THE IMPACT OF FISCAL POLICY ON HUMAN DEVELOPMENT INDEX: EMPIRICAL EVIDENCE FROM NIGERIA'S DEMOCRATIC ERA

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Abstract

This study examined the effect of fiscal policy on Nigeria human development index (HDI) during the democratic era (1999 -2016). The study employed the unit root and co-integration tests, as well as the error correction model on the time series data. The result revealed that HDI and selected fiscal policy variables included in the model have a long run relationship during the period. The study also revealed that fiscal policy variables of domestic debt and tax have direct and significant impact on Nigeria HDI both on the short and long run period; total government expenditure has inverse and insignificant impact on Nigeria HDI both in the short and long run. This meant that total government expenditure during the democratic era has not improved the welfare of Nigerians. Furthermore, external debts has inverse and insignificant impact on Nigeria HDI on the short run but had inverse and significant impact on HDI on the long run. This implies that budget deficit financing by external debt does not improve the welfare of Nigerians. The Cumulative Sum (CUSUM) and Cumulative Sum of Squares (CUSUM Q) of the residual showed that Nigeria democratic system of government from 1999 to date is stable. Therefore, the study recommended that government fiscal policies should place greater emphasis on the principles of effective taxation aimed at

promoting investment and growth of the HDI in the country and government should ensure that total government expenditure on human development projects followed due process to avoid leakages in the system.

Keyword: Human Development Index, Fiscal Policy, Total Government Expenditure, Domestic Debt, External Debt, Democracy, Economic Growth

INTRODUCTION

Since independence (1960) to date, Nigeria Nation has served as a political game-arena for two different regimes, namely military regime and democratic regime. However, since 1999 to date the country has witness uninterrupted democratic regime. The popular view of democracy according to Abraham Lincoln sees democracy as government of the people by the people, and for the people. Harvey and Harvey (1989) as reported in Anegbode and Alonge (2014) conceptualized democracy as a concept that involves setting affairs according to known rules of government, toleration towards minority views, regular elections, freedom of speech and above all, observance of rule of law. Furthermore, Anegbode and Alonge (2014) postulated that democracy is all about equality, justice and fairness as it fosters the rule of law, constitutionalism, human right, freedom of speech, freedom of movement, equality among the citizens, separation of powers, civil liberties and adults suffrage. They also asserted that democracy does not treat some people as citizen and other as slave. It see every one as equal before the law and provide equal opportunity, whether a leader or the led, rich or poor, male or female and majority or minority. As it were, almost everyone in Nigeria is anxious to know what dividends democracy can bring particularly now that it is on its third republic and for any economy to grow, there is need to have government to run its affair through fiscal policy. However, over 19 years of unbroken democratic governance practice in Nigeria, the country has nothing or little to show for it in terms of economic growth and human development.

Fiscal policy is one of the fundamental economic policies use in the administration of the entire economic activities in other to achieve economic growth, price stability, equilibrium in balance of payments, promotion of employment, increase in citizen welfare and a host of other objective but despite this policy option the growth of the Nigerian economy has dwindle and the HDI of Nigerians which is an aggregate of the general standard of living of the people, in terms of access to education, health care, housing, security, potable water and life expectancy e.t.c have not faired well, and in most areas have deteriorated significantly.

Furthermore, Dawood (2015) noted that when democracy returned to Nigeria in 1999, expectations were high. The prevailing attitude among the citizenry was positive and many believed that government would provide everything. Others thought that the country's struggling economy would finally improve. However, today, the average Nigerian encounters outrageous frustration, disillusionment and psycho-moral dislocation owing to the failure of government to deliver the expected fruits of democratic governance in the scenes there still unemployment, increased level of poverty, corruption and injustice in the distribution of the nation's resources thereby creating disunity among the divergent ethnic nationalities.

The Keynesian economics theory imposes important functions to governments for economic growth and development. The school of thought stated that without an active role of the government, no countries can achieve economic growth and development. Especially for a good long-term growth performance, government expenditures on education and health improve human capital. In addition, government expenditures cause accumulation of physical capital, and infrastructural expenditures causes positive externalities. Within the framework of this evaluation, it is understood that government policies, especially fiscal policies, do not only focus on creating revenue streams but also enhance the distribution of income which stem income inequality and improve human development. Furthermore, it is obligatory for governments to use fiscal policy tools such as government spending, taxation and deficit financing in this direction.

However, in practice, the use of these policies varies according to developmental levels of countries. Asaju, Adagba and Kajan (2014) observed that the Nigerian Public Services have also remained inefficient in terms of service delivery. Infrastructural decay, high rate of corruption, and lack of transparency and accountability in the management of public policies and resources shows the depth of inefficient public sector that supposed to pilot the economy through fiscal policies. These have led to a rise in inflation, fall in growth and declining real incomes, and high rate of poverty. From the developmental roles of the various organs of government as articulated in the 1999 constitution chapter two section 2B vis-a-vis the standard of living of the people is the almost purpose of government and many people are worried about the high budgetary allocation, enormous internal and external debt and high tax revenue of the Nigerian federal government, year in year out to elect and maintain public officers while the standard of living of the populace continue to nosedives. For instance, during the democratic era that is 1999 to 2016 the average government tax revenue, external debt, and internal debt, total government expenditure was N2331.79 billion, N2115.25 billion, N3844.64 billion and N2749.21 billion respectively while HDI was 0.4847. According to UNDP (2016) the Nigeria's HDI value for 2015 is 0.527 which put the country in the low human development category

positioning it at 152 out of 188 countries and putting the country below neighbouring Ghana and Zambia positioned at 139th, Gabon, 109th, and Equatorial Guinea, 135th.In this context, the main goal of this study is to empirically examine the impact of fiscal policy on HDI during the Nigeria democratic era.

Literature abounds on the impact of fiscal policy on economic growth in Nigeria. Scholars such as Audu (2012), Medee and Nembee (2011), Sikiru and Umaru (2011) and Babalola (2015) have evaluated the impact of fiscal policy on the Nigerian economy. While Iganiga and Obafemi (2012) investigated the impact of Government expenditure on Nigeria HDI, Nwakanma and Nnamdi (2013) examined the relationship between taxes and human development index in Nigeria. Udoh, Afangideh, and Udeaja (2016) investigated how the decentralized system of expenditure impacted on human resource development in Nigeria. Much attention has not been given to the impact of fiscal policies variables of total government expenditure, tax, internal and external debt on Nigeria HDI. Hence, there is the need to bridge the obvious gap in knowledge by examining the impact of fiscal policies variables of total government expenditure, tax, internal and external debt on Nigeria HDI with particular references to the country democratic era. This paper is prearranged into five segments. Section I articulates the background of the study, Section II contains the review of the relevant literature while section III contained research methodology. The empirical findings and interpretation of results are discussed in section VI and Section V concludes the study with policy implications.

LITERATURE REVIEW

Conceptual Issues

Fiscal policy is defined as the means by which a government adjusts its levels of spending in order to monitor and influence a nation's economy (Reem, 2009). Bhatia (2008) noted that fiscal policy consists of steps and measures which the government takes both on the revenue and expenditure sides of its budget and that it is the aggregate effects of government expenditures and taxation on income, production and employment. Dwivedi (2009) defined fiscal policy as government's programme of taxation, expenditure and other financial operations to achieve certain national goals. He posited that whatever the objectives and the order of priorities, the two basic instruments of fiscal policy used to achieve social goals are taxation and public expenditure. Baumol and Blinder (2011) conceptualized fiscal policy as government plan for managing aggregate demand through spending and tax programme and the policy is jointly made by the president and congress. There are two type of fiscal policy- expansionary and contractionary policy. The expansionary fiscal policy is a policy aimed at increasing government expenditure or a decrease in taxation which lead to an increase in the budget deficit while

contrational fiscal policy is mainly concern with the reduction of budget deficit through a decrease in government expending and or increase in taxation which is also called fiscal consolidation.

According to Reem (2009) as reported in Agu, Idike, Okwor and Ugwunta 2014) noted that fiscal policy is based on the theories of British economist John Magnard Keynes whose theory basically states that governments can influence macroeconomic productivity levels by increasing or decreasing tax levels and public spending. This influence, in turn, curbs inflation, increases employment and maintains a healthy value of money. Fiscal policy deals with government deliberate actions in spending money and levying taxes with a view to influencing macro-economic variables in a desired direction. Fiscal policy involves the use of government spending, taxation and borrowing to influence the pattern of economic activities and also the level and growth of aggregate demand, output and employment (Anyanwu, 1993). While, Asaju, Adagba and Kajang (2014) conceptualized fiscal policy as the manipulation of government revenue through tax system, government expenditure and debt management, to achieve pre-determined macroeconomics objectives. Such fiscal policy can be used for allocation, stabilisation and distribution. In essence, a primary objective of fiscal policy is to balance the use of resources of the public and private sectors and by so doing avoid inflation, unemployment, balance of payments pressures and income inequality. Fiscal policy is traditionally administered by the Executive arm through the Ministry of Finance. Fiscal policy entails government's management of the economy through the manipulation of its income and spending power to achieve certain desired macroeconomic objectives (goals) amongst which is economic growth. Baumol and Blinder (2011) asserted that fiscal policy was employed by government in 2008, 2009 and again 2010 to shorten the great recession and speed up economic recovery.

The term democracy is derived from two Greek words meaning "the people'' and Kratas meaning "the rule'' when the two combine are combined it means rule by the people. This form of government originates from the Ancient Greece. Democracy refers to the rule by the majority in which supreme authority is vested in the electorate and exercised by them directly or indirectly through their representative who are elected at periodic elections. Democracy may be viewed as a form of government in which power flows from the citizens to the governors, that is government based on the consents of the people. Alonge (2005) asserted that a democratic government must rest on the consent of the governed and its policies must be responsive to their desires. Contemporary democracy is the enhancement of the rule of law and the empowerment of the people for their development of their potentials for their wellbeing. The origin of the human development index can be traced back to the work of an Indian economist,

Amartya Sen (1990) and a Pakistani economist, Mahbubul Haq (1995). They identified three major components for measuring human development level namely: education, health and income.

Theoretical Literature

Theoretical Framework of fiscal policy and growth of economic activities is hinged on three schools of thought i.e. the Neo-classical theory, the Keynesian theory and the Ricardian Equivalence theory. Each of these theories provides different assumptions. First, the neoclassical theory of fiscal policy stresses the need for attaining smoothing of tax (Lucas, 1986; Barro, 1989). This theory emphasizes on the expenditure induced deficits, whereby budget deficits are used to meet the increasing public expenditure while maintaining low tax rates. The Neoclassical economics emphasizes on the crowding-out effect of private investments, which is based on deficit financing through internal and external borrowing (Buiter 1983; Dalyop,2010; Gaber, 2010). Oladipo and Akinbobola (2011) confirmed in their studies that domestic debts, especially bank loans are responsible for crowding-out private investments. Neoclassical theory is concerned with real crowding out, which involves increase in government borrowing relative to taxation leads to reduction in private investment.

Second, the Keynesian theory encouraged public expenditure-led growth of the 1970s brought about the prominence of budget deficit. It was the renowned British economist, John Meynard Keynes, who put forward the argument that under-spending by governments depress economic performance and exacerbate the rate of unemployment. He argues that in order to reduce unemployment, government should deliberately create expansionary fiscal policy of deficits financing to stimulate demand for goods and services and in the process drive output and create employment which will have a spillover effect on HDI. Advocates of the Keynesian school contend that deficit financing lowers domestic interest rate, promotes productive investments and aggregate demand, leading to higher levels of output, income and employment. According to Keynes (1936) cited in Okoye, Evbuomwan, Modebe & Efobi (2016) postulated that supply does not create demand and as a result of that goods remain unsold, production is cut and unemployment is created that cannot be solved by reducing wages as promoted by the Neoclassical theory. The only solution for the low economic activities is for government to spend more in form of budget deficits which is either financed by domestic or external borrowing. The school of thought emphasized on government intervention in the administration of economic problems during the period of economic recession through budget deficits. He states that it is wrong to assume that competitive markets will, in the long run, deliver full employment or that full employment is natural, self-righting, equilibrium state of a

monetary economy as in the neoclassical economics, but that under-employment and under-investment are likely to be the natural state unless active measures are taken in form of government intervention.

Lastly, the Ricardian Equivalence theory postulated that tax-induced deficit leads to higher future taxes that have present value similar to the initial tax cut. The demand for goods is based on expected present value of the future taxes. The assumption in the Ricardian theory is that government expenditure must be financed by taxes either now or sometimes in future, i.e. budget deficit is simply described as deferred tax (Ussher, 1998). Budget deficits can influence the price level through aggregate demand changes and it should change the expected value of the future taxes. In this sense, budget deficits and taxation are said to have equivalent effects on the economy hence the term, "Ricardian equivalence hypothesis" (Barro, 1989).

Empirical Literature

The increasing literature, theoretical as well as empirical, on the impact of fiscal policy variables on welfare and wellbeing of the people is not representing the comprehensible picture and the results are ambiguous and inclusive. For example, Kizilkaya, Koçak and Sofuoğlu (2015) examined the impact of taxes, government expenditures, income and infrastructure (electricity consumption) on the human development from 1998-2007 for 14 OECD countries. Panel unit root, panel co-integration, panel FMOLS, panel DOLS and panel vector error correction based causality methods was used in the study. The study revealed that taxes have a negative impact on human development while government expenditures as fiscal policy variables have positive and significant impact on human development and concluded that government should give importance to public policy, especially to education and to health care section. Gomanee, Morrissey, Mosley, and Verschoor (2005) examined the relationship between government aids and level of welfare. Representing the level of welfare, infant mortality rates and human development index indicators was used. In the study, 104 low-income and middle-income countries were examined for the period which spanned between 1980 and 2000 and concluded that government aids increase level of human development and decrease infant mortality rate.

Suescun (2007) examined the impact of government expenditures as fiscal policy variable on human development in 15 Latin countries using a dynamic intertemporal general equilibrium model of a small open economy that incorporates and endogenizes human development and various indicators of social progress and concluded that government expenditures affected economic growth, welfare, human development, and social progress in a positive manner but government infrastructural expenditures had more effects on development compared to other government expenditures (education, health, transfers, etc.) while Davies

(2009) examined the impact of the size of government consumption expenditures on social welfare as measured by the Human Development Index. Utilizing dynamic GMM estimation in a panel data framework for 154 countries for the period 1975-2002 and found that optimal size of government spending has direct and significant effect on human development index in a positive manner.

Ali, Raza and Yousuf (2012) investigated the role of fiscal policy in the human development of the Pakistan. The study employed the autoregressive distributed lags (ARDL) bounds testing approach of co-integration on different macroeconomic variables from 1972 to 2010 to explore the impact of government expenditure and the political regime on the welfare of the people in the country. The results show that increase in per capita income and education expenditure have positive effect and current expenditure has negative impact on the human development while tax revenue has a negative and insignificant impact on human development which indicate that tax policy have no development effect and the political regime of the democratic governments has a negative effect on human development index. The study recommended that there is need for policy makers to reduce the level of corruption in the public spending to gain the maximum benefits for the human welfare.

Nwakanma and Nnamdi (2013) examined the relationship between taxes and human development index in Nigeria for the period 1970-2010. Based on the Ordinary Least Squares methodology the study revealed that Petroleum Profit Tax, Company Income Tax and Excise Tax respectively exhibit a positive relationship with the level of HDI. Also, a negative relationship exists between corporate tax and Human Development Index. The Johansen maximum likelihood procedure shows that a long-run relationship exists among the variables. The study recommended that there is need to developed federal fiscal system that could guarantee the full potential of taxation in achieving HDI in Nigeria. Edeme (2014) analyzed the effects of sectoral public spending as fiscal policy on human development in Nigeria using data from 20 states for the period1999-2012. Data on each state were generated from various issues of the Accountant-Generals' Reports, Central Bank of Nigeria Annual Report and Statement of Accounts and United Nations Development Programme Reports. For robustness of the analysis, total, recurrent and capital public spending on education, health, agriculture, rural development, energy, housing, environmental protection and portable water resources are employed as predictors of human development. The result depicted that there is a positive functional relationship between education, health, agriculture, rural development, energy, housing, environmental protection and portable water resources expenditure and human development which is an indication that expenditure on these sectors fosters human development and

concluded that the relative effect of capital expenditure in improving human development was greater than that of recurrent expenditure.

Dan (2016) observed that several countries of the world, developed and developing including Nigeria engage in deficit budgeting as a fiscal policy tool and empirically examines the causal relationship between budget deficits and human development in Nigeria for the period 1980 to 2013. This study utilized endogenous lag models using the Keynesian model based on vector error correction (VEC). The study found a unidirectional long-run causality existing between budget deficits and human development in Nigeria, with causality running from budget deficits to Human Development Index, aligning with the Keynesian views. The study recommends amongst others that budget planning as an instrument for fiscal policy enhances human development. Abraham and Ahmed (2011) argued that sustainable economic growth leads to economic development and they employed error correction methodology to examine the relationship between economic growth and human development in Nigeria. Gross Domestic Product (GDP) was used as a proxy for economic growth while the Human Development Index (HDI) was used as a proxy for human development. Secondary data were collected from 1975 to 2008 from the Central Bank Statistical Bulletin, UNDP yearly Report and World Fact Book and concluded that policies aimed at accelerating growth would have a negative impact on human development in the short run but in the long run positive. This implies that economic growth leads to human development and that macroeconomic policies aimed at achieving sustainable economic growth should be maintained.

Farayibi and Owuru (2016) investigated the linkage between fiscal policy and poverty reduction in Nigeria using a descriptive analysis. They explore the effectiveness of fiscal policy tool, especially government expenditure, in addressing the level of poverty and economic growth in the country. The study found that government capital and recurrent expenditures have not significantly reduced the level of poverty in Nigeria because of a weak linkage and this does not allowed fiscal policy to reflect its true opportunity cost and this gap created loopholes in the implementation of the various measures of fiscal policy in the country. The study therefore concludes that the levels of government capital expenditures in Nigeria have weak impact on the level of poverty in the country.

Udoh, Afangideh and Udeaja (2016) observed that there is a widespread belief that fiscal decentralization is an effective tool for increasing the efficiency of public expenditures. Decentralization is expected to boost accountability and transparency in the provision of public goods for the well-being of the society. They investigated how the decentralized system of expenditure impacted on human resource development in Nigeria. Using ARDL Bounds Testing approach and data for the period 1980 to 2012.The study found that expenditure

decentralization exerted negative effect on human resource development and recommended that transparency and accountability at all levels of government is required to make fiscal decentralization supportive for economic growth and human resource development. On the issue of democracy, Aminu, Adeyemi and Kehinde (2014) investigated the impact of democratic dispensation on the performance of the Nigerian economy between 1983 and 2012. It's employed descriptive statistic (comparative analysis of major indicators of economic performance in Nigeria through simple averages) and multiple regression analysis (OLS), causality as well as Johansen co-integration technique. The Johansen co-integration result shows that there was no cointegrating equation; implying the absence of long run relationship between economic growth and democracy in Nigeria. The results of the causality revealed that there was no causation existed between GDP and democracy.

RESEARCH METHODS

Theoretical Framework and Model Specification

The theoretical foundation of this study on the impact of fiscal policy on human development shall be the Keynesian model, which indicates that during recession, a policy of fiscal expansion should be taken to increase the aggregate demand in the economy thus boosting economic activities, hence developing the well-being of human beings. Igania and Obafemi (2014) noted that the most potent indicator for measuring welfare is the human development index because the index focuses on human development. The HDI is a measure of achievement that incorporates three basic factors which include longitivity, literacy rate and per capita income. Therefore HDI is

$$HDI = f (LON_t, LIT_t, PCI_t) \tag{1}$$

Where

LON_t = Longitivity

LIT_t = Literacy rate

PCT_t = Per capita income

t = time period

Human development index is calculated by measuring various social indicators for each country and it is used for comparative studies between countries in terms of relative achievement and improvement of their citizen welfare. From equation one and the literature reviewed various factors determine the component of human development which can either be institutional and non-institutional factors. However, the functional representation of the model adopted to explore the relationship between fiscal policy and Nigerian human development index is specified thus:

$$HDI_t, = f(TGE_t, DDO_t, EXD_t, TAX_t) \tag{2}$$

Equation two is specified in operational form as:

$HDI_t = \beta_0 + \beta_1 TGE_t + \beta_2 DDO_t + \beta_3 EXD_t + \beta_4 TAX_t + \varepsilon_t$ (3)

Where:

HDI= Human Development Index

TGE= Total Government Expenditure as a ratio of GDP

DDO= Domestic Debt as a ratio of GDP

EXD= External Debt as a ratio of GDP

TAX= Total Tax Revenue as a ratio of GDP

$\varepsilon t_=$ Stochastic Error Term

Therefore, if there is no presence of unit root and there is evidence of co-integration among the variables equation (3) is transform into Error Correction Model (ECM) as specified below:

$\Delta HDI_t = \beta_o + \beta_1 \Delta TGE_t + \beta_2 \Delta DDO_t + \beta_3 \Delta EXD_t + \beta_4 \Delta TAX_t + ECM_{t-1} + et.$ (4)

The ECM in the model is the error correction mechanism which indicates the speed of adjustment to equilibrium whenever disequilibrium occurs in the model.

Sources of Data

This study relies on historical quantitative data, which are available in secondary form. The study employs annual time series data spanning from 1999 to 2016. The data are obtained from different sources, including various issues of the Central Bank of Nigeria Statistical Bulletins and United Nation Development Report (2016)

Method of Data Analysis

The study employed augmented Dickson-Fuller unit root test to determine the stationarity status of the data, the Johansen Co-integration test to establish the existence or non-existence of long run relationship among the variables, the Ordinary Least Squares regression to ascertain the long run collective impact of the independent variables on the dependent variable, as well as the individual directional relationship between the independent and dependent variables. It also utilized the error correction Mechanism (ECM) to determine the speed of adjustment to equilibrium of the model whenever disequilibrium occurs. Finally, post estimation analyses are carried out to examine the usefulness, robustness and reliability of the estimated models by conducting diagnostic tests. The diagnostic test examines the serial correlation, functional form, normality and heteroscedasticity associated with the model. Therefore, the basic diagnostic tests such as serial correlation test, heteroskedasticity test and normality test were conducted. The structural stability test is conducted by employing the Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUM Q) of residual of long and the ECM model. The existence

of parameter instability is established if the Cumulative Sum of the residual goes outside the area between the critical (dotted bounded) lines. It is estimated at 5 percent critical level.

ANALYSIS AND DISCUSSION OF RESULTS

Unit Root Test

Conventionally, when dealing with time series data, a number of econometric issues can influence the estimation of parameter using Ordinary Least Squares techniques (OLS). Regressing a time series variable on another time series variable using OLS estimation can obtain a very high R^2 despite that there is no meaningful relationships between the variables (Gujarati, 2007). This situation reflects the problem of misleading regression generated by a non- stationary process. Therefore, it is recommended that a stationarity test be carried out. The Augmented Dickey Fuller Unit root test was used to assess whether the variables are stationary or not and their order of integration. The result of the ADF Unit root test is shown in table 1.

Table 1: Summary of ADF Unit Root Test Results

Variable	ADF Calculated Value In Level	ADF Calculated Value At 1st Difference	Mckinnon 5% Critical Value	Order Of Integration
TGE	-0.7490	-7.6215*	-3.0656	1(1)
DDO	-0.7297	-3.3643*	-3.0656	1(1)
EXD	-1.9843	-3.3826*	-3.0656	1(1)
TAX	-1.7945	--5.8117*	-3.0656	1(1)
HDI	-0.9679	-5.1272*	-3.0656	1(1)

*Significant at 5 per cent

The unit root test in Table 1 shows that total government expenditure (TGE), domestic debt (DDO), external debt (EXD), total tax revenue (TAX) and human development index (HDI) are stationary at first difference since the calculated ADF is greater than the McKinnon at 5% critical values.

Johansen Co-integration Test Result

The result of Johansen co-integration test for the fiscal policy variables and HDI model is shown in tables 2 below:

Table 2: Co-integration Rank Test Assuming Linear Deterministic Trend for Fiscal Policy Model

Hypothesized No. of CE(s)	Eigen Value	Trace Statistics	0.05 Critical Value	Prob.**	Max-Eigen Statistic	Hypothesized No. of CE(s)	0.05 Critical Value	Prob.**
None *	0.9999	233.3986	69.8189	0.0000	156.3087	None *	33.876	0.0001
At most 1 *	0.8795	77.0900	47.8561	0.0000	33.8623	At most 1 *	27.5843	0.0068
At most 2 *	0.8267	43.2278	29.7971	0.0008	28.0407	At most 2 *	21.1316	0.0046
At most 3	0.5583	15.1870	15.4947	0.0556	13.0755	At most 3	14.2646	0.0764
At most 4	0.1236	2.1115	3.8415	0.1462	2.1115	At most 4	3.8415	0.1462

Note: Trace test and Max-eigen value test indicates 3 cointegrating egn(s) at the 0.05 level

Table 2 shows the result of the co-integration test based on the Johansen and Jesulius (1992) approach. Both the trace and Maxi-Eigen statistics show evidence of co-integrated equations. The result shows that there exist three (3) co-integrating equations at 5% level of significance. This is because the Trace statistic and the Max-Eigen value is greater than critical values at 5%. This further shows that there is long run relationship between fiscal policy variables and HDI performance in Nigeria.

Long Run Statistic Regression of HDI

Having confirmed the co-integration, the long run model was estimated. The results are contained in table 3.

Table 3: The Long Run Regression: Dependent Variable HDI

Variable	Coefficient	Standard Error	t-Statistic	Prob.
TGE	-0.5354	0.2709	-1.9764	0.0697
DDO	1.3098*	0.2261	5.7932	0.0001
EXD	-0.2279*	0.0396	-5.7560	0.0001
TAX	0.5848*	0.2755	2.1230	0.0535
C	0.4050	0.0214	18.9507	0.0000

R^2 = 0.8768   F-Statistic = 23.1332

R^{-2} = 0.8389   Pro (F- Statistic) = 0.000008

D Watson Statistic = 1.7866

Note: *Significant at 5 per cent

From Table 3 above, it could be observed that the entire explanatory variable except total government expenditure is consistent with the apriori expectation. The coefficient of total government expenditure is inversely related to Nigeria HDI and also statistically insignificant such that one percent increase in total government expenditure leads to 0.5354 per cent decrease in HDI. This result supports the fact that on the long run total government have inverse and insignificant effects on HDI as a result of poor government expenditure in improving the welfare of Nigerian during the Democratic era. This is not consistent with Kizilkaya, Koçak and Sofuoğlu (2015) and Ali, Raza, Yousuf (2012) who reported that government expenditure has direct effect on HDI. This implies that government expenditure crowed out investment in Nigeria which leads to poor economic growth and reduction in Nigeria HDI.

The coefficient of domestic debt shows direct and significant relationship with Nigeria HDI. One percent increase in domestic debt lead to 1.3098 per cent increase in Nigeria HDI. This is consistent with the apriori expectation. This result suggests that domestic debt as a fiscal policy variable contribute to Nigeria HDI on the long run. However, the significant of this variable indicates that budget deficit financing by domestic debt promote HDI in Nigeria all things being equal on the long run and this is consistent with the intergenerational public debt burden hypothesis because domestic debt does not have intergenerational burden effect on economic activity.

External debt (EXD) has an inverse and significant impact on Nigeria HDI. One per cent increase in EXD leads to 0.2279 per cent decrease in Nigeria HDI. This is consistent with the apriori expectation. This implies that as external debt reduce government income in maintaining the welfare of Nigerian which lead to reduction in HDI.

Total tax revenue as a fiscal policy (TAX) has direct and significant impact on Nigeria HDI. One per cent increase in TAX leads to 0.5848 per cent increase in Nigeria HDI. This is consistent with the apriori expectation. This implies that federal government tax revenue policy encourages HDI Nigerian on the long run. This result conforms to Nwakanma and Nnamdi (2013) findings who reported that tax have direct and significant impact on Nigeria HDI.

The coefficient of determinations R^2 of 0.8768 indicates that about 88 percent of the total variations in Nigeria HDI are explained by the variations in the fiscal policy variables. The F-statistic shows overall significance of the model. The F-statistic is significant at 5% level. The probability of its value (0.0000) is less than the 0.05 critical levels. We, therefore, reject the null hypothesis that the model is not significant in explaining the variations in Nigeria HDI during democratic era on the long run. Finally, the Durbin Watson test of autocorrelation shows an absence of positive serial autocorrelation.

Error Correction Mechanism (ECM) Results

The existence of co-integration between the dependent variable and the explanatory variables resulted to the use of error correction mechanism, which captured the short run relationship between the variables (dependent and independent) as well as the speed of adjustment to equilibrium.

Table 4: Results of the Short-Run Error Correction Mechanism: Dependent Variable D(HDI)

Variable	Coefficient	Standard Error	t-Statistic	Prob.
D(TGE)	-0.4644	0.2679	-1.7335	0.1109
D(DDO)	1.2702	0.4394	2.8906	0.0147
D(EXD)	-0.1698	0.1039	-1.6332	0.1307
D(TAX)	0.7100	0.2593	2.7377	0.0193
ECM(-1)	-0.7814	0.3305	-2.3643	0.0375
C	0.0024	0.0047	0.5138	0.6176
R^2 = 0.6636		F-Statistic = 4.3392		
R^{-2} =0.5106		D Watson Statistic = 1.8023		
D Watson Statistic = 1.8023		Pro (F- Statistic) = 0.0199		

The empirical evidence show that total government expenditure D(TGE) has inverse and insignificant impact on the growth performance of Nigeria HDI in the short run. The variable is insignificant at 5% level of significance. This result is not consistent with the appriori expectation. This finding is consistent with the long run result earlier reported which implies that government expenditure has not improved the wellbeing of Nigerian on the short run. This finding is in line with the neoclassical theory that government expenditure crowd out investment which has detrimental effect on economic performance and HDI.

The difference of Nigeria domestic debt D(DDO) as fiscal policy variable bears a direct sign. This conforms to the apriori expectation. This implies that there is direct relationship between domestic debt and HDI and any increase in D(DDO) leads to increase HDI. The value of the coefficient is 1.2702. This implies that one percent increase in domestic debt leads to 1.2702 percent increase in HDI on the short run. The difference of Nigeria external debt D(EXD) has an inverse and insignificant effect on HDI. This is in-line with the apriori expectation such that one percent increase in external debt leads to 0.1698 percent decrease in Nigeria HDI. However, The difference of Nigeria tax revenue D(TAX) as fiscal policy variable has direct and significant impact on Nigeria HDI. This implies that good tax structure improved economic growth and HDI in Nigeria on the short run.

The result shows that the coefficient of ECM is negative -0.7814 and significant at 5% percent critical level. This indicates that about 78 percent disequilibria in the HDI in the previous years are corrected in the current year. The significance of the ECM is an indication and a confirmation of the existence of a long run equilibrium relationship between HDI and fiscal policy variables during Nigeria democratic era.

Diagnostic Test

To confirm the robustness of the model, a diagnostic test was performed as shown in table 5.

Table 5: Key Regression Statistics

Key Regression Statistics	Long Run Model (Equation 3)	Short Run Model (Equation 4)
Ramsey RESET test	3.4502 (0.1782)	3.0139 (0.1132)
Breusch–Godfrey serial correlation LM test	1.4713 (0.2715)	1.3296 (0.3119)
ARCH Heteroskedasticity Test	0.7677 (0.5650)	0.9036 (0.5123)
J–B Normality Test	5.9024 (0.0523)	3.4502 (0.1782)

Note: The values in parenthesis are Pro Value

The post estimation test captured by Jarque-Bera, Ramsey reset test Breusch-Godfrey, ARCH Heteroskedasticity among others on the long and short run regression, reveal not only the robustness of the estimated equation results but the desired properties of an econometric model. The diagnostic tests confirm the suitability of the estimated models. Thus, the model residual series are normally distributed as suggested by the Jarque–Bera statistics, while the Breusch–Godfrey LM test statistics indicate that the model does not have significant serial correlation problem. Moreover, the ARCH test and the Ramsey RESET test respectively show that the residuals are homoscedastic and the model has correct functional form.

Stability Test

Stability test was also conducted using Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUM Q) of residual of the model as shown in figures 1, 2, 3 and 4. The existence of the parameter of instability is established if the Cumulative Sum of the residual goes outside the area between the critical (dotted bounded) lines. It is estimated at 5 percent critical level. From figures 1, 2, 3 and 4, it can be inferred that the model at 5 percent level of significance has been stable over time.

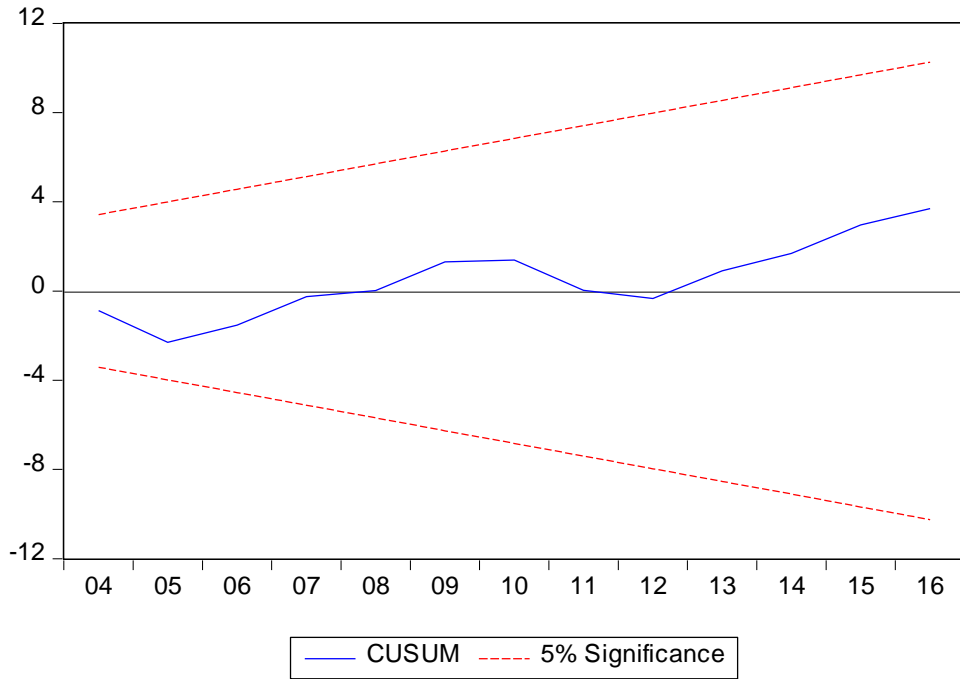Figure 1: Plot of Cumulative Sum of Recursive Residual for long run model

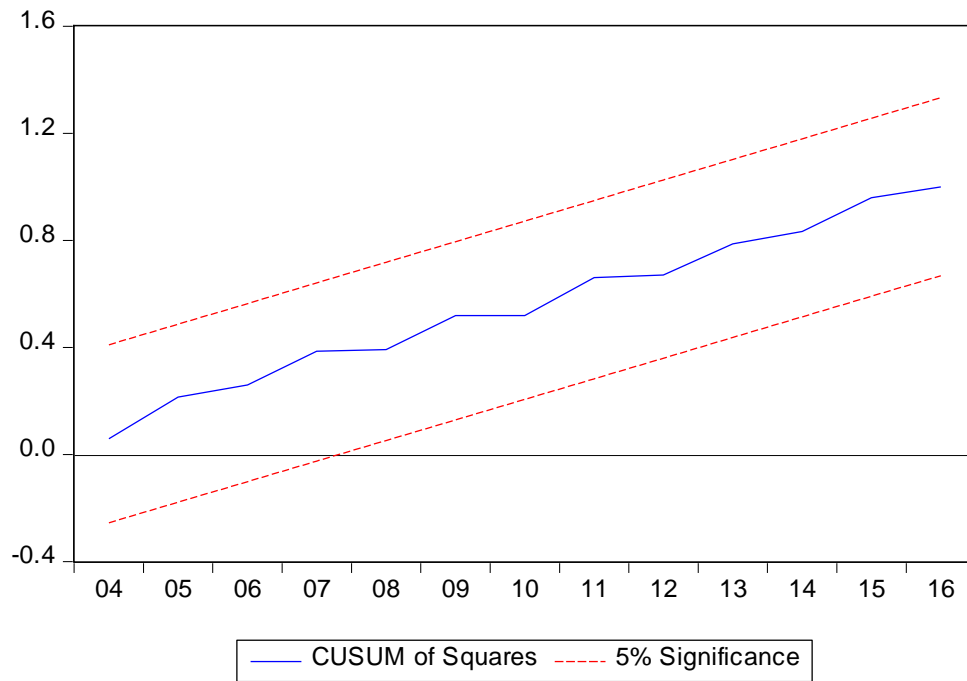Figure 2: Plot of Cumulative Sum of Square of Recursive Residual Results long run model

Figure 3: Plot of Cumulative Sum of Recursive Residual for short run model
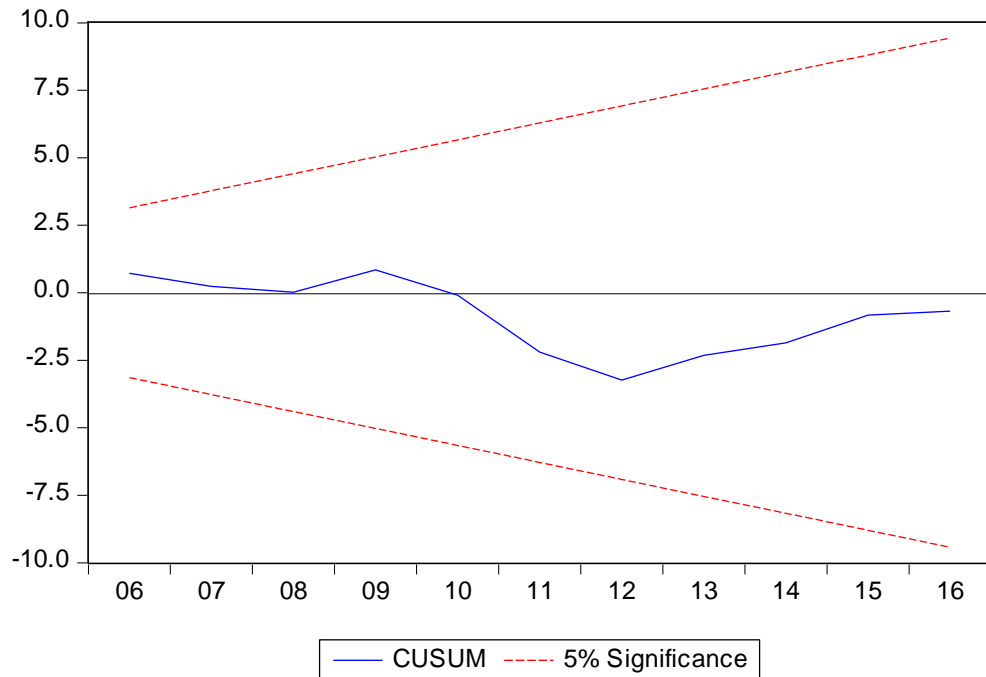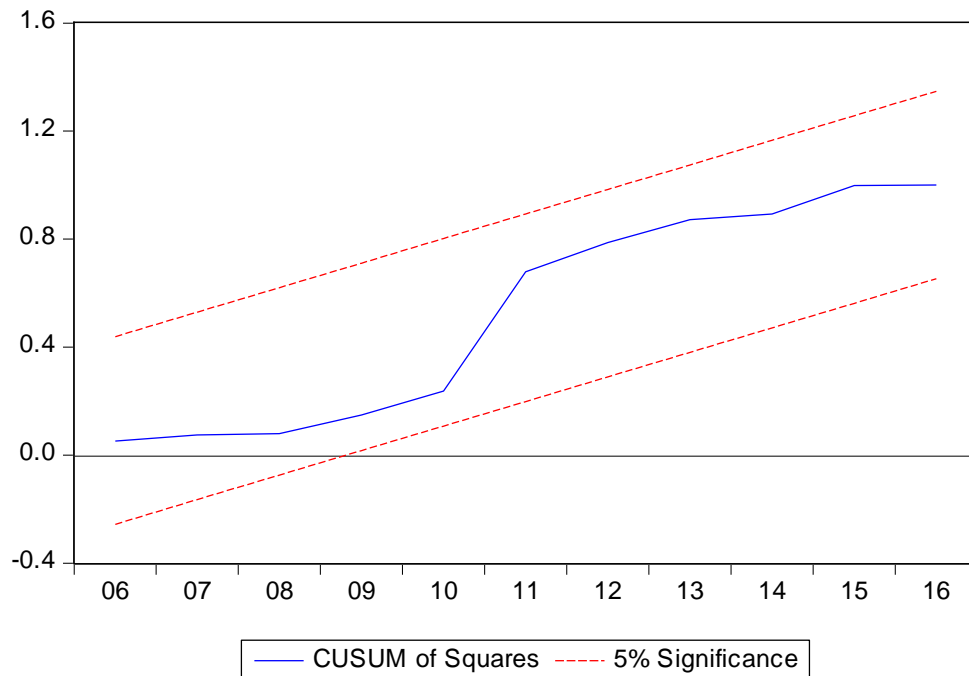

Figure 4: Plot of Cumulative Sum of Square of Recursive Residual Results long run model

CONCLUSION AND POLICY IMPLICATIONS

Economic development is the ultimate goal of every government and a renowned criterion for measuring the development is HDI. Higher the value of HDI, higher is the human development level. In this study, we explore one of the major government policy i.e. fiscal policies on Nigeria human development during the democratic era which spanned between 1999 and 2016. Econometric model was specified and estimated via econometric techniques to ascertain the relationship between HDI and the fiscal policy variables. The variables were tested for stationarity, co-integration analysis was carried out and also error correction test was also performed. The study found that HDI and selected fiscal policy variables included in the model have a long run relationship with Nigeria HDI during democratic dispensation in the country. The study also revealed that fiscal policy variables of domestic debt and Tax have direct and significant impact on Nigeria HDI. Total government expenditure has inverse and insignificant impact on Nigeria HDI both in the short and long. Which mean total government expenditure during the democratic era has not improved the welfare of Nigerian. Also external debts have inverse and insignificant impact on Nigeria HDI on the short run but have inverse and significant impact on HDI on the long run. This implies that budget deficit financing by external debt does not improve the welfare of Nigerian. The stability test conducted using the Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUM Q) of the residual show that the model is stable. This implies that Nigeria democratic system of government from 1999 to date is stable.

The study therefore, concluded that fiscal policy variables of total tax revenue and budget deficit financing by domestic debt induce human development in Nigeria during the democratic era. However, the study is limited to the impact of fiscal policy on HDI which is a composite index of income, longitivity and illiterate rate which does show how fiscal policy affect the individual component of HDI. Therefore, there is need for further study on the impact of fiscal policy variables on Nigerian income, longitivity and illiterate rate in Nigeria. Hence, the study recommended that government fiscal policies should place greater emphasis on the principles of effective taxation aimed at promoting investment and the growth of the HDI in the country, the inverse and insignificant impact of total government expenditure on Nigeria HDI show that increasing government expenditure during the democratic era still fall short of achieving and bursting Nigerian standard of living and also government should ensure that its total expenditure on human development is properly monitored through the application of fiscal transparency and responsibility and due process in order to avoid leakages in the system and improved the welfare of Nigerian. To reduce the adverse effect of external debt on HDI, there is need to analyze the economic and social profitability of all external debt financial projects to ensure that the returns would be in excess of the interest and capital repayment. The aim will be

to prevent the deadweight effect of domestic debt on HDI and also government should restructure its revenue base to finance fiscal policy expansion rather than embarking on external borrowing. This can be achieved by improving its revenue sources and efficient pursuit of tax reforms which will help to minimized tax avoidance and invasion. Finally, adequate machinery should be put in place by all sectors of democratic government to arrest corruption and penalize those who divert and embezzle public funds. This will help to reduce the rising profile of external and domestic debt in Nigeria.

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APPENDICES

Appendix I: Long Run Regression: Dependent Variable HDI

Dependent Variable: HDI

Method: Least Squares

Date: 06/29/18   Time: 18:26

Sample: 1999 2016

Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TGE	-0.535360	0.270876	-1.976407	0.0697
DDO	1.309824	0.226095	5.793240	0.0001
EXD	-0.227865	0.039587	-5.756011	0.0001
TAX	0.584791	0.275450	2.123037	0.0535
C	0.404997	0.021371	18.95066	0.0000

R-squared	0.876815	Mean dependent var	0.485556
Adjusted R-squared	0.838912	S.D. dependent var	0.035016
S.E. of regression	0.014054	Akaike info criterion	-5.461678

Sum squared resid	0.002568	Schwarz criterion	-5.214352
Log likelihood	54.15510	Hannan-Quinn criter.	-5.427575
F-statistic	23.13315	Durbin-Watson stat	1.786572
Prob(F-statistic)	0.000008		

Appendix II: Short-Run Error Correction Mechanism

Dependent Variable: D(HDI)

Method: Least Squares

Date: 06/29/18   Time: 18:29

Sample (adjusted): 2000 2016

Included observations: 17 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TGE)	-0.464438	0.267925	-1.733463	0.1109
D(DDO)	1.270175	0.439422	2.890557	0.0147
D(EXD)	-0.169768	0.103945	-1.633244	0.1307
D(TAX)	0.709999	0.259341	2.737706	0.0193
ECM(-1)	-0.781438	0.330509	-2.364348	0.0375
C	0.002406	0.004683	0.513769	0.6176

R-squared	0.663567	Mean dependent var	0.004118
Adjusted R-squared	0.510642	S.D. dependent var	0.020633
S.E. of regression	0.014434	Akaike info criterion	-5.367913
Sum squared resid	0.002292	Schwarz criterion	-5.073838
Log likelihood	51.62726	Hannan-Quinn criter.	-5.338681
F-statistic	4.339183	Durbin-Watson stat	1.802281
Prob(F-statistic)	0.019948		

Appendix III: Johansen Co-integration Test Result

Date: 06/29/18   Time: 18:45

Sample (adjusted): 2001 2016

Included observations: 16 after adjustments

Trend assumption: Linear deterministic trend

Series: HDI TGE DDO EXD TAX

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.999943	233.3986	69.81889	0.0000
At most 1 *	0.879534	77.08991	47.85613	0.0000
At most 2 *	0.826668	43.22776	29.79707	0.0008
At most 3	0.558342	15.18703	15.49471	0.0556
At most 4	0.123633	2.111516	3.841466	0.1462

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.999943	156.3087	33.87687	0.0001
At most 1 *	0.879534	33.86215	27.58434	0.0068
At most 2 *	0.826668	28.04074	21.13162	0.0046
At most 3	0.558342	13.07551	14.26460	0.0764
At most 4	0.123633	2.111516	3.841466	0.1462

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values