The Relative Effects of Fiscal and Monetary Policies on Ethiopian Economic Growth

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Abstract

The purpose of this paper is to investigate the relative effect of monetary policy and fiscal policy on economic growth in Ethiopia. The paper employed annual time series data from a period of 2009 to 2019. The paper performed Augmented Dickey-Fuller test for unit root, Johansson test of co-integration and Ordinary Least Squares estimation technique to analyze the data. The findings revealed that monetary policy proxy by interest rate has significantly a negative effect on the Ethiopian economic output. Likewise, the study found that fiscal policy proxy by government expenditure has significantly and positively influenced the economic growth (GDP) in Ethiopia. Finally, the study exposed that fiscal policy is somewhat influential than monetary policy in altering economic growth of Ethiopia. The study suggested that both fiscal and monetary policies should be implemented simultaneously to ensure macroeconomic stability and sustainable economic growth in Ethiopia. It is also recommended that government annual budget and projects implementation should be monitored adequately to ensure price stability, full employment, and economic growth. Monetary policies implemented by the National Bank of Ethiopia should promote conducive investment atmosphere through appropriate stabilization of interest rates, and inflation rates to promote economic growth of the country.

1. Introduction

Ethiopia is striving to achieve fast and sustainable economic growth through an effort to stabilize its macroeconomic conditions. Monetary and fiscal policies have pivotal role in achieving this macroeconomic stability through the control of rate of inflation and public spending. Şen & Kaya (2015) suggested that though there are well-known formulation of monetary policy for controlling inflation and fiscal policy for dealing with public finance, both macroeconomic policies are used to stabilize the economic activities. The effectiveness of these policies in realizing the goal of expanding economic growth mainly rely on healthy working economic environment and institutional framework of the government. Conceptually, monetary policy comprises the utilization of different approaches with the goal of regulating the value, supply and cost of money in consistent with the expected level of economic output. Nevertheless, fiscal policy involves a deliberate efforts by the government towards public spending and taxes with the aim of effecting the level and growth of aggregate demand, employment and output.

Yet the relative importance of these macroeconomic policies has been a serious on-going debate and argument between Keynesian and monetarist school of thoughts since 1960s. The Keynesians think that fiscal policy exerts more influence on the economic output than monetary policy, whereas the Monetarists view that monetary policy has greater effect on the economic activity than fiscal policy (Khosravi and Karimi, 2010).

In Ethiopia monetary policy works under the National Bank of Ethiopia that controls the money supply and credit in the economy by setting exchange rate and interest rate, with the goal of boosting economic growth and price stability. Currently, the National Bank of Ethiopia (NBE) is the banker of the government responsible to set and regulate the overall monetary policy actions on behalf of the government (Minyahil, Wondaferahu & Yilkal, 2016). But one of the main goal of monetary policy is to prevent excessive inflation while boosting economic growth (Noman & Khudri, 2015). Fiscal policy is a demand side policy performed by the government to achieve macroeconomic objectives such as economic growth, price stability, reduction in unemployment and balance of payments equilibrium (Kibiwot et al., 2012). Similarly, fiscal policy embraces the change in the amount of money collected in taxes and government spending.

The Keynesians argue that in case of liquidity trap, which is one of the shortcoming of monetary policy, interest rate reaches its minimum level and further increasing the money supply will not reduce the interest rate, and hence in such situation public investment should be large enough to provide spending equivalent to full employment. When monetary policy fails to increase investment, fiscal policy increases the output by increasing government spending.

The literature show that there is still an ongoing debate between the Keynesians and the Monetarists, and have not reached on a clear cut conclusion. Özer & Karagöl (2018) suggested that, there is no dependable evidence throughout literature review found in relation to the relative effect of monetary and fiscal policies on economic output.

The main purpose of this paper is thus to examine the relative effect of monetary and fiscal policies on the

economic growth of Ethiopia. To this end, the paper mainly relied on yearly time series data of 2009-2019 obtained from National Bank Ethiopia reports throughout the process of the study.

2. Objective

The general objective of the paper is to investigate the relative effects of monetary policy and fiscal policy on economic growth (GDP) in Ethiopia. Specifically, the study tries:
1. To assess the effect of interest rate on Real GDP.
2. To examine the effect of government spending on Real GDP.
3. To determine which policy is more powerful in altering economic growth of Ethiopia.

3. Literature Review
3.1. Theoretical Literature

Keynesians believe that expansionary monetary policy increases the availability of loanable funds available through banking industry, causing interest rates to fall. With lower rate of interest, aggregate expenditures on investment and interest-sensitive consumption goods usually increase, causing real GDP to rise. Thus, monetary policy can affect real GDP indirectly.

On the opposite hand, Monetarist may be a school of thought led by Friedman. Friedman (1963) emphasized on the availability of cash because the key factor affecting the well-being of the economy and also, accepted the necessity for an efficient monetary policy to stabilize an economy. He further noted that, so on promote stable rate of growth, funds should grow at a hard and fast rate, instead of being regulated and altered by the monetary authority. Friedman argued that since funds could be demanded for reasons aside from anticipated transaction, it is often held in several forms like money, bonds, equities, physical goods and human capital. Each sort of this wealth features a unique characteristic of its own and a special yield. These effects will ultimately increase aggregate money demand and expand output.

The Monetarists confessed that the economy might not always be operating at the complete employment level of real GDP. Hence, monetarists argue that expansionary monetary policies may increase the extent of real GDP by increasing aggregate demand within the short-run. However, within the long-run, when the economy is working at the complete employment level, they argue that the number theory are going to be an honest approximation of the link between the availability of cash, price index, and therefore the real GDP.

The idea of discretionary policy wasn't widely accepted, since governments were simply expected to balance their budgets annually. Thus, expansionary economic policy, for instance increasing government spending without increasing taxes to stimulate the economy, wasn't generally considered by policy makers. Since the economy was assumed to be at financial condition with potential output, an expansionary policy could only cause higher prices. Before the 1930s, the fluctuations within the level of economic activity is assumed to be largely self-correcting, counting on monetary policy to stop excessive movement in prices. Thus, consistent with classical economists, economic policy is ineffective in boosting demand, thanks to the character of markets to settle at equilibrium in the least times.

According to the Keynesian models, either tax cuts or increased government spending can increase total demand, and thus total output and employment. An initial increase in spending (by either the government or the recipients of the tax cuts) leads to new series of additives to income leads to a complete increase in GDP greater than the first increase in government spending or reduction in taxes.

The monetarists argue that while it's impossible to possess financial condition of the labor pool all the time (as classical economists argued), it's better to go away the macro-economy to plug forces. Friedman modified some aspects of the classical theory to supply the rationale for his noninterventionist policy recommendation. In essence, monetarism emphasized that the utilization of economic policy is essentially ineffective in altering output and employment levels. Moreover, it only results in the crowding out. While, monetary policy is effective, but with a condition that monetary authorities do have adequate knowledge to successfully manipulate the cash supply. Hence, monetarism advocates that neither monetary nor economic policy should be utilized in an effort to stabilize the economy because this might cause greater instability within the economy, and therefore the funds should be allowed to grow at a constant rate.

3.2. Empirical Literature Review

Miftahu Idris (2019) examined the relative impact of the monetary and fiscal policy on growth output of the Nigerian economy over the period of 1980 to 2017 using a time series data. The study, using the OLS technique and the co-integration test, indicated that both monetary policy and fiscal policy have positive and significant impact on economic growth. In addition, the result showed that monetary policy is more effective in Nigeria than fiscal policy for the period under consideration. The study suggested that, there is need to impose fiscal discipline in the public finance since monetary policy cannot attain the desired goal given the existence of fiscal imbalances.

Saqib and Aggarwal (2017) investigated relative effect of fiscal and monetary policy on the economic growth

of Pakistan using time series data from 1984 to 2014. Using the co-integration technique, the findings revealed the existence of positive and significant effect of fiscal policy and monetary policy on economic output. Also, monetary policy has more effect on economic growth than fiscal policy in the economy of Pakistan.

Adegoriola (2018) examined the relative effectiveness of monetary and fiscal policy in stabilizing the Nigerian economy from the period of 1981 to 2015. The study, by conducting the Johansen co-integration and the error correction model, exposed a positive relationship of money supply, government expenditure and revenue while interest rate and budget deficit have negative relationship with economic activity. Also, fiscal policy is more effective than the monetary policy in altering the economy of Nigeria.

A study conducted by Okorie, Sylvester and Simon-Peter, (2017) performed the auto regressive distributed lag (ARDL) model to determine the relative importance of monetary and fiscal policies in Nigeria with a quarterly time-series data from 1981-2012. Their findings reported that both monetary and fiscal policies have significant positive impact on the economy of Nigeria.

Another study by Twumasi (2012) investigated the effect of fiscal policy on economic growth in Ghana for the period 1981 to 2008. The study performed the DF-GLS test of stationary and the bounds test approach of co-integration, and reported that in the long-run, government investments and the government transfer payments affected economic activity positively while taxes and government consumption spending showed a negative relationship. The study recommended that budget policies in Ghana should be tailored towards reducing government consumption expenditure and raising those expenditures that enhance economic output.

Fasanya *et al.* (2013) analyzed the impact of monetary policy on economic growth in Nigeria. The study used time series data covering a period of 1975 to 2010. Vector Error Correction Model (VECM) was used for the analysis. The study reported that all variables have long run relationship. The findings of the study revealed that inflation rate, exchange rate and external reserves have significant effect on economic output in Nigeria. The study suggested that the establishment of primary and secondary government bond markets that can also increase the efficiency of monetary policy and reduce the government's need to rely on the central bank for direct financing should be imperative.

Adefeso *et al.* (2010) assessed the relative effectiveness of fiscal and monetary policy on economic growth in Nigeria using yearly time series data from 1970-2007. The study performed Vector Error Correction Model (VECM). The study found that the effect of monetary policy on economic output is stronger than fiscal policy in Nigeria. They suggested that attention should be toward monetary policy to achieve economic stabilization in Nigeria.

Nouri *et al.* (2011) investigated the impact of monetary policy on economic growth in Iran using time series data from 1974-2008. The study conducted ordinary least squares for estimation, and exposed that there is a positive and significant relationship between money supply and economic growth in Iran.

Khosravi *et al*. (2010) analized the impact of fiscal policy and monetary policy on economic growth in Iran using time series data from 1960-2006. The study employed Autoregressive Distributed approach to co-integration. The study found that there is negative effect of exchange rate and inflation, and positive effect of government spending on economic output in Iran.

Sayera (2012) investigated the relative effect of monetary and fiscal policies on real GDP growth in Bangladesh. Broad money supply and government consumption expenditure were used as a proxy for monetary and fiscal policies respectively while GDP growth at constant prices was used as proxy for real output growth. The study used Granger causality test, co-integration and vector error correction approach to examine the validity of St. Louis equation. The findings of the study reported that monetary policy has a relatively powerful effect than fiscal policy in altering GDP growth in Bangladesh.

Ezeji *et al.* (2013) assessed the effect of monetary and fiscal policies on Nigeria economic activity from a period of 1990 to 2010. The study performed unit root test, co-integration and Vector Autoregressive (VAR) model. The study reported that the time series properties of the variables attained stationary at first order. The variables were co-integrated at most 1 with at least 2 co-integrating equations. The findings of the study exposed that fiscal policy had more effect than monetary policy on the GDP growth, and suggested that monetary and fiscal policies measures are jointly statistically significant to the economic growth of Nigeria.

Onyeiwu (2012) investigated the effect of monetary policy on the Nigerian economy. The study used Ordinary Least Squares Method to analyze data from 1981-2008. The results showed that monetary policy proxy by money supply had a positive effect on GDP growth, but Balance of Payment has a negative effect on inflation. The study suggested that monetary policy should facilitate a favorable investment climate through appropriate interest rates, exchange rate and liquidity management mechanism.

From the above empirical analysis, the effects of monetary policy and fiscal policy on economic growth is inconclusive. But most of the empirical analysis have shown that monetary policy is found to be more powerful than fiscal policy in altering the economic activity. The question to be raised and answered here is that, is that the case in Ethiopia?

4. Methodology

4.1. Data source

The study largely rely on time series data obtained from the National Bank of Ethiopia (NBE). For the purpose analysis, time series data which covers sample period of 2008/9 to 2018/19 are performed. Monetary policy and fiscal policy are proxy by interest rate and government expenditure variables respectively; while the growth variable is proxy by real GDP of Ethiopia.

4.2. Techniques of analysis

The study performed Augmented Dickey-Fuller model, Johansen test of co-integration model, and regression model, to conduct the unit root test, to examine the presence of long-run relationship between variables under consideration, and to determine effect of monetary policy and fiscal policy on economic growth respectively. The regression model is considered to be an essential approach in explaining the direction of monetary and fiscal variables. It is also used to explain the relationship between independent variable(s) over the dependent variable. A regression coefficient or the p-value test the null hypothesis effect of any variable. Meaning that, a variable with a low p-value is likely to have a significant effect on the examined model as variations in the independent variable(s) can be related to changes in the dependent variable. However, the Johansen co-integration test allows for the determination of a long-run relationship among the examined variables. Various non-stationary time series are co-integrated if the linear combination of the variables are stationary. The study model is specified as follows.

4.3. Model specification

This model is specified to determine the effect of monetary policy and fiscal policy on real GDP. The model is derived in the following approach:

$$Y_t = f(MP_t, FP_t) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(1)$$

Where, Y is the measure of aggregate economic output or real GDP is performed as the proxy; MP is the measure of monetary policy substituted by interest rate; FP is the measure of fiscal policy substituted by government spending, while the subscript (t) represents a time period. In broader term, equation (1) is clarified as:

$$GDP_t = f(\text{Interest Rate [IR], Government Expenditure [GE]})\dots\dots\dots\dots (2)$$

In a geometric form, the equation (2) is transformed as follows:

$$GDP_t = \beta_0 + \beta_1 GE + \beta_2 IR + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots...(3)$$

Where, β_0 represents the intercept for the model; β_1, β_2 are the coefficients of the independent variables for fiscal and monetary policy respectively; while ε present the error term. The existence of significant co-movement between the coefficients are determined.

5. Case Analysis and Discussion

This section presents the analysis of some trends of fiscal and monetary policy indicators in Ethiopia. Subsequently, it presents the inferential statistics results of the relative effects of these macroeconomic policies on economic growth of the country.

### 5.1. Trends of Growth Rates of Economic Growth and Government Expenditure

Figure 1: Trend in Growth Rate of GDP of Ethiopia
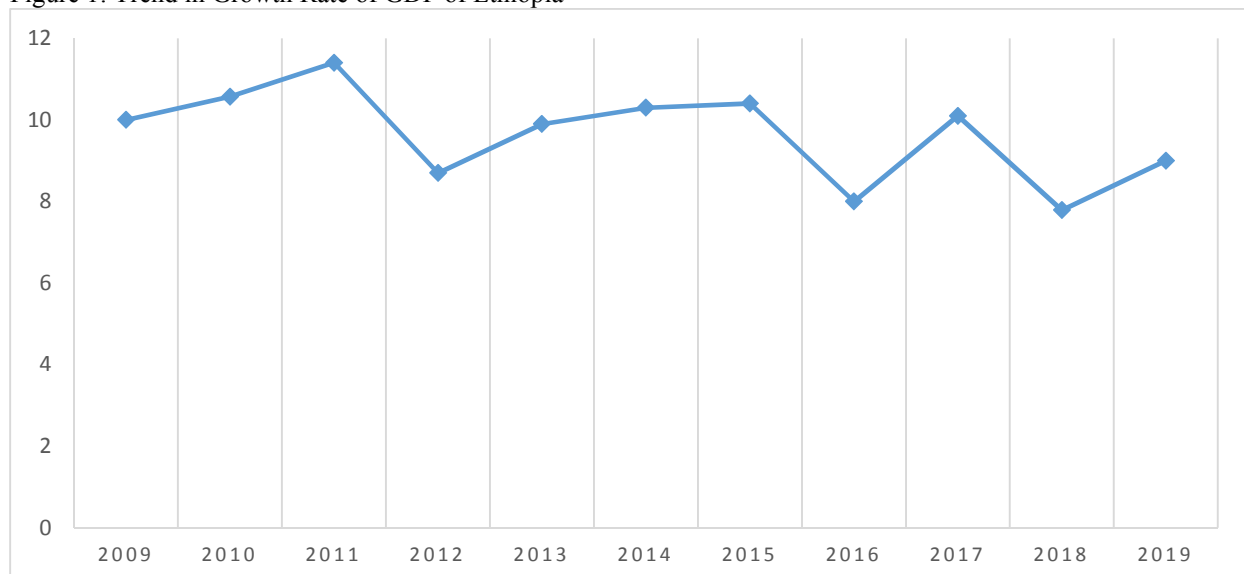
Source: National Bank of Ethiopia Indicators, 2019

Figure 1 shows the trend in the rate of economic growth (GDP) of Ethiopia. Remarkably, there were no negative growth rates during the period under consideration. Ethiopia experienced a two-digit economic growth in 2009, 2010, 2014, 2015, and 2017. In 2009, the rate of economic growth was 10%. The growth rate was sustained to 10.57% in 2010. A significant growth rate of 11.4% was experienced in 2011. But since then, there were fluctuations in the rate GDP growth in the country. For instance, the annual rate of growth reduced to 8.7% in 2012 and gradually increased to 9.9%, 10.3%, and 10.4% in 2013, 2014, and 2015 respectively. Again, the growth rate reduced to 8% in 2016, and then increased to 10.1% in 2017. The rate declined to 7.79% in 2018, and ultimately increased to 9% in 2019.

Figure 2: Trend in Growth Rate of Government Expenditure in Ethiopia.
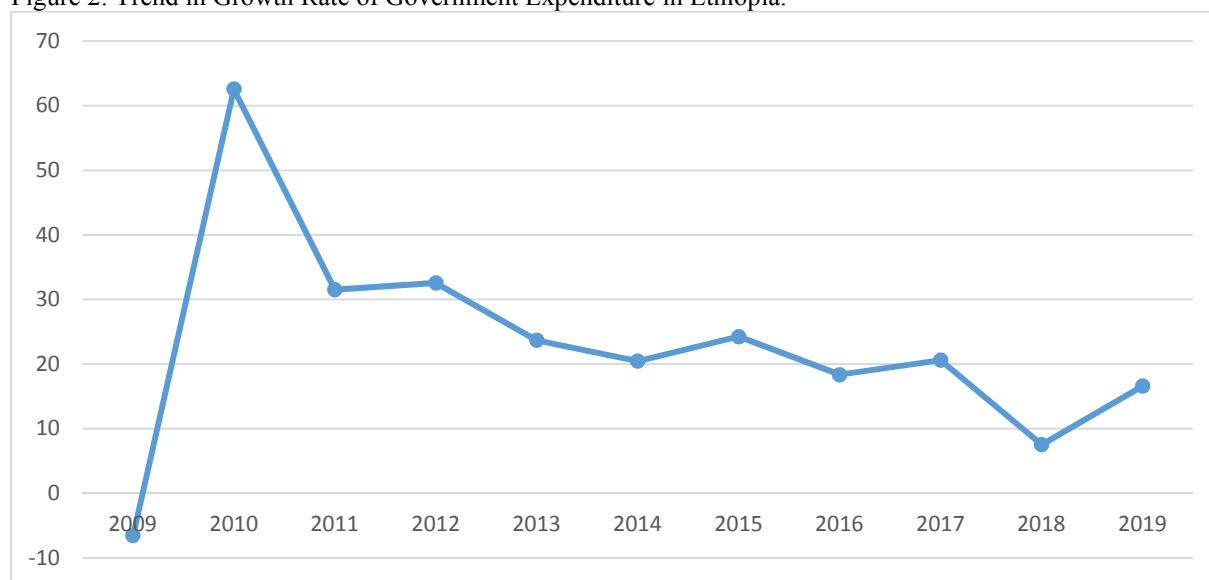
Source: National Bank of Ethiopia Indicators, 2019

Figure 2 depicts the trend in the annual rate of growth of government expenditure in Ethiopia during the period from 2009-2019. Ethiopia exhibited a negative growth rate of government spending (-6.47%) in 2009. The country experienced a remarkable growth rate of government expenditure in 2010 to 62.59%. Since then, it has been showing fluctuations in the growth rate of government spending. For example, the growth rate of government spending reduced to 31.54% in 2011 and slightly increased to 32.59% in 2012; and again declined to 23.72% and 20.49% in 2013 and 2014 respectively. In 2015, the annual rate of government spending increased to 24.29%, and then decreased to 18.39% in 2016. Again, the rate increased to 20.65% in 2017, and then significantly decreased to 7.57% in 2018. Eventually, increased to 16.63% in 2019.

In order to avoid the use of spurious regression, Augmented Dickey-Fuller (ADF) test model is performed to conduct unit root test. This is to permit for the use of stationary series in the model coefficient. The possible existence of long-run relationship among the variables is determined by the Johansson test of co-integration approach while the significance of each parameter is estimated using the regression model.

5.2. Augmented Dickey-Fuller (ADF) Model for Unit root Testing

Every time series data has trend, to identify the pattern of this trend; the study applied a unit root testing. In other words, time series variables are characterized by a stochastic trend that could be removed by differencing. Certain variables became stationary at level, others at first differentiation. The unit root test result is presented as follows:

Table 1: ADF test Results for the variables

Variables	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	P-value
rgdp (real GDP)	-5.192	-4.380	-3.600	-3.240	0.0001
ir (interest rate)	-6.228	-4.380	-3.600	-3.240	0.0000
ge (government expenditure)	-4.937	-4.380	-3.600	-3.240	0.0003

Source: author's computation, 2020

Table 1 depicts the estimated results of unit root testing based on the ADF test. The results show that all variables exhibit stationary 1% and 5% significance level. In absolute value, since the computed values are higher than the critical values at 1% and 5% significance levels, the null hypothesis of non-stationary (unit root) is therefore rejected. By indicating stationary at first difference, it however provides a platform for estimating the

long-run relationship using the co-integration approach.

5.3. Existence of long-run relationship among the variables

To determine the presence of a long-run relationship among the monetary, fiscal policy and real GDP variables, the study performed a Johansen test of co-integration model. Results are given below:

Table 2: Results for Johansen test of co-integration model

Max Rank	Trace Statistic	5% Critical Value	Maximum Eigenvalue Statistic	5% Critical Value
0	713.0330	29.68	247.4535	20.97
1	465.5795	15.41	239.7633	14.07
2	225.8162	3.76	225.8162	3.76

Source: author's computation, 2020

Table 2 shows the estimated findings based on the Johansen cointegration test displaying the long-run relationship between variables of monetary and fiscal policy and real GDP (economic growth). The findings indicate that all examined variables are cointegrated in the model signifying the presence of long-run relationship between indicators of monetary policy, fiscal policy and real GDP. In other words, given that the values of Trace test and the Max-Eigenvalue test are greater than their corresponding Critical Values (CV) at 5% level, it implies the rejection of hypothesis and further support the existence of long-run and cointegrated relationship among the examined variables under consideration.

5.4. The impact of monetary and fiscal policy on economic growth

In this section, regression model was performed to estimate the model coefficient and further explain the effects of government expenditure and interest rate on the real GDP. Result for the model is given below.

Table 3: Results for regression model

Dependent variable: RGDP Method: Least square Sample: 2009-2019 Included observation: 10				
Variables	**Coefficient**	**Std. Error**	**t-statistic**	**P-value**
ir (interest rate)	-0.561	0.196	-2.438	0.044
ge (government expenditure)	0.575	0.000	2.500	0.041
Constant	-0.453	0.224	-2.026	0.082
R^2 = 0.630 Adjusted R^2 = 0.524 S.E of regression = 0.2231 Prob(F-statistic) = 0.031				

Source: author's computation, 2020

Table 3 shows the results of the estimated regression model for measuring the effects of the monetary and fiscal policy variables on economic growth. To measure fitness of the model, the value of R^2 is evaluated. The R^2 also known as coefficient of determination, indicates how monetary and fiscal policy variables best explain the variations in economic growth. The value of R^2 is 0.63, meaning that, about 63% of the total variations in economic growth is explained by government expenditure and interest rate. The remaining 37% account for other factors that influence economic growth but not included in this model. In addition, the regression equation for the model is significant at 5% level of confidence with the p-value of F-statistic 0.031.

As shown in the model, the government expenditure variable has a positive coefficient of 0.575 at 5% significance level. A one unit increase in government spending, other variable being constant, leads to an increase in real GDP (economic growth) by 0.575, implying that, increased government expenditure would raise economic and social welfare, raise employment opportunities, increase the rate of saving and investment, and ultimately output growth.

For the variable interest rate, the parameter indicates a negative coefficient of -0.561 with significant p-value at 5%. By implication, a one unit increase in the interest rate results in a decrease in economic growth by 0.561, other things held constant. This implies that, high interest rate discourages the household and business enterprises for seeking investment loans from the financial institutions, thereby decreasing the rate of investment, lowering savings (individual and corporate) and eventually slowing down the aggregate economic output. The results of explanatory variables indicate that monetary policy proxy by interest rate has a negative effect whereas fiscal policy proxy by government expenditure has a positive effect on the economic output of Ethiopia. These findings are consistent with Twumasi (2012) and Khosravi et al (2010).

In general, the findings indicate that both monetary policy and fiscal policy are effective towards altering rate

of economic growth in Ethiopia. Also, the findings revealed that fiscal policy is slightly stronger than monetary policy in altering the economic growth of Ethiopia. This result is consistent with the findings of Adegoriola (2018) and Ezeji et al (2013); but contrary to the findings of Miftahu Idris (2019), Sayera (2012), Adefeso et al (2010) and Saqib and Aggarwal (2017).

6. Conclusion and Recommendation

The purpose of this paper was to examine the effect of monetary policy and fiscal policy on economic growth in Ethiopia, taking interest rate and government expenditure as proxy variables for monetary policy and fiscal policy respectively. The study employed a time series data for a period of 2009 to 2019. The spurious free regression model was performed by conducting unit root test using Augmented Dickey-Fuller (ADF) test in this paper. The study revealed that monetary policy proxy by interest rate has a negative significant effect on the economic growth of Ethiopia. On the other hand, the fiscal policy proxy by government expenditure has positively affected the country's economic output. The results of regression analysis indicated that both monetary and fiscal policy have significant effect on the economic growth of Ethiopia. Finally, the study reported that fiscal policy is somewhat powerful than monetary policy in altering economic growth in Ethiopia.

The study suggested that both fiscal and monetary policies should be implemented simultaneously to ensure macroeconomic stability and sustainable economic growth, since coordination of these policies are of paramount importance, which otherwise leads to a sharp downturn of economic performance in Ethiopia. Also, it is recommended that government annual budget and projects implementation should be monitored adequately to ensure price stability, full employment, and economic growth. Monetary policies implemented by the National Bank of Ethiopia should promote conducive investment atmosphere through appropriate stabilization of interest rates, and inflation rates to promote economic growth of the country.

7. References

Adefeso, H.A. and Mobolaji, H. (2010). The Fiscal-Monetary Policy and Economic Growth in Nigeria: Further Empirical Evidence. Pakistan Journal of Social Sciences, vo. 7, No. 2: pp. 137 – 142.

Adegoriola, A. E. (2018). An empirical analysis of effectiveness of monetary and fiscal policy instruments in stabilizing economy: Evidence from Nigeria. Social Sciences, 7(3),133-140.

Ezeji, C.E and Michael, N. (2013). The Impact of Monetary and Fiscal Policies on Nigerian Economic Growth: 1990 - 2010. European Journal of Business and Management, 5 (2):13 -26

Fasanya, I. O., Onakoya, A.B.O., and Agboluaje, M.A. (2013). Does Monetary Policy Influence Economic Growth in Nigeria? Asian Economic and Financial Review, 3(5): 635 – 646.

Khosravi, Anvar and Karimi, Mohammad, Sharif. (2010). To Investigate the Relationship between Monetary, Fiscal Policy and Economic Growth in Iran: Autoregressive Distributed Lag Approach to Cointegration. American Journal of Applied Sciences. No. 7(3): 420 424.

Kibiwot, M. I., and Chernuyot, K. S. (2012). Effects of Fiscal Policy on Private Investment and Economic Growth in Kenya. Journal of Economics and Sustainable Development, vol.3, No.7: pp. 8 – 16.

Miftahu Idris (2019). Relative Impact of Monetary and Fiscal Policy on Output Growth in a Small-open Economy. American Research Journal of Humanities & Social Science (ARJHSS), Volume-02, Issue-08, pp-26-38

Minyahil, A., Wndaferahu, M., & Yilkal, W. (2016). Monetary Policy and Inflation Dynamics in Ethiopia: An Empirical Analysis. *Global Journal of Human-Social Science*: (*E*) *Economics*, 16(4), 45-60.

Okorie, D., Sylvester, M.A., & Simon-Peter, D-A.C. (2017). Relative Effectiveness of Fiscal and Monetary Policies in Nigeria. Asian Journal of Social Science Studies, 2(1), 117–129.

Onyeiwu, C. (2012). Monetary Policy and Economic Growth of Nigeria. Journal of Economics and Sustainable Development, vol. 3, No. 7: pp. 62 – 70

Özer, M., & Karagöl, V. (2018). Relative effectiveness of monetary and fiscal policies on output growth in Turkey: an ARDL bounds test approach. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 13(3), 391-409. http://dx.doi.org/10.24136/ eq.2018.019.

Saqib, N., & Aggarwal, P. (2017). Impact of fiscal and monetary policy on economic growth in an emerging economy. International Journal of Applied Business and Economic Research, 15(4),457-462.

Sayera, Y. (2012). Relative Effectiveness of Monetary and Fiscal Policies on Output Growth in Bangladesh: A Co integration and Vector Error Correction Approach. Deputy General Manager of the Research Department of Bangla desh Bank.

Şen, H., & Kaya, A. (2015). The relative effectiveness of monetary and fiscal policies on growth: what does long-run SVAR model tell us? *MPRA Paper*, 65903.

Twumasi, R. A. (2012). The Impact of Fiscal Policy on Economic Growth in Ghana: Unpublished thesis submitted to the Department of Economics, Kwame Nkrumah University of Science and Technology.