDP decrease, the relative share of consumption increases. Results suggest that consumption growth in the next five years will rely on the combination of a declining saving rate and relatively stable income growth and maintaining consumption growth over the longer run will require a further pick up in income growth, since the saving rate cannot fall indefinitely. Fernández-Villaverde and Krueger (2001) using data from the Consumer Expenditure Survey studied the process of consumption and wealth accumulation over the life cycle through the introduction of consumer durables into a dynamic general equilibrium life cycle model with income shocks and borrowing constraints. The model predicts that the interaction of consumer durables and endogenous borrowing constraints induces durables accumulation early in life and higher consumption of nondurables and accumulation of financial assets later in the life cycle. Findings indicate that durables are a key feature to explain both the hump in consumption of durables and nondurables and the optimal asset allocation of households.

The life cycle hypothesis presents a well-defined age between the consumption plans of an individual and his/her income and expectations concerning future income, as he or she passes from childhood, through the work participating years, into retirement and eventual demise (Spio & Groenewald, 1996). This implies that household savings are highest during the working years of the head and when income declines during retirement years (Bonneuil & Saint-Pierre, 2008; Saint-Pierre, 1996), the household draws from their previous savings to maintain the standard of living (Wilson, 2000). Thus, savings is needed by the household to reallocate resources over time thereby smoothing consumption over their life span especially during the retirement age of the household head.

Research Methods

To ascertain the intra-temporal effects of current consumption on future consumption opportunities in Nigeria, this study employed the ARDL bounds testing approach of Pesaran, Shin, and Smith (2001) and time series datasets on private consumption expenditure (consumer spending), per capita income (Income), exchange rate, interest rate, consumer price index (inflation rate) and private domestic savings (Investment and saving rate) for the period, 2000 to 2022 sourced from the World Development Indicators (WDI) and the Central Bank of Nigeria (CBN) Statistical Bulletin. Secondary data have been employed to examine the effects of the variables on one other.

Model Specification

The general functional representation of the relationship among the variables as adapted from Manasseh et al. (2018) is as follows:-

$$PCE=f(PCI, EXCr, INTr, CPI, PDS) \text{-----}(1)$$

And expressed econometrically as follows:

$$PCE= \alpha_0 + \beta_1PCI+ \beta_2EXCr + \beta_3INTr+ \beta_4CPI + \beta_5PDS+ \mu \text{-----} (2)$$

Equation (2) estimates the intra-temporal effects of current consumption on future consumption opportunities in Nigeria. This study has incorporated control variables such as EXCr and INTr as a result of their peculiar roles in influencing consumption and savings.

PCE= Private Consumption Expenditure

PCI= Per Capita Income

EXCr=Exchange Rate

INTr= Interest Rate

CPI= Consumer Price Index

PDS= Private Domestic Savings

α is the intercept of the function and β_1 , β_2 , β_3 , β_4 and β_5 are the regression coefficients while μ is the error term which represents other factors influencing consumption expenditure and opportunities not accounted for in this study either because they are irrelevant or they are not effective estimates of the dependent variables.

Linear ARDL Model

Equation (2) being a static model does not capture the dynamic effects of these variables on consumption behaviour and opportunities in Nigeriap. In order to fix this, the equations will therefore be represented as;

$$PCE_t = \alpha_0 + \beta_1 PCE_{t-1} + \beta_2 PCI_{t-1} + \beta_3 EXCHR_{t-1} + \beta_4 INTR_{t-1} + \beta_5 CPI_{t-1} + \beta_6 PDS_{t-1} + \epsilon_t \text{ -----(3)}$$

Results of Data Analysis

The results of data analysis have been presented in tables and figures to facilitate interpretation. The results of descriptive statistics have been presented in Table 1

Summary Statistics

Table 1: Summary of Descriptive Statistics

	PCE	PCI	EXCHR	INTR	CPI	PDS
Mean	86.38376	2.426602	0.402851	5.560346	12.62558	30.00237
Median	83.58334	3.146425	0.404842	5.790567	12.53783	29.40402
Maximum	184.5448	12.27614	0.588087	18.18000	18.87365	55.56988
Minimum	29.16099	-4.162059	0.224326	-5.627968	5.388008	16.19400
Std. Dev.	43.06869	3.504958	0.109369	5.736985	3.809057	9.884291
Skewness	0.704071	0.409580	-0.046229	0.103598	-0.047952	0.893946
Kurtosis	2.684553	4.376934	2.114154	2.636726	2.158519	3.636316
Jarque-Bera Probability	1.995605	2.460013	0.760218	0.167611	0.687401	3.451395
Sum	1986.827	55.81185	9.265580	127.8880	290.3884	690.0546
Sum Sq. Dev.	40808.06	270.2641	0.263152	724.0860	319.1961	2149.382
Observations	23	23	23	23	23	23

Source; Researchers' computation (2024) using E-views10

Table 1 shows that with the exception of exchange rate with mean equal to median and narrow range value, all other variables have means not equal to median and have large range values. The results suggest that with the exception of exchange rate, all other variables are not normally distributed

Correlation Analysis

Correlation analysis was carried out in order to ascertain the degree of relationship existing among the explanatory variables of the model. This is to ensure that multicollinearity does not constitute a problem. The result of the correlation analysis is presented on Table 2.

Table 2: Summary of correlation analysis

Covariance Analysis: Ordinary
 Sample: 2000 2022
 Included observations: 23

Correlation Probability	PCE	PCI	EXCHR	INTR	CPI	PDS
PCE	1.000000					

PCI	-0.632299	1.000000					
	0.0012	-----					
EXCHR	0.291080	-0.204586	1.000000				
	0.1778	0.3491	-----				
INTR	-0.025134	-0.066406	0.297603	1.000000			
	0.9094	0.7634	0.1678	-----			
CPI	0.281028	-0.130943	-0.447843	-0.162552	1.000000		
	0.1940	0.5515	0.0321	0.4587	-----		
PDS	-0.324732	0.263712	-0.452977	-0.605442	-0.025571	1.000000	
	0.1306	0.2240	0.0300	0.0022	0.9078	-----	

Source; Researchers' computation (2024) using E-views10

The test has revealed that no pair-wise correlation coefficient between any two regressors was up to or exceeded the stipulated benchmark of 0.8. This, there is no problem of multicollinearity in the sample for the study. Problem of multicollinearity in a sample will undermine the statistical significance of the independent variables.

Data Analysis: Pre-Estimation Test

Unit Root Test

The random nature of the variables is examined by testing for stationarity using the Augmented Dickey-Fuller (ADF) and Philip Perron (PP) test, while adopting the unit root assumption that the variables have both intercept and slope. The results of the unit root test have been presented in Table 3.

Table 3: Unit Root Table

		UNIT ROOT TEST TABLE (PP)					
		<u>At Level</u>					
		PCE	PCI	EXCHR	INTR	CPI	PDS
With Constant	t-Statistic	3.4421	-2.4305	-1.6716	-3.6427	-	-
						3.0700	2.9737
	Prob.	1.0000	0.1363	0.4422	0.0067	0.0324	0.0412
		n0	n0	n0	***	**	**
With Constant & Trend	t-Statistic	-0.4120	-3.7045	-0.9968	-3.5831	-	-
						3.1619	2.5807
	Prob.	0.9858	0.0270	0.9388	0.0369	0.0988	0.2901
		n0	**	n0	**	*	n0
Without Constant & Trend	t-Statistic	8.5858	-2.0029	0.0917	-2.3792	-	-
						0.2441	1.3174
	Prob.	1.0000	0.0438	0.7093	0.0176	0.5957	0.1724
		n0	**	n0	**	n0	n0
		<u>At First Difference</u>					
		d(PCE)	d(PCI)	d(EXCHR)	d(INTR)	d(CPI)	d(PDS)
With Constant	t-Statistic	-	-9.3818	-9.4111	-9.3812	-	-
		11.3538				9.4145	9.4025
	Prob.	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000

		***	***	***	***	***	***
With Constant & Trend	t-Statistic	-	-9.3320	-9.6689	-9.3614	-	-
		12.6508				9.3609	9.5782
	Prob.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		***	***	***	***	***	***
Without Constant & Trend	t-Statistic	-9.4340	-9.4340	-9.4340	-9.4340	-	-
						9.4340	9.4340
	Prob.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		***	***	***	***	***	***
ADF UNIT ROOT TEST							
<u>At Level</u>							
		PCE	PCI	EXCHR	INTR	CPI	PDS
With Constant	t-Statistic	1.6514	-1.6419	-1.6716	-1.8681	-	-
						2.9020	2.9594
	Prob.	0.9995	0.4570	0.4422	0.3458	0.0490	0.0427
		n0	n0	n0	n0	**	**
With Constant & Trend	t-Statistic	-0.4742	-3.5099	-1.0236	-1.8279	-	-
						2.9263	2.5494
	Prob.	0.9830	0.0443	0.9350	0.6827	0.1593	0.3043
		n0	**	n0	n0	n0	n0
Without Constant & Trend	t-Statistic	1.7142	-1.3961	0.0917	-1.3722	-	-
						0.2441	1.3174
	Prob.	0.9785	0.1503	0.7093	0.1568	0.5957	0.1724
		n0	n0	n0	n0	n0	n0
<u>At First Difference</u>							
		d(PCE)	d(PCI)	d(EXCHR)	d(INTR)	d(CPI)	d(PDS)
With Constant	t-Statistic	-0.0603	-9.3818	-9.4111	-4.5552	-	-
						9.4145	9.4025
	Prob.	0.9496	0.0000	0.0000	0.0004	0.0000	0.0000
		n0	***	***	***	***	***
With Constant & Trend	t-Statistic	-1.3473	-9.3320	-9.6582	-4.5634	-	-
						9.3609	9.5766
	Prob.	0.8692	0.0000	0.0000	0.0023	0.0000	0.0000
		n0	***	***	***	***	***
Without Constant & Trend	t-Statistic	0.9837	-9.4340	-9.4340	-4.5776	-	-
						9.4340	9.4340
	Prob.	0.9130	0.0000	0.0000	0.0000	0.0000	0.0000
		n0	***	***	***	***	***
Notes: (*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1%. and (no) Not Significant							

As can be seen in the table, the variables for study are integrated of orders zero and one. This has warranted the application of ARDL Bounds Testing approach of Pesaran et. al, (2001), usually considered appropriate when the variables are of mixed order of integration. Prior to the ARDL Bounds test, the lag length of the autoregressive process is estimated with the aid of the lag length criteria in order to determine the appropriate autoregressive lag length.

Table 4: Lag Order Selection Criteria

VAR Lag Order Selection Criteria

Endogenous variables: PCE PCI EXCHR INTR CPI PDS

Exogenous variables: C

Sample: 2000 2022

Included observations: 21

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-315.8052	NA	823474.6	30.64812	30.94655	30.71289
1	-197.2543	158.0680	371.5717	22.78612	24.87517	23.23950
2	-92.32525	79.94593*	1.563821*	16.22145*	20.10111*	17.06344*

* Indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error; AIC: Akaike information criterion

SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion

Model Estimation and Evaluation: Co-integration Test: ARDL Bound Test**Table 5: Co-integration Test**

F-Bounds Test		Null Hypothesis: No levels relationship			
Test Statistic	Value	Signif.	I(0)	I(1)	
Asymptotic: n=1000					
F-statistic	6.192511	10%	2.08	3	
k	5	5%	2.39	3.38	
		2.5%	2.7	3.73	
		1%	3.06	4.15	
Finite Sample: n=35					
Actual Sample Size	21	10%	2.331	3.417	
		5%	2.804	4.013	
		1%	3.9	5.419	
Finite Sample: n=30					

10%	2.407	3.517
5%	2.91	4.193
1%	4.134	5.761

Source: Researchers' Computation (2024), using E-Views 10

As can be seen in Table 5, the computed f-value is 6.19 while the upper bounds critical value is 3.38 at 5% level of significance. Since the computed f-value is greater than the upper bounds critical value, all the variables are considered to be co-integrated. This has warranted the rejection of the null hypothesis and the acceptance of the alternative hypothesis which states that there is a long run equilibrium relationship among the variables.

Table 6: Long-run Estimate

Dependent Variable: PCE
Method: ARDL
Sample (adjusted): 2002 2022
Included observations: 21 after adjustments
Maximum dependent lags: 2 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (2 lags, automatic): PCI EXCHR INTR CPI PDS
Fixed regressors: C
Number of models evaluated: 486
Selected Model: ARDL(2, 0, 1, 0, 2, 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PCE(-1)	1.914538	0.166116	11.52528	0.0000
PCE(-2)	-0.896684	0.188465	-4.757837	0.0014
PCI	0.416485	0.153183	2.718865	0.0263
EXCHR	25.26050	9.984330	2.530015	0.0353
EXCHR(-1)	-57.29275	14.32124	-4.000544	0.0039
INTR	0.314664	0.097730	3.219732	0.0122
CPI	0.089722	0.103765	0.864665	0.4124
CPI(-1)	-0.412673	0.109962	-3.752866	0.0056
CPI(-2)	-0.657383	0.119355	-5.507782	0.0006
PDS	-0.019325	0.049325	-0.391796	0.7054
PDS(-1)	0.063476	0.041468	1.530707	0.1644
PDS(-2)	-0.128481	0.050635	-2.537417	0.0349
C	26.65168	5.319634	5.010059	0.0010
R-squared	0.999809	Mean dependent var	91.61684	

Adjusted R-squared	0.999523	S.D. dependent var	41.34260
S.E. of regression	0.902705	Akaike info criterion	2.906173
Sum of squared residual	6.519014	Schwarz criterion	3.552782
Log likelihood	-17.51482	Hannan-Quinn criter.	3.046504
F-statistic	3495.180	Durbin-Watson stat	2.364055
Prob(F-statistic)	0.000000		

Source: *Researchers' Computation (2024), using E-Views 10*

Table 6 shows clearly that with the exception of CPI and PDS, all other variables have significant b-coefficient at different time periods. This is an indication that these variables had significant effect on future consumption. In particular, the negative significant b-coefficient in previous two years and the positive significant b-coefficient in the previous year of PCE suggest that current consumption has effect on future consumption opportunities in Nigeria. Coefficient of determination equals 99 per cent. This suggest that the model has a good fit. In other words, the explanatory variables are critical determinants of consumption in Nigeria. F statistic equals 3495.18 (p equals or less than 0.0000), indicating that there is a significant conjoint effect of the explanatory variables on consumption. The Durbin Watson (DW) Statistic is 2.3 suggesting that there is no autocorrelation problem in the model.

Table 7: Long- run form (Conditional error correction regression)

ARDL Long Run Form
 Dependent Variable: D(PCE)
 Selected Model: ARDL (2, 0, 1, 0, 2, 2)
 Case 2: Restricted Constant and No Trend
 Sample: 2000 2022
 Included observations: 21

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	26.65168	5.319634	5.010059	0.0010
PCE(-1)*	0.017854	0.024343	0.733458	0.4842
PCI**	0.416485	0.153183	2.718865	0.0263
EXCHR(-1)	-32.03225	6.092429	-5.257714	0.0008
INTR**	0.314664	0.097730	3.219732	0.0122
CPI(-1)	-0.980334	0.242620	-4.040615	0.0037
PDS(-1)	-0.084331	0.050872	-1.657716	0.1360
D(PCE(-1))	0.896684	0.188465	4.757837	0.0014
D(EXCHR)	25.26050	9.984330	2.530015	0.0353
D(CPI)	0.089722	0.103765	0.864665	0.4124
D(CPI(-1))	0.657383	0.119355	5.507782	0.0006
D(PDS)	-0.019325	0.049325	-0.391796	0.7054
D(PDS(-1))	0.128481	0.050635	2.537417	0.0349

Source: *Researchers' Computation (2024), using E-Views 10*

Table 7 shows that exchange rate (EXCHR), consumer prices (CPI) and savings (PDS) had negative significant effect on current and future consumption. While per capita income (PCI) and interest rate (INTR) had positive significant effect on consumption. Thus, all the explanatory variables impact significantly on consumption.

Post-Estimation Test

Being that it is necessary to conduct relevant post-estimation diagnostic tests in order to ascertain whether the estimated model is robust, suitable and valid for policy application and recommendation purposes. Serial correlation, heteroskedasticity, normality and model stability have been carried out as follows:-

Heteroscedasticity Test

The result of the heteroscedasticity test for the model using the Breusch-Pagan-Godfrey approach is presented Table 4.8. The null hypothesis of heteroskedasticity against its alternative hypothesis is:

H₀: Error term of the ARDL model is homoscedastic (homoscedasticity)

H₁: Error term of the ARDL model is not homoscedastic (heteroscedasticity)

Table 8: Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.124303	Prob. F(12,8)	0.4472
Obs*R-squared	13.18301	Prob. Chi-Square(12)	0.3559
Scaled explained SS	1.350183	Prob. Chi-Square(12)	0.9999

Source: Researchers' Computation (2024), using E-Views 10

As can be seen in the table, the probability of Chi-Square of the observed *R-square is greater than 0.05, indicating that the estimated model does not have the problem of heteroscedasticity.

Serial Correlation Test

H₀: Residuals are not serially correlated in the ARDL model (no autocorrelation)

H₁: Residuals are serially correlated in the ARDL Model (autocorrelation)

Table 9: Serial Correlation test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	4.722364	Prob. F (2,6)	0.0586
Obs*R-squared	12.84188	Prob. Chi-Square (2)	0.0016

Source: Researchers' Computation (2024), using E-Views 10

The decision rule is to reject the null hypothesis if the F-statistic is less than 0.05 otherwise accept. As is seen in Table 9, the probability of the F-statistic in the model is greater than 0.05 (5% significant level). Therefore, we accept the null hypothesis which states that there is no autocorrelation or serial correlation in the ARDL model.

Findings

This study commenced with the objective of examining the effects of current consumption on future consumption opportunities in Nigeria. In the course of achieving this set objective, very important findings were made and will now be discussed in an attempt to deduce their policy implications.

This study found that whereas one percent increase in savings led to 0.08 percent decrease in consumption opportunities in current time period, one percent increase in interest rate led to 0.03 percent increase in consumption opportunities. This implies that while the effect of savings on consumption opportunities is determinate, the effect of interest rate on consumption opportunities is indeterminate. The inclusion of interest rate as a control variable has added a new dimension to the study by revealing that consumers save, no matter the prevailing rate of interest, due to the extra income in their possession. Nie and Palmer (2016) had reported that consumption growth in the next five years will rely on the combination of a declining saving rate. Hall (1988) reported that periods of high real interest rates did not yield increased consumption.

Again, it has also been found that exchange rate volatility had effect on consumption expenditure. This is not surprising considering that naira is highly volatile and weak against key currencies in international monetary system. Another finding is that consumer prices had negative significant effect on consumption in Nigeria. One percent increase in consumer prices led to 0.9 percent decrease in consumption whereas one percent increase in per capita income led to 0.4 percent increase in consumption. This implies that raising income of workers may not necessarily compensate for the inflationary spiral in the country. Hok (2020) reported that prices do not influence household consumption expenditure.

Recommendations

Based on the above -stated findings and the accompanying discussion, the researchers have made the following recommendations:

With the negative significant effect of saving on consumption and the positive significant effect of interest rate on consumption, it becomes a matter of priority for the CBN to adopt twin policies aimed at mobilization of savings and the lowering of the MPR in order to boost consumption opportunities available to Nigerians. In this way, there would be high rates of productive investment in agricultural and industrial sectors that would subsequently lead to increase in supply of consumer goods and services in the country. The negative significant effect of consumer prices on consumption and positive significant effect of per capita income on consumption requires that inflation in Nigeria should be fought through the combined efforts of the CBN and the federal government. There should be synergy between the CBN and the federal government in their application of monetary and fiscal policies to fight inflation. Over reliance on monetary policy that does not take into cognizance the unproductive expenditure of the government is only a step to economic slump.

Conclusion

The major generalization which has been drawn from this study is that the current level of consumption in Nigeria has the effect of increasing consumption opportunities within the period covered in this study. This is the intra-temporal perspective of the effect of current consumption on consumption opportunities in Nigeria within the period, 2000 - 2022. Intra-temporal decision making is concerned with the allocation of resources across different activities within the period. Perhaps, what could be deduced from this study is that the analysis has failed to project how much would be available for future consumption in Nigeria. What this implies is that the study has made a strong case for Intertemporal analysis of the effect of current consumption on future consumption opportunities in Nigeria. Notwithstanding, the study is novel in the sense that it has validated the Life Cycle Hypothesis propounded by Brumberg and Modigliani in 1954.

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