

ECONOMETRIC MODELING OF INCOME-CONSUMPTION RELATIONSHIP: EVIDENCE FROM NIGERIA

ABSTRACT

This paper seeks to empirically verify the dynamic relationship between consumption expenditure and income in Nigeria by experimenting with two major income hypotheses, the habit persistence and permanent income hypotheses. The major research question was which of the consumption theories best describe the relationship between consumption and income in Nigeria? Time series data on per capita personal consumption expenditure (PPCE) and per capita disposable income (PPDI) in Nigeria for the period 1980 – 2014 were used. The result of the AR(p) time series estimation showed the non-existence of habit formation by Nigerian consumers. The median lag of the Koyck AR(p) model was 0.3911 that is, in less than a period 50% of the total response of private personal consumption expenditure responds to changes in per capita disposable income. The mean lag was 0.2048 implying that on the average consumption expenditure adjusts to per capita disposable income in a relatively short time. Due to the high level of poverty, unemployment and low standard of living, consumers in Nigeria find it difficult to form a consumption habit for long. Modelling consumption along the assumptions of Permanent income hypothesis, the results of the ARDL bound testing cointegration showed that the long-run multiplier effect of marginal propensity to consume out of permanent income is -0.1098; an indication that consumers save more than spend. This also implies that Nigerians on the average have a low permanent income and a higher transitory income which does not affect consumption according to the assumption of Friedman. The study therefore recommends that policies towards reducing the rate of unemployment and alleviate poverty in the Nigeria economy should be put in place to encourage good consumption habits.

Keywords: Habit persistence, Permanent income, per capital personal consumption, ARDL

1. INTRODUCTION:

Nigerian, mostly referred to as the giant of Africa([cite-scite source and year](#)) endowed with natural resources is characterized by poverty, poor savings geared by high consumption for basic needs among her people and high rate of unemployment. This feature tends to be a general form of the sub Sahara region thereby resulting into stagnation of the region. Loayza, Schmidt-Hebbel and Serven, (2000) identified that the rates of saving in the past three decades doubled in East Asia and stagnated in Sub-Saharan Africa, Latin America and the Caribbean constituted to poor growth and development of the region.

[Describe the term 'Income-consumption'at this point.](#) Keynes' General Theory in 1936 identified the relationship between income and consumption as a key macroeconomic relationship. The theory asserts that as income rises, consumption also rises but not

necessarily at the same rate. Rich people are expected to consume a lower proportion of their income than poor people. Habit persistence hypothesis of **A. C. Brown** ([year????](#)) identified past consumption habits as a major determinant of present growth rate of consumption. The permanent income hypothesis on the other hand is a theory of consumer spending which states that people will spend money at a level consistent with their expected long term average income.

The consumption pattern of households in Nigeria is such that is determined by their income, past behaviour, or future expectations thus leading to a dynamic approach to the study. People in different positions in respect to income have different structures of consumption. National saving at the macro level is low because Nigeria's economy is a consuming nation with a low National income as a result of low consumption of locally made products in the country. The persistent budget deficit in Nigeria is an indication of high expenditure and of this, consumption occupies the share of gross domestic expenditure composition([source, yr????](#)).

The major objective of this paper is to study the dynamic relationship between consumption expenditure and income in Nigeria by experimenting with various alternative hypotheses. The major research question is which of the consumption theories best describe the relationship between consumption and income in Nigeria?

The paper is divided into four sections. Section two after the introduction is the review of literature. Section three is the data and descriptive analysis, section four is the theoretical framework and empirical analysis. Section four is the conclusion and policy recommendations.

2. BRIEF REVIEW OF LITERATURE

Akekere and Yousuo, (2012) conducted a research on the impact of Change in Income on Private Consumption Expenditure in Nigeria from 1981 to 2010 with the use of Ordinary Least Regression techniques. Their analysis indicated that a positive significant impact of Gross Domestic Product /income is felt on Private Consumption Expenditure in the country..

Lingaraj Mallik and Kalandi Charan Pradhan(2012) analysed relations between per capita consumption expenditure and personal income in India using Granger Causality and Koyck

transformation approach for the period covering 1950 to 1993. The result indicated that unidirectional causality flows from per capita consumption expenditure to personal disposal income in the country while the Koyck Model indicates that per capita personal consumption expenditure adjusts to personal disposal income within a relatively long period of time as an indication that major part of the peoples income is being spent on consumption expenditure in India thus militating against savings.

Adelakun (2011) analysed how private saving in Nigeria is determined using data covering 1970-2007 using the Error-Correction modelling procedure and found that savings rate increases as the interest on deposits with banks and the disposable income of individuals' increases. He concluded that income based for the nation must be increased to enhance savings.

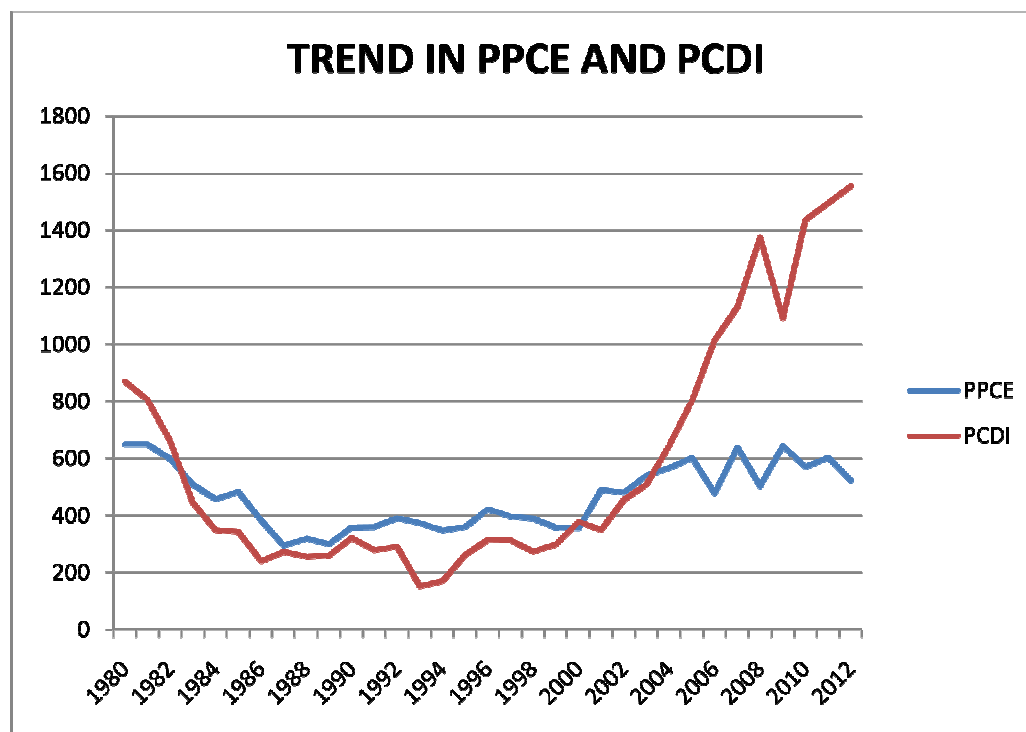
Oluwafemi, (2013) empirically verified if the habit persistence hypothesis holds in the Jamaican economy. He used the **GMM** [write in full the abbreviate later](#) time series estimation on Jamaican data of income, domestic interest rate inflation and exchange rate from 1980 to 2011. His results show that the existence of habit formation is very high among the Jamaicans. He concluded that to encourage good consumption habits interest rate inflation rates and exchange rate have to be moderately adjusted.

[Too brief literature reviewed to form a strong argument for research gap](#)

[GIVE A BRIEF SHORT ON METHODOLOGY USED SHOWING HOW YOU WILL ACHIEVE STUDY OBJECTIVES AND ANSWERS FOR RESEARCH QUESTIONS. THIS IS MISSING.....](#)

3. DATA AND DESCRIPTIVE ANALYSIS

This section presents the trend analysis of the per capita personal consumption expenditure (PPCE) in relation to per capita disposable income (PPDI) in Nigeria for the period 1980 – 2014. [But trend graph shows upto 2012?????](#)



[Update data trend graph to 2015-fig no. missing](#)

From the trend analysis above income (pcdi) appears to be more volatile than consumption. While consumption (ppce) looks stable or durable over the years, income fluctuates. The more stable or durable consumption may imply that consumers may find it difficult to form consumption habit and sustained it for long. Also the more volatile income follows the Permanent Income hypothesis tenet that believes that individuals base their consumption on a longer term view of an income measure. It is necessary that we study the direction of causality between the two variables.

Table 1.0: Pairwise Granger Causality

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision
PCDI does not Granger Cause PPCE	31	4.49747	0.021	Reject
PPCE does not Granger Cause PCDI		5.63177	0.0093	Reject

The result of the pair wise Granger causality test is shown in Table 1.0. The test is sensitive to the lag length, the choice of lag was 2 was made using the iterative method, that is gradually increasing the lag length until there is no further improvement in the decision making (Gujarati and Sangeetha 2007).

The idea behind causality test is that, although regression analysis deals with the dependence of one variable on the other variable, it does not necessarily imply causation. In other words the existence of a relationship either the dynamic or equilibrium, between variables does not prove causality or the direction of influence.

Table 1.0 presents the direction of influence between the variables in a pair-wise manner. The decision whether to reject or accept the null hypothesis is made based on the probability of the F – statistics. Wherever the null hypothesis is rejected it implies the acceptance of the alternative hypothesis. At 0.05 level of significance the result shows that there is a bidirectional causality between PPCE and PCDI. That is private personal consumption expenditure granger cause per capita disposable income and vice-versa as shown by the probabilities. Following our objective, PPCE is a made the endogenous variable for this study.

4. THEORETICAL BACKGROUND, MODEL SPECIFICATION AND ESTIMATION

A. Habit Persistence Hypothesis Model

If we base our consumption function on the Habit persistence hypothesis of A. C. Brown, the model follows a distributed lag system, $DL(p)$ where p is the lag length. The lag length here represents the length of consumption habit already formed by the consumer. Following the assertion that “habit fades away but gradually”, we can assume that the impact of the habit on present consumption follows a declining lag. Thus we have:

$$PPCE_t = \alpha + \alpha_0 PCDI_t + \alpha_1 PCDI_{t-1} + \alpha_2 PCDI_{t-2} + \dots + u_t \dots \dots (1.0)$$

If we rationalise our choice of distributed lags of past consumption expenditure in equation 1.0 using the Koyck’s transformation, the Habit persistence model for this study is defined as an AR(p) model as follows:

$$PPCE_t = \alpha + \alpha_0 PCDI_t + \alpha PPCE_{t-j} + u_t \dots \dots 2.0$$

where $\alpha = \alpha(1 - \alpha)$; $v_t = (u_t - \alpha u_{t-1})$, a moving average
 α is such that $0 < \alpha < 1$ = rate of decline of the distributed lag.

[Key to explain model abbreviations missing –line 136- 143](#)

Explaining equation 2.0 in terms of Euler's relation, α is the parameter representing habit persistence which is expected to be less than zero if there is evidence of habit formation and greater than zero if the effect durability dominates. If both effects are present the sign of the coefficient which of the two effects dominates. Habit persistence implies that the coefficient of lagged consumption expenditure is negative, while durability implies positive coefficient for the variable. (Ferson and Constantinides 1991)

Equation 2.0 was estimated using the OLS. But a major hindrance is the choice of the number of lag. We resort to the method of iteration, testing for serial correlation using the LM test and heteroscedasticity using the ARCH test in each case. Lag 2 was chosen as free from serial correlation and heteroscedasticity problem. The result of the AR(2) estimation of consumption expenditure is presented in Table 2.0.

Table 2.0: Koyck's Model of Consumption Expenditure in Nigeria

Dependent Variable: PPCE				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
PCDI	0.141723	0.048711	2.909486	0.0072
C	355.6675	42.34674	8.398935	0.0000
AR(1)	0.169952	0.171082	0.993397	0.3293
AR(2)	0.461365	0.15781	2.923548	0.0069
R-squared	0.708688		F-statistic	21.89474
Adj. R-squared	0.67632		Prob(F-statistic)	0.0000
Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	0.751161	Prob. F(2,25)		0.4822
Obs*R-squared	1.757279	Prob. Chi-Square(2)		0.4153

Heteroskedasticity Test: ARCH			
F-statistic	0.797415	Prob. F(1,28)	0.3795
Obs*R-squared	0.830715	Prob. Chi-Square(1)	0.3621
Inverted AR Roots	0.77	-0.6	

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159 The two coefficients of lagged consumption are both positive, implying that there is
160 evidence of durability rather than habit formation in the Consumption expenditure in
161 Nigeria.

162 If we assume the distribution effect of past consumption expenditure on the present
163 consumption expenditure follows the Koyck's relation, the rate of decline of the distributed
164 lag is λ which is 0.1699 the median lag is

165
$$-\frac{\log 2}{\log \lambda} = 0.3911 \text{ And the Mean lag is } \frac{\lambda}{1 - \lambda} = 0.2048$$

166 The median lag is the time required for the first half, or 50 percent, of the total change in
167 consumption expenditure following a unit sustained change in per capita disposable income.
168 Here it is 0.3911 that is, in less than a period 50% of the total response of private personal
169 consumption expenditure responds to changes in per capita disposable income. On the average
170 it seems as if consumption expenditure adjusts to per capita disposable income in a relatively
171 short time (0.2048). This also confirms that consumption expenditure shows durability rather
172 than habit formation. This implies Nigeria consumers find it difficult to form habit in their
173 consumption decision for long.

174 [Results in table 2.0 not exhaustively interpreted eg Probability/t-values](#)

175 **B. Permanent Income Hypothesis Model**

176 On the other hand if we model our consumption function following the Permanent Income
177 Hypothesis of **Milton Friedman** [\(year????\)](#) the ingredients of such model are permanent
178 consumption ($ppce_p$), permanent income ($pcdi_p$), transitory consumption and transitory
179 income. Present income is the sum of permanent and transitory income and consumption at time
180 t is the sum

165 of the permanent and transitory components. Friedman also postulated that there is no
 166 correlation between the permanent and the transitory components. That is an increase
 or
 167 decrease in transitory income does not affect permanent consumption. The equation
 168 determining permanent consumption is given by

$$169 \quad ppce_p = k(r, z)pcdi_p \dots\dots\dots 3.0$$

170 Where $k(r, z)$ is the average (or marginal) propensity to consume out of permanent
 income .

171 This depends on the rate of interest r and the taste shifter variable z .

172 Adjusting equation 3.0 by differentiating totally we have

$$dppce_p = krdpcdi_p + kzdpdi_p$$

173

$$dppce_p = kzdpdi_p + krdpcdi$$

$$ppce_t^{**} = \square_0 + \square_1 pcdi_t^{**} + u_t \dots\dots\dots 4.0$$

174

$$\square_0 = kzdpdi_p \dots\dots\dots \text{change in taste shift factor}$$

$$\square_1 = kr \dots\dots\dots \text{marginal propensity to consume out of permanent income}$$

175 Where $ppce_t^{**}$ and $pcdi_t^{**}$ are desired change in personal consumption expenditure – [does this](#)
[mean ppce_t and pcdi_t are the same????](#)

~~175~~176 [Give key for all abbreviations in your equations!!!!](#)

~~176~~177 (permanent consumption) and expected change in income (permanent income) respectively.

~~177~~178 These are not directly observable; we used the partial adjustment mechanism to derive the

~~178~~179 desired consumption expenditure and the adaptive expectation model for the expected level

~~179~~180 of income, called the permanent income. The resultant model is an ARDL model (Gujarati

~~180~~181 and Sangeetha 2007). Since Permanent income hypothesis is a long run measure of 181

relationship between consumption expenditure and income, cointegration analysis was 182
 therefore employed.

183 To test for stationarity of the variables, the Augmented Dickey Fuller (ADF) unit root test

184 was conducted on each series. The correct specification is to include trend variable and 185
intercept since the descriptive analysis in figure 1 shows that the two variables are trended.

186 Accordingly the null hypothesis in each case is that there is a unit root in each series that is 187
each variable is non-stationary. The result is presented in Table

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Table 3 : Unit Root TEST

	AT LEVELS				1ST DIFFERENCE				
VARIABLE	ADF Test	1% C. V.	5% C. V.	Prob.	ADF Test	1% C. V.	5% C. V.	Prob.	I(p)
PCDI	-1.81367	-4.28458	-3.56288	0.6737	-8.05868	-4.28458	-3.56288	0.000	I(1)
PPCE	-3.00793	-4.28458	-3.56288	0.1462	-8.70717	-4.28458	-3.56288	0.000	I(1)

The results of the ADF unit root test in Table 3 shows that the variables are integrated of the same order. This implies that the condition for cointegration using the Johannsen method was met by the series. But, the major objective of this study is to analyse both the dynamic relationship between the two variables via the ARDL, Bound testing cointegration approach was preferred to test the long-run equilibrium relationship between the variables we reformulate equation 4.0 as ARDL as follows.

$$\Delta ppce_t = \alpha_0 + \sum \alpha_j \Delta ppce_{t-j} + \sum \alpha_1 \Delta pcdi_{t-j} + \alpha_0 ppce_{t-1} + \alpha_1 pcdi_{t-1} + e_t \dots \dots 5.0$$

where $j = 1, 2, 3, \dots$

Equation 5.0 is the ARDL model of the consumption-income relationship which is also known as the **“unrestricted ECM”**. The lagged first difference AR variables are the short-run dynamics of the permanent income hypothesis while the DL variables are the long run impacts. The appropriate lag length is determined using one or more of Akaike (AIC), Schwartz (SC) and Hannan-quin (HQ) criteria. The result is shown in Table 4.0

Table 4.0: Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-157.5376	NA	5207.775	11.39554	11.4907	11.42463
1	-156.1621	2.456204	5072.912	11.36872	11.51146	11.41236
2	-153.7018	4.217660*	4575.655	11.26441	11.45473	11.3226

3	-151.6866	3.310753	4263.691*	11.19190*	11.42979*	11.26462*
4	-151.6267	0.09412	4572.965	11.25905	11.54452	11.34632
5	-150.8476	1.168629	4664.685	11.27483	11.60788	11.37664

* indicates lag order selected by the criterion

From table 4.0, LR suggest a maximum lag of 2, while FPE, AIC, SC and HQ all suggest a maximum lag of 3 for $\Delta pcdi_t$.

A key assumption in the ARDL/Bound Testing methodology of Peseran et al. (2001) is that the errors of the equation must be serially independent. We use LM to test this hypothesis.

But the LM test of serial correlation conducted on ARDL as shown in Table 5.0, rejects the presence of serial correlation up to the third lag. Therefore a maximum of 3 lag was selected for our ARDL.

Table 5.0.A: VAR Residual Serial Correlation LM Tests

Lags	LM-Stat	Prob
1	0.884096	0.3471
2	2.660347	0.1029
3	0.216252	0.6419

The Bound test was conducted on the unrestricted ECM to test by conducting the F statistics of the hypothesis, $H_0: \alpha_0 = \alpha_1 = \alpha_2 = 0$ against the alternative. As a check we perform a “Bounds” t-test of $H_0 = 0$, if the t-statistic for intsec_{t-1} in equation 2 is greater than the “I(1) bounds” tabulated by Pesaran et al., this would support the conclusion that there is a long-run relationship between the variables. Pesaran et al. supplied bounds on the critical values for the asymptotic of the F – statistics. If the computed F – statistic falls below the lower bound we would conclude that the variables are I(0), so no cointegration is possible, by definition. If the F- statistics exceeds the upper bound, we conclude that we have cointegration. Finally if the F –

statistics falls between the bounds, the test is inconclusive, we may rely on the result of Granger causality and/or the short-run analysis.

The ARDL Results in Table 5.0 shows both the short-run and long run impacts. Three influences are captured by the result. The first is the short-run impact of past consumption expenditures on present consumption decision. This is the components of Habit formation captured by the joint coefficients of $D(PPCE(-1))$ and $D(PPCE(-2))$. The joint significance of these two variables implies that consumers in Nigeria form habit in their consumption. The second influence is captured by the joint coefficients of $D(PCDI(-1))$ and $D(PCDI(-2))$. This is a measure of the impact of short-run income on consumption decision, the short-run marginal propensity to consume. The third is the impact of permanent income on consumption decision. This is captured by the joint coefficients of $PPCE(-1)$ and $PCDI(-1)$.

Table 5.0.B : Results of ARDL Model of PCDI on PPCE

Dependent Variable: D(PPCE)				
Method: Least Squares				
Included observations: 30 after adjustments				
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed				
bandwidth = 4.0000)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PPCE(-1))	-0.19891	0.211168	-0.94195	0.356
D(PPCE(-2))	0.214668	0.139808	1.535448	0.1383
D(PCDI(-1))	0.142559	0.115894	1.230079	0.2311
D(PCDI(-2))	0.05285	0.090371	0.584817	0.5644
PPCE(-1)	-0.38563	0.141835	-2.71885	0.0122

PCDI(-1)	0.042343	0.050361	0.840782	0.4091
C	145.2264	42.23545	3.438496	0.0022
R-squared	0.497585	Mean dependent var		-2.56667
F-statistic	3.796481	Durbin-Watson stat		2.018588
Prob(F-statistic)	0.008948			

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237 The result in Table 6.0 is the Wald test of Coefficient restrictions, a test of the joint significance
 238 of the three restrictions. The null hypothesis 1 is accepted since the probability shows that
 239 neither the F-statistic nor the Chi-square is significant. This confirms our earlier findings that
 240 impact of past consumption habit on present consumption decision is insignificant. This
 241 confirms that Nigeria consumers find it difficult to form habit in their

consumption decision for long. Also the null hypothesis of the shortrun marginal propensity to consume accepted implying that impact of short-run income level on consumption decision is insignificant.

The third null hypothesis is the permanent income restriction. It is rejected since the probabilities of the two statistics are both less than 0.05. this implies that present consumption decisions among consumers in Nigeria are influenced by permanent income rather than current income or past habit.

Table 6.0: Wald Test of Coefficient Restrictions

Test Statistic	Value	Df	Probability
F-statistic	1.797139	(2, 23)	0.1883
Chi-square	3.594279	2	0.1658
<i>Null Hypothesis 1: $D(PPCE(-1)) = D(PPCE(-2)) = 0$</i>			
Test Statistic	Value	Df	Probability
F-statistic	1.203474	(2, 23)	0.3184
Chi-square	2.406948	2	0.3001
<i>Null Hypothesis 2: $D(PCDI(-1)) = D(PCDI(-2)) = 0$</i>			
Test Statistic	Value	Df	Probability
F-statistic	9.077281	(2, 23)	0.0012
Chi-square	18.15456	2	0.0001
<i>Null Hypothesis 3: $PPCE(-1) = PCDI(-1) = 0$</i>			

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248 To test for the present of cointegration in the permanent income model, we compare the F-
249 statistics of the null hypothesis 3 with the Peseran et al Bound test table. The value of our F250
statistic is 3.4259, and we have $(k+1) = 7$ variables in our model. The critical lower and upper
251 bounds of the Pesaran et al. (2001), is presented in Table 7.0.

252

Table 7.0: Critical Lower and Upper Bounds Values

	5%		1%	
	LOWER	UPPER	LOWER	UPPER
Restricted Intercept No Trend	2.17	3.21	2.73	3.90
Unrestricted Intercept No Trend	2.32	3.50	2.96	4.26

Source: Peseran et al (2001)

As the value of our F statistic of our restricted ECM (9.07728) exceeds the upper bound at both the 1% and 5% significant levels for restricted and the unrestricted specifications, we can conclude that there is evidence of a long-run relationship between PPCE and PCDI.

We can therefore extract the long-run multiplier from the ARDL result. The long-run marginal propensity to consume from permanent income is derived from the following equation:

$$-\frac{\alpha_1}{\alpha_0}$$

Where α_i represents the long-run coefficient of ith variable in the ARDL model and α_0 is the coefficient of PPCE(-1) in the ARDL model. The long-run multiplier for the individual coefficient is -0.1098. This is negative, an indication that consumers save more than spend. The best argument for this is that Nigerians on the average have a low permanent income and a higher transitory income which does not affect consumption according the assumption of Friedman.

4. CONCLUSION AND POLICY RECOMMENDATIONS

The objective of this paper was to study the dynamic relationship between consumption expenditure and income in Nigeria by experimenting with various alternative hypotheses. The major research question is, which of the consumption hypotheses of Habit persistence and permanent income best describe the relationship between consumption and income in Nigeria. The study revealed that on the average, consumption expenditure adjusts to changes in per capita disposable income in a relatively short time (0.2048). This suggests that consumption

expenditure do not show a significant response to habit formation. This implies Nigeria consumers find it difficult to form habit in their consumption decision for long.

On the other hand, modelling consumption along the assumptions of Permanent income hypothesis shows that the long-run multiplier effect of marginal propensity to consume out of permanent income is -0.1098; an indication that consumers save more than spend. The best argument for this is that Nigerians on the average have a low permanent income and a higher transitory income which does not affect consumption according the assumption of Friedman. There are observable macroeconomic conditions in Nigeria that support these conclusion.

i. Poverty is rampart in Nigeria, a phenomenon that suggest that transitory income which does not affect consumption, is larger than permanent income in Nigeria.

ii. Unemployment in also high in Nigeria, a phenomenon that makes self-employed and unemployed larger than the salaried workers or farm household larger than non-farm households.

iii. Self employed and unemployed have larger transitory components to their income.

In concluding this paper it is recommended that government should regulate interest rate a major determinant of the marginal propensity to consume out of permanent income. Also the shift factor of the propensity which is the taste shifter has a direct link with the type of employment and rate poverty. Government should therefore device policies towards reducing the rate of unemployment and alleviate poverty in the Nigeria economy.

REFERENCES

Adelakun, Ojo Johnson (2011): The Nexus of Private Savings and Economic Growth in Emerging Economy: A Case of Nigeria. *Journal of Economics and Sustainable*

Akekere and Yousuo, (2012): Empirical Analysis of Change in Income on Private

Consumption Expenditure in Nigeria from 1981 to 2010. *International Journal of Academic Research in Business and Social Sciences* December 2012, Vol. 2, No. 12 ISSN: 2222-6990

Ferson, W.E. and Constantinides, G. M. (1991). Habit Persistence and Durability in Aggregate Consumption. National Bureau of Economic Research Working Paper No. 3631. *Development* www.iiste.org ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online) Vol.2, No.6, 201.

Gujarati, D. N. and Sangeetha (2007), Dynamics Econometric Models, *Basic Econometrics*, 1st ed. New Delhi, Tata McGraw-Hill Publishing Company, chapter 17, pp 671-727.

Keynes, J.M. (1936). The General Theory of Employment, Interest and Money,

Koyck, L. M. (1954), Distributed Lags and Investment Analysis, Amsterdam, North Holland

308 Publishing Company.

309 Lingaraj Mallik and Kalandi Charan Pradhan(2012): Per Capita Consumption Expenditure and
 310 Personal Disposal Income in India-an econometric analysis. *International Journal of*
 311 *Economics. Res.*, 2012, v3i2, 96-102 ISSN: 2229-6158.

312 Loayza, Schmidt-Hebbel and Serven, (2000): Does income inequality raise aggregate saving?
 313 *Journal of Development Economics Vol. 61 2000 417–446.*NBS (2012): Consumption Pattern
 314 in Nigeria 2009/2010.

315 Oluwafemi, O. B. (2013), The Habit Persistence Hypothesis: Evidence from Jamaica, Munich
 316 Personal RePEc Archive, MPRA paper No. 57077, online at [http://mpa.ub.uni-](http://mpa.ub.uni-munchen.de/57077)
 317 [munchen.de/57077](http://mpa.ub.uni-munchen.de/57077), posted 3, July 2014