Research Article

Relative effectiveness of fiscal and monetary policies on economic growth in Ethiopia: An Autoregressive Distributed Lag Co-integrated approach

Tesfa-Amlak Gizaw[1]

Abstract

Stable macroeconomic variables are achieved through effective fiscal and monetary policies. There are some consensuses on the effectiveness of both fiscal and monetary policies; however, there are also continuing debates about the relative effectiveness and stabilizing role of fiscal and monetary policies. The aim of this work is to examine the relative effectiveness of fiscal and monetary policies in promoting economic growth in Ethiopia from the period 1986 to 2019 using Autoregressive Distributed Lag model with its important estimation techniques. The findings reveal that the effects of both fiscal and monetary policies on economic growth are positive and significant in the short run; nonetheless, in the long run, economic growth is only affected by fiscal policy. In the Ethiopian context this result implies that fiscal policy is more effective than monetary policy. Yet it does not mean that fiscal policy is the last macroeconomic policy resort for economic growth; rather it implies the presence of significant room in formulation and coordination of macroeconomic policies. Therefore, for the long run, macroeconomics policy making is expected to focus on formulating and using effective monetary policy and exercising determination to coordinate with that of fiscal policy.

---

[1]Lecturer at Dilla University, PhD Candidate in Development Economics.   E mail: tesfanatan@yahoo.com

---

1. Introduction

The effects of fiscal and monetary policies on economies have long been a key macroeconomic issue. It is this view which furnished a prominence place and forms a policy perspective; given how necessary it is for policy makers to have a proper understanding of the consequences of their actions in determining each monetary and fiscal stance. Although there is common consensus over the effectiveness of prudent monetary and fiscal policy in correcting various macroeconomic imbalances, there is also disagreements in that how and to what extent these policies are effective. It is also because of this view that attention-grabbing but different theories over the effectiveness of fiscal and monetary policies on output growth has been forwarded since the classical period of time. If we looked at these forwarded arguments in depth: "concerning fiscal policy" a group of classical economists have faith in the forces of supply and demand which are essential in determining the level of economic activity. In contrast Keynes and Keynesian economists argue that government intervention into the economy is a must that is the private led economies or market falls into a slump in many cases and this kind of problem could be treated only by the government through public investment and other fiscal policy instruments (Rakic, et al, 2013).

Similarly, regarding monetary policy, classical economists argue that spending, output, employment and prices do not mainly depend on the quantity of money in circulation. In consequence, money does not play any role in the determination of output, employment and income, which are most important variables in determining the economy. Conversely monetarists argue that if the economy operates at less than full employment level, then an increase in money supply will lead to a rise in output and employment because of a rise in expenditure, but merely in the short run. Keynesians believe that change in money supply may affect the level of output indirectly via interest rate and investment. They advocate for monetary policy as a cure to deficiency in effective aggregate demand. Because they believe that this would induce private spending however, that they do not recommend monetary policy as a remedy for slump as it is manifested with the pitfall of liquidity trap (Mankiw, 2010).

Moreover, more recent global recession occurrence since 2008 financial crisis have acknowledged a renewed debate on the relative effectiveness of monetary and fiscal policies on economic activity though there had been widely believed statement among different scholars that implementing fiscal policy is more complex process and controversy than applying monetary policy instrument which is easily managed and controlled by certain authorized body on behalf of government. In contrast to aforementioned argument, as is mentioned by Özer & Karagöl (2018), due to large and prolonged growth and employment costs of the crisis, monetary policy has limited effect when interest rates are wedged at the zero lower-bound, and the essential of increased public expenditure to tackle a "secular stagnation" in this economic phenomena, there is a tendency of agreement among economists and policy makers for the powerfulness of fiscal policy as a countercyclical macroeconomic policy tool.

Meanwhile, in the Ethiopian context monetary policy of central banks is a simplified analysis

amounts to the determination of the "optimal" quantity of money or (in a dynamic sense) the optimal rate of growth of the money stock and its principal objective is to maintain price and exchange rate stability and support sustainable economic growth of Ethiopia. Price stability is a proxy for macroeconomic stability which is vital in private sector economic decision on investment, consumption, international trade and saving.

Likewise fiscal policy, which continued to focus on increasing tax revenue by strengthening tax administration and enforcement while covering a greater proportion of government expenditures from domestic resources, aimed at healthy economic growth and fair distribution of income so that government expenditures have largely been geared towards supporting capital expenditure and enhancing pro-poor social spending programs and safety nets. In sum monetary policy is commonly understood as, "the deliberate application of monetary variables by the government (Central Banks in most cases) to influence the general economic environment" (Ayubu, 2013) whereas fiscal policy is one of major macroeconomic policies in which a Government uses its spending and taxation powers to monitor and influence a nation's economy. Despite the difference in the way they are applied, monetary policies and fiscal are mainly targeted to reduce unemployment, enhance price and exchange rate stability, and attain maximum output *(*Minyahil, *et.al, 2016)*.

In tandem with this evidence shows that Ethiopian economy which had exhibited 9.1 percent average annual growth during 2014/15-2018/19, registered 9 percent expansion in 2018/19, showing improvement relative to the 7.7 percent growth of last year although it was 2 percentage point lower than the base case scenario of GTP II target set for the year. It was also significantly higher than the 3.1 percent average growth estimated for Sub - Saharan Africa (WEOU, 2018). Besides that annual average headline inflation declined to 12.6 percent in 2018/19 from 14.6 percent a year earlier due to the rise in both food and non-food inflation. Similarly, annual headline inflation went down to 15.3 percent from 16.8 percent owing to 5.7 percentage point fall in food inflation against 9.7 percentage point increase in non-food inflation. This slowdown in annual inflation was largely aided by tight monetary and prudent fiscal policy stance (NBE, 2019). However, while post 2019 economic instability is the foremost macro economy problem in the country.

To conclude, a lot of empirical studies which were conducted in both developed and developing nations strengthen the above conspicuous but inconclusive arguments. On top of that, in Ethiopia, a number of scholars tried to conduct various researches on the effects of macroeconomic policies on output growth either by focusing on the effect of fiscal policy or the effect of monetary policy or both relatively. However, almost all of them placed either the room of time or variable or methodology. Even the recent study which performed by Tekilu T. and Tesfaye M. (2019) on the relative effects of monetary and fiscal policies on economic growth in Ethiopia, through employing ARDL model is not without gap. And here the room they created was in using the so called "St. Louis equation'' which is in its form

did not back up by economic theories and the functional problem in that using the log of inflation which is undefined. Thus, in filling these rooms, the over-all objective of the paper is to investigate the relative effectiveness of fiscal and monetary policies on economic growth. The specific objective is to investigate the effectiveness of fiscal and monetary policies on economic growth and contrasting their effectiveness both in the short and long runs.

2. Literature Review

Theoretical Literature Review

In the classical case the LM curve is vertical. This is due to the demand for money being totally unresponsive to changes in the interest rate. The interest elasticity of the demand for money is said to be zero. If the demand for money is purely a function of the level of income, then the demand for money will equal the supply of money at some level of income regardless of the value of the interest rate. With an interest inelastic demand for money of this type the income velocity of circulation of money is constant as in the classical model; hence the label 'the classical case. Keynesian economics again has its own views on monetary policy's influence on economic output.

Keynes emphasizes that economic growth is to a great extent affected by the key part played by the monetary policy in an economy. He proposed that interest rate, aggregate demand, level of employment, output and income are vulnerable to change in the money supply. Aggregate supply function, good price interest with a perfect competitive market and closed economy are some of the assumptions of the Keynesian model. The investigation of Keynes' thought considers money to be exogenously determined when just a single decision exists between holding bonds by wealth holders. The hypothesis is to all intents and purposes in view of price rigidity and the economy perhaps working or performing below full employment level of output, employment, and income. Keynes' macroeconomic theory stresses the issue of output as opposed to price as a function of variety in financial and economic conditions. The liquidity trap may be represented in the IS-LM diagram as a horizontal segment of the LM curve at a certain minimum interest rate. At that level the interest rate is so low that everybody expects it to rise in the future and so expects capital losses on bond holdings.

Therefore, once the rate of interest reaches the minimum level, any increase in the money stock will be added to idle balances, and no one will use the money to buy bonds. In Keynes's words, 'liquidity preference may become virtually absolute in the sense that almost everyone prefers cash to holding a debt which yield so low a rate of interest' (Rebmann et al. 1982). The price of bonds and the rate of interest do not, in these circumstances, change as the money supply is increased, and monetary policy becomes impotent as a means of increasing the level of income. All that happens as the money supply rises is that the demand for idle balances absorbs the increase in the money supply the interest rate does not fall, more investment is not induced, and income remains unchanged.

In the short term of the monetary policy, monetarism theory formulated by Milton Friedman (1970) is the theory that focuses on the macroeconomic impacts of the money supply and central banking procedures or mechanisms. This theory maintains that the monetary authorities should strictly focus on maintaining price stability (inflation), and the frequent expansion of the money supply as these two monetary policy instruments are the primary drivers of economic growth. The monetarists emphasize that shocks in the money supply are the most essential and important determinants of the rate of economic growth as well as the response by the business cycle. This theory can put much power on economic growth when it is specifically utilized by the central banks. This theory suggests that aggregate demand for goods and services will increase if the money supply increases in the system. Hence, an increased aggregate demand gives birth to employment which in turn stimulates economic growth (Kindleberger, 1986).

Empirical Literature Review

Ali et al. (2008) examined the effects of fiscal and monetary policy on economic growth in South Asian countries using annual data from 1990 to 2007 and Autoregressive distributed lag model. They indicated that money supply had a positive and significant effect on economic growth in the short and long run; thus, they concluded that monetary policy is more powerful than fiscal policy in supporting economic growth in South Asian countries.

Thamae (2013) investigated the dynamics of government spending in Lesotho using Vector Autoregresion and Vector Error Correction (VECM) models between 1980 and 2010. The results indicated that government spending influenced economic growth positively, whereas tax share influenced economic growth negatively in the long run. These results are consistent with Keynesian theory for fiscal policy which states that the impact of government spending on economic growth should be positive. Keynes also argued that an increase in tax rate would affect private consumption negatively which would in turn cause a decline in the rate of economic growth.

Bokreta and Benanaya (2016) examined the relative effectiveness of monetary and fiscal policy in Algeria using co-integration and vector error correction modelling, and found that in the long-run, the impact of government expenditure is positive, while the effect of taxes is negative on growth, concluding that fiscal policy is more powerful then monetary policy in promoting economic growth in Algeria.

Leshoro (2017) conducted a study to analyze the effects of disaggregated government expenditure on economic growth in South Africa between 1976 and 2015, using ARDL technique. The results indicated that the disaggregated government expenditure was positively influencing economic growth in both the short and long run, for the periods under reference. These results are in consistent with Keynesian theory for fiscal policy which states that the impact of government spending on economic growth should be positive.

Özer, M. & Karagöl, V. (2018), in their study on Relative effectiveness of monetary and fiscal policies on output growth in Turkey: an ARDL bounds test approach indicated that monetary policy variable is creating only short-run effects on growth; but, it's not causing any Granger causality on it. On the other hand, fiscal policy variable has a long-run significant effect and causing to growth. Thus, the fiscal policy seems to be more effective than monetary policy during examination period, implying the rethinking the implementation of both policies in Turkey.

Tamirat, B. and Singh, I. (2019) in their study on Effectiveness of Monetary Policy on Industrial Growth of Ethiopia: ARDL Modeling on Monetary Framework revealed that Ethiopian industrial problem could be tamed by appropriate managements of the monetary policies.

3. Data and Methodology

3.1 Data and Variables

In this paper annual time series data over the period of 1986 and 2019 was used for analysis. The data were singled out from World Bank Database, National bank of Ethiopia (NBE) and Ethiopia Economic Association (EEA). The variables included in the model are Real GDP which is used as proxy for the real output growth, Capital, Labor, government final consumption expenditures which is employed as proxy for fiscal policy, broad money supply is used as proxy for monetary policy and other Z variables.

3.2 Methods of Analysis

The collected data was analyzed quantitatively using Autoregressive Distributed Lag (ARDL) model. The advantages of using ARDL model are: First, it is more statistically significant approach to determine the co-integration relation in small samples as the case in this study. Second it can be applied whether the regresses are purely order zero [I (0)], purely order one [I (1)], or mixture of both. Third with the ARDL approach it is possible that different variables have different optimal numbers of lags, while in Johansen-type models this is not permitted. Forth, the other advantages of bound testing approach in the long run and short run parameters of the model in questions are determined simultaneously. Fifth, Appling the ARDL technique we can obtain unbiased and efficient estimators of the model (Narayan, 2004).

3.3. Model Specification

An economic theory over which the following econometric model has made a base is endogenous growth theory. And this theoretical, the endogenous growth accounting, model can be written as

$$Y_t = f(A_t K_t L_t) = A_t K_t^{\beta_1} L_t^{\beta_2} \underline{\hspace{6cm}} \quad (1)$$

Where Y_t is real GDP at time t, K_t, L_t, are the total factor productivity, the stock of capital, the stock of labor respectively.

Meanwhile, to scrutinize the relative effectiveness of fiscal and monetary policies on economic growth, Andersen and Jordan (1968), employed the so called St.Louis equation. This equation can be expressed as: *Y=f (F, M, and Z)* _____ *(2)*

Where: Y represents the economic performance variable; F fiscal policy variables; M monetary policy variables, and Z represents other variables influencing economic performance. Then by combining equations1 and 2 and assuming that these policy variables influence the efficient allocation of resources which in return implies higher or lower factor productivity that is A in the above equation 1 we derived at the following equation:

$$Y_t = f(A_t K_t L_t) = FMZ_t K_t^{\beta_1} L_t^{\beta_2} \underline{\hspace{6cm}} (3)$$

Next by introducing logarism on equation 3 of both sides then we derived at:

$$\ln Y_t = \beta_0 + \beta_1 \ln k_t + \beta_2 \ln LF_t + \beta_3 \ln gfc_t + \beta_4 \ln m_t + \beta_5 \ln CPI_t + \beta_6 \ln OFR_t + \beta_7 GPI_t + \varepsilon_t \underline{\hspace{1cm}}$$
(4)

Where additional variable consumer price (CPI), official exchange rate (OFR) and gender parity index (GPI) used to signify productivity as Z value along with broad money (m) and government final consumption (F or gfc). Finally an ARDL representation of equation 4 built as follows

$$\Delta \ln y = \beta_0 + \sum_i^n \beta_1 \Delta \ln y_{t-i} + \sum_i^n \beta_2 \Delta \ln lf_{t-i} + \sum_i^n \beta_3 \Delta \ln k_{t-i} + \sum_i^n \beta_4 \Delta \ln f_{t-i} + \sum_i^n \beta_5 \Delta \ln m_{t-i} + \sum_i^n \beta_6 \Delta \ln CPI_{t-i} +$$

$$\sum_i^n \beta_7 \Delta \ln ofr_{t-i} + \sum_i^n \beta_8 \Delta gpi_{t-i} + \mu_1 \Delta \ln y_{t-i} + \mu_2 \Delta \ln lf_{t-i} + \mu_3 \Delta \ln k_{t-i} + \mu_4 \Delta \ln f_{t-i} + \mu_5 \Delta \ln m_{t-i} + \mu_6 \Delta \ln CPI_{t-i} +$$

$$\mu_7 \Delta \ln ofr_{t-i} + \mu_8 \Delta gpi_{t-i} + \varepsilon_t \underline{\hspace{6cm}} (5)$$

Where, Δ denotes the first difference operator; β_0 is the drift component, and ε is the usual white noise residuals, β's are coefficients of short run dynamics and μ 's are coefficients long run relationship.

3.3. Estimation Techniques

3.3.1. Unit root test

In order to determine the degree of stationary, the paper adopted the Augmented Dickey-Fuller (ADF) test was used. The testing procedure for the ADF unit root test is specified as follows:

$$\Delta Y_t = \mu + \delta_t + \gamma Y_{t-1} + \sum_{i=1}^{p} \lambda \Delta Y_{t-i} + \varepsilon_t \underline{\hspace{5cm}} (6)$$

Where, Y_t is a time series variables under consideration in this model at time t, **t** is a time trend variable; Δ denotes the first difference operator; ε_t is the error term; **p** is the optimal lag length of each variable chosen such that first-differenced terms make a white noise. Thus, the ADF test the null hypothesis of unit root (non-stationary).

That is; H_0: $\gamma = 0$; H_1: $\gamma \neq 0$

If the t value or t-statistic is more negative than the critical values, the null hypothesis (I.e. H0) is rejected and the conclusion is that the series is stationary. Conversely, if the t-statistic is less negative than the critical values, the null hypothesis is accepted and the conclusion is that the series is non-stationary.

3.3.2. Tests for co-integration

The bounds test is mainly based on the joint Wald test or F- test which its asymptotic distribution is non-standard under the null hypothesis of no co-integration. Thus, the null hypothesis of no co-integration among the variables in Equation (5) is:

H_o: $\theta_0 = \theta_1 = \theta_2 = \theta_3 = \theta_4 = \theta_5 = 0$ (meaning no long-run relationship among variables)

Against the alternative one;

H_1: $\theta_0 \neq \theta_1 \neq \theta_2 \neq \theta_3 \neq \theta_4 \neq \theta_5 \neq 0$

If the calculated F statistic is greater than the upper bound critical values, it denotes rejection of the null hypothesis of no long run relationship among the variables. If the calculated F statistic is less than the lower bound critical values, it implies accepting the null hypothesis of no co-integration among the variables. However, if the calculated F statistic is between the upper and lower bound critical values, inference is inconclusive. Beside for the diagnostic checking, the author tested the presence of serial correlation and heteroscedasticity in the errors and normality of errors as well. Finally, by using CUSUM and CUSUMSQ tests the parameters stability of the model tested.

4. Results and Discussion

Table 1: Unit root test result

Variables	Level	ADF test Statistics	Critical value at 5%	P-Value	Decision
LNY	Intercept	-5.462220	-2.957110	0.0001	I(1)
LNLF	Intercept	-7.537719	-2.967767	0.0000	I(1)
LNM	Intercept	-4.275408	-2.957110	0.0021	I(1)
LNGFC	Intercept	-5.413864	-2.957110	0.0001	I(1)
LNOFR	Intercept	-5.874765	-2.957110	0.0000	I(1)

INF	Intercept	-4.387137	-2.954021	0.0015	I(0)
TGPI	Intercept	-7.084679	-2.963972	0.0000	I(1)

Source: Own computation

The results in table 1 show that merely one variable (INF) is stationary at level and the remaining all variables are stationary in their first difference.

4.1. Diagnostic test and model stability results

Table 2: Diagnostic test result

Test Statistics	Diagnostic Tests	
	LM Version	**F Version**
A:Serial Correlation	CHSQ(2)= 2.266109[.3220]	F(1,12)=0.490254[.6242]
B:Functional Form	Not applicable	F(1,13)= .682218[.4237]
C:Normality	CHSQ(2)=.579548[.748433]	Not applicable
D:Heteroscedasticity	CHSQ(15)=2.799491[.9997]	F(15,14)= .646411[.7942]
A:Lagrange multiplier test of residual serial correlation B:Ramsey's RESET test using the square of the fitted values C:Based on a test of skewness and kurtosis of residuals D:Based on the regression of squared residuals on squared fitted values		

Source: E-views 9 owned computation

The results of diagnostic tests in table 2 designated that both the LM version and the F version of the statistics are unable to reject the null hypothesis specified for each test. Hence, there is no serial correlation problem plus the Ramsey functional form test confirms that the model is specified well. Likewise, the errors are normally distributed and the model doesn't suffer from heteroscedasticity problem.
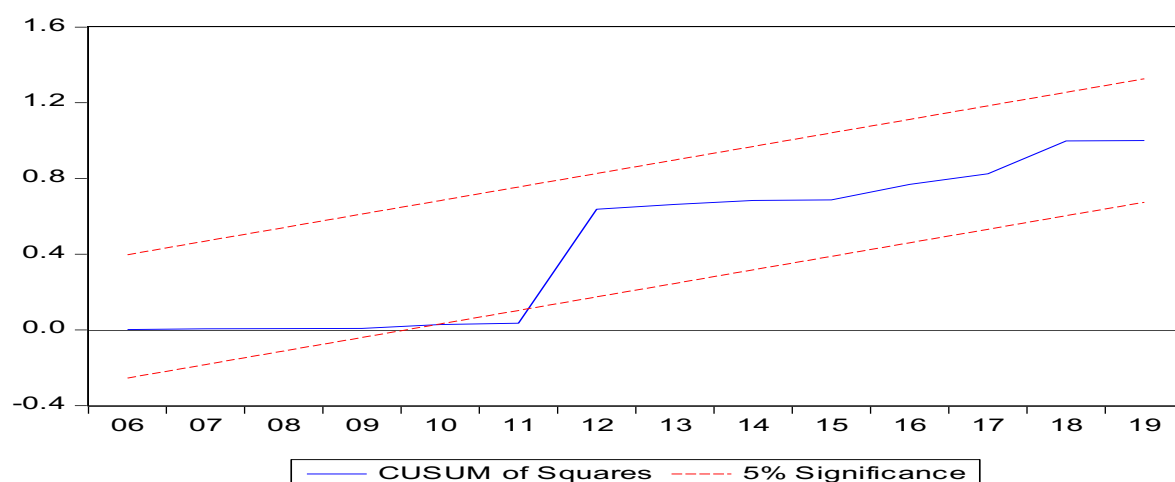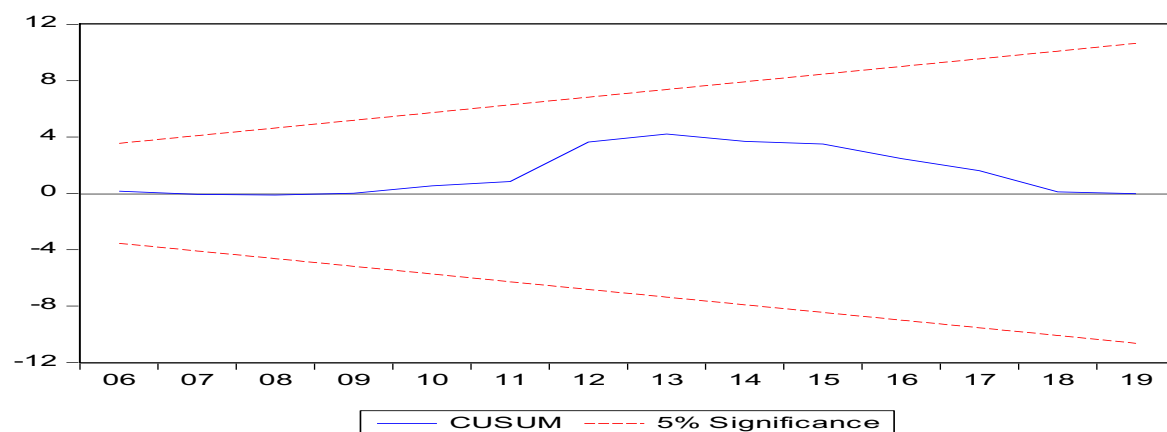
Besides, the plot of CUSUM recursive residual and CUSUMSQ recursive residual exhibited that there is no structural instability in the model during the period under investigation. This means the model appeared to be stable and efficient in estimating both the short run and long run relationship between the explained and explanatory variables.

4.2. Bound test Result

Table 3: The critical values for bounds

Significance Level	Lower Bound	Upper Bound
10%	2.45	3.52
5%	2.86	4.01
F-statistics value = 4.429161		

Source: E-views 9 owned computation

As Table 3 indicates, the calculated F-statistics is 4.429161 and this value is higher than the upper bound critical values at 5% level of significance, meaning that there is evidence of long-run relationship or co-integration between variables.

4.3. Short Run Model

Table 4: Short run result

Variables	Coefficient	Std. Err	t. statistic	P. value
D(LNY(-1))	0.291179	0.171819	1.69467	0.1123
D(LNLF)	*-7.037961*	*2.609819*	*-2.696724*	0.0174
D(LNGFC)	0.703961	0.051873	13.570383	0.0000
D(LNGFC(-1))	-0.167445	0.136118	-1.230143	0.2389
D(LNM)	0.681549	0.281549	2.420762	0.0297
D(LNM(-1))	1.308619	0.284116	4.605928	0.0004
D(LNOFR)	0.100977	0.125124	0.807013	0.4332
D(LNOFR(-1))	0.113776	0.132798	0.856761	0.4060
D(INF)	-0.004905	0.002247	-2.182914	0.0466
D(TGPI)	1.402028	0.712316	1.968266	0.0692
ECTt-1	-0.398524	0.140998	-2.826447	0.0135
Cointeq = LNY - (0.3417*LNLF + 0.5886*LNGFC + 0.2810*LNM - 0.8343*LNOFR -0.0123*INF + 3.5181*TGPI -0.1941)				

Source: E-views 9 owned computation

The empirical results in Table 4 and table 5 conceptualized that sign of the coefficients of both fiscal policy (LNGFC) and monetary policy (LNM) variables are positive implying that they have a straight impacts on economic growth. Specifically fiscal policy has positive and significant effect on economic growth both in the short and long run. However, while the positive effect of monetary policy variable on growth is significant in the short run, it doesn't have significant effect on economic growth in the long run.

Moreover ECTt-1 presents the lagged error correction term. This error correction term measures the speed of adjustment to restore equilibrium in the dynamic model. It appeared with negative sign and statistically significant coefficient at 5 percent level, demonstrating that long run equilibrium can be attained. In other word the speed of adjustment coefficient is -0.398524 with probability value 0.0135, signifying that approximately 39.85% of disequilibrium is corrected in each year and the full adjustment to equilibrium takes about 2 and half years.

4.4. Long Run Model

Table 5: long run result

Variables	Coefficient	Std. Err	t. statistic	P. value
LNLF	0.341652	2.098580	0.162802	0.8730
LNGFC	0.588628	0.143060	4.114546	0.0011
LNM	0.281022	0.496666	0.565817	0.5805
LNOFR	-0.834256	0.426193	-1.957462	0.0705
INF	-0.012308	0.006953	-1.770269	0.0984
TGDI	3.518053	1.790863	1.964446	0.0696
C	-0.194051	27.323362	-0.007102	0.9944

Source: E-views 9 owned computation

In tandem with these results Keynes argue that the shocks in government expenditure and taxes affect aggregate demand, savings, investment and the level of economic activity. He also argued that fiscal policy can be used to balance out the economy via the span of business cycle.

Apart Keynesian economics again argue for the monetary policy's influence on economic output. In that Keynes suggested that economic growth is to a great extent affected by the key part played by the monetary policy in an economy. Likewise monetarists believe that money can affect real variables in the short run but only nominal magnitudes in the long run. In other word the monetarists argue that if the economy operates at less than full employment level, then an increase in money supply will lead to a rise in output and employment because of a rise in expenditure, but this work out only in the short run (Kuroda, I. 1997). In addition to this, therefore, the findings of this work are also consistent with the findings of Thamae (2013); Bokreta and Benanaya (2016), Thabane and Lebina (2016) and Özer & Karagöl (2018).

5. Conclusion and recommendations

To conclude, there exists positive and significant effect of fiscal policy on economic growth in the long run. However, in the short run, economic growth is affected both by fiscal and monetary policies. Besides the coefficient of fiscal policy significantly surpass from that of monetary policy. Thus, it could be inferred that relatively fiscal policy is more effective than monetary policy in terms of contribution to the Ethiopian economic growth. Nevertheless, it doesn't mean fiscal policy is the last macroeconomic policy resort rather the result implied the presence of some room in macroeconomic policies formulation and coordination.

Therefore, macroeconomics policy making should focus on formulating and using effective monetary policy and exercising determination to coordinate with that of fiscal policy.

References

Ali, S., Irum, S., & Ali, A. (2008), "Whether fiscal stance or monetary policy is effective for economic growth in case of South Asian Countries", *Pakistan Development Review*, 47(4).

Andersen, L. C., & Jordan, J. L. (1968), "Monetary and fiscal actions: a test of their relative importance in economic stabilization" Federal Reserve Bank of St. Lotus Review.

Bokreta, K., & Benanaya, D. (2016), "The fiscal-monetary policy and economic growth in Algeria: VECM approach" World Academy of Science, Engineering and Technology, International *Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 10(9).

Jooste, C., Liu, G. and Naraidoo, R. (2012), "Analyzing the effects of fiscal policy shocks in the South African economy" University of Pretoria Working Paper Series, No. 2012-06

Kindleberger, C. P. (1986). Keynesianism vs. monetarism and other essays in financial history: George Allen & Unvin. London.

Kuroda, I. (1997). Towards More Effective Monetary Policy: New York, St. Martin's Press, Inc.

Leshoro, T.L.A. (2017). An empirical Analysis of Disaggregated Government Expenditure and Economic Growth in South Africa: UNISA Economic Research Working Paper Series, Working Paper No: 10/2017, Department of Economics, University of South Africa.

Mencinger, J., Aristovnik, A., & Verbič, M. (2017), Asymmetric effects of fiscal policy in EU and OECD countries: Economic Modelling, 61.

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.

Ndzinisa, P. (2008). The efficacy of monetary policy on economic growth in Swaziland: The central bank of Swaziland, Research department.

NBE, (2019), Annual Report, National Bank of Ethiopia, Addis Ababa, Ethiopia.

Özer, M and 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.

Rebmann, A. R., Levacic. (1982). Macroeconomics: An Introduction to Keynesian-Neoclassical Controversies. Macmillan Press LTD.

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

Tadesse, T. and Melaku, T. (2019), "Analysis of the relative impact of monetary and fiscal policies on economic growth in Ethiopia: ARDL approach to co-integration." *Copernican Journal of Finance & Accounting*, 8(2), 87–115.

Thabane, K. and Lebina, S. (2016). Economic Growth and Government Spending Nexus: Empirical Evidence from Lesotho. *Journal of Economic Review*, 4(1), 86-100.

Thamae, R.I. (2013). The growth of government spending in Lesotho: *Journal of Economic analysis and Policy*, 43 (3), 339-352.

Tamirat,B.& I. Singh. (2019). Effectiveness of Monetary Policy on Industrial Growth of Ethiopia: ARDL Modeling on Monetary Framework. *IOSR Journal of Economics and Finance*, 10 (3): 01-13.