

Determining Factors of Flow of the Foreign Direct Investment in Ethiopia

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Abstract

Many developing countries are competing to attract foreign direct investment with a belief that it can be a tool for poverty reduction. The Ethiopian government has opened several economic sectors to foreign investors and issued several investment incentives for foreign investors. Since the market oriented economic reforms took place in 1992 emphasis has been given to attracting FDI. In this study determining factors for foreign direct investment in Ethiopia is analyzed empirically. It is based on secondary data which was collected from the Ethiopian investment agency, UNCTADs database and the World Bank's world development indicators. The period covered in the study is 1982-2012. The model was estimated using the Autoregressive Distributed Lag Model. Based on our estimation result the past economic growth positively and significantly affect the FDI inflow to the Ethiopian economy during the time under consideration. While past FDI inflow, past institutional quality and macro economic instability (i.e. inflation rate) are also have expected sign but they are insignificant as far as this data is concerned. And the surprising result is openness to international economy turn out with unexpected negative sign and also insignificant in the model. But this doesn't mean that these variables are not important at all in influencing FDI inflows to Ethiopia. Ethiopia has the potential to attract a large amount of foreign investment as the economy continues to grow, with its large potential natural recourse (like minerals, arable land and water resources), livestock population and its cheap man power.

Keywords: Foreign Direct Investment, Economic growth, Autoregressive Distributed Lag Model, Ethiopia

1. INTRODUCTION

Ethiopia is a very unique country that has a lot of potential for development. It is the second most populous country in all of Africa and the fourteenth in the world with a population estimated over 82 million. It is also a very young country with 46 percent of the population between the ages of 0-14. The economy is highly dependent of agriculture, which contributes 85 percent of the jobs to the labor force and 41 percent of the GDP. In addition it is one of the poorest countries in the world as measured by a GDP per capita. In recent years it has experienced high growth rates annually and this has been sparked by government reforms to improve economic conditions similar to many other African countries in recent years. This has helped Ethiopia attract foreign direct investment, which has improved some aspects of business in Ethiopia (chase, 2011).

As indicated in Ethiopian Investment Guide (2012) the Government of Ethiopia, in recognition of the role of the private sector in the economy, has revised the investment law over three times for the last twenty years (1992-2012) to make it more transparent, attractive and competitive. Major positive changes regarding foreign investments have been introduced through Investment Proclamation No.280/2002 and Regulations No.84/2003. As a result of the implementation of the above mentioned policies and strategies, agricultural and industrial production, investment and export trade are growing steadily from year to year both in terms of variety and volume. The World Bank has also witnessed the double-digit economic growth registered in the last several years. This achievement is the highest among the non-oil producing economies of Africa.

According to World Bank (2011) due to the investment-friendly environment created in the country, the inflow of foreign direct investment (FDI) has been increasing over the last twenty years. Accordingly, out of the total investment projects licensed between 1992- 2012, FDI's share is about 15.71 percent. However, the overall trend of investment in 2009/10 both the total number of projects and capital invested have shown decline. Ethiopia remains an untapped and unexploited market for investors. China, India, Sudan, Germany, Italy, Turkey, Saudi Arabia, Yemen, the United Kingdom, Israel, Canada and the United States are the major sources of FDI.

1.1. Objective of the study

The objective of this study is to identify the major determining factor for foreign direct investment in Ethiopia.

1.2. Glimpse of foreign direct investment (FDI) theories

In order to analyze the decisive determinants that is relevant for the type of FDI flows to any nation. It is important to understand the theory behind the appearance of FDI flows. Therefore, we will see overview over the relevant theories and the derived determinants influencing FDI in general. As cited in Heckelei (2011) the theory on FDI is not unified but rather distributed among three different branches: (1) the theory of international trade (2) the theory of the firm and (3) the theory of international capital markets. Only the combination of these three strings of literature allows for a satisfying identification of the relevant determinants for the occurrence and type

of FDI as well as a derivation of the possible relation between FDI and other economic variables. Each of these theories explained as follows.

1.2.1. International trade

The focus of the theory of international trade lies on the optimal international allocation of production and the resulting directions of trade flows. This implies optimal location of each type of asset used in production. In this theory capital assets are treated as a factor influencing trade, whereas the theory of international capital markets focuses on the mechanism behind capital flows. Most models trying to analyze the appearance of FDI are based on the Heckscher-Ohlin (HO) model which emphasize trade is driven by differences in factor endowments. The main determinant for FDI is the availability of resources in specific countries factor endowments.

1.2.2. Theory of the firm

A major objective of this theory is the identification of the optimum size and structure of firms within an international environment. The main determinant for placing affiliate abroad and getting involved in FDI are existing market efficiencies and market size. On the top of that International business economists have explained the emergence of TNCs using the Ownership-Location-Internalisation (OLI) framework. The OLI framework explains FDI on the basis of ownership-specific advantages of the firm, internationalization incentives and locational advantages. Accordingly there are four types of transnational companies:

- Market-seeking (TNCs that serve market through investment rather than through exports)
- Efficiency-seeking (TNCs using low labor costs)
- Natural resources-seeking
- Strategic asset seeking (seeking technology, skills or take over brand names)

1.2.3. Theory of international capital market

The theory of international capital markets rather focuses on how capital flows are generated. Especially when looking at dynamic trade models the reaction of capital markets become an important determinant for FDI. The Capital-Asset-Pricing-Model (CAPM) dominated the theory. It explains the value of individual investments taking risk into account. Risk is distinguished by market risk. The market risk includes all risks for the value of an investment due to changes in market determinants such as interest rate, exchange rate, consumer prices, the usual risk of sales and equity risk.

Overall when the result from these theories and other empirical findings summarized there are two types of drivers considered to be behind FDI flows: pull factors (domestic conditions of recipient countries) and push factors (external conditions). Typical pull factors are macroeconomic conditions attracting inward FDI such as abundant natural resources, privatization, size of the economy, growth, inflation, fiscal and external balances, and openness of the economy, as well as structural factors such as the strength of institutions and the quality of infrastructure. Typical push factors are conditions encouraging outward FDI such as abundant foreign reserves, world interest rates and world economic growth, rising in labor cost in home country, increasing natural resource security concerns (Page et. al, 2004; TGBAP, 2009; Heckeley, 2011).

1.3. Foreign direct investment policies in Ethiopia

FDI can help the transformation of the present economy to a modern economy in a number of ways. It can supplement domestic savings by facilitating resource transfer to the Ethiopia to raise the level of investment. Equally, importantly it will be an efficient medium for the transfer of technical and management know-how, so essential for a modern economy. It can also serve as an instrument to foster market access (Chase, 2011). While the FDI regime is more open than ever in Ethiopia since the early 1990s, the country receives much less FDI than other Sub-Saharan African countries. Many sectors can benefit from FDI including textiles and garments, horticulture, tourism, leather products and light industry. However, some sectors are not open to FDI at present, despite the change in the FDI regime. According to Access capital research report (2011) the present regulatory regime governing FDI in Ethiopia has undergone significant changes as part of the reform process started in 1992/93. The main features of the present regulatory regime are summarized as follows.

More sectors are now open to foreign investors. However, there are numerous sectors currently reserved for domestic private investors and the State. Transmission and supply of electrical energy and postal services with the exception of courier services are exclusively reserved for the government. Manufacturing of weapons and ammunitions as well as the provision of telecommunication services are open ventures both foreign and domestic investors only with joint venture with the Government. Generation of electricity from hydropower is allowed for both foreign and domestic investors without any limitation on generation capacity. Banking and insurance businesses are open only to Ethiopian nationals. Ethiopian FDI policy does not require foreign firms to meet specific performance goals or guidelines, for instance, in terms of exports, foreign exchange restrictions for imports, minimum local content levels in manufactured goods, or employment limits on expatriate staff.

The main investment incentives offered to foreign investors are the following:

- Foreign investors are fully exempted from customs duties and import tariffs on all capital equipment and up to 15% on spare parts; and from export taxes. Income tax holidays are given varying from one to five years

(depending on the sector and region within Ethiopia), taxes deductible from R & D expenditures and capital remittance are tax-exempt.

- Foreign investors could carry forward initial operating losses and can use any depreciation method in their financial statement. These incentives apply to eligible sectors open to FDI.
- Investment guarantees for FDI include full repatriation of capital and profits. This encompasses profits, dividends, interest payments on foreign loans, asset sale proceeds and technology transfer payments.

To increase foreign direct investment in the economy, the government also revised the minimum capital limit applying to foreign investment in joint-ventures to be US \$25,000 and US dollars 50,000 applying to sole ventures in engineering, architectural, accounting, project studies and management consultancy. Any foreign investor is to be allowed to invest a minimum capital of US dollars 100,000 for a single investment project and US dollars 60,000 if he or she invests jointly with domestic investors on any area allowed for private and in particular foreign investor. Foreign investors could remit profit and dividends accruing from investment, principal and interest payment on external loans, payments related to technology transfer agreement, registered in accordance with the proclamation, proceeds from the sale/liquidation of an enterprise and proceeds from the transfer of shares or of partial ownership of an enterprise to a domestic investor.

Despite all these incentives given the country is not attract FDI inflows in mass scale. In the following section we will see the share and the amount of FDI inflow to Ethiopia since 1990s.

1.4. Foreign direct investment in Ethiopia

Since 1990 the rate of return on foreign direct investment (FDI) in Africa has averaged 29 percent. The rates of return on FDI in Africa were the highest of any developing regions. Ethiopia ranks higher in doing business than 3 out of the 4 BRIC countries, of the BRICs only china ranks higher than Ethiopia. The economist magazine Ethiopia is forecast to be the fourth fastest growing economy in the world in 2009. Ethiopia is one among five largest economies in sub-Saharan African (TGBAP, 2009).

The distribution of FDI flows among LDCs remains uneven. In recent years over 80 percent of the flows went to resource rich economies in Africa. The concentration in a limited number of resource-rich countries has risen over the past decade. Four mostly natural resources-extracting countries Angola, Equatorial Guinea, Sudan and Zambia received over half of the total FDI into SSA countries. Country ranking in 2001 and 2010 point out to the fact that FDI has largely targeted extraction industries such as oil and mineral resources (UNCTAD, 2010).

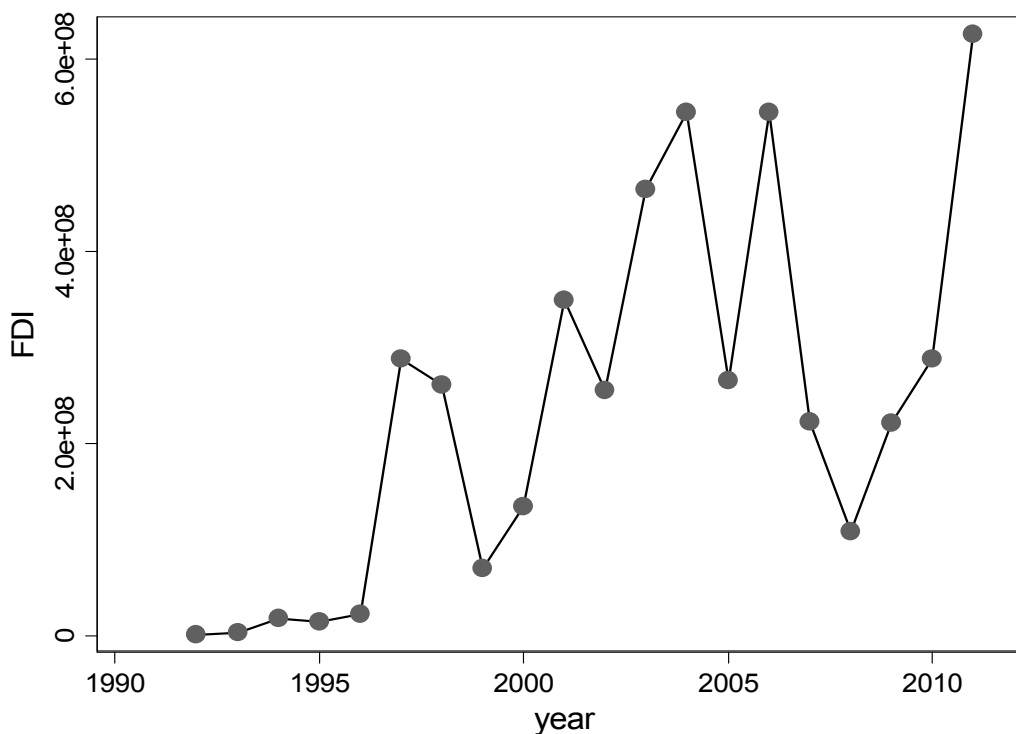
Ethiopia receives only meager FDI inflows compared to other sub-Saharan countries. According to the data reported in the World Investment Report out of total global FDI inflows in 2000, Sub-Saharan Africa accounted for only about 0.57 percent of these flows. Of this meager resource coming to Africa, Ethiopia had a share of about 0.74 percent and 0.004 of the world. Compared to some African countries, the per capita FDI inflow to Ethiopia was the lowest (DTIS, 2004, IMF, 2011).

Despite having the second largest population in Africa with approximately 9 percent of the continents population, currently Ethiopia only brings in roughly 1 percent of all African foreign investment. The government's liberalization strategy has attracted new investment in the country but it still lacks in comparison to other countries. Between 1992-2005 Saudi Arabia contributed over 50 percent of all foreign investment. Even more interesting is that the largest investments from Saudi Arabia came from one person who is half Ethiopian. A large percentage of the foreign investment in Ethiopia since 1992 has come from developing countries and this shows a lack of interest from developed countries. Saudi Arabia, India, China, and other African countries contribute over 60 percent of the total foreign investment and investors from the United States contributed only 5.4 percent of the investment. Comparing these investment numbers to other African countries shows that investment in Ethiopia is not as appealing to investors because Ethiopia lacks the single biggest resource that has attracted the most foreign investment in Africa. Ethiopia has no known oil reserves and few sufficient mineral deposits (chase, 2011).

This absence of valuable and exploitable natural resources has prevented Ethiopia from attracting large-scale investments. Countries like Angola and Sudan have attracted massive foreign investments over the same time period despite political and social unrest because of their oil reserves. Since 1991, Ethiopia has drawn in less than \$4 billion in foreign investment while Angola has received over \$90 billion. The foreign investment for mining in Ethiopia contributed only 0.22 percent of the total investment between 1992-2005 and currently slightly increased to 0.5. The largest sector of total foreign investment during that time was in the agricultural sector, which comprised only 25 percent of the total (ibid).

The following diagram shows the trend of foreign direct investment in Ethiopia since 1992. In the early 1990s the inflow and amount of FDI was very low. This was because of the military regime did not allow the privet sector participation in the economy. After the down fall of the Derg regime due to political unrest the flow was low during this time as well. Following the change in policy in the 1992 the amount of FDI inflow gradually started to rise and reach its peak in the year 2011 reaching more than half billion US dollar.

Figure1. Foreign direct investment in to Ethiopia in millions US dollar



Source: Authors computation using data from World Bank, 2011.

2. Methodology

2.1. Data source

In this study, secondary data from investment agency, UNCTADs database and the World Bank's world development indicators were used. The data covers the time period 1992 to 2011. Data for institutional quality is obtained from International Freedom of House. Openness to international economy was calculated as the ratio of the sum of export and import to GDP.

2.2. Model specification

Any econometric model is specified taking into account both a prior theoretical consideration as well as specific circumstances. There are alternative approaches in modeling any economic relationship one is based on the established theory and the other is *ad hoc* specification. In this seminar we adopt the first approach. Based on the combined result from the theories of FDI (i.e. from international trade theory, theory of firm and theory of capital market) the relationship between FDI and its determinants like economic growth, macroeconomic instability, openness to international economy and institutional quality could be modeled using time series data.

2.2.1. Estimable model

The approach of Autoregressive Distributed Lag Model is found to be an appropriate method to estimate the model. In Gujarati (2004) the autoregressive distributive lag model is defined for the variable y as:

$$Y_t = \sum_{i=1}^p a_i y_{t-i} + \sum_{i=0}^n c_i x_{t-i} + \varepsilon_t \quad (1)$$

Where x_t is the k dimensional column vector process and y_{t-1} the lag of dependent of variable and ε is the error terms.

The model that we want to estimate is a representation of the form the above ADL autoregressive distributed lag model (because the dependent variable FDI inflow is regressed over its own lagged value, other lagged independent variables and other explanatory variables) the model can be estimated using OLS estimation technique. Generally the estimation of the ADL model need the series to be integration of order zero i.e. it needs stationary series. Following the above argument the estimable model for FDI is specified as follows.

$$\ln FDI_t = \beta_0 + \ln FDI_{t-1} + \ln GDPgr_{t-1} + \ln INF_t + \ln OPP_t + \ln INS_{t-1} + \varepsilon_t \quad (2)$$

Where, $\ln FDI_t$ is foreign direct investment at time t , $\ln FDI_{t-1}$ is lagged FDI, $\ln GDPgr_{t-1}$ is lagged economic

growth rate captured by GDP growth rate, $lnINF$ is inflation rate in the economy to capture macro economic instability, $lnOPP$ is openness to international economy measured by the ratio of the sum of export and import to GDP, $lnINS_{t-1}$ is lagged institution to capture institutional quality of the country and ε is the error term. All variables are in natural logarithm form this is because of we are interested to express the relationship in percentage change.

Therefore, from equation 2 it is postulated that lagged FDI, economic growth rate, openness to international economy and good institution are positively affecting FDI inflow to Ethiopia. While macroeconomic instability affects negatively the FDI inflow.

2.2.2. Diagnostic tests

2.2.2.1. Testing for non-stationary

Estimation and interpretation of auto regressive distributive lag (ADL) model depends on the stationary series. Thus before estimation the variables are tested for unit root. As indicated in Eviews Guide (2004) there are different alternative test for unit root the most popular tests are Dickey-Fuller test and Phillips-Perron tests. The Dickey-Fuller test requires that the errors to be uncorrelated i.e. no serial correlation among error terms. This is because of in the presence of serial correlation the standard D-F test statistic will be wrong. However, the Augmented Dickey-Fuller (ADF) test takes in to account the presence of serial correlation. Therefore, the paper employs the Augmented Dickey- Fuller test that allows the presence of serial correlation among the disturbance term in the model. If the variables do not have a unit root equation 2 will be estimated using data in level form. However, if the null hypothesis of unit root is not rejected we will estimate the following representation of equation 2 all variables are as defined previously except the difference operator (i.e. equation 3 will be estimated using differenced data).

$$\Delta \ln FDI_t = \beta_0 + \Delta \ln FDI_{t-1} + \Delta \ln GDPgr_{t-1} + \Delta \ln INF_t + \Delta \ln OPP_t + \Delta \ln INS_{t-1} + \varepsilon_t \quad (3)$$

2.2.2.2. Test for serial correlation

The other care that should be taken is whether serial correlation exists or not among error terms. Because of the presence of the lagged dependent variable as explanatory variable in the model in such case obtaining the truly adequate coefficient estimate and standard error in the time series context is not simple (Achen, 2006). Therefore, we will test the presence of serial correlation in the model.

There are various tests for serial correlation. The Breusch-Godfrey or Lagrange Multiplier test (BG) and the Durbin-Watson d-test are the two famous tests of serial correlation are considered here. To use the DW test, the test assume that regression model contains an intercept, the error process is AR (1), the error term is normally distributed, there is no lagged dependent variable and there are no missing observations in the data. However, Durbin did propose an h test for models that include a lagged dependent variable. However, the test is not as powerful as the Breusch-Godfrey test. The BG test is useful in that it allows for lagged dependent variables unlike the Durbin-Watson d-test and also it allows high order autoregressive processes as well as single or high order moving average processes (Maddala, 1992). Therefore, this paper will employ the BG test for serial correlation. In addition other post estimation diagnostic tests will be conducted like hetroskedasticity and multicollinearity test among independent variable for examination of the well being of the model that we want to estimate.

3. ECONOMETRIC RESULT AND DISCUSSION

3.1. Diagnostic test result

The first task before estimating the regression equations is testing whether the variables are stationary or not. This paper used ADF unit root test with the null hypothesis that the series *have a unit root* against the alternative *no unit root*. The test result for variables in level and in difference is given in table1 below.

Table 1: Unit root test result

Variables	Level form	First difference
LnFDI	-3.222 (0.0800)	-5.391(0.0000)***
LnGDPgr	-2.452 (0.3211)	-7.099 (0.0003)***
LnINS	-3.020(0.1265)	-4.263 (0.0036)**
LnINF	-1.824(0.5612)	-4.764 (0.0021)***
LnOPP	-0.846(0.9616)	-3.722 (0.0210)**

Source: Authors calculation data from World Bank, 2011

Note: The sign *, **and *** denotes significance of variables at 10%, 5% and 1% respectively, p-value is given in parenthesis and the regression result is not reported.

As the ADF test result shows for all variables in level form (see first column of table 1) the null hypothesis of unit root is not rejected with time trend even at 10 percent significant level. This testifies that the variables are not stationary in level form. Therefore, to avoid the spurious regression (if the variables are not co-

integrated) the variable should be differenced to make them stationary. The test result for variables in first difference is given in second column of table 1. The result shows test statistics are significant at 1 percent level of significant for natural logarithm of FDI, GDP growth rate and inflation rate. While natural logarithm of institution and openness are significant at 5 percent level. Therefore, the null hypothesis that there is unit root is rejected for natural logarithms of all variables. This implies that all variables are only stationary after first differencing. Following this result we can estimate equation 3 rather than equation 2.

3.2. Estimation result

Since estimation and interpretation of ADL model depends on stationary series. Thus the data must be differenced before estimation. The estimation result for ADL model is given in the table 2 below.

Table2: Estimation Result (dependent variable FDI)

Explanatory variables	Coefficient	Standard Errors	t	p-values
LDlnFDI	0.0884271	0.3477601	0.25	0.808
LDlnGDPgr	1.282947	0.5148394	2.49	0.047
DlnINF	-0.1482394	0.2205234	-0.67	0.526
LDlnINS	0.3224042	3.468755	0.09	0.929
DlnOPP	-2.458377	2.880621	-0.85	0.426
Constant	0.3063688	0.2765063	1.11	0.310

R²	.55
Breusch-Godfrey	
LM	
lag(1) p-value	0.2740
lag(2) p-value	0.4244
Breusch-pagan test p-value	0.8709

Table 2 above shows the estimation result. Before the interpretation of the result parameter the model has to be examined for its wellbeing. As indicated by the model R² only 55 percent of variation of the FDI inflows to Ethiopia is explained by lagged FDI, lagged institutional quality, lagged of GDP growth rate, macro economic instability measured by inflation rate and openness to international trade.

The first test is test for serial correlation among the error terms in the model. According to the result from Breusch-Godfrey Lagrange multiplier test statistic gives a higher p-value for lag order (2) this indicate we fail to reject the null hypothesis of no serial correlation, even the null is not rejected for the higher lag orders (not reported in the table) thus there is no problem of serial correlation in the model. The other important test result is test for hetroskedasticity, the test result from Berusch-Pagan\ Cook-Weisberg shows the null hypothesis of constant variance is not rejected because the given p-value is larger (0.8709) which is greater than 0.05. This indicates that there is no problem of hetroskedasticity in the model.

The other important test is test for the multicollinearity in the model. Before proceeding to interpretation of estimation result, it is important to test for multicollinearity among explanatory variables in the model. As documented in most econometrics literature, the presence of multicollinearity results in inflated standard errors, which makes inference from estimation problematic (Maddala, 1992, Gujarati, 2004). Therefore, the test was conducted using variance inflation factor (VIF), which computes test statistics for each explanatory variables. A VIF statistic greater than 10 or 1/VIF < 0.10 indicates the presence of multicollinearity. Since the VIF statistics for all variables in the model (not reported here) were less than 10, serious multicollinearity problem was not identified for all explanatory variables.

As demonstrated above, since the model has passed all regression hurdles, we therefore conclude that the model adequately fits the data and thus we can now interpret the result. The estimation result is reported in table 2 above in which it could be show that lagged GDP growth rate has expected sign in its coefficient and it is significantly affecting FDI inflow to Ethiopia. This is rational to think that the recent economic growth of the country influences foreign investor to invest in Ethiopia to rape the benefit of economic growth. Accordingly a percentage increase in lagged economic growth increase inflow of FDI by 1.28 percent.

The coefficient of lagged FDI, lagged institutional quality and inflation rate are also have expected sign but they are insignificant as far as this data is concerned. However, openness to international economy turn out with unexpected negative sign and also insignificant in the model.

4. CONCLUSIONS

The Government of Ethiopia, in recognition of the role of the private sector in the economy, has revised the investment law over three times for the last twenty years (1982-2012) to make it more transparent, attractive and

competitive. Major positive changes regarding foreign investments have been introduced through Investment Proclamation No.280/2002 and Regulations No.84/2003. Despite these repeated reform Ethiopia receives only meager (only 1 percent) FDI inflows compared to other sub-Saharan countries. Comparing these investment numbers to other African countries shows that investment in Ethiopia is not as appealing to investors because Ethiopia lacks the single biggest resource that has attracted the most foreign investment in Africa. Ethiopia has no oil reserve the absence of this valuable and an exploitable natural resource has prevented Ethiopia from attracting large-scale investments.

Based on our estimation result only the past economic growth positively and significantly affect the FDI inflow to the Ethiopian economy during the time under consideration. While past FDI inflow, past institutional quality and macro economic instability (i.e. inflation rate) are also have expected sign but they are insignificant as far as this data is concerned. And the surprising result is openness to international economy turn out with unexpected negative sign and also insignificant in the model. But this doesn't mean that these variables are not important at all in influencing FDI inflows to Ethiopia. Rather further investigation is needed to arrive at such conclusion.

In order to increase the amount of foreign investment Ethiopia is going to have to continue to promote attractive investment opportunities and keep the pace of its economic growth sustainably. There are many challenges that country going to face in order to draw in more beneficial development projects. To start, inflation is still the problem in the country. Some sector of the economy is not opened to foreigners; there is relatively poor infrastructure development even by African standard. Still the issue of institutional quality is also under question in the country. If the country improves on these determinates of investment climate even without an oil reserve, Ethiopia has the potential to attract a large amount of foreign investment as the economy continues to grow, with its large potential natural recourse (like minerals, arable land and water resources), livestock population and its cheap man power.

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