The Effect of Tax Incentive on Domestic Investment in Ethiopia: ARDL Approach

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Abstract- The aim of this paper was to evaluate the effect of tax incentive for domestic investment from 1982 to 2017 using quantitative method, descriptive design and secondary data. The ARDL (Autoregressive distribution lag) approach with ordinary least squares (OLS) for co integration and error correction model was employed to investigate the long-run and the short-run relationship between the dependent variable and the explanatory variables. There was a positive significant effect of tax incentive on domestic investment in the long run, that is a one percent change in tax incentive brought about 1.401 percent changes in domestic investment at five percent significance level. The finding implied that domestic investment has been stimulated through tax incentives complemented with sustainable economic growth, basic infrastructures, and social overheads, improved and globally inclusive market. Finally the whole system is getting adjusted at the speed of 74.15% towards the long-run equilibrium. The study basically recommended that the government of Ethiopia should approve implementation of critical and periodically cost- benefit effective tax incentive with good access of market, basic infrastructure and sustainable economy to boost domestic investment.

Index Terms- Tax Incentive, Domestic Investment, Ethiopia, ARDL

I. INTRODUCTION

Both developed and developing countries offer tax incentive to promote investment, however, the effect of tax incentive on investment is still a subject matter of considerable debate in economic theory and policy (UN, 2018 and Thabani, 2014). Scholars debate about the set of policies needed to promote investment for developing countries (Atukeren, 2005). Both developed and developing countries are trying to attract investment through various fiscal and non-fiscal incentives. Tax incentive is among fiscal incentives used by many countries to attract investors and increase investment in a country (Esson and Zolt, 2002). Tax revenues are necessary as a veritable tool of economic growth and development depends on a proper tax system which has the capacity to generate revenue through tax. While fulfilling the revenue function, taxes also have a pervasive influence on economic decisions of individuals and businesses, and on social equity (SADC, 2004).

Developing countries use tax incentives to promote investment, but it is ineffective and unclear to what extent they attract investment (Klemm, 2010). According to Proclamation No. 769/2012, the country Ethiopia offers different tax incentives to encourage investment, increase inflow capital, speed up the transfer of technology, promote the equitable distribution of investments, transparency and efficiency of administration and benefit the society.

II. STATEMENT OF THE PROBLEM AND LITERATURE REVIEW

Majeed (2008) argued that countries with a high participation of investment succeeded in higher economic growth and made many economic and structural reformations to encourage as well as attract potential investment. Investment incentives mostly focus on economic performance objectives as a policy instrument for attracting investment, despite persistent criticism that they are economically inefficient and lead to misallocations of public funds (Blomstrom, 2003).

The implication of high investment levels is the productive capacity of the economy which in turn, subsequently leads to higher rates of economic growth, job creation and opportunities for the poor to improve their livelihoods (Esubalew, 2014). The tax incentive system plays an important role in the life of the society and development of the country; however the mere existence of tax incentives doesn’t guarantee the effective growth of an economy and proper mobilization. There appear two perspectives regarding the effectiveness of fiscal incentives, some argue that fiscal incentives promote investment which generates job opportunities and leads to overall economic growth. On the other hand, those who advise against tax incentives argue tax preferences create inequity, abusive tax and avoidance schemes which may erode the revenue base (Bolnick, 2004).

Despite the aforementioned debate, Ethiopia has undertaken tax reforms, introduces incentives and made amendment the policies of the past governments in power such as deregulation, privatization and liberalization of the foreign exchange market. The government has reduced customs import duties, exemptions from payment of export customs duties and income tax holding (Proclamation No. 769/2012). However, there is no document which assessed the effect as a result of these tax incentives on domestic investment.

According to Esubalew (2014) proportion of domestic investment in Ethiopia was 11.9 percent of GDP. On the other hand, as per Ethiopian Revenue and Customs Authority(ERCA) annual report shows that revenue forgone granted to investment was 51.07% of government revenue in 2014 and it’s also growth remains steady that indicates huge amount loss of public resource not to finance the needs of society (ERCA, 2014).
The paradox between low investment and huge forgone revenue needs further research to be conducted in the sector.

Designing appropriate strategies for catalyzing and stimulating investment in Africa requires a good understanding of the key determinants or drivers of investment in African countries (UNCTAD, 2014). To encourage domestic investment and attract different programs, tax incentive which is most popular has been introduced, but fails to assess its cost-benefit and its effectiveness remain debatable in developing countries. There is little empirical analysis in the academic arena on determinants of domestic investment but fail to look the nexus between foreign direct investment and domestic investments; which used a panel data to examine the determinants of domestic investment for some African countries but ignores the link between domestic investment foreign direct investments (Haile, 2013).

Even Esubalew (2014) investigated determinants of domestic investment in East Africa, including Ethiopia using panel data and that analyzed the relationship domestic investment with foreign direct investment and public investment, but failed to see the effect of tax incentive; and regression analyzed by Abdisuu (2013) and Kurabachew (2016) have failed too who have seen only the effect of tax incentive on domestic investment in manufacturing sector and did not examine the relationship among domestic investment, public and foreign direct investment.

Therefore; the researcher has attempted on conducting a research on the effect of tax incentive on domestic investment Ethiopia from 1982-2017 which includes the determinants of domestic investment using ARDL approach of co integration to fulfill the above stated gaps.

III. METHODOLOGY

The research approach used for this study was quantitative research which has been performed by using both descriptive research design and econometric analyses. Quantitative research uses a standard format with a few minor, interdisciplinary differences of generating a hypothesis to be proved or disproved. The researcher entirely relies on secondary data types which are macroeconomic variables that affect investment. The study follows the leads of the flexible accelerator theory of investment because the strength of the variety and availability of data. The model used in the study can be specified in the following which also had been used John (2012) general form with modification:

\[ DI = \beta_0 + \beta_1 X + \epsilon \]

Where; \( DI \) = Domestic Investment

This function specifies Domestic investment as a function of the priority variable (incentives) and other control variables (X). The model is modified to take special features of the country and theories into account. DI is the dependent variable measures domestic investment which is defined in real value. Given the difficulty of measuring tax incentives, this study used a dummy variable to show the presence and absence of tax incentives in sectors under consideration. It is assumed that: Tax incentive takes a value of 1 if the incentives are offered and zero otherwise. Vector \( X_i \) represents other variables which affect the flow of DI. These control variables are Market growth/size (real GDP growth rate), FDI, Openness of the economy, public investment and macroeconomic instability such as inflation, real interest rate. Though many variables have been proposed by literatures as determinants of DI it is not possible to include all of them. Due to this fact, we chose few of them depending on previous studies specific to a country, the strength of the variety and availability of data. \( \epsilon \) is an error term and \( \beta_0 \) is an intercept of system equations. The estimated model is:

\[ DI = f (GDPGR, INF, FDI, MOP, PUB, LR, DUMT) \] (3.2)

Where, DI= operational domestic investment inflow in real value based on 2000 constant price

FDI-operational foreign direct investment based on 2000 constant price

GDPGR real gross domestic product growth rate
INF-Inflation based on consumer price index OPEN-Market/Trade openness (Imp +Expo /GDP) LER- lending interest rate in annual %

DUMT= Dummy variable for tax incentives.

By introducing the „\( u \)“ is called error term or random disturbance term or stochastic term, the extended model is:
In the long run, holding other things constant, a one percent change in foreign direct investment (FDI) brought a 0.96971 percent decrease in domestic investment. This finding implies that FDI has not only negative output effects but also negative spillover effects. Furthermore, countries experience a widening gap in terms of technological advancement, which is not desirable for the development of Ethiopia. In fact, FDI decreases domestic investment which in turn leads to a lower growth rate. Progress rate real output promotes investment because it indicates problems of heterscedasticity and percentages (elasticities) approaches.

In this study, inflation has found insignificant at 5%, but significant, with 10% and with an expected negative sign. At 10%, this has found to be significant and was confirmed by Kassahun, (2010) represented by its current, inflation is estimated to have a negative influence on the growth of investment that a 1 percent increase in the rate of inflation inflicts the growth of domestic investment decreased by 0.310944 percent. And this finding is consistent with expectations of neoclassical investment theory, positive association between investment and income growth.

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in the long run, the lending interest rate has an adverse effect, but insignificant on domestic private investment. This has confirmed to the finding of Esuabalew (2014) in East Africa adverse effect of interest rate on domestic private investment due to its underdevelopment and financial repression.

Trade openness has a positive sign and significant relationship with domestic investment. The probability value of t-statistics for openness is 0.0062 which is below both 5 and 1 percent level of significance. The coefficient of market openness which is measured as a log of the ratio of import-export with real GDP is positive and statistically significant at both 1% and 5% means the more open the market system is the higher the Domestic investment holding other factors constant. The positive sign is as per our expectation and it is due to the open market policy of the Ethiopian government, which creates trade opportunities for the domestic investors. This result is the same as Guadagno (2012) and Kassahun (2010); the higher the import-export rates of a country the greater the market opportunity or trade openness for investors.

Tax incentives have been used by governments as tools to promote a particular economic goal. Investment tax incentives are used both to encourage capital accumulation in the long run and to stimulate economic activity in the short run. In case of this study the dummy variable for investment (and change tax) policy, particularly tax incentive policy, which is the main focus of the study, turns out to great improvement in investment with a coefficient 1.4009 and p-value 0.0183 which is significant with a positive coefficient. This can be due to tax policy change from Dereg to EPRDF helped grow on average by 1.401% per year in domestic private investment at 5% level significance. This result is consistent with Van Parys and Klemm (2011), James (2009) and UN (2018). The positive sign here agrees with the assumption that the lower tax rate means lower cost burden and higher profit after tax for investors. Regardless, only those tax incentive programs that can pass cost-benefit assessments of both economic and revenue impacts are worth attempting or preserving.

In general, GDP growth, trade openness, public investment and tax incentive dummy have a positive and significant, whereas FDI is negative and significant while LER and Inflation are negative but insignificant determinants of domestic operational investment in the long run. And the strength of variables’ effect on domestic investment market openness has a strong positive effect while tax incentive has a strong positive significant effect next to trade openness, however, FDI and LER have negative with proportional strong effect on domestic effect on domestic investment. This confirms with the result of Tanzi (2000) and Zee, (2002) in which tax incentives can promote investment, but they are not the “first best” solution as overall economic and institutional environment may be more important for a success of projects. Finally, the estimated long-run model presented as follows with figures in the parenthesis indicates the p-value.

\[
LGDI = 10.73 - 0.012T - 0.97LGFDI + 0.173LGGDP - 0.311LGINF - 0.99LGLEN + 0.005 (0.1946) (0.463) (0.0967) (0.138) \\
2.16LGOP +0.17LG5PUB + 1.40DUMT (0.002) (0.00) (0.02)
\]

Table 4.2: Estimated Long-run Coefficients Using ARDL Approach

<table>
<thead>
<tr>
<th>Regressors</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGFDI</td>
<td>-0.969371</td>
<td>0.068655</td>
<td>-14.119418</td>
<td>0.0050*</td>
</tr>
<tr>
<td>LGGDP</td>
<td>0.173090</td>
<td>0.029782</td>
<td>5.811899</td>
<td>0.0463**</td>
</tr>
<tr>
<td>LGINF</td>
<td>-0.310944</td>
<td>0.104444</td>
<td>-2.977141</td>
<td>0.0967</td>
</tr>
<tr>
<td>LGLEN</td>
<td>-0.988476</td>
<td>0.411369</td>
<td>-2.402895</td>
<td>0.1382</td>
</tr>
<tr>
<td>LGOPEN</td>
<td>2.159902</td>
<td>0.170199</td>
<td>12.690434</td>
<td>0.0062*</td>
</tr>
<tr>
<td>LGPUB</td>
<td>0.169182</td>
<td>0.010532</td>
<td>16.063716</td>
<td>0.0039*</td>
</tr>
<tr>
<td>Tax incentive DUMT</td>
<td>1.400954</td>
<td>0.192010</td>
<td>7.296266</td>
<td>0.0183**</td>
</tr>
<tr>
<td>C</td>
<td>10.724456</td>
<td>0.441229</td>
<td>24.305894</td>
<td>0.0017*</td>
</tr>
<tr>
<td>@TREND</td>
<td>-0.012085</td>
<td>0.006289</td>
<td>-1.921626</td>
<td>0.1946</td>
</tr>
<tr>
<td>R-squa.</td>
<td>0.998408</td>
<td>0.974531F-</td>
<td>41.81501</td>
<td>0.023613</td>
</tr>
</tbody>
</table>

Source: Author’s calculation, 2018 Using Eviews 9
Note: **, * indicates five and one percent level of significance
The model stability test using cumulative sum of recursive residuals (CUSUM) could be replaced for Chow test structural breakpoint. If the plot of CUSUM statistic moves between the critical bounds/red lines (at 5 percent significance level), then the estimated coefficients or the model/system are/is said to be stable in the long run. Figure 4.3 reported that the plot of CUSUM test did not cross the lower and upper red lines critical limits which indicated that, the estimate is stable and there is no any structural break in the long run.

![Fig 4.3. The Plot of the Cumulative Sum of Recursive Residuals](image)

Source: Computed by the Author, 2018 using Eviews 9

V. CONCLUSION

Investment has been recognized as a facilitator of economic growth for developing countries as a result, the government of Ethiopian has introduced investment incentives (tax incentives) since 1982 to promote domestic investment and attract FDI. The study on trend of investment and tax incentive indicates that an inconsistent relationship between investment and tax incentive in which their trend shows neither similar, nor regular pattern. This merely indicates the existence of other powerful investment determining factor. Thus, the provision of the tax incentive scheme to attract investment was not the only factor that boosts investment rather other non-tax determinants are more effective in persuading investors in favor of making more participation in the economy. In the study period, tax incentives and government revenue not balanced and revenue generation has remained ineffective due to tax-base erosion effect.

Based on the empirical analysis of long-run ARDL model, it can be concluded that the hypothesis is consistent with the theory and tax incentive was found to be determining factor which confirms with the intention of governments towards fiscal policies. Though providing duty and tax incentives in the short run has a negative impact on revenue, productivity, in the long run it has a positive impact on increasing domestic investment thereby revenue productivity as well as sustainable economic growth. Based on the long run ARDL model output, a one percent change in tax incentive, leads 1.401 percent change in domestic investment, given that other remains constant.

Further, other determinant factors of domestic investment are, GDP growth, trade openness and public investment have a positive and significant, whereas FDI is negatively significant. On the other hand, FDI has to crowd out effect on domestic investment which indicates that the existence of a very wide technological gap compared to that of the developed countries, making it difficult for domestic firms to realize the technology transfer in the form of spillover effects, and the sustainability of any country’s economic development hinges on the growth of local entrepreneurs. Finally the whole system is getting adjusted at the speed of 74.15% towards the long-run equilibrium.

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