International Journal of Social Sciences and Conflict Management
Volume 3, Number 1 March 2018
ISSN: 2536-7234 (Print) : 2536-7242 (Online)
http://www.casirmediapublishing.com

Deficit Financing and Economic Welfare in Nigeria: A Formal Test of the Ricardian Equivalence Hypothesis (REH)

EwereF.O.Okungbowa[1] & David Umoru[2], AERC, FMNES
[1]Department of Economics, Banking and Finance, Benson Idahosa University, Benin City, Nigeria
[2]Department of Economics, Faculty of Arts, Management & Social Sciences, Edo University Iyamho,
david.umoru@edouniversity.edu.ng

ABSTRACT
This study tests empirically whether Nigeria is Ricardian economy using ARDL Bounds test approach within the period of 1980-2017. The study revealed that REH holds in Nigeria and that swap of debt for tax asoption for financing budget impact less on aggregate demand of citizens. It was also statistically insignificant thereby supporting presence of REH and not the conventional Keynesian view. Indication is that a farsighted and rational individual will not increase her consumption when tax is low because such an individual is aware that the debt will be redeemed in a future date through higher taxes. Hence, substitution of deficit for tax is seen as just a tax timing differencebecause, current debt neutralizes futurehigher taxes.Based on result, we recommend that government should change use of deficit financing as fiscal policy measure that she employs in improving welfare of citizens in Nigeria.
Keywords*: Debt, consumption, tax, government expenditure, budget constraint.***JEL classification**: E21, E62, D61

Background to Study
Most economies of the world, especially developing countries are seen to be highly engrossed with fiscal deficit in the last four decades. There are numerous means by which government finances her spending amongst which are: taxation, borrowings and monetizationetc. Among all the means, borrowing happens to be the most patronized. This actually implies a reduction of taxes in the current period,which could be raised in the future to repay the debt. So,debt for tax swap today can be accompanied by high taxes in the future for repayment of the debt or proper servicing of the debt (Ricardo, 1951). To Ricardo, it is economically equivalent to maintain a balanced budget or a deficit budget (debt- financing deficit) since the substitution of debt for taxes does not affect private sector wealth and consumption. That is, use of debt in current period as against using of taxes is viewed as a mere change in timing of taxation. (Akanbi,2013). The Ricardian hypotheses propose that substituting debt for tax as a means of financing the fiscal deficit will have no long run impact on the aggregate demand. It therefore implies that current debt will neutralize high taxes in the future to repay the debt (Barro, 1989). This therefore suggests that the individual is not better off in the current period as he will have to save now that the disposable income is on the increase because in the next period he will be made to repay the incurred debt.

However, From the Keynesian point of view, it is believed that tax cut which gives rise to debt for financing budget leads to rise in consumer's disposable income and that the rise in debt also increases interest rate and hence crowd out private investment. So, from the Keynesian perspective, individuals take debt as net worth and do not take into

consideration that they will be taxed heavily someday to redeem the debt. RE macroeconomic analysis can be understood clearly in view of Ramsey's model which states that households live infinitely and has rational expectations of economy's future. And from the angle of Barro (1974) who examined an overlapping generation's model with finitely-lived agents, who make bequests to their children, and showed that REH holds after all.

However, under the following conditions and some others REH will fail to hold. Firstly, if the agents are dynamically optimizers such that they choose current consumption based on their current disposable income, secondly, if households are liquidity constrained (such that they cannot borrow to smoothen out their consumption path, so $C_1 \neq C_2$. Hence, thePIH fails),thirdly, if taxes are distortionary, or if government spending is not exogenous to financing. In view of tax swap, private individuals who are forward looking are not better off as they know that they will be made to pay for this debt in future from the so called "raised disposal income" in recentera. So there is equivalence in aggregated demand between the periods in question. In spite of private individuals, the Ricardo also posited in this hypothesis that debt swap for a tax affects government spending negatively with private savings positively in matching proportion and this will therefore leave national saving unchanged. Hence, it haszero effect on the national income as a debt today will be offset in the next period by the rising taxes. This suggests also that, the nation is not better off with debt-financing deficit either.

How relevant is the RE in Nigeria is the question that prompted this study. And the following questions are actually pressing and demand answers.Does RE hold in Nigeria?Does debt-financing deficit has impact on private consumption? In trying to provide answers to the above questions, this study, therefore seeks to validate the presence of RE in the Nigerian economy from the period of 1980- 2014. Basically, the 80s and 90s happened to be the periods which witnessed the most deficits. Specifically, the study examines if there is any significant difference in consumption between periods given debt swap for tax.Thehypothesis tested is:*No substantial difference between consumption in the present and futurewhen debt is swap for tax financing budget (i.e. the Keynesian perception about deficit on consumption do no hold, implying that REH holds). Alternatively, there issignificant difference between consumption in the present and in the future when debt is swap for tax (i.e. Keynesian perception holds, implying that REH do not hold).* Immediately after this section one which is the introductory section, is section two which contains literature review and the theoretical framework, section three covers the data and methodology, section four contains the discussion of results while section five houses the conclusion and recommendations of the study.

Empirical Review

While some studies accepted evidence of the proposition, others rejected the opinion that the proposition does not hold. Some other studies found an inconclusive result as regards presence of equivalence in private aggregated demand (consumption) and savings.From the strand of studies in developed and developing countries, Akanbi(2013)found that the REH does not hold for the Nigerian economy. This, he attributed to implausibility of

assumptions required for equivalence. This however suggests that the assumptions were probably not well defined or not suitable for the economy.

In the work of Sunge et al (2015) on the relevance of REH on the Zimbabwean economy, they found strong evidence against the proposition implying fiscal policy as regards debt financing deficit is playing a major role in the macroeconomic stabilization in Zimbabwe. This suggests that private individuals take advantage of the swap and assume the debt as net worth, hence increase their consumption. In that same light, Adji (2009) reveals that substitution of tax for debt with regards budget deficit financing tends to increase disposable income, aggregate consumption and aggregate demand. This however supports failure of the hypothesis.The effect of debt swap for tax on consumption and national saving was found not to be profound but infinitesimal. Whether its effect is large or small does not matter what matters is if there is a difference between private consumption and national savings in the presence of debt-financing deficit as against use of tax. This shows that REH does not hold. (Abel and Bernanke, 2001). Again, Apergis et al (2004) provides evidence against REH in a panel of 12 different transitional economies as an inverse relationship was found to exist between consumption and deficit budget. This also negates the Keynesian proposition which proposed a positive relationship between consumption and deficit budget in the face of debt swap for tax.

Studies by Graham (1995), Evans (1993), Feldstein (1982) and Elmendorf and Liebman (2000) have also rejected the hypothesis. Vamvoukss in (2001) and (2002) found empirical evidence against REH and in support of Keynesian proposition. Using Nigerian data, Useni (2013) findings revealed a positive relationship between government debt and private consumption, although the effect was not a one-to-one type. Similarly, Kolehmainen (2003) invalidated the proposition. He, however stressed that the reason for the failure of RE was because consumers do not act as they have infinite lives, but that they act egoistically when it comes to issue of maximization of consumption. This study was found to contradict previous studies as it relates to Finland that suggested conformity with the RE. The study by Ogba (2014) found inconformity of REH in Nigerian as the result revealed a positive and significant relationship between the debt and consumption.Seater, (1993) obtained consistent result in his work based on altruism. He stressed the importance of altruism in the RE proposition because as far as he is concerned parents are altruistic in the infinite horizon and so they will leave bequests for their children to help them in offsetting taxes in future when this is done, consumption is indifferent between periods.

Evans (1988) found no evidence from US data for Blanchard's alternative to RE. However, Evan's study found the consumption deeds of households supported REH. Studies of Barro(1978) and Tanner (1979) conformed to REH's assumptions. Most recently, Afzal (2012) found confirmed the presence of RE with emphasis on government savings and debt in Pakistan. Barro, (1989); Bernheim (1987) and Khalid, (1996) and Gale and Orszag (2004) found a mixed result in this regard. In sum, most of the literatures that were reviewed in this work had one limitation or the other which this study intends to improve upon and if possible correct. The most recurring of the flaws was in methodology which most authors employed in validating REH.

Some studies took no cognizance of time series properties. As we know this can lead to biasedness of the result. According to Engle and Granger (1987) any regression run in that manner will produce a spurious result. For instance, Feldstein (1982), in his work used level data whereas, Kormendi (1983) used differenced data. It has been known that use of differenced data for REH test gives the result the tendency to supporting the presence of REH than the use of data at level(Stanley, 1998).

Again others who took care of time series properties did not take into consideration the assumptions of the proposition in choice of their variables.This brought about uniformity in variable which defines the RE. Why some authors made use of government debts, some others used government expenditure very few were found to use deficit financing (Alfaz, 2012).Some studies adopted the use of state and local debt, but, in this work, by way of improving upon the previous study, we adopted the government's total debt outstanding because private consumption also is in theaggregate. Government deficit financing and private consumption are the key variables used in this work to analyze RE. Some of empirical research was also limited by omitted variables bias. Tax rate was omitted in most works due to paucity of data. The challenge of tax data is almost general. Other works that omitted tax as a variable did that was justified to do so because when they used tax revenue as a proxy for tax and committed multicollinearity problem between tax and other fiscal variables like government expenditure, deficit budget and so they dropped tax on that ground. However, Feldstein (1987) suggested use of lagged tax values as a controlled variable to reduce national Ricardian bias in regression.

THEORETICAL FRAMEWORK AND MODEL SPECIFICATION

Explaining the REH Macroeconomic Theory

The RE is an economic postulate holding that consumers are forward looking and so take on government's budget constraint when making their consumption decisions. Thus, this theorem is used as an argument against tax cuts and spending increases aimed to boost aggregate demand.

Governments can finance their expenditures either through taxes or by issuing bonds. Since bonds are loans, such loans must ultimately be repaid doubtlessly by raising taxes in the future. The optimal rule is consequently to tax today or to tax tomorrow. If the government finances some superfluous spending through budget deficits and decides to tax tomorrow, taxpayers will expect future tax payments. This indeed culminate to increasing private savings to offset future tax increase. This is realized by a reduction in current private consumption, thereby leaving on aggregate demand unaffected as if the government implement the tax policy today. With RE, governments do not have any prospective to exercise countercyclical efforts if the path of government expenditures is stable and if agents form rational expectations. If these conditions hold, cuts in taxes imply a later pressure to increase taxes, since government has to fill the income gap in the budget which is the result of the early tax cut.

So, rational agents instantaneously devote such additional income from the tax cut into savings and consumption does not intensify. Countercyclical fiscal policy can be effective if any one of the conditions necessary for the equivalence does not hold. Hence, new classical macroeconomics highlights the conditions under which fiscal policy can be effective and not the ineptitude of fiscal policy. RE accentuates the significance of fiscal reforms, since such reforms are needed in order to change the path of government expenditures. When implementing wide-ranging fiscal reforms which make public sector more efficient governments do not exert countercyclical efforts but form the necessary conditions for regaining countercyclical prospects. In this respect, RE explains the strict conditions indispensable for countercyclical fiscal policies.

Mathematical Proof of the Ricardian Macroeconomic Theory

To David Ricardo (1772-1823), taxation and public borrowing constitute equivalent financing of public expenditure.The rationale behind his assertion is that government redeems its debt at a future date. So, assuming one is in a closed economy, the repayment of this debt is through increase in future taxation. This therefore suggests that based on rational expectations hypothesis, individuals will have to save today to be able to pay back the debt and also withstand the latter year that will likely come with higher taxes.

If savings matches accrued debt, it therefore implies that interest rate is unaffected. Meaning that, private investments are not crowded-out by public expenditure. And also, that aggregate demand remains the same that is it unaffected.In open economy as redemption of public debt takes place via the sales of assets to international institutional agents which in all cases also comes with decline of government's future income and so increment of taxation to boost government income in the future is inevitable. The following are the underlying assumptions behind this proposition:

Successive generations are connected by altruistic transfers: gifts (from child to parent), and bequests from parents to child, Capital markets are perfect (or the failures are specific), the tax-postponement does not redistribute resources within generations, taxes are non-distortionary, use of deficits does not create value, consumers are rational and farsighted and since deficit financing does not influence political processes.

Mathematically, this proposition can be proven following Romer (2006) such that the budget constraint of the household and government are respectively given by equations (3.1) and (3.2).

$$(3.1)\quad \int_{t=0}^{\infty} e^{-H_t} C_t\,dt \leq M(0) + B(0) + \int_{t=0}^{\infty} e^{-H_t} [A_t - T_t]\,dt$$

$$(3.2)\quad \int_{t=0}^{\infty} e^{-H_t} G_t\,dt \leq -B(0) + \int_{t=0}^{\infty} e^{-H_t} T_t\,dt$$

This implies

$$\int_{t=0}^{\infty} e^{-H_t} \, Gt = - B(o) \int_{t=0}^{\infty} e^{-H_t} \, Tt \, dt$$

Which can be re-written as:

$$(3.3) \int_{t=0}^{\infty} e^{-H_t} \, Tt \, dt = \int_{t=0}^{\infty} e^{-H_t} \, Gt + B(o)$$

Substituting equation (3.3) into equation (3.1) we have.

$$(3.4) \int_{t=0}^{\infty} e^{-H_t} \, Ct \, dt \leq M(o) + D(o) + \int_{t=0}^{\infty} e^{-H_t} \, [At - Gt - B(o)] \, dt$$

Cancelling out we have:

$$(3.5) \int_{t=0}^{\infty} e^{-H_t} \, Ct \, dt \leq M(o) + \int_{t=0}^{\infty} e^{-H_t} \, [At - Gt] \, dt$$

Equation (3.5) above established the REH. Stating that what matters the most to households is expenditure level and not the means through which government finances her expenditure. This is so given the individual's constraint as independent of government's bonds B(o) and taxes (that is, cannot appear as arguments in household's budget constraint).

Empirical Model

The study adopts the Keynesianabsolute consumption function approach and included some fiscal variables (DEFICIT, GOVEXP TAX) to validate REH following Feldstein (1982),Kormendi (1983) and Ogba(2014). Though, the model adopted is a modifiedone based on transformation of variables into their real term by deflating them with GDP deflator or dividingthe variables by the total population as well turning them into their natural log form to capture elasticity.

However, it is due to deficit data which happens to assume more negative value,it was left in its original form. Income per capita was also not transformed owing to its ratio form.This transformation averts multicollinearity problem. We employed DEFICIT to capture REH in the bid to avoiding multicollinearity problem that would likely occur between DEFICIT and GDEBT When they are both included in the model.

The Keynesian model upholds consumption as a function of disposableincome. The modified modelcaptures the impact of fiscal variables shows that consumption is a function of previous deficit, tax, income per capita and government expenditure. Thus:

$$(3.6) \; CONSUMPt = \phi_o + \phi_1 DEFICIT_t + \phi_2 TAX_t + \phi_3 Y_t + \phi_4 GOVEXP_t + \mu_t$$

Where CONSUMPt is Consumption (total private consumption expenditure/pop) DEFICIT is deficit financing or budget, (GOVEXP) government expenditure (₦'bn), TAX is tax revenue (₦'bn), Y is GDP per capita, and μ_t is taken as the error term. Note all the variables apart from Deficit and Y are in their natural log form.

From the traditional viewpoint, the a priori signs are $\phi_1\phi_3$, $\phi_4 > 0$ while $\phi_2 < 0$ but for REH to hold, null hypothesis that $\phi_1 = 0$ must hold, also $\phi_4 \neq 0$ must hold.ARDL framework is adopted in this study. The equation below is specified in the ARDL framework as follows:

$$(3.7)\ \Delta \text{In}CONSUMPt = \phi 0 + \sum_{i=1}^{p} \phi 1 \Delta \text{InCONSUMP}t-i + \sum_{i=1}^{p} \phi 2 \Delta DEFICITt-i + \sum_{i=1}^{p} \phi 3 \Delta \text{In}TAXt-i + \sum_{i=1}^{p} \phi 4 \Delta \text{Y}t-i + \sum_{i=1}^{p} \phi 5 \Delta \text{InGOVEXP}t-i + \alpha 1 \text{InCONSUMP}t-1 + \alpha 2 DEFICITt-1 + \alpha 3 \text{In}TAXt-1 + \alpha 4 \text{Y}t-1 + \alpha 5 \text{InGOVEXP}t-1 + \varepsilon t$$

The expressions from α_1 - α_5 depicts the long-run relationship between the variables, while ϕ_1- $\phi_5$with the summation signs show the short-run dynamics of the variables. ε_t is the Gaussian white noise. To obtain results from ARDL bounds testing approach the following steps sufficed. We first estimated equation (3.6). Through the OLS method and conducted a bounds test based on F-Statistics to ascertain long-run relationship among the variables.

The null hypothesis in equation (3.7). Is H_o: α_1 - α_5 =0, meaning that there is no long -run relationship, while the alternative is H_1: α_1 - $\alpha_5 \neq 0$. The calculated F-statistics value will then be compared with the upper and lower bound critical values if the series is in order zero and one. If the calculated F-statistic value exceeds the upper bound critical value, then, the null hypothesis of no co-integration will be rejected,implying co-integration and that long-run relationships holds.

Confirming the existence of long-run relationship, we estimated a long-run model using the selected ARDL model through Adjusted R-square criterion, HQC, AIC and SBC.After step two, we estimates an error correction model with the equation below.

$$(3.8)\ \Delta CONSUMPt = \beta 0 + \sum_{i=1}^{P} \beta 1 \Delta \text{CONSUMP}t-1 + \sum_{i=1}^{P} \beta 2 \Delta \text{DEFICIT}t-1 + \sum_{i=1}^{P} \beta 3 \Delta \text{TAX}t-1 + \sum_{i=1}^{P} \beta 4 \Delta \text{Y}t-1 + \sum_{i=1}^{P} \beta 5 \Delta \text{GOVEXP}t-1 + \rho ECMt-1 + \mu t$$

The error correction model result indicates the speed of adjustment back to long-run equilibrium after a short-run shock.

Econometric Methodology

In testing the time series for unit roots, we employ the use of ADF test based on the regression below.

$$(3.9)\ \Delta Y_t = \Omega + \Pi Y_{t-1} + \beta + \sum \beta_j \Delta Y_{t-j} + \mu_t$$

Where μ_t is taken as the Gaussian white noise, the test statistics based on (3.9) is referred to as the τ (tau) statistic. The most important parameter in the unit root regression is π. According to Engle and Granger (1987), if the calculated τ (tau) is less than the critical τ (tau) value we accept the null hypothesis that Ho: $\pi = 0$ meaning that there is a unit root in the time series of the variable in question and hence, it is said to be non-stationary or integrated of order one or I(1).

The study utilizes the ARDL co-integration approach due to Pesaran and Shin (1999) and Pesaran et al (2001. The choice of this method for this work derived from the following.

First is that ARDL does not impose any form of restriction on data series as regards order of integration. With this approach, one can conveniently use data series that are of different order of integration or data of same order as the case may be.Second, it has been found also, that ARDL approach accommodates estimations with lesser samples as compared to Johansen co-integration technique. Third, this technique can handle endogeneity because of free nature of residual correlation that it possesses. Estimation can be done even when any of the explanatory variables is found to be endogenous.

Data

Time series data were gathered from CBN bulletin (2013) and World Bank (2014) respectively was employed for this analysis over the sample period of 1980-2014. Most of the data were transformed into their real and per capital level to take care of stationary problem. For instance, consumption per capita was used as against total private consumption expenditure this was done by diving total consumption by total population. We employed GDP per capita. Data for two years was found to be missing in consumption and deficit. This was filled with the help of five years' average.

RESULTS AND DISCUSSIONS

Descriptive Statistics

The mean of consumption (CONSUMP) was 68106.31, deficit financing (DEFICIT) had an average value of -237.0884, GDP per capita (Y) had an average value of 106322.1, tax revenue (TAX) had an average of 642.3000, and government expenditure had an average value of 1278.988 over the periods as shown in Table I. total observations are thirty.

The standard deviation shows dispersion in the variables, no single variable was constant. The Jarque-Bera statistics show that the variables were normally distributed at 1% except for government expenditure.

Table I: Descriptive Statistics

Variables	Mean	Std. Deviation	Jarque-Bera	Prob.
Consump	88106.31	96103.38	12.95803	0.001535
Deficit	-237.0884	378.8346	17.26024	0.000179
Govexp	1278.988	1669.698	8.305738	0.015719
Tax	642.3000	933.2430	15.78547	0.000373
Y (Income	106322.1	157847.8	14.03441	0.000896

Source: Authors

Unit Root Test

In testing for a unit root for the variables, we used the augmented dickey-fuller (ADF) unit root test the variables were tested before logged. The test results are in Table II.

Table II: Stationarity Test Results

Variables	Lag	ADF statistics	Remarks
Cosump	3	-4.079119	I(0)
Deficit	6	-5.24111*	I(1)
Govexp	8	-3.48733*	I(1)
Tax	2	-6.758079*	I(1)
Y (Income	6	-3.669814**	I(1)
* = (5%), ** = (10%) significance level			

Source: Authors

Using the Dickey-Fuller unit root technique, after considering all the cases which comprise unit root with trend alone, with intercept alone and with both trend and intercept, a critical scrutiny we resorted to the unit root test with intercept and trend.The result from the table above reveal that apart from government expenditure that was stationary at order zero (that is I(0)), other variables were stationary at order one (i.e I(1)).

Table III: ARDL Bounds Testing for the Existence of Long- Run Relationship

Computed F-Statistic	5% Critical Bounds	5% Critical Bounds
Consump	Upper Bound: I(1)	Lower Bound: I(0)
7.66*	4.57	3.47
Pesaran et.al. (2001) * denotes rejecting the null hypothesis of no co-integration at 5% level.		

Source: Authors

From the table III above we have the computed F-Statistic ratio that was obtained in the OLS estimation procedure that was compared with the Bound Testing critical values as suggested by Pesaran et.al. (2001). The F-Statistics is well beyond the critical value at 5% level of significance both for the upper and lower bounds. Therefore, this is an

evidence of strong long-run relationship among variables. Based on this a granger causality test was employed to ascertain the direction of causality.

Table IV: Granger Causality Test

Null Hypothesis	F-statistic	Probability
Deficit fails to Granger Cause Consump	1.50638	0.2289
Consump fails to Granger Cause Deficit	3.32140	0.0780
GOVEXP fails to Granger Cause CONSUMP	9.26706	0.0047
Consump fails to Granger Cause Govexp	12.6894	0.0012
Tax fails to Granger Cause Consump	0.27298	0.6051
Consump fails to Granger Cause Tax	16.4415	0.0003

Source: Authors

From result in Table IV above, it is cleared that between CONSUMP and DEFICIT, COMSUMP and TAX there isuni-directional movement. Hence, while consumption granger cause tax the reverse is the case, also, while consumption granger cause deficit, budget deficit fails to granger cause consumption.

However, there is a bi-directional movement between private consumption and government expenditure. This is so because, the hypotheses that consumption fails to granger cause government expenditure and that government expenditure fails to granger cause consumption were both rejected at 1% level.

Table V: ARDL Long-run Coefficients

Regressor	Coefficients	Probability
Deficit	-0.000313	0.1771
Tax	-1.044374	0.0304
Y (Income)	-0.000002	0.0947
Govexp	1.025278	0.0008
C	1.691152	0.0000
Trend	0.122223	0.0281
Explained variable is the natural log of private consumption Serial Correlation: 0.3879, Functional form: 0.8400, Normality: 0.72605, Heteroscedasticity: 0.2031		

Source: Authors

The result oflong-run estimates of tableV above revealed that a unit change in the government deficit will result to a -0.0313% decline in private consumption per capita in the long-run.

The result was also found to be statistically insignificant. This therefore supports the fact that debt swap for tax as anoption to finance budget does not impact on the private

consumption in the long- run. This therefore, suggests that judging with deficit, there is evidence of REH in Nigeria which corroborates empirical studies Seater (1982), Kormendi (1983), Barro (1978), Evans (1998), Carsol (2011), Afzal (2012). It therefore negates the findings of Feldstein (1978) and (1982), Evans (1993), Apergis et al (2004), Useni (2013), Ogba (2014), Sunge et al (2015) etc.

Government expenditure meet the expected sign and was also statistically significant at 1% level. The result shows that, a 1% escalation in expenditure will bring about a 1% increase in consumption. This suggests a one- for-one increase which should be the case if Nigerian government isrational enough. This finding therefore supported the conclusion of REH which suggests that what matters to the consumer in the long-run is quantity of government expenditure rather than financing means.

Income per capita did not meet the expected sign and it says that a rise in GDP per capita by a unit will bring about an infinitesimal fall in consumption. Iteffect is rather feeble even at 10%. Control variables like Tax revenue and real GDP had negative relationship with private consumption but significant in their effects on private consumption at 5 and 10 percent respectively.

Table VI: ARDL Short-run Estimates (4, 0, 3, 2, 2)

Regressor	Coefficients	Probability
Δ(Consump(-1))	0.250934	0.2427
Δ(Consump(-2))	0.527856	0.0083
Δ(Consump(-3))	0.784161	0.0009
Δ (Deficit)	-0.000294	0.0997
Δ (Tax)	-0.342417	0.0416
Δ (Tax(-1))	0.473291	0.0065
Δ (Tax(-2))	0.185478	0.0599
Δ (Y)	-0.000001	0.3496
Δ (Y(-1))	0.000001	0.1811
Δ (Govexp)	-0.408206	0.0677
Δ (Govexp(-1))	-1.230117	0.0010
Δ(@Trend	0.115022	0.0029
ECM(-1)	-0.941072	0.0011
Explained variable is the natural log of private consumption R- Square: 0.998, F: 516.74 (0.0000), D-W: 1.96, ECM = Consump–(-0.0003*Deficit – 1.0444*Tax + 1.0253*Govexp– 0.00001*Y +1.6912+0.1222*@Trend)		

Source: Authors

Table VI presents the short- run results with the lagged ECM_{t-1} reporting expected sign and it is significant. This coefficient -0.94 shows adjustment speed to equilibrium at long-run in the current year. The signs and magnitude of the short-run estimates are smaller than long-run estimates except for some immediate past period's variables which actually implies time lag for any meaningful response to a current change. For instance, consumption in a past three periods had positive relationships with current private consumption.

Yet, that of the immediate past years was significant to current consumption whereas the two last period's consumption are significant showing the present of time lag. Again, while current tax dropped consumption, past two period's tax raised consumption. Implying also that the utilization of the tax revenue may not be immediate. Government's deficit had a negative and feeble insignificant relationship with private consumption. This also supports existence of REH in Nigeria economy.

Based on this we shall accept hypothesis insignificant difference between consumption in the present and future when deficit is an option for financing budget. So, REH holds in Nigeria.The results of robustness and reliability test are satisfactory, judging by the B-G LM test and the probability values the estimates are devoid of autocorrelation problem. The plots of stability graphs implies that all estimated coefficients are stable.

CONCLUSION AND RECOMMENDATIONS

The study empirically tests whether Nigeria is Ricardian economy or not employingthe ARDL Bounds test approach. Given that the governments resort to budget deficits through bank borrowing with no increase in taxation, disposable incomes of the average Nigerian citizenry are beforehand at the survival level. Hence, the Nigerian populace finds it difficult to observe any respite in the Nigerian government's annual budgets, and consequently loses enthusiasm in the no increase in taxation policy of the government. No wonder the lack of empirical evidence in favour of a significant impact of budget deficits on private consumption and as result, the failure of REH to hold in Nigeria.

The policy finding is that increases in government deficits is shadowed by decreases in private saving. Consequently, our results suggest that budget deficits have no impact on private consumption. The policy implication is that the Nigerian citizen would prefer to obey a definite pattern of private expenditure and so substitution of debt for taxes has pocket-sized impact on Nigerian household's consumption level. In effect, imposition of RE restriction is rejected for Nigerian economy.The failure of REH in Nigeria in the determination of private consumption for period under studyis indeed a pointer to the fact that budget deficit as option for expenditure financing do not contribute to private consumption in Nigeria. Hence, we recommend government should change from deficit financing as a fiscal policy measure that she employs in welfare improvement of her citizenry as this will amount to nothing.

REFERENCES

Abel,A., & Ben, S.B (2001). Macroeconomics, Addison- Wesley.

Afzal, M.(2012). Ricardian equivalence Hypothesis: evidence from Pakistan. *Journal of Management and Economics,3*(6). 258-265.

Adji, A (2009), Essays on Ricardian Equivalence, Scholars @George State University.

Akanbi, S.B (2013). Ricardian Equivalence and Nigerian Economy: An empiricalInvestigation 17(1). 45-60

Barro, R .J (1974). Are Government Bonds Net Wealth? Journal of Political Economy, 82, 1095 - 1117.

Barro, R. J (1989), "The Ricardian Approach to Budget Deficits". *Journal of Economic Perspectives*3 (2) (spring), 47 - 54.

Bernheim, D.P (1987). Ricardian equivalence: an evaluation of Theory and Evidence in StanleyFischer Macroeconomics Annual, NBER.

Carlson, G., (2011). "An Empirical Study of the Ricardian Equivalence Hypothesis,National Savings, and Interest Rates" *Undergraduate Honors Theses.* Paper 609

CBN (2014). Central Bank of Nigerian Bulletin.

Drakos, K, (2001). Testing the Ricardian Equivalence Theorem: Time Series Evidence from Greece, *Journal of Economic Development,* 26, 149-160.

Domenech, R., David, T.,& Juan, V (1997). The effects of Budget Deficits on National saving in the OECD. A paper presented at the CMTEA (1996) at the V *JornadasEconomica International* and at the EEA '97 (Toulouse).

Elmendorf, D. W.,&Jeffrey, B. L,(2000). "Social Security Reform and National Savingin an Era of Budget Surpluses." *Brookings Papers on Economic Activity* (2)1-71.

Engle R.F., & Granger, C.W.J (1987). Co-integration and Error–Correction: Representation, Estimation, and Testing, *Econometrica,* 55: 251-276.

Evans, P (1988). Are consumers Ricardian? Evidence for the United States, *J. Pol. Economy,* 96 (5): 983-1004.

Evans,P, (1993). "Consumers Are Not Ricardian: Evidence from Nineteen Countries". *Economic Inquiry,* 31 (4). 534–548.

Feldstein, M.S., (1978). "Reply." In The Impact of Social Security on Private Savings: Evidence from the U.S. Time Series, by Robert J. Barro. Washington: American Enterprise Inst.*90 The Lahore Journal of Economics, 6(1)*

Feldstein, M, (1982). Government Deficits and Aggregate Demand, *Journal of Monetary Economics,*9, 1-20.

Gale, T., (2008),"Ricardian Equivalence." *International Encyclopedia of the Social Sciences.* 2008. *Encyclopedia.com.*22 Mar. 2016 <http://www.encyclopedia.com>.

Gale, W.G.,&Orszag P.R, (2004). Budget deficits, national savings and interest rates. A paper presented at the Brookings institute and tax policy center for the Brookings panel on economic activity, Sept 6-10, 2004.

Huntley .H, (2014),"The Long-run Effects of Federal Budget Deficits on National Saving and Private domestic investment". Congressional budget office working paper. http://gov/ULE

Jalil, A., & Mahmud, S.F, (2009). Environment Kuznets Curve for CO_2emissions: A co-integration analysis for China. *Energy policy/Elseveirl/* 37(12). 5167-5172.

Jalil, A(2009),"Financial Development and Reduced Growth Volatility: Evidence from China. International Trade and Finance" Association 19th International Conference Working Paper.

Johansen, S (1991),"Estimation and Hypothesis Testing of Co-integration Vectors in Gaussian Vector Autoregressive Models", *Econometrica*, 59, 1551–1580.

Johansen, S (1995). Likelihood-based Inference in Co-integrated Vector Autoregressive Models, Oxford: Oxford University Press.

Kazmi, A. A, (1991). Savings, Consumption and Ricardian Equivalence, AMacro econometric Analysis of Pakistan: 1960-88. Ph.D. Dissertation, Boston University

Khalid, A. M, (1996), " Ricardian Equivalence: Empirical Evidence from Developing Economies", *Journal of Development Economics*, 51, 413-432.

Kimball, M.,&G.N. Mankiw, (1989),"Precautionary Saving and the Timing of Taxes", *Journal of Political Economy*, 97(4) 863-879.

Kormendi, R.C, (1983). "Government Debt, Government Spending, and Private Sector Behaviour." *American Economic Review* 73, 994-1010.

Ogba, I,(2014),"Econometric Test of Ricardian Equivalence Hypothesis: Results forNigeria". *JORIND* 12(1). ISSN 1596-8308. www.transcampus.org/journals; www.ajol.info/journals/jorind

Pesaran, M. H., & Y. Shin, (1999). An Autoregressive Distributed Lag Modelling Approachto Co-integration Analysis, In Strom, S. (Ed.): Econometrics and Economic Theory in20th Century: The Ragnar Frisch Centennial Symposium, Chapter 11, CambridgeUniversity Press, Cambridge.

Pesaran,M.H., Shin,Y.,&Smith,R.J., (2001),"Bounds testing approaches to the analysis of level relationships". *Journal of Applied Econometrics.* 16,289-326.

Raza, S.A; Shahbaz, M; & Nguyen, D.K. (2015),"Energy conservation Policies, growth and Trade Performance: Evidence of feedback hypothesis in Pakistan".

Romer, D. (2006),"Advanced Macroeconomics". The McGraw- Hill Companies. New York. 567-568

Seater, J (1993)," Ricardian equivalence", *Journal of Economic Literature*, 31,142-190.

Seater, J. 1982 "Are Future Taxes Discounted?" *Journal of Money, Credit &Banking* (Ohio State University Press); Aug82, 14(3), 376-389

Sunge, R., Mufandaedza,S.,&Matsvai, S (2015),"Testing the Ricardian Equivalence Hypothesis in Zimbabwe: An ARDL Bound Testing Approach". *Journal of Economics and Sustainable Development.* 6(11).

Tanner, J. E.(1979), "An Empirical Investigation of Tax Discounting: A comment." *Money, Credit and Banking* 11, 214-18.

Vamvoukas, G. A. (2001),"The Relationship between Budget Deficits and CurrentAccount", *Archives of Economic History*, 12, 57-76.

Vamvoukas, G. A. (2002),"Budget Deficits and Interest Rates in a Small Open Economy-Another Look at the Evidence:Reply", *International Economic Journal*, 16(2) 31-36

World Bank (2014), "World Development Indicator", Nigeria.