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RESEARCH ARTICLE

THE EFFECT OF FOREIGN DIRECT INVESTMENT ON ECONOMIC GROWTH IN ETHIOPIA; AN EMPIRICAL INVESTIGATION

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ABSTRACT

Recent evidences indicate that a large increase in FDI inflows to African countries including Ethiopia. And this FDI has seen as a crucial source of capital inflows and stimulants of economic growth in the country. And in order to attract this FDI, Ethiopia took some steps towards liberalizing trade and the macroeconomic regimes as well as introducing some measures aimed at improving the FDI regulatory frame works. But empirical literatures find mixed evidence on the impact of FDI on Economic growth in the host country. So, the main aim of this study is to empirically investigate the impact of FDI on economic growth by incorporating a simultaneous equation econometric model and 3SLS estimation technique based on time-series data over the period 1974–2014. Following this empirical analysis, the study found a positive and statistically significant impact of FDI on economic growth in Ethiopia though the impact is weak in magnitude which is below the relative impact of domestic capital investment on economic growth. Thus, this study implies that Ethiopia could enhance its economic growth by improving the amount of FDI inflows and its contribution in the growth process.

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INTRODUCTION

Growth theories suggest that economic growth emanates from expansion in investment whose various financing components are domestic saving and foreign sources notably foreign capital inflows. And different research papers show that the performance of Ethiopia in improving the level of investment through domestic sources and private capital inflow is far from adequate (EEA, 2007). This made the importance of foreign direct investment indisputable to the well-being of the economy. Recent evidences indicate that FDI in African countries have been on the rise, especially since 1990's including Ethiopia. The total FDI inflows to Ethiopia have increased continuously from USD 135 million in 2000 up to USD 545 million in 2004 and then up to 2007 the yearly FDI inflows have been varied between these two amounts (UNCTAD, 2008). Even though, the amount of this FDI inflow increases, different theories provides conflicting predictions concerning the growth effects of FDI. Sun (1998) has investigated the macroeconomic impact of FDI on China from 1979-1996. The study shows that FDI has a significant role in promoting the economic growth of China through contributing to domestic capital formation, increasing exports and creating new employment. Hsiao and Shen (2003) study based on the Harrod-Domar's model assumes that FDI raises

the productivity of capital through improved competition, positive technological externalities, and accelerated spillover effects. Otepola (2002) examines empirically examined the impact of FDI on growth and he concluded that FDI contributes significantly to economic growth, especially through exports. Li and Liu (2005), by using a single equation and simultaneous equation techniques, examined the relationship between FDI and economic growth on a panel data for 84 countries for the period 1970–1999, and found a positive impact of FDI on economic growth through its interaction with human capital in developing countries, but a negative impact of FDI on economic growth through its interaction with the technology gap. Also Getinet and Hirut (2006) studied the nature and determinants of foreign direct investment in Ethiopia over the period 1974-2001. This finding implies that liberalization of the trade and regulatory regimes, stable macroeconomic and political environment, and major improvement in infrastructure are essential to attract FDI to Ethiopia. In contrast, some theories predict that FDI will hurt resource allocation and slow growth. In a recent survey of the literature (Hanson, 2001) argues that evidence that FDI generates positive spillovers for host countries is weak especially in developing countries. Also in a review of micro data on spillovers from foreign-owned to domestically owned firms (Gorge and Greenwood, 2002) concludes that the effects are mostly negative. In the standard Solow type growth model based on the neoclassical approach, FDI enables host countries to achieve investment that exceeds their own domestic saving

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and enhances capital formation (De Mello, 1997 and Solow, 1957). (Nunnenkamp and Spatz, 2003) found, using data of United States FDI stock abroad, that the link between FDI and economic growth is quite weak. Akinlo (2004) investigates the impact of FDI on economic growth in Nigeria using data for the period 1970 to 2001. His error correction model (ECM) results show that both private capital and lagged foreign capital have small and insignificant impact on economic growth. Also Micro-level studies using firm-level data generally have not been as positive. (Aitken and Harrison, 1999), using data for over 4,000 Venezuelan firms, found that there are very limited spillover effects from foreign firms to domestic firms. In a study by Carkovic and Levine (2002) show that FDI does not have a robust independent influence on growth. Mwlima (2003) also did not see FDI as an important tool for development. (UNCTAD, 1998) indicate that the positive effect of FDI is stronger, the higher the level of development of a host country. Higher level of development allows countries to reap the benefits of productivity fostered by foreign investment. (Fry, 1992) examined the role of FDI in promoting growth by using the framework of a macro-model for a pooled time series and cross section data of 16 developing countries for 1966-1988 periods. And he did not find FDI to exert a significantly different effect from domestically financed investment on the rate of economic growth, as the coefficient of FDI after controlling for gross investment rate, was not significantly different from zero in statistical terms. FDI had a significant negative effect on domestic investment suggesting that it crowds-out domestic investment. Thus, this paper seeks to analyze FDI inflows to Ethiopia and to investigate its effect on economic growth empirically. It will examine the arguments put forward by both micro and macro theories about the effect of FDI inflows on economic growth over the study period of 1974-2014.

Statement of the problem

Despite the fact that history of the growth performance was poor in the past, the Ethiopian Economy is growing at a rapid rate of double digit for the last few years. Real GDP averaged 11.2% per annum during the 2003/04 and 2008/09 period, placing Ethiopia among the top performing economies in sub Saharan Africa (Ncube, Lufumpa and Ndikumana, 2010). Also the government put a lot of efforts to attract FDI in order to internalize the growth rate of the economy. However, the country is surrounded by multidimensional problems that challenge to sustain the current trend of economic growth. The most important permanent feature of the Ethiopian economy is the presence of resource (financial) gap. The resource gap can be explained as the presence of savings investment gap, foreign exchange gap and fiscal gap. The presence of these resource gap forces the country to rely on an inflow of foreign finance (specifically foreign direct investment) to bridge the gap. Gross domestic saving as a proportion of GDP is low and unlikely to achieve this growth rate by mobilizing the major domestic savings. In 2005 gross domestic saving was only 2.6% of GDP. That is, total consumption accounted for 97.4% of the GDP (EEA, 2007). So, due to the subsistence nature of the economy, it is unlikely to improve the performance of the economy by enhancing private domestic investment. That is, the performance of Ethiopia in improving the level of investment and promotion of economic growth through domestic capital sources and private capital inflow alone is far from adequate. This makes the importance of foreign direct investment indisputable to the performance of the economy.

The current government of Ethiopia realized the inadequate of the domestic capital and opened several economic sectors to foreign investors. The government also issued several investment incentives including tax holidays, duty free importation of capital goods and export tax exemption to encourage FDI. Despite the numerous attempts by the government to encourage foreign investors, the inflow of FDI is quite low. The annual FDI inflow to Ethiopia from 2003 to 2006 were only USD 399 million, which is only 1.56 percent of total FDI flows to Africa (UNCTAD, 2008). That is, Ethiopian performance in attracting FDI is very poor compared to many African countries. Also most of the FDI-growth study is dominated by cross country regression analysis, country specific studies are relatively few in number and studies on the area are also provides debatable result. Even though past studies show that FDI has a positive impact on economic growth, the size of such impact may vary across countries depending on the level of human capital, domestic investment, infrastructure, macroeconomic stability, and trade policies. The literature continues to debate on the role of FDI in economic growth as well as the importance of economic and institutional developments in fostering FDI, especially in developing countries. With this fact, identifying the impact of FDI on economic growth and designing a means to enhance the contribution of this FDI in Ethiopia is a key step to know the different factors which are responsible for the poor performance of the country in attracting FDI.

Objective of the study

The general objective of the study is to empirically investigate the impact of foreign direct investment on economic growth in Ethiopia. In line with this main objective, the paper addresses the following specific objectives

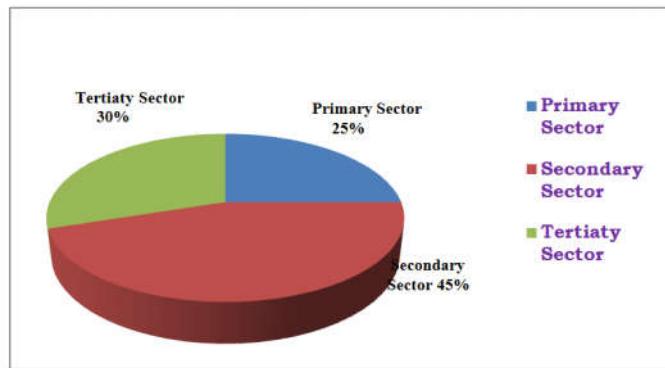
- To identify the relationship between FDI and economic growth in Ethiopia.
- To compare the relative strength of FDI contribution to growth with other growth determinants.
- Addressing the magnitude, trend and composition of FDI and economic growth in the country over the study period.
- To provide alternative policy suggestions for future FDI inflows and economic growth performance based on empirical findings of the study

Methodology and model specification

Data Source and Method of Analysis

The study is based on a country level annual macroeconomic data covering the period from 1974 to 2014. The choice of the period is based on the availability of relevant data for the study. The relevant data are collected from various national and international sources of National Bank of Ethiopia (NBE), Ethiopian Economic Association (EEA), World Bank (WB), Ministry of Finance and Economic Development (MoFED), and United Nation Conference on Trade and Development (UNCTAD). The data is analyzed based on econometric model specified, simultaneous equation model. Also various diagnostic tests are performed including multicollinearity, autocorrelation, heteroscedasticity, stationarity, simultaneity and identification issues. Generally, the validity of estimators is checked by using both statistical and econometric tests.

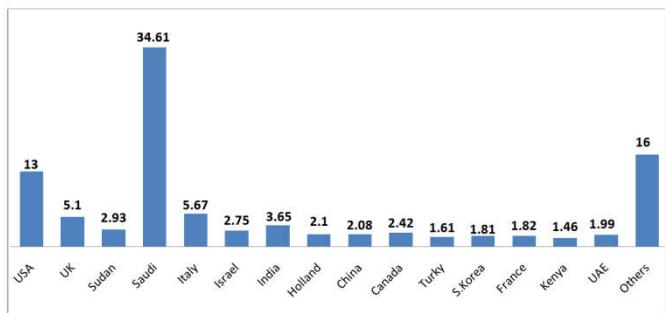
very small, as the country does not have sufficient deposit of some important minerals like petroleum



Source: Own computation based on EEA database, 2015

Fig 1. The distribution of FDI flows to Ethiopia by sector (From July 1992-July 2014)

When we see FDI by country of origin, Saudi Arabia accounted for the largest of the FDI flows to Ethiopia for the period from 1992-July 2014. The second largest source is the United State of America, accounting for 13%. United Kingdom, Italy, Canada, China, India are the other major source countries in the period. Worldwide, developed countries are the major source of FDI flows. Nevertheless, more than half of FDI flows to Ethiopia are originated from developing economies (Saudi Arabia, India, Sudan, Kenya and China). This might indicate that Ethiopia could not provide an attractive business environment for FDI originates from developed economies. Here, one can raise a question why investment from Saudi Arabia dominates the FDI flows to Ethiopia. Ethiopian Economic Association reported that one company-MIDROC group investment dominates FDI flows originated from Saudi Arabia. According to this report, the MIDROC's investments are counted as a foreign investment.



Source: Ethiopian investment Agency, as reported by Ethiopian Economic Association

Fig. 2. Percentage FDI inflows by Country of Origin (July 1992 - July 2014)

Model estimation results and Interpretation

The main purpose of this empirical investigation is to analyze the impact of FDI on economic growth and to examine how FDI interacts with domestic capital investment in promoting economic growth in Ethiopia by using a SEM. The system has four equations, where the dependent variables are real GDP growth rates, growth rate of domestic capital, FDI growth rate and international trade/export growth rate. And the model is estimated by employing 3SLS estimation technique using Stata software package. The various diagnostic tests of the model is

conducted including the Breush-Pagan test for heteroscedasticity, the Durbin-Watson test for autocorrelation, Ramsey's general test of model misspecification and variance inflation factor test for multicollinearity. And all these tests did not detect any problem of serial correlation, heteroscedasticity, model misspecification, and multicollinearity problems. The 3SLS estimation results and interpretation are presented as follows; .reg3 (GRGDP = GFDI GK GX dGL GFDIGK dt) (GFDI = GRGDP INF RER GD dt) (GK> = GRGDP GSAV r) (GX = GRGDP RER GPCI)

Three-stage least-squares regression

Equation	Obs	Parms	RMSE	"R-sq"	chi2	P
GRGDP	36	6	5.302999	0.8969	61.49	0.0000
GFDI	36	5	82.95141	0.7256	4.29	0.0087
GK	36	3	13.85943	0.7786	30.38	0.0000
GX	36	3	7.536966	0.8447	22.33	0.0001

GRGDP	Coef	Std.Err.	t	P> z	[95% Conf. Interval]
GFDI	.0663112	.0151653	0.25	0.042	.1114103 .1440328
GK	.3374177	.1230436	2.74	0.006	.0962567 .5785787
GX	.1155455	.0376494	0.78	0.034	.1738421 .4049331
dGL	.0783221	.0177009	0.11	0.069	3.745535 3.086179
GFDI*GK	.0100117	.0030761	0.33	0.742	-.0070407 .0050173
dt	.0310101	.0102271	1.02	0.008	2.974989 3.912969
cons	.0680248	.0221507	3.010.005.3024501		1.005471

GFDI	GRGDP	.1917369	.0310162	0.15	0.008	1.308684	6.92521
INF		-1.16445	.3590933	-0.86	0.012	-3.82987	-1.50097
RER		.3698732	.0690624	-0.15	0.003	14.18605	15.4463
GD		-0.0245166	.0021064	-0.19	0.043	-.2035532	-.234502
dt56.09418		10.11601	1.12	0.013	42.13139	154.3198	
_cons		21.94048	28.19309	0.78	0.436-33.31854	77.19951	

GK	GRGDP	2.057367	.3798739	5.42	0.000	1.312828	2.801906
GSAV		.0326742	.0047034	0.80	0.014	.0941421	.1594906
r		-.0712063	.0187158	-0.40	0.001	-.1214828	-.2790702
_cons		.7717411	.2057059	0.29	0.045	3.074932	4.531450

GX	GRGDP	.1743756	.0174969	0.18	0.007	1.721883	2.070635
RER		.8928564	.4057227	2.00	0.045	.0192559	1.766457
GPCI		.4462092	.1245164	0.58	0.005	1.071815	1.964233
_cons		9.540265	3.261806	2.92	0.003	3.147242	15.93329

Endogenous variables: GRGDP GFDI GK GX
Exogenous variables: dGLG(FDI*K) INF RER GD GSAV r GPCI dt

The result reflects that FDI is an important determinant of economic growth in Ethiopia. The estimated coefficient of 0.07 which is significant at the 5 percent level indicates that a one percentage point increase in FDI will bring about an increase of 0.07 percentage point in the growth rate of real GDP, all other variables being held constant. The estimated coefficient of domestic capital investment (0.34) is also statistically significant at 1 percent level. Comparing the coefficients for FDI (0.07) and domestic capital (0.34) variables suggests that FDI is less important for growth than domestic capital investment in general. This contradicts the theoretical predictions according to which FDI should have a greater impact on growth because of the transfer of more advanced technology it entails. A plausible explanation in the case of Ethiopia can be the relatively limited development of human and physical capital that does not permit FDI to yield its full potential. The interaction of FDI and domestic investment coefficient (0.01) yields a positive but statistically insignificant coefficient which indicates the impact of FDI and domestic investment interaction is very weak in the growth process. One of the important questions raised in the literature is whether

FDI augments a host country's capital investment or crowds out domestic investment. Even though not statistically significant, the positive interaction between FDI and domestic investment in the regression implies that domestic investment is unlikely to be crowded-out in Ethiopia. Rather the result is supportive of a small crowding-in effect that is, a one-dollar increase in the growth rate of FDI inflow is associated with an increase in domestic capital investment in the host economy of less than one dollar (0.01). The coefficient of structural dummy variable (1.02) is positive and significant at 1 percent level which suggests that on average the growth rate of Ethiopian economy is increased significantly after 1991 compared to the previous political regime. The dummy variable is introduced to capture the economic reform process that commenced in the late 1991. So, this positive and significant structural dummy variable shows that there is an improvement in economic growth in the current market oriented economy than the previous command economic system.

In the above result, the estimated coefficient of the real GDP growth rate (0.19) is statistically significant at the 1 percent level which is positive and consistent with the expectation. This statistically significant coefficient of GRGDP confirms the existence of simultaneity problem which justifies our specification of a simultaneous equations model is therefore correct. And this estimated coefficient on growth rate of real GDP indicates that, other things remaining constant, a 1 percentage point increase in real GDP growth rate would raise rate of FDI growth by 0.19 percentage point. It seems that higher economic growth in Ethiopia indeed reflects good signals about the Ethiopian economy to foreign investors. Thus, countries with large market and high market potentials are more likely to be successful in attracting FDI than poorer countries which is perfectly in line with the FDI theory. That is, the higher the rate of economic growth is the higher the rate of FDI inflows in a country. It is believed that foreign investors are keen to invest their money in those countries where the growth rate of the economy is showing an upward trend. A high level of economic growth is also a strong indication of market opportunity which in turn a basis for high amount of FDI inflows. The coefficient of inflation (-0.86) which is significant at 5% level indicates that there is a negative correlation between FDI and inflation. That is, High and unpredictable inflation which is a proxy for macroeconomic instability distorts the information content of the market prices and the incentive structure which affects FDI inflows negatively. The growth rate of total external debt variable (GD) has also negative effect on growth rate of FDI which is significant at 5 percent level. This suggests that growth rate of total foreign debt is a case for macroeconomic instability which affects FDI inflows negatively. A devaluation of real exchange rate tends to raise FDI inflows into Ethiopia as the estimated coefficient of real exchange rate (0.37) is positive and statistically significant at the 1 percent level in the 3SLS estimation. Also the dummy variable coefficient (56.09) which is significant at 5 percent level indicates that there is a significant increment in the inflow of FDI in Ethiopia after 1991, where the Ethiopian economy shifted from command economy to market oriented system.

Conclusion

The empirical analysis shows that the findings of this research are consistent with economic theory that foreign direct

investments stimulate economic growth in Ethiopia. That is, there is a significant and positive relationship between foreign direct investment and economic growth which shows foreign direct investment plays important role in the growth of Ethiopian economy. Also it has been found in the study that the growth impacts of domestic capital investment, international trade and labour force growth rates are positive and statistically significant. And the structural dummy variable shows that there is a significant improvement in both FDI inflows and economic growth after 1991 in Ethiopia. Although the impact of FDI on growth is positive and statistically significant, its magnitude is very weak. The regression coefficient of FDI (0.07) in the economic growth equation shows that a one percent increases in the growth rate of FDI will increase economic growth only by 0.07 percent. Actually this weak link between FDI and economic growth in Ethiopia may not be surprising in view of the fact that FDI inflows and its contribution to economic growth needs sound macroeconomic policies, greater trade openness, advanced infrastructure, large market size, educated human capital and other essential variables. The other important conclusion in the study is that FDI has a complementary relationship with domestic investment rather than crowding-out it. So, in addition to overcoming shortage of capital in the economy, it also stimulated economic growth through complementing domestic investment in Ethiopia even though the magnitude is insignificant. The interaction coefficient (0.01) shows that FDI has little crowding-in effect with domestic capital investment in the economic growth process. Also the contribution of FDI to economic growth is relatively small in magnitude than domestic capital investment.

Policy implications

The following measures are suggested to increase the amount of FDI inflows in the Ethiopian economy and to facilitate its contribution in the growth process.

- The study suggests the need for proper management of foreign exchange market and the reduction of inflationary and debt pressures on the economy which affects FDI inflows negatively. So, the nation's monetary authorities should develop and implement measures that will ensure all inflation, foreign debt and foreign exchange rates are sustained at levels that will guarantee increasing the level of inflow of FDI.
- In addition to their efforts to attract FDI, policymakers might consider more active measures that help to maximize the benefits of FDI in the growth process, particularly those that facilitate the development of backward and forward linkages. Thus, improving the functioning of the banking system and capital markets, educational reforms to increase the supply of appropriate labour skills, the provision of appropriate infrastructure, etc should be provided so as to cut the cost of investors doing business and to enhance the technological spillover effect of FDI.
- The policy makers should design policies that FDI can be utilized as means of enhancing domestic production, savings and exports and also as a medium of technological diffusion. So, Government must target at attracting specific types of FDI that are able to generate spillovers effects in the overall economy.
- Effective competition policies could help to protect domestic firms from unfair foreign firms' competition

- to avoid negative spillovers including the bankruptcy of potentially viable domestic firms. In particular domestic firms may need to be strengthened so that they can compete more effectively with foreign firms and become more attractive partners for foreign firms in upstream and downstream operations.
- FDI should be targeted towards the productive sector of the economy and should be directed more to production of capital goods against the production of consumer goods in order to enhance more domestic capital formation. Care must be taken not to allow FDI displace indigenous industrial development.

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