

## Fiscal Policy and Economic Growth: An Examination of Selected Countries in Sub-Saharan Africa

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**Abstract** *The debate on the effectiveness of fiscal policy as a tool for promoting growth and development remains inconclusive given the positions of economic theories as well as conflicting results of past studies. This study sought to determine the effect of fiscal policy variables on the economic growth of sub-Saharan African countries. The ex-post facto research design was adopted which enabled the study to make use of secondary data from sub-Saharan African Countries in a panel least squares. The result of the linearly modelled hypotheses tested using the panel data estimation technique under the fixed-effect assumptions revealed that Government productive and unproductive expenditures, distortionary tax (a proportional tax on output at rate) and non-distortionary taxes have significant effects on the economic growth of sub-Saharan African countries. Findings also revealed that budget balances of sub-Saharan African countries have a positive but insignificant effect on the economic growth of sub-Saharan African countries.*

**Key words** Fiscal policy, economic growth, government expenditure, taxation, fiscal balances

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### 1. Introduction

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. 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 (Medee and Nembee, 2011). Olawunmi and Tajudeen (2007) opine that fiscal policy has conventionally been associated with the use of taxation and public expenditure to influence the level of economic activities. They further opined that the implementation of fiscal policy is essentially routed through government's budget. Fiscal policy as mostly to achieve macroeconomic policy; it is to reconcile the changes which government modifies in taxation and expenditure, programmes or to regulate the full employment price and total demand to be used through instruments such as government expenditures, taxation and debt management (Hindriks and Myles, 2006). As noted by Anyanwu (1993) the objective of fiscal policy is to promote economic conditions conducive to business growth while ensuring that any such government actions are consistent with economic stability. From the foregoing, it is clear that if fiscal policy is used with circumspection and synchronized with other measures, it will likely smoothen out business cycles and lead to economic growth and stability. Fiscal policy is the means by which a government adjusts its levels of spending in order to monitor and influence a nation's economy. Fiscal policy serves as an important tool to influence the aggregate demand (The Strategist, 2013). Depending upon existing situation of the economy, government can employ either expansionary or contractionary fiscal policy. Expansionary fiscal policy increases the aggregate demand whereas contractionary or deflationary fiscal policy reduces the aggregate demand. Changes in the level, timing and composition of government spending and taxation have an important effect on the economy.

The extent to which fiscal policy engender economic growth has continued to attract empirical debate especially in developing countries and the fundamental problem is the representation of fiscal policy. Literature reveals that there are different opinions as to what coefficient best captures fiscal stance. Theoretically, three standard fiscal policy measures; spending/expenditure, taxation and deficits exist. Out of these three variables, literature does not single out any as the most representative of fiscal policy. While scholars such as (Rebelo, 1991; Stokely and Rebelo, 1995; Engen and Skinner, 1996) have made use of tax rates as a proxy for fiscal policy others such as Martin and Fardmanesh (1990) and Easterly and Sergio (1993) have used deficits to account for fiscal policy in their estimations. Yet, scholars including Barro (1990), Aushauer (1989) used expenditure to account for fiscal policy stance. When expenditure is considered as a fiscal policy measure certain studies have considered aggregate government expenditure as a single variable while others are of the view that the variable ought to be decomposed into several categories.

Consequently, past empirical results differ greatly between various studies as (Levine and Renelt, 1992) emphasized the sensitivity of the findings to changes in the set of control variables. Levine and Renelt (1992) also argue that none of the three policy variables has a robust association with economic growth when examined individually. Fu, Taylor, and Yucel (2003) suggest the inadequacy of any one of the identified fiscal policy indicators (as pointed by Levine and Renelt, 1992) but disputed the mainstream growth literature which could be due to the inability of any one policy factor to adequately account for a given fiscal policy position. Mathew (2009) consequently points out that a third-generation strand of the literature on fiscal policy and economic development has emerged which attempts to examine the structure of at least two fiscal policy variables simultaneously.

A significant problem with most of the past African countries studies is the inability of the studies to apply pair-wise combinations of the fiscal. This implies testing the effects of fiscal policy on economic growth taking into account the structure of fiscal policy i.e. both sides of taxation and expenditure. In other words, past African studies focused on the effect of government deliberate spending on economic growth while ignoring, at least partially, the other side (taxation/ income) of fiscal policy. Bleaney *et al.*, (2000) opine that any fiscal policy growth study, which does not take both sides of the fiscal policy into account, suffers from substantial biases of the coefficient estimates. This study dealt with the above problems in the context of static panel regressions by showing the complete specification of the government budget constraint and careful attention to fiscal classifications to produce dramatically different results for the economic growth effects of fiscal policy.

## **2. Literature review**

### **2.1. Conceptual review**

The implementation of fiscal policy is essentially routed through government's budget. Thus, the budget is, therefore, more than a plan for administering the government sector. It (budget) both reflects and shapes a country's economic life, and the most important aspect of a public budget is its use as a tool in the management of a nation's economy (Omitogun and Ayinla, 2007). Fiscal policy aims at stabilizing the economy. Increases in government spending or a reduction in taxes tend to pull the economy out of a recession; while reduced spending or increased taxes slow down a boom (Dornbusch and Fischer, 1990).

Fiscal deficit could be seeing from many angles. It is the gap between the government's total spending and the sum of its revenue receipts and non-debts capital receipts. It represents the total amount of borrowed funds required by the government to completely meet its expenditure (Wosewei, 2013). It could also be defined as the excess of total expenditure including loans net of payments over revenue receipts and non-debt capital receipts. It also indicates the total borrowing of the government, and the increment to its outstanding debt. Despite the fact that realized revenues are often above budgeted estimates, extra budgetary expenditures have been rising so fast and result in fiscal deficit (Wosewei, 2013). Anyanwu (1997) shows that budget deficit in developing countries are heavily influenced by the degree of political instability as well as public finance considerations with no apparent direct effect of elections. Investigations show that Nigeria was caught in the deficit trap since early 1980s when the world oil market collapsed and since then, there have been frantic efforts to exit the deficit trap but all to no avail

instead, the mode of financing the deficit has been the major factor including rapid monetary growth, exchange rate depreciation and rising inflation (Wosewei, 2013).

The Strategist (2013) noted the major objectives of fiscal policy as follows:

• *Full employment*: It is very important objective of fiscal policy. Unemployment reduces the level of production, and hence the level of economic growth. It also creates many problems to the unemployed people in their day-to-day life. So, countries try to remove unemployment and attain full employment. Full employment refers to that situation, where there is no involuntary unemployment in the economy. To attain this objective, government tends to:

- Increase its spending;
- Lower the personal income taxes;
- Lower the business taxes, or,
- Employ a combination of increasing government spending and decreasing taxes.

However, in practice, it is difficult to achieve full employment. As the factor markets are not perfect, factor units may lose their jobs and may not get the new jobs immediately.

• *Price stability*: Both sharp rise and sharp fall in general price level are not desirable. It is because sharp rise in prices makes many goods and services unaffordable to the consumers whereas sharp fall in prices discourages the producers to produce goods and services. So, price stability is desirable. However, it should be noted that the principle that general price level should be reasonably stable is generally accepted, the determination of exact trends which are most satisfactory from the stand point of welfare of society is difficult. There are following three alternative points of view regarding the price stability.

• *Economic growth*: It is also an important objective of fiscal policy. By means of higher rate of economic growth, the problem of unemployment can also be solved. However, it may create some problems in the maintenance of price stability. The developed countries, like USA, UK, Japan, etc. give attention to the relationship of actual growth rate to the potential growth rate permitted by the consumption – saving ratio, technological considerations and other factors. The less developed countries give emphasis to the increase in the potential growth rate as well as the relationship of the actual and potential growth rate.

• *Resource allocation*: Resource allocation refers to assigning the available resources of the economy to the specific uses chosen among many possible and competing alternatives. It gives answer to what to produce and how to produce-questions of the economy. Fiscal policy should ensure the optimum allocation of the resources. It should divert the resources from unproductive sectors to the productive sectors of the economy. It is the long-run objective of the government. The emphasis of the government upon the full employment, price stability and economic growth should not overshadow the resource allocation goal.

• *Increase in Savings*: This policy is also used to increase the rate of savings in the country. In the developing countries rich class spends a lot of money on luxuries. The government can impose taxes on them and can provide the basic necessities of life to the poor class on low rate. In this way by providing incentives, savings can be increased.

• *Equal Distribution of Wealth*: Fiscal policy is very useful for the achievement of equal distribution of wealth. When the wealth is equally distributed among the various classes then their purchasing power increases which ensures the high level of employment and production.

• *Control Inflation*: Fiscal policy is very useful weapon for controlling the rate of inflation. When the expenditure on non-productive projects is reduced or the rates of taxes are increased then the purchasing power of the people reduces.

• *Reduce the Regional Disparity*: In the less-developing countries, the regional disparity is found. Some areas are more developed while the others are less developed. Government provides the infrastructure facilities in less developed areas. The tax holiday incentive is also provided in these areas which are very useful in increasing the per capita income.

• *Check Rapid Increase in Consumption*: Fiscal policy is also used to check the rapid increase in the consumption will be high then the rate of saving will be low and consequently rate of investment will be low. So one country cannot improve its economic condition without increasing the investment.

The Strategist (2013) pointed out that the nature of fiscal policy may be either expansionary or contractionary. Expansionary fiscal policy increases the aggregate demand of the economy. It increases the

level of production, and hence the level of employment. It eliminates the recessionary gap existing in the economy. It should be noted that recessionary gap occurs when the equilibrium real GDP is less than the potential real GDP of the country. In this situation, unemployment is greater than natural rate of unemployment. Contractionary fiscal policy reduces the aggregate demand of the economy. It reduces the level of production, and hence the level of employment. It eliminates the inflationary gap existing in the economy. It should be noted that inflationary gap occurs when the equilibrium real GDP is greater than potential real GDP. In this situation, unemployment is lower than the natural rate of unemployment.

## **2.2 The Theoretical Framework: The Endogenous Economics Growth Theory/The Theoretical Framework**

The theoretical underpinning for this study is basically the endogenous growth theory. The endogenous growth theory advocates the stimulation of level and growth rate of per capita output through within the economic policies such as tax policies. The endogenous growth theory posits that the driver of economic growth is fundamentally the result of endogenous factors and not external factors (Roma, 1994). The endogenous growth theory posits that the growth of the economy in the long run primarily depends on policy measures which have grave implications on openness, competition, change and innovation (Fadera, 2010). The endogenous growth theory further argues that economic growth is generated from within a system as a direct result of internal workings of the system. Specifically, the theory notes that the enhancement of a nation's human capital will lead to economic growth by means of the development of new forms of technology and efficient and effective means of production which are not disrupted by taxes. Supporters of endogenous growth theory argue that the productivity and economies of today's industrialized countries compared to the same countries in pre-industrialized eras are evidence that growth was created and sustained from within the economy.

Since the mid-1980s the theoretical growth literature has above all tried to endogenize the growth rate of output in the long-run. As is well known, in the neoclassical growth model, if the incentives to save or to invest in new capital are affected by fiscal policy, this alters the equilibrium capital output ratio, and therefore the level of the output path, but not its slope (with transitional effects on growth as the economy moves onto its new path). The novel feature of the public-policy endogenous growth models of Barro (1990) and Barro and Sala-i-Martin (1992, 1995) is that fiscal policy (tax policy) can determine both the level of the output path and the steady-state growth rate. Endogenous growth theory pioneered by the work of Romer (1986), Barro (1990) among others, points out mechanisms by which policy variables cannot only affect the level of output, but also steady-state growth rates. Barro (1990) constitutes one of the first attempts at endogenizing the relationship between growth and fiscal policies. He distinguishes four categories of public finances: productive vs. non-productive expenditures and distortionary vs. non-distortionary taxation. Taxation is distortionary if it affects the investment decision, and hence output/growth. This is, above all, the case for direct income and profit taxation. Otherwise taxes, such as consumption taxes, are considered non-distortionary, except for the case when households face the endogenous choice of labour or leisure.

## **2.3. Empirical review**

Bleany *et al.*, (2000) noted that the endogenous growth models, such as Barro (1990), predict that government expenditure and taxation will have both temporary and permanent effects on growth. Bleany *et al.* (2000) tested this prediction using panels of annual and period-averaged data for OECD countries during 1970-95, isolating long-run from short-run fiscal effects. Their results strongly support the endogenous growth model and suggest that long-run fiscal effects are not fully captured by period averaging and static panel methods. Unlike previous investigations, our estimates are free from biases associated with incomplete specification of the government budget constraint, and do not appear to result from endogeneity of fiscal or investment variables (Bleany *et al.*, 2000) concluded.

Easterly and Robelo (1993) described the empirical regularities relating fiscal policy variables, the level of development, and the rate of growth. Easterly and Robelo (1993) employed historical data, recent cross-section data, and newly constructed public investment series. Their main findings are: (i) there is a strong association between the development level and the fiscal structure: poor countries rely heavily on

international trade taxes, while income taxes are only important in developed economies; (ii) fiscal policy is influenced by the scale of the economy, measured by its population; (iii) investment in transport and communication is consistently correlated with growth; (iv) the effects of taxation are difficult to isolate empirically.

Nijkamp and Poot (2003) used meta-analysis to shed light on whether the public sector enhances or retards long-run economic growth. A sample of 93 published studies, yielding 123 meta-observations, is used to examine the robustness of the evidence regarding the impact of fiscal policy on growth. Five fiscal policy areas are considered: general government consumption, tax rates, education expenditure, defense, and public infrastructure. Several meta-analytical techniques are applied, including descriptive statistics, contingency table analysis and rough set analysis. On balance, the evidence for a positive impact of conventional fiscal policy on growth is rather weak, but the commonly identified importance of education and infrastructure is confirmed.

Dar-Atui and Amirkhalkhali (2002) conducted investigation on the endogenous growth model of fiscal policy and concluded that in the endogenous growth model of fiscal policy (government expenditure and income) is very crucial in predicting future economic growth. Abduliah (2000) analyzed the relationship between government expenditure and economic growth and found that the size of government expenditure is very important in determining the performance of the economy. He further advised that, government should not only support and encourage the private sector to accelerate economic growth, but should also increase its budgetary provision on infrastructure, social and economic activities.

Nijkamp and Poot (2002) also conducted a meta-analysis of past empirical studies of fiscal policy and growth and found that in a sample of 41 studies, 29% indicate a negative relationship between fiscal policy and growth, 17% a positive one, and 54% an inconclusive relationship while (Khosravi and Karimi, 2010) maintains that fiscal policy is generally believed to be associated with growth, or precisely, it is held that appropriate fiscal measures in particular circumstances can be used to stimulate economic development and growth.

Fuente (1997) examined the impact of public expenditures and taxation on economic growth of 21 OECD countries from 1965 to 1995. The results of the study could not provide evidence in support of fiscal policy-led growth. Specifically, public expenditures tend to crowd-out private investment leading to reduction in disposable income and the incentive to save.

Ghali and Al-Shamsi (1997) examined the causal links between fiscal policy (government expenditure) and economic growth (GDP) from 1973 to 1995 in U.A.E using a cointegration and error-correction framework. The results provided evidence in support of existence of cointegration between government expenditure and GDP. The results of the causality tests showed that causation runs from government expenditure to GDP.

Mansouri (2008) studied the relationship between fiscal policy and economic growth in Egypt, Morocco and Tunisia. The spans of data for each country are: 1970-2002 for Morocco, 1972-2002 for Tunisia and 1975-2002 for Egypt. The empirical results showed that 1 percent increase in public spending raised the real GDP by 1.26 percent in Morocco, 1.15 percent in Tunisia and 0.56 percent in Egypt. The results also indicated existence of long-run relationships for all the three countries.

Enache (2009) investigated the connection between fiscal policy and economic growth in Romania using Forecasted time series data which covered periods between 1992 and 2013. The empirical results indicated weak evidence for the positive impact of fiscal policy on economic growth. The study concluded that government authorities could use fiscal policy to affect economic growth in an indirect manner.

Karimi and Khosravi (2010) investigated the impact of monetary and fiscal policies on economic growth in Iran using autoregressive distributed approach to cointegration between 1960 and 2006. The empirical results indicated existence of long-run relationship between economic growth, monetary policy and fiscal policy. The results further revealed a negative impact of exchange rate and inflation (as proxies for monetary policy), but a positive and significant impact of government expenditure on growth.

Olasunkanmi and Onakoya (2012) investigated the fiscal policy variables that contributed to growth in Nigeria for the period of 1981 to 2010 in view of hypothesizing the fiscal policy variables-growth effect. Secondary annual time-series data were used. Data on Productive expenditure, Unproductive expenditure, distortionary taxes, non-distortionary taxes, fiscal deficit and real growth rate of GDP were analyzed using

cointegration and ordinary least square techniques. Cointegration results show a long run relationship among the variables. Results of fiscal-growth effect model invalidate the claim that only productive expenditure, distortionary taxes and fiscal deficit contribute to growth in case of Nigeria. These results draw attention towards the significance of non-distortionary taxes as addition to three fiscal policy variables that contribute to growth and government should reduce expenditure on recreational-cultural-religious affairs and other functions like political administrative expenses in order to achieve stabilization policies in Nigeria.

Omitogun and Ayinla (2007) examined empirically the contribution of fiscal policy in the achievement of sustainable economic growth in Nigeria. Using the Solow growth model estimated with the use of Ordinary Least Square method, they found that fiscal policy has not been effective in the area of promoting sustainable economic growth in Nigeria. Although, the finding seems invalidating the Keynesian postulation of the need for an active policy to stimulate economic activities, however, factors such as policy inconsistencies, high level of corruption, wasteful spending, poor policy implementation and lack of feedback mechanism for implemented policies evident in Nigeria which are indeed capable of hampering the effectiveness of fiscal policy have made it impossible to come up with such a conclusion.

Iyeli and Ijomah (2013) investigated the impact of fiscal policy variables on Nigeria's growth between 1970 and 2011. Their result revealed that there exist a long run equilibrium relationship between economic growth and fiscal policy variables in Nigeria. Consequently, it is recommended that government should formulate and implement viable fiscal policy options that will stabilize the economy. This could be achieved through the practice of true fiscal federalism in Nigeria. It further suggested that there should be consistency in macroeconomic policies implementation in the non-oil sectors of the economy by providing relevant incentives to foreigners wishing to invest in the agricultural sector and manufacturing sectors in Nigeria. More importantly, there should be appropriate macroeconomic policy mix in managing the economy.

Ilegbinosa (2013) examined problems surrounding procedures of fiscal policy and their influence on economic growth in Nigeria from 1970-2009. Theory envisage that fiscal policy can impinge on economic growth by changing motivation for investment and labour as well as by altering after-tax proceeds across sectors. It is clear that economists have different analysis concerning the effect of government spending and tax on economic growth in any nation. The research was conducted using an Ordinary Least Squares (OLS) technique of multiple regression models using statistical time series data from 1970-2009. The estimated result shows a positive relationship between the dependent variable (real gross domestic product) and the Independent variables (Government Expenditure and Taxes). This implies that the government expenditure is a strong determinant of economic growth especially when properly directed towards the provision of adequate basic infrastructural facilities to stabilize investment activities. The regression result also shows that tax was not properly signed and this could largely be credited to poor tax administration in Nigeria and over dependence of government on earnings from crude oil in funding her projects. Accordingly, the result agreed with the Keynesian theory, which supports that government involvement through the use of fiscal policy could accelerate economic activities hence growth.

Adu (2012) evaluated the causal relationship between money supply, fiscal deficits and exports as a means of analyzing the impact of policy on the growth of the Nigerian economy between 1970 and 2010. The research employed the Co-integration Error Correction Mechanism (ECM), a two band recursive least square to test for the stability of the Nigerian economy as well as determine the effect of money supply, fiscal deficits, and exports on the relative effectiveness of fiscal policies in the Nigerian economy. The study reveals that there is a significant causal relationship between gross domestic product (GDP) and the variables used in this research. Adu (2012) conclude that there was a significant causal relationship between exports and gross domestic product and hence fiscal policies.

Dinca and Dinca (2013) analyzed the correlation between fiscal policy and economic growth. Using a multiple regression Dinca and Dinca (2013) researched the effects of the fiscal pressure, gross capital formation, exchange rate, labor productivity and economic openness upon the growth rate of the Gross Domestic Product per capita. Dinca and Dinca (2013) grouped the countries into two categories: old member countries and new member countries of the European Union, gathering the data for the 2001-2011 periods. Dinca and Dinca (2013) divided the member countries into these categories taking into

consideration the existing disparities in the economic development between the European Union member countries. The results obtained have shown that the economic growth rate is positively influenced by fiscal pressure, gross capital formation in the private sector, degree of economy openness and labor productivity. The variables government expenditures, exchange rate and public debt likely exerted a negative influence upon the economic growth.

Wosewei (2013) determined the relationship between fiscal deficit and macroeconomic performance in Nigeria over the period 1980 to 2010. The specific objectives include: to determine the impact of fiscal deficit on macroeconomic aggregate in Nigeria, to examine whether fiscal deficit had led to economic growth in Nigeria, and to find out the nature of relationship between fiscal deficits and macroeconomic aggregates in Nigeria using data from secondary sources. The study employed the Ordinary Least Square in estimating the equation. Preliminary test of stationarity and co integration of variables using the Augmented Dickey Fuller (ADF) test and the co integration test using the Engle Granger procedure were conducted respectively. However, the empirical findings showed that fiscal deficits even though that it met the economic a prior in terms of its negative coefficients yet, did not significantly affect macroeconomic output. The result also show a bilateral causality relationship between government deficit and gross domestic product, government tax, and unemployment, while there is an independent relationship between government deficit and government expenditure and inflation.

Olasunkanmi and Onakoya (2012) investigated the fiscal policy variables that contributed to growth in Nigeria for the period of 1981 to 2010 in view of hypothesizing the fiscal policy variables-growth effect. Secondary annual time-series data were used. Data on Productive expenditure, Unproductive expenditure, distortionary taxes, non-distortionary taxes, fiscal deficit and real growth rate of GDP were analyzed using cointegration and ordinary least square techniques. Cointegration results show a long run relationship among the variables. Results of fiscal-growth effect model invalidate the claim that only productive expenditure, distortionary taxes and fiscal deficit contribute to growth in case of Nigeria. These results draw attention towards the significance of non-distortionary taxes as addition to three fiscal policy variables that contribute to growth and government should reduce expenditure on recreational-cultural-religious affairs and other functions like political administrative expenses in order to achieve stabilization policies in Nigeria.

Adam and Bevan (2005) examined the relation between fiscal deficits and growth for a panel of 45 developing countries. Based on a consistent treatment of the government budget constraint, it finds evidence of a threshold effect at a level of the deficit around 1.5% of GDP. While there appears to be a growth payoff to reducing deficits to this level, this effect disappears or reverses itself for further fiscal contraction. The magnitude of this payoff, but not its general character, necessarily depends on how changes in the deficit are financed (through changes in borrowing or seignior age) and on how the change in the deficit is accommodated elsewhere in the budget. They also found evidence of interaction effects between deficits and debt stocks, with high debt stocks exacerbating the adverse consequences of high deficits.

### **3. Methodological framework**

#### **3.1. Research design, data issues and sampling concerns**

This study is designed to structurally ascertain the effect of tax policy variables on economic growth in sub-Saharan Africa and thus adopted an *ex-post facto* research design. This implies that the event investigated had already taken place therefore; the data used are already in existence. The adoption of this research design is based on the fact that the study relied on historic data obtained from relevant publications and as such the data already are in existence. In this study an attempt was made to account for the endogenous tax policy variables that affect economic growth in sub-Saharan Africa.

In line with the approach adopted by Mathew (2009), Bleany *et al* (2000), Fu *et al* (2003) in their works on fiscal policy and economic growth using various inter-country data, this research made use of handpicked data from the International Monetary Fund (IMF) and World Bank Data websites. This is because the data is ideal in answering our research questions and to empirically test our research hypotheses in other to achieve the objectives of the study. The theoretical model requires the classification of taxation into distortionary and non-distortionary. We thus classified consumption taxes (VAT) as non-

distortionary since consumption taxes do not distort the choice between consumption at different times and are less distortionary than income taxes, while classifying income taxes as distortionary taxes and classifying expenditure into productive and unproductive expenditure. Our annual dataset covered sub-Saharan African countries for various periods during 1990-2012 from two sources. Government budget data were gathered from the IMF *Government Finance Statistics Yearbook* (GFSY); remaining data were gathered from the World Bank databank. While it could not be technically possible at least within the context of this study to consider all African countries, it was considered ideal to use a sample. The use of a sample became imperative also to ensure availability of a reasonable dataset. This study in terms of sampling is geared towards a geographical location and limited to a selected countries in the sub-Saharan Africa. This is because of the peculiar characteristics of the sub-Saharan African countries including its location, with agriculture based on cash crops for exports. The sub-Saharan African countries studied include: Benin Republic, Botswana, Burkina Faso, Burundi, Cameroun, Cape Verde, Central African Republic, Equatorial Guinea, Liberia, Kenya, Lesotho, Madagascar, Malawi, Namibia, Nigeria, Seychelles, Sierra Leone, and South Africa. There we arrived at our sample using a combination of cluster and purposive sampling.

### **3.2. Definition of Variables and Model Specification**

#### *Productive Expenditure*

This classification was made by Classical economists on the basis of creation of productive capacity. Expenditure on infrastructure development, public enterprises or development of agriculture increase productive capacity in the economy and bring income to the government. These are development expenditure that includes expenditure on education, health, economic services, transport and communication and they promotes growth by impacting the marginal product of private capital (Khalil and Sajida, 2013). Thus we expect a positive sign with economic growth (Bleaney, *et al* 2000; Mathew, 2009; Khalil and Sajida, 2013).

#### *Unproductive Expenditure*

Expenditures in the nature of consumption such as defence, interest payments, expenditure on law and order, public administration, do not create any productive asset which can bring income or returns to the government. Such expenses are classified as unproductive expenditures. They are non-developmental expenditures including defense, interest payment, subsidies related expenditure and do not influence marginal product of private capital and subsequently has zero effect on growth (Khalil and Sajida, 2013; Bleaney, *et al* 2000; Mathew, 2009).

#### *Distortionary taxes*

A distortion is departure from the allocation of economic resources from the state in which each agent maximizes his/her own welfare. A proportional wage-income tax, for instance, is distortionary. Tax on income, profits, capital gains, taxes on payroll and workforce, taxes on property including taxes on inheritance, capital and financial transaction reduce incentive for investing in physical/human capital and thus deters growth (Khalil and Sajida, 2013). Bleaney, *et al* (2000) and Mathew, (2009) supports a negative effect on economic growth.

#### *Non-distortionary Taxes*

Non-distortionary is a lump-sum tax which is a fixed amount, no matter the change in circumstance of the taxed entity. In economic theory, a lump-sum tax is considered to be pareto-efficient because it does not interfere with optimal market mechanisms and will only reduce people's available income and therefore increase their budget constraint, but leave the relative price of goods unchanged (Hindriks and Myles, 2006). Lump sum taxes or non-distortionary taxes include indirect taxes including custom, sales tax, federal excise taxes and do not discourage investing in physical/ human capital and thus have neutral impact on economic growth (Khalil and Sajida, 2013). Bleaney *et al.* (2000) also supports zero effect on economic growth.



### Budget Surplus

A situation in which income exceeds expenditures. A surplus is considered a sign that government is being run efficiently. A budget surplus might be used to pay off debt, save for the future, or to make a desired purchase that has been delayed. Bleany *et al.* (2000) supports a zero effect on growth.

The models for this work were structured in a way to empirically show the effect of fiscal policy on economic growth in sub-Saharan Africa. Bearing in mind that taxation, other fiscal variables (expenditure and budget balance) are considered in the fiscal growth studies, thus in line with Barro and Sala-i-Martin (1992) in Bleaney *et al.* (2001) we show that the long-run growth rate in an endogenous growth model ( $f$ ) can be expressed as:

$$f = l(1-t)(1-a)A^{1/(1-\alpha)}(g/y)^{\alpha/(1-\alpha)} - m \quad (1)$$

Where  $l$  and  $m$  are constants that reflect parameters in the utility function. Equation (1) shows that the growth rate is decreasing in the rate of distortionary taxes ( $t$ ) and increasing in government productive expenditure ( $g$ ), but is unaffected by non-distortionary taxes ( $L$ ) or non-productive expenditure ( $C$ ). This is the model which we tested in this study. Practically and as in Bleaney *et al.* (2001) we accounted for the fact that government finances the budget solely from tax revenue and as such the budget is not balanced in every period, so the constraint becomes:

$$ng + C + b = L + tny \quad (2)$$

- $g$  = government productive expenditure (+tive)
- $t$  = distortionary taxes (a proportional tax on output at rate) (-tive)
- $L$  = non-distortionary taxes (lump sum) (0)
- $C$  = non-productive expenditure (0)
- $b$  = budget surplus.

The predicted signs of these components in a growth regression would be:  $g$  – positive;  $t$  – negative;  $C$  and  $L$  – zero;  $b$  – zero provided that the composition of expenditure and taxation remains unchanged. Specifically, to achieve the objective of this study we modeled in a log linear equation as follows:

$$\ln Y_{it} = a + b_1 \ln \text{DIST}_{it} + b_2 \ln \text{INDIST}_{it} + b_3 \ln \text{UNPEX}_{it} + b_4 \ln \text{PREX}_{it} + b_5 \ln \text{FIS}_{it} + U_{it} \quad (3)$$

Where:

- $a$  = constant;
- $\ln$  = natural log
- $\ln \text{DIST}$  = natural log distortionary tax defined as direct tax;
- $\ln \text{INDIST}$  = natural log non-distortionary tax defined as indirect tax;
- $\ln \text{UNPEX}$  = natural log unproductive government expenditure defined as total recurrent government expenditure less recurrent expenditure on health, education and economic services;
- $\ln \text{PREX}$  = natural log productive government expenditure defined as expenditure on health, education and economic services;
- $\ln \text{FIS}$  = natural log budget deficit/surplus;
- $\ln Y_{it}$  = natural log real GDP

We carried our analysis under the panel data estimation technique under the fixed effect assumption and as such decomposed the error term in equation 3 as follows:  $u_{it} = h_{it} + \varepsilon_{it}$ . In the above decomposition,  $\varepsilon_{it}$  is the standard disturbance term, which varies across time and cross-sections, while  $h_{it}$  is a set of group specific effects, which refer to each cross section in the model. It follows that equations 3 could be re-written as follows:

$$\ln Y_{it} = a + b_1 \ln \text{DIST}_{it} + b_2 \ln \text{INDIST}_{it} + b_3 \ln \text{UNPEX}_{it} + b_4 \ln \text{PREX}_{it} + b_5 \ln \text{FIS}_{it} + h_{it} + \varepsilon_{it} \quad (4)$$

#### 4. Discussion of findings

We start our analysis by presenting the redundant fixed effect test of our model to ensure that the panel least squares are appropriately applied. Given that the panel least squares in this study were estimated under the fixed effects assumptions thereby imposing time and cross section independent on fiscal policy variables specific effects on the panel series controlled for distortionary and non-distortionary taxes, productive and unproductive expenditures as well as the element of the budget on the economic growth of Sub-Saharan African countries, the Redundant Fixed Effects test were conducted on the panel least squares to ensure that the fixed effects assumptions were adequately applied. To check whether the cross-sectional and time specific effects are appropriately included in our model we carried out the "Redundant Fixed Effect -Likelihood Ratio test". The (Cross-Section/Period F Cross-Section/Period Chi-square) tests the validity of a model where both cross-sectional and time effects are included in the model against a standard OLS model. The null hypothesis is that the set of dummies,  $h_i$  and  $h_t$ , are not statistically different from zero. The appropriate application of the fixed effects strengthens the result of our panel least squares. The results are presented and discussed below.

Table 1. Redundant Fixed Effects Tests

Equation: Untitled  
 Test cross-section and period fixed effects

| Effects Test                    | Statistic  | d.f.   | Prob.  |
|---------------------------------|------------|--------|--------|
| Cross-section F                 | 43.721830  | (11,8) | 0.0000 |
| Cross-section Chi-square        | 176.850336 | 11     | 0.0000 |
| Period F                        | 1.643053   | (18,8) | 0.2408 |
| Period Chi-square               | 66.516543  | 18     | 0.0000 |
| Cross-Section/Period F          | 32.062473  | (29,8) | 0.0000 |
| Cross-Section/Period Chi-square | 204.856629 | 29     | 0.0000 |

Source: Author's Eviews Output, 2014.

The null hypothesis is that the set of dummies,  $h_i$  and  $h_t$ , are not statistically different from zero. However, a look at table 2 presenting the cross-section and period fixed effects for equation 4 reveals that the probability of the Cross-section/Period F and Cross-Section/Period Chi-square statistics of 32.062473 and 204.856629 respectively are perfectly significant at  $0.0000 < 0.05$  respectively. We therefore, reject the null hypothesis and conclude that  $h_i$  and  $h_t$  is statistically significant from zero thus implying that the cross-sectional and time specific effects are appropriately applied in our estimation. Having ascertained that the applications of cross-sectional and time specific effects are appropriate, we thus presented the panel least results.

Table 2. Panel Least Squares Result

| Variables       | Coefficients | t-Statistics             | R-squared | F-statistics              |
|-----------------|--------------|--------------------------|-----------|---------------------------|
| NLDISTAX        | 0.514806     | 5.208780***<br>(0.0000)  | 0.97      | 160.9331***<br>(0.000000) |
| NLNONDISTAX     | 0.356536     | 2.289537**<br>(0.0231)   | 0.96      | 134.9866***<br>(0.000000) |
| NLPRODEXP       | -0.429583    | -5.937564***<br>(0.0000) | 0.96      | 252.1151***<br>(0.000000) |
| NLUNPRODEXP     | -0.444797    | -6.177455***<br>(0.0000) | 0.96      | 226.8038***<br>(0.000000) |
| NLBUDGETBALANCE | 0.036080     | 0.267985<br>(0.7907)     | 0.98      | 61.83568***<br>(0.000000) |

Probability of t- Values in parenthesis

\* Significant at the 10%

\*\* Significant at the 5%

\*\*\* Significant the 1%

The results of this study confirm certain previous evidence by a number of scholars for the inter-country as well as country studies while not in consonance with certain findings. In line with our objectives which set out to determine the effect of Government productive and unproductive expenditure on economic growth of sub-Saharan African countries, our findings of negative effect of government productive and unproductive expenditure on economic growth are in consonance with the findings of certain past studies. The findings of Guseh (1999) and Nurudeen and Usman (2010) who found that growth in government size has negative effects on economic growth and that government total capital expenditure, total recurrent expenditures and expenditure on education have negative effect on economic growth respectively. Also, Devarajan, Vinaya and Heng-fu (1996) raised the possibility that public expenditures such as capital investments that were generally viewed as productive might be unproductive. Abu and Abdullah (2010) investigated the relationship between government expenditure and economic growth in Nigeria from the period ranging from 1970 to 2008 and their results revealed that government total capital expenditure, total recurrent expenditure and Education have negative effect on economic growth. On the contrary, Gregoriou and Ghosh (2007) discovered that countries with large government expenditure in term of budgetary provisions tend to experience higher economic growth, but the effect varies from one country to another. Nijkamp and Poot (2003) evidenced that a positive impact of conventional fiscal policy on growth was rather weak, but the commonly identified importance of education and infrastructure was confirmed. Alexander (1990) found among others, that growth of government spending has significant negative impact on economic growth. Using panels of annual and period-averaged data for 22 Organizations for OECD countries during 1970 to 1995, (Bleaney *et al.*, 2001) found that productive public expenditures enhance economic growth, but non-productive public spending does not enhance economic growth.

On taxation, decomposed into distortionary and non-distortionary taxes sought to ascertain the its effect on economic growth of sub-Saharan African countries, our findings of a positive effect corroborates Chigbu *et al* (2012) who examined the causality between economic growth and taxation in Nigeria for the period 1970-2009 and found that taxation as an instrument of fiscal policy affects the economic growth and taxation granger cause economic growth of Nigeria. Koester and Kormendi (1989) estimated that the marginal tax rate -conditional on fixed average tax rates—has an independent, negative effect on output growth rates. Wang and Yip (1992) in Chiumia and Simwaka (2012) show that the proportion in which taxes are collected is more important than the level of taxation in explaining economic growth in Taiwan from 1954 to 1986 and while their empirical estimates show negative impacts of specific taxes on economic growth, the effect of total taxation is not significant. Stokey and Robelo (1995) in Chiumia and Simwaka (2012) employed endogenous growth models in their analyses and found insignificant negative effects of taxation on economic growth in developed economies. Chiumia and Simwaka (2012) examined the impact of tax policy and donor inflows on economic growth in Malawi and found that reduction in tax burden is more potent in influencing economic growth than fine tuning the proportion in which income and consumption taxes are collected in Malawi.

On fiscal balance which was designed to determine the effect of budget balance on economic growth, we found a positive but insignificant effect of budget balance on economic growth. Wosewei (2013) empirical findings showed that fiscal deficits even though that it met the economic a prior in terms of its negative coefficients yet, did not significantly affect macroeconomic output while Olasunkanmi and Onakoya (2012) invalidate the claim that only productive expenditure, distortionary taxes and fiscal deficit contribute to growth in case of Nigeria.

## 5. Conclusions and recommendations

As one of the recent studies that empirically analyzed the extent that fiscal policy engenders growth in Africa, this study has attempted to ascertain and project the drivers of economic growth in Africa given Government deliberate actions. Endogenous growth theory predicts that the impact of fiscal policy on growth depends on the structure as well as the level of taxation and expenditure. Any empirical test of this theory needs to address the implications of the linear relationship between the elements of the government budget. This constraint implies that the coefficient of any budget element must be interpreted as the impact of a unit increase in that element financed by a unit change in the element or elements

omitted from the regression. Using a sub-Saharan Africa data set, we have found that in fiscal policy variables, distortionary taxes raise the economic growth rate while productive expenditures retard economic growth. Our results also suggest that consumption taxation can realistically be regarded as non-distortionary, rather than as merely less distortionary than income taxation. We have also investigated the robustness of our results to potential endogeneity of the fiscal regressors, to sample selection, and to regression specification. Again, in all cases we continue to find evidence against the predictions of the endogenous growth model. The high degree of theory-inconsistency of the empirical results contrasts sharply with the more ambiguous findings that characterize much of the previous literature.

Governments of sub-Saharan Africa should enhance investment in productive expenditure as well as ensure that funds meant for development on these sectors are properly utilized. Evidence arising from this study show taxes generate sufficient revenue to Government for further productive investment in the economy to crowd in the private sector whose activities enhances economic growth. Therefore, the proportion in which taxes are collected is more important than the level of taxation in explaining economic growth. Thus efficient collections of all forms of taxes are imperative. Governments of African countries should strive to reduce expenditure on recreational-cultural-religious affairs and other functions like political administrative expenses in order to achieve stabilization policies in individual countries. Most importantly, strengthening the anti-corruption crusade as well as the judicial system is imperative to tackle the high level of corruption found in public offices in Africa. This will enhance the judicious use of public funds for further productive investment.

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