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Fiscal Policy, Monetary Policy and Economic Growth in Sub-Sahara Africa

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Abstract

The study analysed the effects of fiscal and monetary policies on economic growth in a panel of 47 sub-Saharan African economies from 1996 to 2016, using descriptive analysis, the econometric techniques of dynamic panel General Method of Moment and the Dumitrescu-Hurlin causality; the scaling quantity analysis inclusive. The study traced the debate from the Keynesians to the Monetarist. The findings showed that fiscal and monetary policies affected economic growth positively in the sub-region. Moreover, fiscal policy has a greater scale-effect in enhancing economic growth in sub-Saharan Africa. The study concluded that fiscal policy had greater influence on growth than monetary policy. It was recommended, amongst others, that governments of countries in the sub-Saharan region should focus more on formulating and implementing programmes that support productive investments; foster favourable trade; improve productivity of labour; and make the political environment stable.

Keywords: Fiscal Policy, Monetary Policy, Growth, GMM, Dumitrescu-Hurlin, Scaling Quantity

1. Introduction

Every economy aspires to be great. The governments of these economies make earnest efforts to formulate and implement macroeconomic policies that are efficient with substantial and tolerable degree of equity or fairness. These acts do not just stimulate their economies, but fulfil the critical obligation of improving the lives of citizens. The most important macroeconomic policy options governments have embarked on over the years are fiscal policy and monetary policy.

Fiscal and monetary policies are instruments adopted to regulate the economy directly by governments or through the apex monetary authorities. Existing literatures have shown the efficacy of fiscal policy [Ocran, (2009); Ubesie (2016); Ubi-abai and Bosco, (2017); Ugwuanyi and Ugwunta, (2017)] and monetary policy [Bassey and Essien (2014); Udude (2014); Inam and Ime, (2017); and Onwioduokit (2017)] in influencing various macroeconomic indicators. There is a general agreement among economists that public policies, such as fiscal and monetary policies either interact together or interact individually

to affect the level of economic activities. However, there have been series of contentions by the Keynesians and the Monetarists on the degree and relative importance of these policies in affecting growth. This study is not to resolve the fiscal-monetary policy debate, but to examine the effects of these policies in propelling growth in sub-Sahara African economies. Moreover, the recent recession has clearly put to test the efficacies of fiscal policy and monetary policy, and how both policies interact to propel growth. It is therefore pertinent to consider these thought-provoking questions:

1. How has fiscal policy affected economic growth in sub-Saharan Africa?
2. How has monetary policy affected economic growth in sub-Saharan Africa?
3. What is the nature and direction of causality between fiscal and monetary policies and economic growth in sub-Saharan Africa? and
4. Which policy is relatively important in influencing economic growth in sub-Saharan Africa?

The findings of this study enrich the existing body of literature on the relationship between these important macroeconomic policies and growth of sub-Sahara Africa; and it is relevant to governments and policymakers in the sub-Saharan region. Finally, the research findings serve as a foundation for further research in this aspect and similar areas.

2. Materials and Methods

Some economists were of similar opinion that decision-making authority is important to the effective functioning of any economy, even when its presence is not visible or its presence is not easily identified. The groups of economists were the Keynesians and the Monetarists.

2.1 *The Monetarists' View*

The Monetarists believed that aggregate demand is affected primarily by money supply and that the effect of money on aggregate demand is stable and dependable overtime. In essence, the Monetarists say: Only money matters for aggregate demand. To them, the growth of money supply is the major determinant of GDP growth; hence monetary policy exerts greater influence on economic activity. They believe that prices and wages are flexible, and that the private economy is stable. However, they recognized the existence of fiscal policy, but believed that there will be negligible effects on output and prices if monetary changes were not recognized. This reveals that the monetarists favour the dominance of monetary policy

whenever both policies (monetary and fiscal) interact. However, the second group of economists, the Keynesians, had contrasting views.

2.2 *The Keynesians' View*

The Keynesians, by contrast, held that the world is complex. They agreed that money has relevant effect on aggregate demand, output and prices. However, they argued that money is not the only factor that matters; other factors matter too. They points to conclusive evidence that the velocity of money (V) rises systematically with interest rates, so keeping money supply constant is not enough to keep nominal or real GDP constant. The Keynesians believed that government expenditures, taxes, and net export have important effects on aggregate demand and prices. Also, Keynesian economists insisted that price and wage are not flexible; and that if prices and wages are relatively flexible, as monetarists believe, then output will generally be close to its potential. Hence, Keynesians believe that fiscal policy rather than monetary policy exerts dominant influence on economic activities. The debate did not end as the third group of economists emerged with a reason why these systematic policies (fiscal and monetary) were not likely to function optimally.

2.3 *Empirical Literature Review*

The empirical literature did not review the works of scholars that conducted studies on individual countries¹, but the study focused on the review of the research carried out on cross-section studies. In an attempt to resolve a controversy² on the impact of fiscal and monetary actions, Batten and Hafer (1983) carried out an empirical study on five developed countries namely: Japan, Canada, United Kingdom, France and Germany, using the Saint Louis' equation. They discovered that monetary policy exerted greater influence on economic

¹ Country-specific studies were conducted by Biljana and Tarnara (2013) on Serbia; Ali, Kenneth and Cedric (2014) on the United States; Emmanuel and Patrick (2014) on Ghana; Shoayeb and Mohsan (2015) on Bangladesh, Bokreta and Benanaya (2016) on Algeria; Najia and Priyanka (2017) on Pakistan; and Michael and Olufemi (2017) on Nigeria.

² The controversy occurred after the debate by the Keynesian, Monetarists and rational expectations Theorists. It started from Anderson and Jordan (1968) where they carried out a study in United States on the relative importance of fiscal and monetary actions on economic growth. They concluded that monetary policy, relative to fiscal policy, exerted greater and faster influence on growth. However, De Leeuw and Kalshbrenner (1969) contradicted this position after results of their study showed that fiscal policy was better off in affecting economic growth. Friedman (1977) confirmed the greater and significant impact of government expenditure when he extended the original data of (1933-1968) used in the study of Anderson and Jordan (1968) to 1976. Subsequently, Carlson (1978) argued that the work of Friedman (1977) suffered from the problem of heteroscedasticity and was of the view that the estimated regression should be in first difference form (Adefeso and Mobolaji, 2010).

growth than the fiscal policy, and equally that Saint Louis can be applied to a variety of other countries.

Meanwhile, Keran (1970) had conducted a cross-section time series based on data from seven developed countries outside the United States. Keran found that money supply exerted more influence on GDP than changes in government expenditure. Teigen (1973) applied the Anderson and Jordan methodology to data from three Scandinavia countries, namely, Denmark, Finland and Norway to determine the relative effectiveness of money supply and government expenditure. In the three countries studied, it was observed that government expenditure dominated economic activities, even after the data were transformed and beta and elasticity coefficients were used³. The results contradicted the earlier conclusions by Anderson and Jordan which was collaborated by that of Keran.

Using an adjusted St. Louis equation in five Latin American economies spanning 1950 to 1981, Darrat (1984) investigated the relative influence of fiscal and monetary policy actions on national income. The study used gross national product, money stock, government spending and exports. The findings showed that fiscal policy significantly lead monetary policy in explaining changes in nominal income.

Ali, Irum and Ali (2008) adopted the auto regressive distributed lag and error correction model to determine the relative effectiveness of monetary and fiscal policy on economic growth in the case of south Asian countries using annual time series spanning 1990 to 2007. Gross domestic product, broad money and fiscal balance were considered. The findings indicated that monetary policy had greater influence on economic growth than fiscal policy in South Asian economies.

Fetai (2013) assessed how effective monetary and fiscal policies were on growth of developing and emerging economies during the financial crisis. He applied the techniques of ordinary least squares with robust standard errors and GMM estimator. It was discovered that during the financial crisis, monetary and fiscal policy contractions were connected with an

³ Subsequently, Lybeck and Teigen (1975) had used Swedish data with the Anderson and Jordan methodology to regress quarterly changes in money supply and government expenditure on quarterly changes in normal GDP. Unlike the earlier results from the data on Denmark, Finland and Norway by Teigen (1973), the findings with Swedish data showed inconclusive evidence as to which of the two policy instruments had stronger influence on GDP. The inconclusive of the result was linked to conflicting on the exogenous variables and autocorrelation (Siyani and Adegioriola, 2015).

increase of the output cost. Moreover, the expansion of fiscal policy was accompanied with smaller output cost over the financial crisis, whereas the expansion of monetary policy had not showed a clear effect.

It is interesting to know that none of the empirical works considered the relative importance of the fiscal and monetary policies. However, this study, along with other objectives, seeks to determine which of the policies is relatively important by using a scaling quantity. This was designed in a rigorous, systematic, valid, empirical and unbiased manner.

3. Method

3.1 Research Design

The study adopted the descriptive and quasi-experimental approach to data analysis. The descriptive approach comprised the trends in fiscal and monetary policies in sub-Saharan Africa. The quasi-experimental research design was important for the study because it analysed relationships between dependent and independent variables. In order to achieve this, it was important to specify a model that is consistent with theory.

3.2 Model Specification

In order to ascertain the effects of fiscal and monetary policies on economic growth in Sub-Saharan Africa, the study adopted the Saint Louis' Equation where Gross Domestic Product (GDP) is a function of Government Expenditure (GE) and Money Supply (MS). In this equation, government expenditure serves as a proxy for fiscal policy while money supply serves as a proxy for monetary policy. The rationale for using government expenditure as a proxy for fiscal policy was because the government spends whatever it receives (revenue), even if it is borrowed (debt). This is in accord with the Keynesian's view that fiscal policy exerts dominant influence in the economy. In order to incorporate the monetarists' view, money supply was used to represent monetary policy because of the major roles played by the apex monetary authority, the Central Bank, in controlling not just the money in circulation, but the exchange value of the local currency.

Having stated the rationale for the variables of interest, the Saint Louis' equation is stated thus:

$$GDP = \beta_0 + \beta_1 GE + \beta_2 MS + \mu \dots \dots \dots 1$$

It is important to note that large-scale economic decision-making activities are carried out for the effective functioning of the economies of the sub-Saharan region. The study included the Gross Fixed Capital Formation (GFCF) as proxy for investment. Moreover, the activities of the governments of sub-Saharan Africa and their apex monetary institutions are not carried out in closed economies. Their economies are always open to international trading activities. Hence, there is need to account for the large-scale international trading activities that feature in the sub-Sahara African economies. Hence, the degree of *trade openness index* was not excluded from the model.

Definitely, the productive efforts of the working population (labour) in the respective countries were not ignored. Also, there is the possibility that the macro-economic stability of these countries can be threatened due to uncertainties. Hence, the study accounted for macroeconomic instability and uncertainty by introducing the rate of inflation into the equation. Finally, all these outcomes would not be possible if the political environment of any of the African countries in the sub-Saharan region is not stable. The underlying idea is that it is only when the political environment is stable that corruption can be controlled, the rule of law can be upheld and government can be effective. Hence, the study incorporated the political environment in the equation.

In order to incorporate investment, the degree of openness to trading activities, the productive efforts of the working population, the rate of inflation, and the political environment, the study modified the Saint Louis' Equation thus:

$$GDP = \beta_0 + \beta_1 GE + \beta_2 MS + \beta_3 GFCF + \beta_4 LABOUR + \beta_5 INF + \beta_6 PSAVT + \mu \dots \dots 2$$

It is important to specify a dynamic model that portrayed not just the time path of the dependent variable in relation to its past value(s), but the time path of current and past values of explanatory variables was required. Introducing the essence of the rational expectation theorist's view into the model, equation 2 is given thus:

$$GDP_t = \beta_0 + \beta_1 GDP_{t-1} + \beta_2 GE_t + \beta_3 GE_{t-1} + \beta_4 MS_t + \beta_5 MS_{t-1} + \beta_6 GFCF_t + \beta_7 GFCF_{t-1} + \beta_8 LABOUR_t + \beta_9 LABOUR_{t-1} + \beta_{10} INF_t + \beta_{11} INF_{t-1} + \beta_{12} PSAVT_t + \beta_{13} PSAVT_{t-1} + \mu \dots 3$$

Equation 3 implies that current Gross Domestic Product (GDP) depends on its past information, that is, lagged value of GDP; Government Expenditure (GE) and its past available information; Money Supply (MS) and its past available information; Gross Fixed

Capital Formation (GFCF) and its past available information; Labour and its past available information; Inflation and its past available information; and Political instability and its past available information.

Notably, equation 3 is a dynamic model. This dynamic model required an appropriate dynamic estimation procedure. Before the estimation procedure is laid out, it is noteworthy to provide detailed information on the data that was used for the study.

3.3 Data, Sources and a priori Expectations

The study used annual time series and cross-section data covering 1996 to 2016 from 47 African countries in the sub-Saharan region⁴. The data used for the study were Real Gross Domestic Product (GDP), Government Expenditure (GE) and Money Supply (MS), Gross Fixed Capital Formation (GFCF), Labour, the rate of inflation, and Political Stability and Absence of Violence/Terrorism (PSAVT). The data were obtained from the World Development Indicators (WDI), 2016 except the data on Political Stability and Absence of Violence/Terrorism (PSAVT) which was obtained from the World Governance Indicators (WGI), 2016.

In summary, it is expected that government expenditure and money supply affect growth positively as posited by the Keynesians and the Monetarists. It is also expected that gross fixed capital formation affect growth positively; labour is expected to be positively related to growth. Lastly, it is expected that the stability of the political environment propels growth.

The data, its sources and the *a priori* expectations show that the study was unbiased and followed a systematic approach. As mentioned in the preceding section, the dynamic model specified in equation 3 required a dynamic estimation procedure – an interesting one.

3.4 The Dynamic Estimation Procedure

The preceding section explained that the data have a panel structure. Typically, estimating a panel data required that the Ordinary Least Square (OLS) technique be adopted since the

⁴ The countries are Angola, Benin, Botswana, Burkinafaso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Brazzaville, Congo Democratic Republic, Cote Divoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, and Zimbabwe.

to be correlated with the error term. Hence, in order to take care of the potential endogeneity in the model, the dynamic panel GMM, recommended by Holtz-Eakin, Newey, and Rosen (1988) and Arellano and Bond (1991), was capable of generating consistent and efficient parameter estimates on the effect of fiscal and monetary policies on growth in sub-Saharan African countries. In addition, the study sought to ascertain the relative importance of the policies in influencing growth in sub-Saharan Africa; and to determine the causality relationship between both policies and economic growth in sub-Saharan Africa. These objectives were carried out by a *Scaling Quantity Analysis* and the *Dumitrescu-Hurlin Homogenous Causality* testing procedure.

3.5 *Scaling Quantity Analysis*

Realistically, governments of countries in the sub-Saharan region do not formulate one policy in isolation of the other; they formulate and implement fiscal and monetary policies together in a given year. There is the possibility that one of the policies will have intense effect on growth than the other. Hence, in order to ascertain the relative importance of a policy in influencing growth, a scaling quantity analysis was adopted. The formula for the scaling quantity is presented thus:

$$(S_i \div S_y) |bi|$$

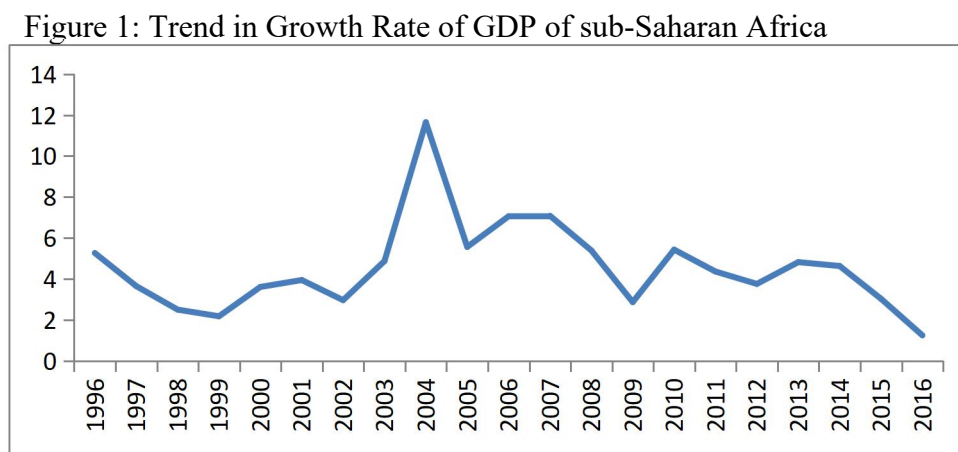
Where, S_i represented the standard deviation of the independent variable, S_y represented the standard deviation of the dependent variable (gross domestic product), and $|bi|$ represented the absolute values of the coefficients of the independent variables (government expenditure and money supply). The highest value signifies the policy with the greater importance in influencing growth in the sub-Saharan region.

3.6 *Dumitrescu-Hurlin Homogenous Causality*

Dumitrescu and Hurlin (2012) proposed a similar bi-variate testing procedure to Granger causality test in a panel setting. This test makes an extreme opposite assumption to Granger causality test, allowing coefficients to be different across sections. Their testing approach takes into account (i) the heterogeneity of the regression model used to test the Granger causality test and (ii) heterogeneity of the causality relationships over the cross-section dimension under the null hypothesis that there is no causal relationship for any of the units of the panel.

4. Results and Discussion

The preceding section gave detailed analyses on the systematic and unbiased ways of providing answers to the research questions of the study. Before the outcomes of these ways are displayed, it is necessary to analyse some trends of fiscal and monetary policy variables in sub-Saharan Africa⁵.



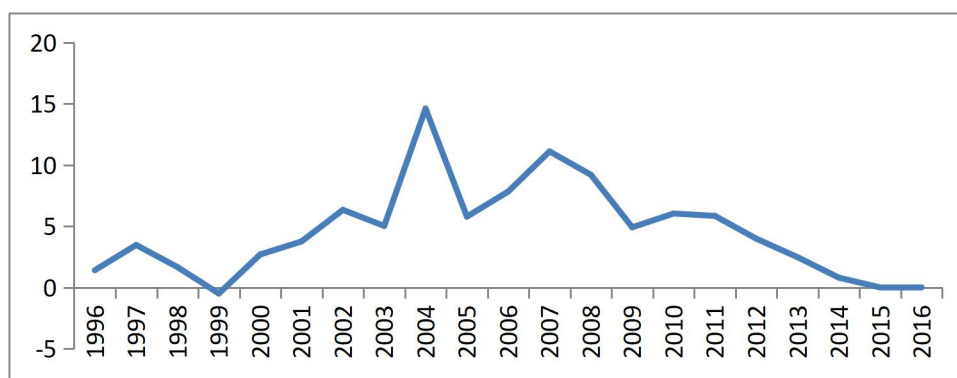
Source: World Development Indicators, 2016

Figure 1 shows the trend in the rate of economic growth of countries in the sub-Saharan region of Africa. Notably, there were no negative growth rates during the period under study. In 1996, the rate of economic growth was 5.3%. The growth rate was not sustained as it reduced to 3.6%, 2.5% and 2.2% in 1997, 1998 and 1999 respectively. The years 2000 and 2001 experienced increased growth rates of 3.6% and 3.9%. The rate of economic growth in sub-Saharan African countries experienced a significant increase in 2004 to 11.6%. Since then, there have been fluctuations in the rate of economic growth in the sub-Saharan region of Africa. For example, the annual rate of growth reduced to 5.6% in 2005 and increased proportionally in 2006 and 2007 to 7.1% each. Again, it reduced to 5.4% and 3.8% in 2010 and 2012. Since 2013, there have been reductions in rate of economic growth reaching an all-time low of 1.2% in 2016⁶.

Figure 2: Trend in Growth Rate of Government Expenditure of sub-Saharan Africa.

⁵ The trend analyses on economic growth, fiscal and monetary policies comprise the aggregate of the 47 countries used for the study.

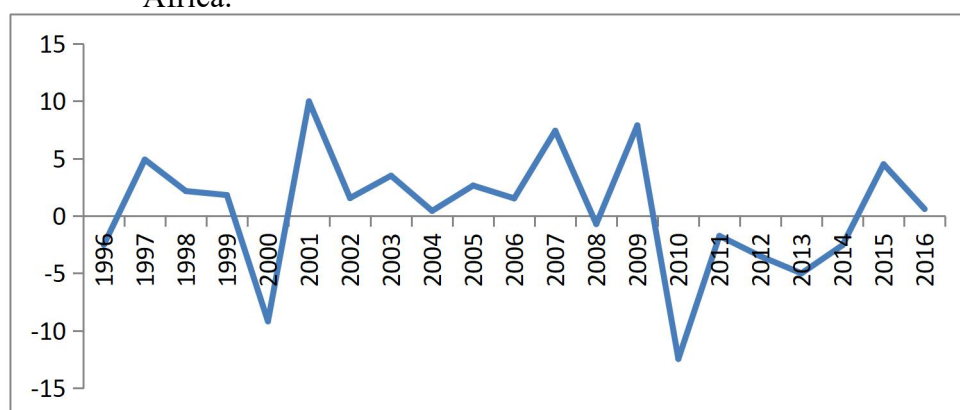
⁶ This may not be unconnected to the global crisis which has resulted to slow growth among regions of the world.



Source: World Development Indicators, 2016

Figure 2 shows the trend in the rate of growth of government expenditure of countries in the sub-Saharan region of Africa. The data exhibited series of upward and downward fluctuations during the period under review. The rate of growth of government expenditure started on a positive note with an increase of 1.41% in the year 1996. The growth rate of government expenditure increased in the year 1997 and reduced drastically to -0.48% in the year 1999. It recorded an increase in growth rate to 2.70%, 3.76% and 6.34% in the years 2000, 2001 and 2002 respectively. The growth rate in government expenditure of countries in the sub-Saharan region reached peak of 14.6% in the year 2004. After series of fluctuations, it decreased in the year 2010 to 6% and has since experienced a gradual decline till the year 2016⁷.

Figure 3: Trend in Growth Rate of Broad Money Supply of sub-Saharan Africa.



Source: World Development Indicators, 2016

Figure 3 shows the growth rate of money supply of countries in the sub-Saharan region during the period under review. The trend shows that 8 out of the 21 years experienced negative growth rates of money supply in sub-Saharan Africa. The first negative growth rate

⁷ The reason given for the decline in the rate of economic growth may likely be the same reason for the gradual decline in the rate of government expenditure in sub-Saharan Africa.

of money supply occurred in 1996 with a value of -2.5%. This was followed by three years of positive growth at decreasing rates: 4.9%, 2.2% and 1.8% for the years 1997, 1998 and 1999. The second negative growth rate of money supply occurred in 2000 with a value of -9.2%. Moreover, positive growth rates of money supply was experienced from the year 2001 to the year 2007, with the years 2001 and 2007 accounting for the highest growth rates in money supply (9.97% and 7.42%). The third experience of a negative growth rate in money supply occurred in 2008 with a value of -0.71%. However, there was positive growth rate in the year 2009 with a value of 7.9%. Unexpectedly, there were negative growth rates in money supply from the year 2010 to the year 2014⁸. Since then, there have been positive but declining growth rates in money supply, with 2016 accounting for 0.6%.

Table 1: Dynamic Panel GMM, Causality, and Scaling Quantity Analysis

Panel A: Dynamic Panel Generalized Method of Moment				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
LOG(GDP(-1))	0.976018	0.002051	475.7729	0.0000
LOG(GE)	0.007640	0.001155	6.616637	0.0000
LOG(GE(-1))	-0.035886	0.001283	-27.96412	0.0000
LOG(MS)	0.001997	0.001056	1.890503	0.0590
LOG(MS(-1))	0.000994	0.001580	0.629397	0.5293
LOG(GFCF)	0.005154	0.001178	4.375664	0.0000
LOG(GFCF(-1))	0.048412	0.000562	86.08429	0.0000
LOG(TOPN)	0.071965	0.001132	63.58820	0.0000
LOG(TOPN(-1))	-0.029191	0.001528	-19.09817	0.0000
LOG(LABOUR)	4.091513	0.102050	40.09335	0.0000
LOG(LABOUR(-1))	4.350574	0.092559	47.00306	0.0000
INF	4.88E-05	6.26E-06	7.787502	0.0000
INF(-1)	-8.69E-05	3.75E-06	-23.16206	0.0000
PSAVT	0.010531	0.000734	14.35644	0.0000
PSAVT(-1)	-0.036755	0.000750	-49.03657	0.0000
Panel B: Dumitrescu-Hurlin Panel Causality Test				
LOG(GE) does not homogeneously cause LOG(GDP)				0.0011
LOG(GDP) does not homogeneously cause LOG(GE)				0.0000
LOG(MS) does not homogeneously cause LOG(GDP)				0.0000
LOG(GDP) does not homogeneously cause LOG(MS)				0.0000
Panel C: Scaling Quantity Analysis*				
$GDP = S_y$	$GE = Si_1$	$MS = Si_2$	$(Si_1/S_y)b_1$	$(Si_2/S_y)b_2$
9.19E+12	1.86E+12	2.88E+12	0.00155	0.00033

Source: E-Views 10.0

*Computed by the Authors

The dynamic panel GMM results in Panel A shows the effect of fiscal and monetary policies on economic growth in sub-Saharan Africa. The previous growth of the countries in the sub-Saharan region affected present growth positively by 97.6%. Panel A gives an interesting

⁸ This may likely be attributed to measures undertaken by most African countries to control excess money in circulation.

outcome on the relationship between government expenditure and economic growth in sub-Saharan Africa. First, previous available information showed that there was a negative and significant relationship between government expenditure and growth. This implies that the policies and programmes of various governments of countries in the sub-Saharan region did not support growth. Information on Panel A shows that government expenditure programmes reduced growth by 3.5%. Definitely, this testifies to the fact most fiscal policy programmes of governments in sub-Saharan Africa were either formulated but not implemented (as every governments must present budgets for every year); or if attempts were made to implement them, they were not fully implemented. One of the possible reasons responsible for this outcome is timing problem *a la* Umo (2012)⁹. Second, present available information showed that there was a positive and significant relationship between government expenditure and economic growth. This implies that governments in the sub-Saharan region have subsequently put in considerable efforts to formulate and implement its fiscal policy programmes. These considerable efforts have supported growth by approximately 0.8% during the period under study.

Information on Panel A shows an interesting outcome on the relationship between money supply and growth. Past available information shows that money supply supported growth by 0.09% in sub-Saharan Africa. This implies that policies targeted at controlling money supply supported growth. However, the relationship between money supply and growth was not significant at the 5% level of significance. Hence, the relationship was not reliable. Present available information shows a positive and significant relationship between money supply and growth. The implication of the present and past relationships between money supply and growth is that past implementation of monetary policies did not have significant effect on the economy of countries in the sub-Saharan region. The reasons are not farfetched: policies targeted at regulating the money in supply were either not implemented or they were partially implemented. However, present relationship shows that the implementation of monetary policy was improved upon that the effect on growth (almost 0.2% increase) was significant.

⁹ According to him, correct timing is always difficult to achieve because there are many lags between making and implementing fiscal policy. These include: *the recognition lag*, which indicates the time difference between the occurrence of the problem and its manifestation in the statistical trend; *the administration lag*, which refers to the waiting period between the recognition of the problem and the taking of definite decisions to act on it; and *the operational lag*, which refers to the time needed for the implementation of fiscal action to have the desired effects.

The past and present relationships between investment and growth in countries of the sub-Saharan region were positive and significant at the 5% level of significance. Past information shows that investment supported growth by 4.8%; and the present information shows that investment supported growth by 0.5%. It is necessary to note that the percentage by which investment supported growth decreased (from 4.8% to 0.5%). This shows that efforts by the countries in the sub-Saharan region to increase investments have not yielded the desired outcome – an increased effect of investment on growth.

The degree of trade openness of these countries definitely had differing effects on growth of their economies. Panel A shows that the past relationship between trade openness and growth was negative and significant. This implies that the degree by which countries in the sub-Saharan region were opened to trading activities was unfavourable to growth. However, present available information shows that the degree by which sub-Saharan African countries were opened to trading activities affected growth positively and significantly.

The relationship between the working population of sub-Saharan Africa countries and the growth of their economies were positive based on past information, and negative based on current available information. Moreover, these relationships were significant at the 5% level of significance. These imply that labour of countries in the sub-Saharan region were productive in supporting growth in the past. However, current information shows that labour of countries in the sub-Saharan region were not productive during the period under study.

The relationships between inflation rate and growth and between political stability and absence of violence/Terrorism and growth had the same trend – they both negatively and significantly affected growth in the past; they both positively and significantly affected growth in the present.

In summary, the dynamic GMM results in panel A shows that fiscal policy and monetary policy are important tools for supporting growth in sub-Saharan African countries. Moreover, the outcome of the results shows that fiscal policy had more positive impact on growth than monetary policy. Furthermore, it was necessary to determine the causality relationship between fiscal policy and growth of countries in the sub-Sahara region; and between monetary policy and growth of countries in the sub-Sahara region. This required that homogenous causality relationships be carried out – the one proposed by Dumitrescu and Hurlin (2012) and displayed in Panel B.

Panel B shows the directions of causality between government expenditure and GDP; and between money supply and gross domestic product during the period under study. There was a bi-directional relationship between government expenditure and gross domestic product, flowing from government expenditure to gross domestic product and flowing from gross domestic product to government expenditure. Also, there was a bi-directional relationship between money supply and gross domestic product, flowing from money supply to gross domestic product and flowing from gross domestic product to money supply. These imply that fiscal policy and monetary policy causes economic growth in sub-Saharan African countries during the period under review. Hence, the importance of each policy in driving economic growth cannot be overemphasised.

Definitely, there is the possibility that one of the policies will have intense effect on growth than the other. In other words, one policy must be relatively important than the other in influencing growth of countries in the sub-Saharan region. In order to ascertain the relative importance of the policies in influencing growth of countries in the sub-Saharan region, a scaling quantity analysis was carried out. The outcome of the scaling quantity analysis is displayed in Panel C.

Panel C shows the relative importance of fiscal and monetary policies in influencing growth in sub-Saharan Africa. The value of the scaling quantity analysis for fiscal policy is 0.00155; and the value of the scaling quantity analysis for monetary policy is 0.00033. Observably, the value of the scaling quantity for fiscal policy is greater than the value of the scaling quantity for monetary policy. This implies that fiscal policy of countries in the sub-Saharan region has been relatively important in influencing growth than monetary policy during the period under review.

5. Conclusion

The study examined the effects of fiscal and monetary policies on economic growth in sub-Saharan African economies. The study modified the Saint Louis' equation in line with the theoretical foundations to provide satisfying answers to the research questions. Moreover, preceding sections and sub-sections have established some interesting facts during the period under study; and concluded the following:

- That the Keynesians were right that fiscal policy exert influence on growth of an economy. This view was supported by the significant and positive effect of the

relationship between government expenditure and gross domestic product in sub-Saharan Africa;

- That the Monetarists were also right that monetary policy exert influence on growth of an economy. This view was also supported by the significant and positive effect of the relationship between government and gross domestic product in sub-Saharan Africa;
- That fiscal policy and monetary policy caused economic growth of countries in sub-Saharan region; and
- That fiscal policy exerted more influence on economic growth than monetary policy in countries of the sub-Saharan region.

Definitely, the study had some policy implications. The policy implications are:

- The governments of sub-Saharan African economies should focus more on fiscal actions that are capable of affecting economic growth positively. This requires that they formulate and implement programmes that supports productive investments; foster favourable trade; improve the capability of labour; and capable of making the political environment stable.
- The apex monetary authorities of sub-Saharan African economies should ensure monetary policies are targeted at stabilizing critical financial indicators. For example a policy targeted at reducing inflation supports the progress of any economy. Also, a policy aimed at controlling foreign exchange definitely has implications for trade.
- The governments of sub-Saharan African economies should ensure that there is synergy between fiscal and monetary policies in propelling growth in Nigeria. This can be possible if the formulation and implementation of fiscal policy strengthens the existent monetary policy, or the formulation and implementation of monetary policy strengthens the existent fiscal policy.

There are wide ranges of empirical contributions on the study. Further research opportunities can focus on other theories and their implications. Also, further studies can be conducted on other regions in Africa and the rest of the world.

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