ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

THE IMPACT OF FOREIGN DIRECT INVESTMENT ON ECONOMIC GROWTH: THE CASE OF ETHIOPIA

By

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This is to certify that the project prepared by Betelhem Dessie, Entitled: "The Impact of Foreign Direct Investment on Economic Growth: The Case of Ethiopia" and submitted in partial fulfillment of the requirement for the Degree of Master of Arts in Applied Economic Modeling and Forecasting (Fiscal Policy Analysis and Management) complies with the regulation of the university and meets the accepted standards with respect to the originality and quality.

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Abstract

The Impact of Foreign Direct Investment on Economic Growth: The Case of Ethiopia: Vector Error Correction Model

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Addis Ababa University, 2016

This paper analyses the impact of foreign direct investment on the economic growth of Ethiopia using Vector Error Correction Model over the period 1981 to 2015. First the study examined the individual growth impact of foreign direct investment. The empirical finding revealed that foreign direct investment has negative significant effect on economic growth in the long run but insignificant effect in the short run. The study examined the causal relationship between foreign direct investment and per capita gross domestic product by using Pairwise Granger causality test. The Pairwise Granger causality test showsthe existence of causal unidirectional relationship from foreign direct investment to per capita gross domestic product.

The study also investigates the impact of other macroeconomic variables on per capita gross domestic product. External debt and real effective exchange rate are found to have negative significant effect on per capita gross domestic product in the short run. In the short run, the impact of gross domestic saving on per capita gross domestic product is found to be positive. As that of the first model here also foreign direct investment has negative significant impact on economic growth. The tax incentives provided to foreign investors and the misuse of tax incentives by the investors can be the possible reasons for the negative relationship between foreign direct investment and gross domestic product.

Keywords: Per Capita Gross Domestic Product, Foreign Direct Investment, Granger Causality, Cointegration test, VEC model

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Acronyms

ADB	African Development Bank
ADF	Augmented Dickey–Fuller
AEO	African Economic Outlook
AIC	Akaike Information Criterion
BPM5	Balance of Payments Manual version 5
ECA	Economic Commission for Africa
ERA	Economic Report on Africa
EICS	Ethiopian Investment Climate Statement
EYA	EY's attractiveness survey
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IMF	International Monetary Fund
MNEs	Multinational Enterprises
MoFEC	Ministry of Finance and Economic Cooperation
NBE	National Bank of Ethiopia
PP	Phillips–Perron
SIC	Schwarz Information Criterion
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
VAR	Vector Auto Regression
VEC	Vector Error Correction
WDI	World Development Indicator
WIR	World Investment Report

Chapter One

Introduction

1.1. Background of the study

Capital flows play a significant role in a country's development process. Since the early 1990s the sudden increase in cross border capital flows has created unprecedented opportunities for developing countries to attain accelerated economic growth (Ghose, 2004). Foreign direct investment is one type of capital flow which contributes to economic growth through improving technology transfer, knowledge spillover, employment opportunity and building capital in developing countries. Different scholars and international institutions give different definitions of foreign direct investment. For the purpose of this study the definition by the International Monetary Fund is used. Accordingly, Foreign Direct Investment is defined as:

"A category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy" (IMF 2011, 100).

Ricardo's theory of comparative advantage was considered to be the first attempt to explain FDI. It was considered as the development of classical theories of international trade. Heckscher-Ohlin (1933) theory considers the existence of difference in resource endowment between countries. With the base of Ricardo's theory of comparative advantage, it predicts pattern of commerce and production based on the factor endowments of a trading region. The fundamental concept of the model is that countries will export products that utilize their abundant and cheap factors of production and import products that utilize the countries scarce factors. But, FDI cannot be explained by Ricardo's theory, since it is based on two countries, two products and a perfect mobility of factors at local level. Such model could not even allow FDI (Kastrati, 2013).

Stephen Herbert Hymer (1960) introduced the microeconomic theory of international production in 1960, which is considered to be the landmark in the study of FDI. Hymer verified that FDI only takes place when the benefits of exploiting firm-specific advantages across borders allow overcoming the additional costs of doing business overseas. Based on Hymer's idea, it has been

argued that multinational enterprises have firm specific advantages allowing them to operate profitably in foreign countries (Kastraati, 2013).

There are controversial arguments regarding the effect of foreign direct investment on the economic growth of host countries. Although some argue thatforeign direct investment is taken as a way out to boost economic growth and development in developing economies, others are concerned with its negative impact on host country. According to the latter group foreign direct investment (FDI) can destroy local capabilities and extract natural resource without adequately compensating poor countries. Despite this during the past decades countries are recognizing the important role of FDI on economic growth and start to liberalize their FDI regime (Velde, 2006).

Over the past two decades the world economy has shown wide inflow and outflow of FDI. During the period 1990 – 2014, the world FDI inflow and outflow increased at an annual average rate of 11 and 12 percent respectively. Relative to developed countries the average percentage increase of FDI inflows is higher in developing countries, accounts 23.7 percent average increase (WIR, 2014). According to world investment report of 2015, the FDI flow to East Africa has increased by 11percent. The liberalization strategy taken by most developing countries contributes a lot to the increasing trend of FDI inflow in the region.

In the case of Ethiopia, the 1992 reform creates conducive environment for private investment and opens the door for foreign investors to participate in domestic investment. The revised Investment Code of 1996, as well as the Investment Proclamation give incentives for development-related investments and have gradually removed most of the sectorial restrictions on investment (EICS, 2015). However some areas of investment are reserved for domestic investors only. According to Ethiopia's regulation on Investment Incentives and Investment Area Reserved for Domestic Investors (2012), banking service, insurance, postal service, supply of electrical energy, telecommunication service, and broadcasting are some areas reserved for domestic investors.

In order to create a favorable investment climate, the government of Ethiopia extended various kinds of incentive in industrial development zone. Accordingly, the 2012 amendment to

Ethiopia's investment proclamation introduced provisions for the establishment of industrial development zones, both state-run and private, with favorable investment, tax, and infrastructure incentives. The government also established the Ethiopian Industrial Zones Corporation under the Ministry of Industry in 2012 to supervise the construction and regulation of the zones (EICS, 2015).

With the existing incentives provided to attract foreign investors and the development of FDI through the past two decades, this study tries to examine the possible impacts of foreign direct investment on economic growth of Ethiopia. In doing so, first the study attempts to analyze the separate link between FDI and economic growth. Secondly the study looks at the impact of FDI by incorporation of other macroeconomic variables which account for both the increase in FDI and economic growth.

1.2. Statement of the problem

For the past two decades, Ethiopia has experienced rapid and stable economic growth. According to the report from UNDP (2014) average GDP growth rate of 11% has been registered in the last two decades. From several factors which accounted for economic growth, foreign direct investment is the one which can relieve the transfer of technology that have extensive effects for the entire economy to developing countries (Romer, 1993). Following the 1992 reform of Ethiopia the FDI inflow has shown a gradual increase, rising from 2 percent of total investment in 1995/96 to 59 percent in 1997/98 (ECA,2002). In 2014 Ethiopia, Africa's fastest growing economy, has becomes the 8th largest recipient of foreign direct investmentin the region, up from 14th position in 2013 (EYA, 2015).

For developing countries like Ethiopia the expansion of FDI inflow is expected to have a strong positive effect on economic growth. However theories in the area produce vague predictions on the growth effect of FDI. According to Romer (1993) FDI may not only increase the productivity of those receiving foreign capital but also through its spillover effect of technology it can increase the productivity of all firms. In contrast, some theories argue that FDI in the presence of preexisting trade, price, financial and other distortions will hurt resource allocation and slow growth (Boyd and Smith, 1992, cited by Carkovic and Levine, 2002).

There are several studies conducted on the impact of FDI on economic growth. However most of the studies use panel data regression. According to Carp (2012) capital flows has significant influence on the host country. Financial markets, host country absorptive capacity, human capital and technology are the main channels through which the effects are transmitted. The study by Borensztein, De Gregorio, Lee (1998) argues that FDI contributes to economic growth only when a sufficient absorptive capability of the advanced technologies is available in the host economy. This argument is also supported by Fortanier (2007) whose finding proves that the growth consequences of FDI differ by country of origin, and that the effects of country of origin also vary depending on the host country characteristics. In contrast, there are also studies which provide the negative impact of FDI to economic growth. Work by Hanson (2001), Lipsey (2002) and Moura and Forte (2009) areamong those studies that found the crowd out effect of FDI to local enterprises and show the negative impact of FDI on economic growth (Denisia, 2010)

There are few works done on the impact of FDI on economic growth of Ethiopia. The latest literatures conducted so far are focused on the impact of investment on economic growth (Zinabe, 2014) and the impact of FDI on poverty reduction in Ethiopia (Remal, 2012). The first literature looks the effect of investment on economic growth using data from 1981-2011. While the second literature analyzes the relationship between FDI and poverty reductionusing co-integrated VAR approach for the period 1970 – 2009. The study by Remal (2012) uses GDP per capita as a proxy for poverty but it did not provide the separate impact of FDI on economic growth. It also does not include the effect of real effective exchange rate on his investigation. Furthermore there is six years' time gap from now which show the need for updates. Thus, this study attempts to investigate the impact of FDI on economic growth over the period 1981- 2015 and fill the gaps not covered by others.

1.3. Objective of the study

The general objective of the study is to analyze the impact of foreign direct investment on economic growth in Ethiopia. The specific objectives of the study are:

- To investigate the effect of foreign direct investment on economic growth;

- To examine whether there is causality between foreign direct investment and economic growth;
- To identify the short run and long run linkage between foreign direct investment and economic growth;
- To identify the effects of other macroeconomic variables on the economic growth and examine whether there exist short run and long run relations.

1.4. Significance of the study

Despite the contradicting theoretical arguments about the growth effect of FDI, there are a lot of studies conducted on the relationship between FDI and economic growth. However most of them use panel regression and there are few studies conducted on the impact of FDI on the economic growth of Ethiopia. Thus this study will contribute to the existing literatures by analyzing boththe separate impact of FDI on economic growth and looking its impact by incorporating other relevant macroeconomic variables using the latest data.

1.5. Scope and Limitation of the study

This study analyzes the impact of FDI on economic growth in Ethiopia. Due to absence of long time series data on same variables the study limit to investigate the growth effect of FDI using annual data over the period 1981 – 2015.

1.6. Data Source and Methodology of the study

The study relies on annual secondary data which is obtained from World Development Indicator(WDI), Ministry of Finance and Economic Cooperation (MoFEC) and National Bank of Ethiopia (NBE).The analysis of the studyemploys co-integrated vector autoregressive and vector error correction approach.

1.7. Organization of the study

This paper is organized in six chapters. The theoretical and empirical reviews are discussed in the second chapter. Chapter three presents an overview of economic growth and foreign direct investment in Ethiopia. The model specification and methodology of the study are discussed

under chapter four. Chapter five is devoted to empirical analysis and interpretation of the study. The last chapter provides the conclusion and policy implication.

Chapter Two

Literature Review

2.1. Definition and Concept of FDI

According to the IMF's BPM5 foreign direct investment is defined as a category of international investment that reflects the objective of a resident in one economy (the direct investor) obtaining a lasting interest in an enterprise resident in another economy (the direct investment enterprise). The lasting interest implies the existence of a long term relationship among the direct investor and direct investment enterprise, and a significant degree of influence by the investor on the management of the enterprise. A direct investment relationship is established when the direct investor has acquired 10 percent or more of the ordinary shares or voting power of an enterprise abroad.

Based on the motives for investing abroad FDI is classified as Resource or Asset Seeking, Market Seeking and Efficiency Seeking (UNCTAD, 1998). Resource Seeking FDI is made to seek and secure natural resources such as minerals, raw materials, or lower costs for the investment company. Historically for countries with absence of the capital, skills, know-how and infrastructure, the availability of natural resources has been the main determinant of FDI. The purpose of Market Seeking FDI is to identify and exploit new markets for the firms' finished product. High market growth rates motives both foreign and domestic investors. Efficiency Seeking FDI made to restructure its existing investments so as to achieve an efficient allocation ofinternational activity of the firms. In this type of FDI international specialization whereby firms seek to benefit from differences in product and factor prices and to diversify risk (Behrman, 1972).

Foreign direct investment is also classified into Greenfield investment, Cross-border or International merger and acquisitions (M&A) and Reinvested earning. Greenfield investment includes any investment undertaken abroad where the finance is covered by capital raised in direct investor's country. Cross-border or international merger and acquisitions (M&A) refers to the transfer of ownership of a local productive activity and assets from a domestic to a foreign entity (UN, 1998 cited by Accolley). The profits that are not repatriated by direct investors but kept in the host country to finance future projects is referred to Reinvested earnings.These three

types of FDI further classified to other three categories; Export-oriented FDIs, Market-development FDIs, and Government initiated FDIs. Export-oriented FDI is made either to extract raw materials or to manufacture component parts or finished goods at a lower cost for export to investor's home country or elsewhere. Foreign direct investment made to produce goods and services for sale in the host country is Market-development FDI. Such type of FDI is also known as Import-replacement FDI. Government-initiated FDI is the last category where the investment is initiated and subsidized by the host country. This type of investment is provided by less developing countries so as to reduce unemployment, decrease inequality among regions in the host country, reduce the deficit of the balance of payments, etc (Accolley, 2003).

2.2. Theoretical Literature

2.2.1. Theories on Economic Growth

Classical economistsargue that economic growth depends on not only land, labour, capital, technology but also social, economic and political structure. Their main concern was the sustainability of economic growth, with the pessimism of Thomas Malthus and David Ricardo contrasting with the optimism of Adam Smith (Ucak, 2015). Though, during the period 1870–1929 economists' research was heavily influenced by the 'marginalist revolution' and was therefore predominantly micro oriented, being directed towards issues relating to the efficient allocation of given resources (Snowdon and Vane, 2005:585- 586, cited by Ucak, 2015).

R.F. Harrod (1939) and E.D. Domar (1946) extended the static and short-term structure of Keynesian Model to dynamic and long-term structure. Harrod-Domar model relates economic growth to aggregate saving and investment. According to the model the trick of economic growth is simply a matter of increasing saving and investment. The Harrod-Domar model also shows that the market mechanism may not provide stable growth rate in the long run, hence they confirmed that the proposal of Keynes which capitalist system was inherently unstable is valid not only in the short run but also in the long run. This led to the birth of the neoclassical model of economic growth (Ucak, 2015).

Solow (1956) and Swan (1956) developed the neoclassical model of economic growth which emphasizes the role of capital accumulation. Unlike the Harrod and Domar model the neoclassical growth model takes into account that labor and capital are substitutable which gives a way to vary the capital labor ratio as a growth process goes on. According to the Solow-Swan model, the output per worker increase with the output per capital but at decreasing rate. This implies that there will be a point at which labour and capital can be set to reach an equilibrium state. Hence unless there are technological advances economic growth will not be take place. The model also shows how economic policy can raise an economy's growth rate by inducing people to save more. It predicts that such an increase in growth can not last forever. In the long run, the country's growth rate will revert to the rate of technological progress, which neoclassical theory takes as being independent of economic forces, or exogenous. Without technological change an economy can perhaps grow for a while by accumulating capital, but eventually that growth will be choked off by the diminishing marginal product of capital. With technological change, however, growth can be sustained; and indeed the economy will converge to a steady state in which the rate of economic growth is exactly equal to the rate of (Harrod-neutral) technological progress (Aghion and Howitt, 2009).

The main concerns with this theory is that it provides no account of the rate of technological progress, which it takes as given by some unspecified process that generates scientific discovery and technological diffusion. This limitation of the neoclassical growth model is addressed by endogenous growth models; provide a theoretical framework for analyzing the persistent growth of output that is determined within the system governing the production process. One key assumption of Romer's (1986) growth model is increasing returns to scale. The model also addresses technological spillovers and other positive externalities that may be present in the process of industrialization. An important implication of the new growth models is that economies with increasing returns to scale do not necessarily reach a steady-state level of income (Ucak, 2015).

According to endogenous growth model income disparities may persist or even enlarge if richer countries make investments that encompass larger externalities. In developing countries, the potentially high rates of return on investment (low capital-labour ratios) are often greatly eroded

by lower levels of complementary investments in human capital, infrastructure, or research and development. Thus the new growth models emphasize the importance of investments in human capital and potential gains from technology transfer from the technologically advanced countries. In this model the knowledge and the processes of creating knowledge are important parts of the production, which reflect no diminishing returns. As firms and workers are experienced on production, they can produce more efficiently, which is called learning-by-doing. Arrow (1962) by inspiring Romer's studies emphasizes that the failure of the Solow–Swan model to endogenize technological change was that it missed the empirically obvious point that the knowledge associated with technological change is continually growing as the result of production experience. Arrow (1962) assumes that the technical augmentation factor is related to economy-wide aggregate capital in a process of "learning-by-doing" (Ucak, 2015).

2.2.2. Theories on Foreign Direct Investment

The applicable theories on FDI flows are organized in to three schools. The first two are traditional schools of development thinking 'the dependency and modernization schools' and the third one is the integrative school (Wilhelms, 1998).

The dependency school flourished between 1960s and 1980s. Its focus on the consequences of foreign direct investment in developing countries was the major contribution of the school to the field of FDI. The dependency school is consists dependencia (neo-Marxist) and structuralist theories. According to the dependencia (neo-Marxist) sub school international trade and the Multinational Corporation exploits developing countries through deteriorating terms of trade and transferring profits out of developing economies respectively. The structuralist sub school on the other hand assumes that international centers (industrialized countries) and domestic centers (national capital) extract resources from the periphery, namely the poor countries or local countryside.

The modernization school takes FDI as a requirement and means to achieve sustained growth and development. Accordingly economies have to be freed from distorted state interventions and opened to foreign investment and trade. The perfect market approach of the modernization school is represented by the neoclassical and perfect market theories. Early neoclassical

theoriesexplain international capital flows with differential rates of return across countries which lead to capital arbitrage, with a capital seeking highest rate of return. Though capital arbitrage theories fail to explain why private investment takes the form of FDI and also the empirical testing of thetheories has not produced clear results. Perfect market theories on the other hand assumes perfect competition in which there is no monopolies or oligopolies and all participants are price takers, enjoying unrestricted market entry and exit. Due to its oversimplified assumption, market theory was elaborated upon by taking into account structural distortions or rigidities, which hinder an economy and thus prevent society from taking full advantage of FDI.

The imperfect market approach of modernization theory consists of industrial organization theory, the theory of the firm and internalization theory. According to industrial organization theory FDI occurs usually in oligopolies where a small number of sellers exert control over the market. Such market imperfections can make it more efficient for firms to diversify or integrate vertically or horizontally instead of competing against one another. The theory of firm examines factors that influence a firm's choice of foreign investment instrument. Under the internalization theory since firms want to control risk and keep control and market share, they continue operations through a 100 percent subsidiary. Implying that, foreign direct investment decisions are market-driven.

The integrative school analyzes FDI from the perspective of host countries and investors. It combines those dependency and modernization concepts. The integrative school represented by the eclectic foreign direct investment paradigm, negotiation theory, and integrative theory. The eclectic paradigm examines FDI from the view point of firms,while the bargaining approach and integrative theoryexamines FDI from the perspective of host nation without falling into the dependency theory's victimization trap.

Denisia (2010) classifies theories of FDI as Production cycle theory, the theory of exchange rates on imperfect capital markets, the internalization theory and the eclectic theory.The product lifecycle theory is first proposed byRaymond Vernon in 1966.According to Vendor firms that pioneer a product in their home market undertakes FDI to produce a product for consumption in foreign market. The production life cycle theory proposes that there are four stages of life cycle:

an introductory phase, followed by growth, maturity and decline phases.Companies undertake FDI at particular stage in the life cycle of the product they have pioneered. Vendor argues that firms invest in other advanced countries when local demand in those countries grows large enough to support local production. Thus in the early stage FDI is market oriented. When product standardization and market saturation give rise to price competition and cost pressures it subsequently shift production to developing countries. Since labour cost is lower in developing countries, investment in developing countries taken as the best way to reduce costs. Hence in the latter phase of the product cycle FDI will be export oriented and motivated predominantly by cheap labor consideration. In the last stage of product cycle theory the product innovating country has become the net importer of the product. However, this theory fails to explain why it is profitable for a firm to undertake FDI at such times, rather than continuing to export from its home base and rather than licensing a foreign company to produce its product. Even though Vendor theory is applicable for some products it is not applicable for the vertically integrated MNEs (Kastrati, 2013).

The theory of exchange rates on imperfect capital market is the second theory which tried to explain FDI. In the empirical analysis made by Cushman (1985) shows that real exchange rate increases stimulated FDI made by USD while a foreign currency appreciation has reduced American FDI. However, currency risk rate fails to explain simultaneous FDI between countries with different currencies.

The internalization theoryexplains the growth of transnational companies and their motivations for achieving FDI. The theory was initially launched by Coase in1937 in a national context and Hymer in 1976 in an international context. Buckley and Casson was first developed the international theory in 1976. They reveal that transnational companies are organizing their internal activities so as to develop specific advantages, which then to be exploited. The market imperfections approaches to FDI referred to the internalization theory (Kastrati, 2o13). According to Hymer (1976) foreign direct investment take place only if the benefits of firm specific advantages outweigh the relative costs of operating abroad.

The eclectic theory was developed by professor Dunning. This paradigm includes three different theories of FDI: Ownership-specific (O), location-specific (L), and internalization (I). It also called OLI framework. This theory insists that all the three factors (OLI) are important in determining the extent and pattern of FDI.

- The ownership specific advantages include both tangible assets such as natural endowments, manpower, capital and intangible assets such as information technology, managerial, marketing skill, entrepreneurial skill and organizational systems. Firms have a monopoly over its own specific advantages and using them abroad leads to higher marginal profitability or lower marginal cost than other competitors (Dunning, 1973, 1980, 1988, cited by Denisia, 2010). Accordingly there are three types of specific advantages. The first is the monopoly advantages in the form of privileged access to markets through ownership of natural limited resources. The second is technology, which includes all forms of innovation activities. The last advantage is economies of large size such as economies of learning, economies of scale and scope, greater access to financial capital.

- The location (or country specific) advantage includes factor endowments, market structure, government legislation and policies, and political, legal, and cultural environments in which FDI is undertaken.The location advantages of different countries determine the host countries for the activities of transnational corporations.Thus each country will have three specific advantages: a) economic benefits which comprise both qualitative and quantitative factors of production, cost of transport, telecommunication, market size etc. b) Political advantages: common and specific government policies that affect FDI flows and c) social advantages including, distance between the home and home countries, cultural diversity, attitude towards strangers etc.

- Internalization refers to the firm's innate flexibility and capacity to produce and market through its own internal subsidiaries. Assuming the first two conditions are met, it must be profitable for the company to use these advantages together with some factors outside the country of origin (Dunning, 1973, 1980, 1988 cited by Denisia, 2010).Internalization

offers an outline for assessing different ways wherethe company will exploit its powers from the sale of goods and services to various agreements that might be signed between the companies.

Generally the eclectic paradigm OLI shows that OLI parameters are different from company to company. It depends on the context and reflects the economic, political and social characteristics of the host country. Hence the challenges and opportunities offered by different types of countries will determine the magnitude and pattern of production as well as the objectives and strategies of the firms (Denisia, 2010).

2.2. Empirical Literature

Several studies have been undertaken on the impact of FDI on economic growth. However most of studies come up with contradicting results. Alfaro (2003) examines the effect of foreign direct investment on growth in the primary, manufacturing and services sectors using cross-country data for the period 1981-1999. The study found that FDI was having an ambiguous effect on growth. However the FDI in the primary sector found to have a negative effect on growth while FDI in manufacturing tends to have a positive effect. Similarly Khaliq & Noy (2007) analyzes the impact of FDI on economic growth using sectoral data for FDI inflows to Indonesia for the period 1997-2006. The study shows that FDI has a positive effect on economic growth. But when the average growth performances of different sectors are taken in to consideration the impact of FDI will no more be positive. The FDI inflows also found to have a robust negative impact on the mining and quarrying sector.

Adewuni (2006) investigates the contribution of FDI to growth in Africa. The study uses a time series data for a panel of eleven countries over the period 1970-2003. The finding indicates that foreign direct investment has a positive but insignificant contribution to growth in most of the countries. Likewise Anna (2007) examines the impact of foreign direct investment on economic growth in China during 1994-2003. According to the finding of the study foreign direct investment had a positive but insignificant effect on the economic growth.

Lund (2010) examines the causal relationship between FDI and economic growth in both developed and developing countries. The study applies panel cointegration and Granger causality techniques. Accordingly three main findings of the study were: (a) FDI to GDP causality is more common in higher income countries; (b) causation is primarily running from economic growth to FDI. It is higher levels of economic growth that are attracting FDI, not FDI spurring economic growth; and (c) FDI cause economic growth primarily in the manufacturing sector. Lamine (2010) also uses Granger causality test to determine the contribution of FDI on Guinea Republic's economic growth. The study found that FDI was less contributed to economic growth.

Louzi & Abadi (2011) analyzes the impact of FDI on economic growth in Jordan using time series data from 1990-2009. The study applies cointegration and error correction mechanism. Accordingly the FDI inflows did not exert an independent influence on economic growth. In contrast Koojaroenprasit (2012) explores the empirical impact of FDI on South Korean economy over the period 1980-2009. The study indicates that FDI has a strong and positive impact on South Korean economic growth. In addition Gudaroet al. (2012) examines the impact of FDI in Pakistan for the period 1981-2010. This study shows that there exists a significant positive relationship between gross domestic product and foreign direct investment. The study concludes that FDI is an essential factor of economic growth in developing countries which allow the transfer of technology, uplift competition in the domestic input market and contributes to human capital development.

The study by Juma (2012) estimates the impact of foreign direct investment on growth in Sub-Saharan Africa. The study uses panel of 43 countries over the period 1980-2009. The study revealed that foreign direct investment was associated with higher growth in Sub-Saharan Africa. The study also investigates for a difference in the effect of foreign direct investment on growth in mineral rich versus mineral poor countries. Accordingly the study does not found statistically significant difference among the two set of countries. On the other hand Umeora (2013) investigates the effect of foreign direct investmenton gross domestic product, inflation and exchange rate in Nigeria. The study reveals that foreign direct investmentdoes not make gross domestic product to grow, inflation and has a negative effect on exchange rate.

Moyo (2013)analyzes the impact of foreign direct investment on GDP in Zimbabwe, post dollarization period. The finding of the study shows that foreign direct investment has a very significant positive impact on economic growth. The Study by Anti (2013) examines the impact of foreign direct investment on economic growth in Ghana. The study indicates that there exists a long-run equilibrium and causal relationshipbetween foreign direct investment and gross domestic product. It also determines that in the short-run, effects of GDP and GNI volatility on FDI are nearly imaginary.

Brenner (2014) studies the effect of foreign direct investment on national economic growth with the help of GMM panel regression. The study separates the less and more developed countries as well as the time periods 1974-1991 and 1992-2009. The empirical analysis found that FDI has an effect on production capacities for more developed countries in the first time period, while the effects on innovation activities are exist for the medium developed countries in the latter time period. The effects in less developed countries are found to be negative. Melnyk et al. (2014) investigates the impact of FDI on economic development of post communism transition economy countries. The study indicates that FDI had significant influence on economic growth of host countries.

In the case of Ethiopia even though there are several studies in the area of foreign direct investment, there are few studies on the impacts of foreign direct investment on economic growth. Remal (2012) empirically analyze the relationship between foreign direct investmentand poverty for the period 1970-2009. The study uses co-integrated VAR approach. Accordingly foreign direct investmenthad a negative impact on economic growth and hence does not reduce poverty in the country.

Tibebu (2014) examines the relationship between FDI and domestic private investment using time series data over the period 1970-2012. The study shows that FDI crowds-out domestic private investment and also foreign direct investmentdoes not have a significant effect on economic growth. According to the study in the long run economic growth have a significant positive effect on both foreign direct investment and domestic private investment.

Asmelash (2015) analyzes foreign direct investmentin Ethiopia using co-integrated VAR approach over the period 1974/75 to 2013/14. The study took the determinant of FDI in Ethiopia such as infrastructure development, the domestic market size and growth potential, macroeconomic stability, human capital development, openness, and external debt and evaluate as to how they affect the inflow of FDI. The finding of the study revealed that in the long run explanatory variable such as infrastructure development, the domestic market size, human capital, openness, and external debt are found positively related and statistically significant while the inflation rate is negatively related and statistically significant. However, in the short run there exists a negative relation between the gross capital formation and inflation and they are statistically significant. Gross domestic product found to have positive significant relation with FDI. The study also indicates that there was bidirectional causality between gross fixed capital formation and foreign direct investmentand the variables of inflation, Gross Domestic Product, Debt Servicing, Openness and Human Capital does Granger- causes foreign direct investment but not the other way around.

In conclusion, since there are few studies conducted on the impact of foreign direct investmenton economic growth in Ethiopia; there is a need for further studies. Thus this study contributes to the existing knowledge by taking into account the impacts of real effective exchange rate, which expected to have significant impact on both FDI and GDP. The study also fills the time gap exit with the recent study which undertaken by Remal (2012).

Chapter Three

Overview of Economic Growth and FDI in Ethiopia

3.1. Ethiopian Economy

After the overthrown of the imperial government a group of military officers known as the Derg comes to power in 1974. The government introduced the centralized economic system which discourages market economy and private property. During the period 1974/75–1989/90 an average GDP growth rate of 2.3 percent with per capita growth of –0.4 percent has been registered. According to Alemayehu (2001) the war with Somalia and the instability which created by the introduction of new policies are among the factors accounted for the decelerated growth in the period. These and several other factors led to the overthrow of the regime in 1991 and the Ethiopian People Revolutionary Democratic Front (EPRDF) come to power. EPRDF adopted policy reforms including structural adjustment program per recommendation of the World Bank (WB) and International Monetary Fund (IMF). As a result the role of the state in the economic activity has declined and the government relaxed most of the restrictions made by the Derg regime. Accordingly tariffs have been cut, quota constraints relaxed, licensing procedures simplified, foreign exchange controls eased, compulsory cooperative membership and grain delivery discontinued, and privatization begun (ERA, 2002).

Table 3.1: Annual GDP growth rate (1974-1990)

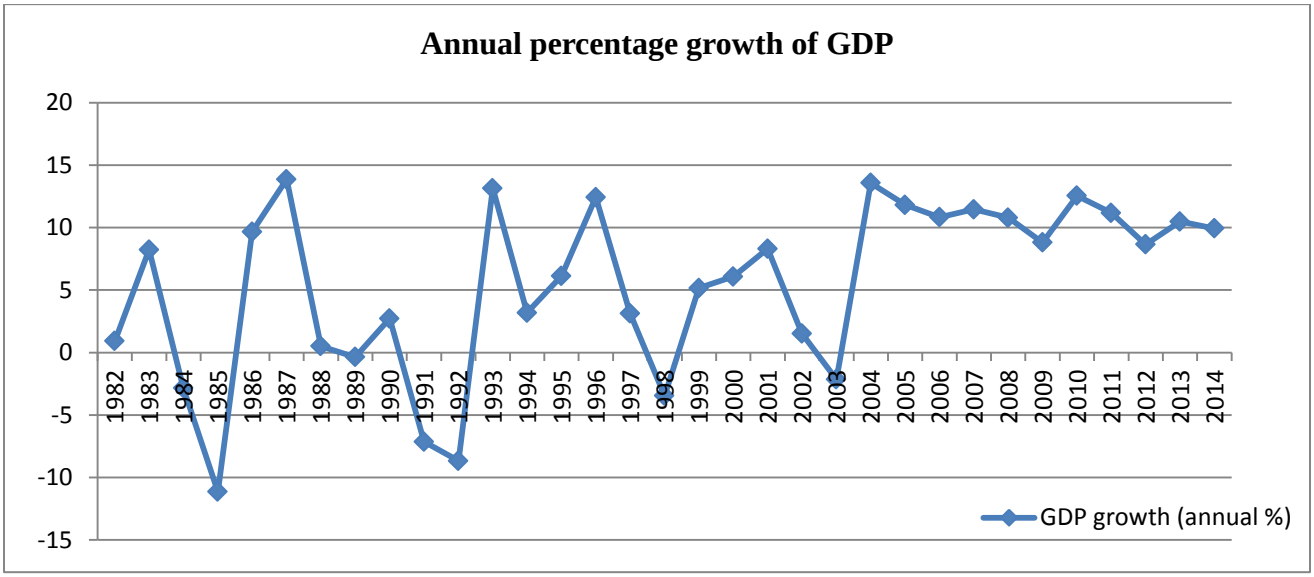
Year (in G.C.)	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
RGDP growth rate	1.39	-0.01	1.58	1.22	-1.68	6.63	5.10	0.82	0.74	8.06	-4.94	-5.84	6.94	9.53	1.85	1.62	-1.44

Source: Ministry of finance and economic cooperation

Following these reforms the economy starts to recover. According to the data from the World Bank, excluding the abnormal years 1991-92 the GDP has registered an annual average growth rate of 5.6 percent. In addition to policy reform, peace and good weather condition in the past decades contribute to the economic growth. In terms of inclusive growth, among countries with average growth above 6 percent from 2001 to 2014 Ethiopia had the highest rank (Ncube, Shimeles and Younger, 2013 cited by AEO, 2012).

Over the period 2000-2014 Ethiopian economy experienced an annual average GDP growth rate of 8.92 percent. On the overall Ethiopia had undergone rapid growth and transformation over the last two decades. The figure below shows the trend of GDP growth rate over the past three decades.

Figure 3.1: Trends of annual percentage growth of growth(1982-2014)



Source: World Bank Database, world development indicator

3.2. Trend of Foreign Direct Investment in Ethiopia

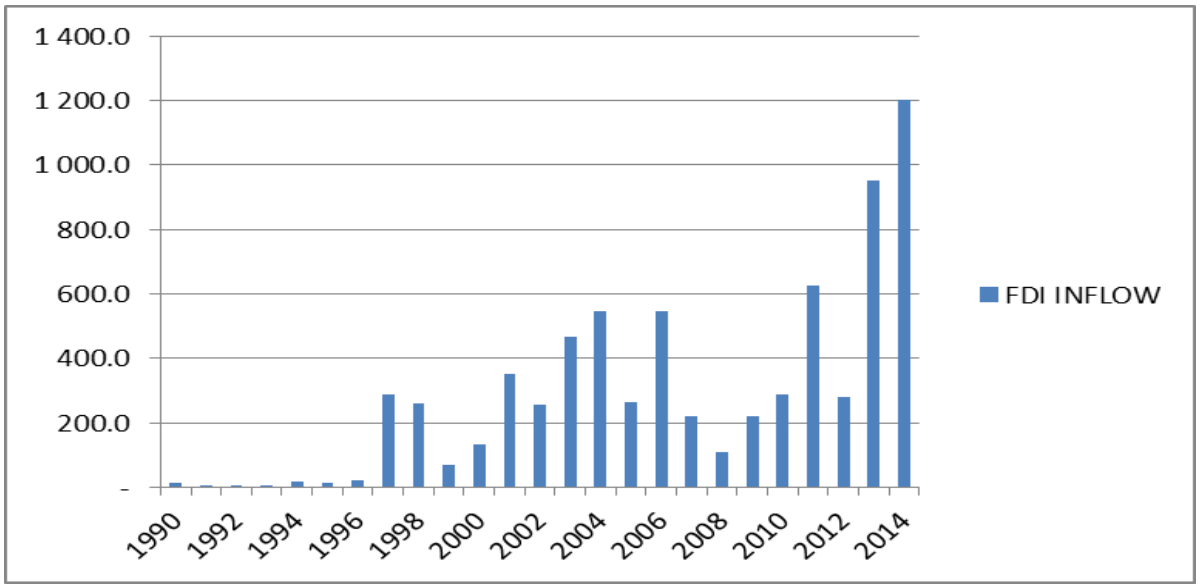
The centralized economic system by the Derg regime (1974-1991) discouraged market economy and private property. Hence FDI was not encouraged during this period. Following the investment friendly environment which created after the 1992 reform the inflow of FDI started to show a gradual increase. Accordingly FDI rose from 2 percent of total investment in 1995/96 to 59 percent in 1997/98. Even though this share fell during the Ethio-Eritrea war, FDI accounted for 20 percent of investment capital for projects commencing in 1992–2001 (ECA, 2002).

In 2013 FDI inflows reaches its peak which accounts more than 2 percent of GDP for the first time since 2008.Since 1993 the stock of U.S. foreign direct investment in Ethiopia has reached nearly US$1.5 as of November 2013 (EICS, 2014). According to the 2015 UNCTAD report Ethiopia has become among the top five landlocked countries in terms of FDI inflows. Starting

from 14th position in 2013 the Ethiopian economy emerged as the 8thlargest recipient of foreign direct investment project in Africa (EYA, 2015).

The manufacturing sector has become the largest recipient of FDI, which accounts 41 percent of new FDI projects under implementation and 70 percent of FDI capital investments. Based on the 2002 report of the economic report on Africa, Saudi Arabia has been the source of 60 percent of FDI approved in that period which followed by the European Union, accounting about 30 percent. Over the period 1992-2015 Turkey has the largest share of investment capital with 22 percent of total investment followed by Saudi Arabia and China, which contributes 15.67% and 14.53% of total investment respectively (Asmelash, 2015).

Figure 3.2: Trends of FDI in Ethiopia, 1990-2014(in millions of dollar)



Source: UNCTAD, FDI/TNC database (www.unctad.org/fdistatistics)

The trend of foreign direct investmenthas shown a significant rise over the past two decades. In response to market reforms in 1992 comprehensive set of fiscal and non-fiscal incentives are offered to encourage investment. This includes

- Customs duty exemptions of up to 100 percent on imports of capital goods for eligible areas of investment;
- Income tax exemptions for a period ranging between 1 and 9 years, depending on the specific activity and the location of the investor;

- Loss carry forward for business that suffer losses during the income tax exemption period for half of the tax exemption period;
- With the exception of a few products, no export tax is levied on Ethiopian export products;
- Duty Drawback Scheme, Voucher Scheme and Bonded Factory and Manufacturing Warehouse Schemes
- Various non-fiscal incentives for exporters
- Guaranteed remittance of capital for foreign investors

Although regulations on FDI are much more relaxed than during the Derg period, some areas are reserved for domestic investor's only. According to the regulation on Investment Incentives and Investment Area Reserved for Domestic Investors (2012) banking service, insurance, postal service, supply of electrical energy, telecommunication service, and broadcasting are some areas reserved for domestic investors.

Chapter Four

Model Specification and Methodology

4.1. Variables included in the Model

The main aim of the study is to examine the impact of foreign direct investment on economic growth using secondary time series data over the period 1981 – 2015. Except for real effective exchange rate which obtained from National Bank of Ethiopia (NBE); all the data are extract from World Development Indicator (WDI, 2015), online Databases of World Bank (2015). The dependent variable used in this study is GDP per capita, which obtained by dividing GDP at current market prices by the population. The following are the explanatory variables that are used in this study with their definitions as of World Bank development indicator (2015).

Foreign direct investment is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. Ownership of 10 percent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship.

Gross capital formation is consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like while inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress."

Gross domestic savings are calculated as gross domestic product less final consumption expenditure (total consumption).

*External debt stock*is total external debt which owed to non-residents repayable in currency, goods, or services. It is the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt.

*Real effective exchange rate*is the nominal exchange rate divided by a price deflator or index of costs.

4.2. Model Specification

In order to examine the impacts of FDI on economic growth of Ethiopia two separate models are developed. The first model links GDP with foreign direct investment. This helps to detect whether there is causality between GDP and FDI or not. In the second model in addition to FDI other macro-economic variables which determine economic growth are included. Therefore the growth models are specified as follows;

Model -1-$GDP = f(FDI)$ ---------- (1)

Model -2- $GDP = f(FDI, ED, GCF, GDS, REER)$---------- (2)

Where GDP= Gross domestic product per capita

FDI= Foreign direct investment

ER= External debt stock

GCF= Gross capital formation

GDS= Gross domestic saving

REER= Real effective exchange rate

In forecasting economic variables the use of log transformation is often useful to stabilize the variance of a series (Lütkepohl & Xu, 2009). Hence the study uses the log form of the above variables. Accordingly the log linear forms of the models are written as follows;

Model -1- $lnGDP = \beta 0 + \beta 1 lnFDI + \varepsilon$---------- (3)

Model -2- $lnGDP = \beta 0 + \beta 1 lnFDI + \beta 2 lnED + \beta 3 lnGCF + \beta 4 lnGDS + \beta 5 lnREER + \varepsilon$ --- (4)

Where βt are parameters to be estimated while ε is error term.

4.2.1. Unit Root Test

According to Gujarati (2004) empirical work based on time series data assumes that the underlying time series is stationary. A time series is said to be stationary if its mean, variance and autocovariance remains the same no matter at what point we measure them; meaning that they are time invariant. If time series is non-stationary the persistence of shocks will be infinite. It will also result in spurious regression where a regression of one on the other could have a high *R*2 even if the two are totally unrelated. Moreover, models with non-stationary variables will invalidate the standard assumptions for asymptotic analysis.In other word the usual "*t*-ratios" will not follow a *t*-distribution, so we cannot validly undertake hypothesis tests about the regression parameters.

Dickey-Fuller (DF) Test

The unit root test has become widely popular over the past several years. The early and pioneering work on testing for unit root in time series was done by Dickey and Fuller (Dickey and Fuller, Fuller 1976). The objective of the DF test is to test the null hypothesis that φ =1(the series contains a unit root) in equation (5), against the alternative φ <1 which is stationary.

$$y_{t=}\varphi y_{t-1} + u_t \text{---------- (5)}$$

The usual form of the regression is $\Delta y_{t=}\psi y_{t-1} + u_t$ so that a test of φ=1 is equivalent to a test of ψ=0 (since φ-1=ψ). In order to allow for the various possibilities the DF test is estimated in three different forms.

- $y_t$is a random walk against a stationary AR(1)

$$y_{t=}\varphi y_{t-1} + u_t \text{ ---------- (6)}$$

- $y_t$is a random walk against a stationary AR(1) with drift

$$y_{t=}\mu_1 + \varphi y_{t-1} + u_t \text{---------- (7)}$$

- $y_t$is a random walk against a stationary AR(1) with drift around a stochastic trend

$$y_{t=}\mu_1 + \mu_{2t} + \varphi y_{t-1} + u_t \text{ ---------- (8)}$$

Where *t* is the time or trend variable. In each case, the null hypothesisis that $\varphi = 0$; that is, there is a unit root; the time series is non-stationary. The alternative hypothesis is that φ is less than zero; that is, the time series is stationary.

AugmentedDickey–Fuller (ADF) Test

In DF test it was assumed that the error term u_t was uncorrelated. However in case the $u_t$are correlated, Dickey and Fuller have developed a test, known as the Augmented Dickey–Fuller (ADF) test. The ADF test is conducted by augmenting the preceding three equations by adding the lagged values of the dependent variable y_t. Accordingly the ADF test for equation (8) consists of estimating the following regression:

$$y_t = \mu_1 + \mu_{2t} + \varphi y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta y_{t-i} + \varepsilon_t \text{---------- (9)}$$

Where $\varepsilon_t$is a pure white noise error term and where Δy_{t-1} = $(y_{t-1} - y_{t-2})$, y_{t-2}= $(y_{t-2} - y_{t-3})$ etc. As that of the DF test, the null hypothesis of ADF is $\varphi = 0$. The ADF test also follows the same asymptotic distribution as DF statistic, so the same critical value can be used (Gujarati, 2004).

Phillips–Perron (PP) Test

Phillips and Perron have developed a more comprehensive theory of unit root non-stationarity. The Phillips–Perron (PP) unit root tests are similar to ADF tests except that Phillips and Perron use nonparametric statistical methods to take care of the serial correlation in the error terms without adding lagged difference terms (Gujarati, 2004). The PP tests have the same asymptotic distribution as the corresponding ADF *z* and τ tests, but they are computed quite differently.

4.2.2. Cointegration

Testing for cointegration is the essential step to check whether our modeling reveals meaningful relationship or not. If variables have different trends processes, they cannot stay in fixed long-run relation to each other, implying that you cannot model the long-run, and there is usually no valid base for inference based on standard distributions (Sjö, 2008). According to Wooldridge (2000) the issue of cointegration applies when two series are I(1), but a linear combination of them is

I(0); in this case, the regression of one on the other is not spurious, but instead tells us something about the long-run relationship between them. If a linear combination of I(1) variables is stationary, then the variables are said to be co-integrated.

Engle and Granger (1987) formulate the first test of cointegration, which is called Engle-Granger two step approach. The first step in this approach is to estimate the cointegration relation. If the variables are co-integrating, they will share a common trend and form a stationary relationship in the long run. The second step in Engle and Granger's two-step approach is to test for a unit root in the residual process of the co-integrating regression. Although this approach is easy to perform it has its own limitations. The first problem with Engle and Granger's two-step approach is that since ADF test is involved in the second step all problems of ADF test are also valid here. The second is even when there are more than two variables in the analysis; it assumes that there is one cointegration vector. The last problem with this approach is that, the test assumes a common factor in dynamics of the system. Thus if this common factor restriction does not hold, the test can be expected to perform badly.

Johansen maximum likelihood approach is another method of cointegration testing which developed by Johansen (1988). This approach overcomes problem associated with two step Engle-Granger approach. Particularly it detects the presence of multiple co-integrating vectors.

4.2.3. Vector Error Correction Model

Once cointegration relation is identified vector error correction (VEC) or non-stationarity regression methods may be used to estimate the cointegration equation.Vector error correction model is a restricted vector auto regression (VAR) which designed for use with non-stationary series that are known to be cointegrated. The VEC specification restricts the long run behavior of the endogenous variables to converge to their cointegration relationships while allowing for short run adjustment dynamics. Since the deviations from the long run equilibrium is corrected gradually through a series of partial short run adjustments, the cointegration term is known as the error correction term (Eviews 3.1 User′s Guide, 2010). Given VAR of order *p* as:

$$yt = A_1 y_{t-1} + \cdots + A_p y_{t-p} + u_t \quad \text{----------(10)}$$

Where the A_i's are $(K \times K)$ coefficient matrix and $u_t = (u_{1t}, \dots, u_{kt})'$ is an observable error term; the vector error correction model (VECM) has the form:

$$\Delta y_t = \Pi y_{t-1} + \Gamma_1 \Delta y_{t-1} + \cdots + \Gamma_{p-1} \Delta y_{t-p+1} + u_t \text{---------- (11)}$$

Here $\Pi = -(I_k - A_1 - \cdots - A_p)$ and $\Gamma_i = -(A_{i+1} + \cdots + A_p)$ for *i= 1,…,p-1*.The term Πy_{t-1} is the only one that includes I(1) variables and for Δy_t to be I(0) it must be the case thatΠy_{t-1} is also I(0). Hence, Πy_{t-1} must also contain cointegrating relation. The Γ_j s (*j=1,…,p-1)* often referred to as the short-run or short-term parameters while Πy_{t-1} is sometimes called the long run or long term part (Lütkepohl, 2004).

Chapter Five

Empirical Analysis and Interpretation

5.1. Unit Root Test

Empirical analysis using non-stationary time seriesmay lead to spurious regression or non-sense regression. To avoid such problem the non-stationary time series has to be transformed to make it stationary. Thus before using any variable for regression it is important to check whether a series is stationary or not. The unit root test is the formal method to test the stationarity of the series. Accordingly an Augmented Dickey–Fuller (ADF) test with different trend assumption is conducted. The null hypothesis under this approach is that the variables contain a unit root, and the alternative is that the variable was generated by a stationary process. The ADF test result with intercept, trend and intercept, and no trend and no intercept both at level and first difference of the variables is presented in table 5.1 below.

Table 5.1: Augmented Dickey Fuller Unit root test results at level and First difference

Variables		**Test statistics under the three assumptions**			**Order of integration**
		Intercept	***Trend and Intercept***	***No Trend and No Intercept***	
1	$lnGDP$	(-3.780243)	(-3.961896)	(-1.008364)	I(1)
	$DlnGDP$	(-3.257195)*	(-3.679632)	(-3.179883)	
2	$lnFDI$	(-4.461472)	(-4.468427)	(1.366448)	I(1)
	$DlnFDI$	(-5.279164)*	(-5.466342)	(-4.783779)	
3	$lnED$	(-1.947693)	(-1.918527)	(1.455306)	I(1)
	$DlnED$	(-4.746219)*	(-4.644824)	(-4.689875)	
4	$lnGCF$	(0.927583)	(0.044318)	(2.152043)	I(1)
	$DlnGCF$	(-7.443527)*	(-8.416092)	(-1.850348)	
5	$lnGDS$	(0.080125)	(-0.036097)	(1.264584)	I(1)
	$DlnGDS$	(-7.450696)*	(-8.010988)	(-7.084688)	
6	$lnREER$	(-1.350571)	(-1.606019)	(-0.481883)	I(1)
	$DlnREER$	(-5.306451)*	(-5.254451)	(-5.359889)	

Note: * imply rejection of null hypothesis at 1% significance level.D indicate the first difference.

As the result of the ADF test shows all variables are non-stationary at level implying the existence of unit root. However when the first difference of the variables is taken all variables became stationary. Which denotes the variables are integrated of order one, I(1). Thus we reject the null hypothesis of unit root under all the three assumptions (Intercept, Trend and Intercept, and No Trend and No Intercept).

5.2. Cointegration Test and Vector Error Correction Model

In this section two models shall be tested. The first model links economic growth with foreign direct investment. In order to find out other factors affecting economic growth the second model links economic growth with other macroeconomic variables including foreign direct investment.

5.2.1. Model 1

5.2.1.1. VAR Lag Order Selection Criteria

There are several methods of determining the order of a VAR or the optimal lag length for a VAR (p). Likelihood Ratio test statistics (LR), the Final Prediction Error (FPE), the Akaike Information Criterion (AIC), the Schwarz Information Criterion [SIC], and the Hannan Quinn Information Criterion (HQ) are the five criteria used for model selection such as determining the lag length of the VAR, with smaller values of the information criterion being preferred. The table below shows "VAR Lag Order Selection Criteria" test result.

Table 5.2: VAR Lag selection order selection criteria; [Model 1]

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-44.65369	NA	0.364140	4.665369	4.764942	4.684807
1	-6.203431	65.36544*	0.011669	1.220343	1.519063*	1.278656
2	-2.362745	5.761029	0.012060	1.236274	1.734141	1.333463
3	2.674104	6.547903	0.011318*	1.132590*	1.829602	1.268654*

* indicates lag order selected by the criterion; each test at 5% level

Using the information criteria of Final Prediction Error, Akaike Information Criterion (AIC) and the Hannan Quinn Information Criterion (HQ) in table 5.2 P=3 will be the number of lags in our model.

5.2.1.2. Johansen Cointegration Test

As the unit root test result indicates all variables are integrated of order one, I(1). Hence in order to prove if there is a long run relationship among the variables it is necessary to carry out cointegration test. Cointegration test is the same as examining whether the residuals of the regression between two non-stationary series are stationary or not. If it is stationary, then the two series are cointegrated. Implying there is meaningful long-run relationship among the variables. Therefore the Johansen cointegration test is employed.

Table 5.3: Unrestricted Cointegration Rank Test (Trace); [Model 1]

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.404505	12.54392	12.32090	0.0459
At most 1	0.132243	2.695026	4.129906	0.1190

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

According to the result of a trace test in the above table the null hypothesis that there is no cointegrated vector is rejected. The trace test indicates that there is one cointegrating equation at the 5% level of significance. This confirms the existence of a long run relationship between economic growth and foreign direct investment.

5.2.1.3. Granger Causality

Granger causality test isused to analyze the cause effect relationship between two variables. Accordingly the Pairwise Granger causality testis carried out to determine the direction of the causality between economic growth and foreign direct investment. The test result on table 5.4 suggests that we can accept the null hypothesis in the first case, implying that per capita GDP does not granger cause FDI. However the null hypothesis is rejected in the second case indicating that FDI granger cause per capita GDP. Generally the granger causality test result for Ethiopia shows that the causal unidirectional relationship exists between per capita GDP and FDI

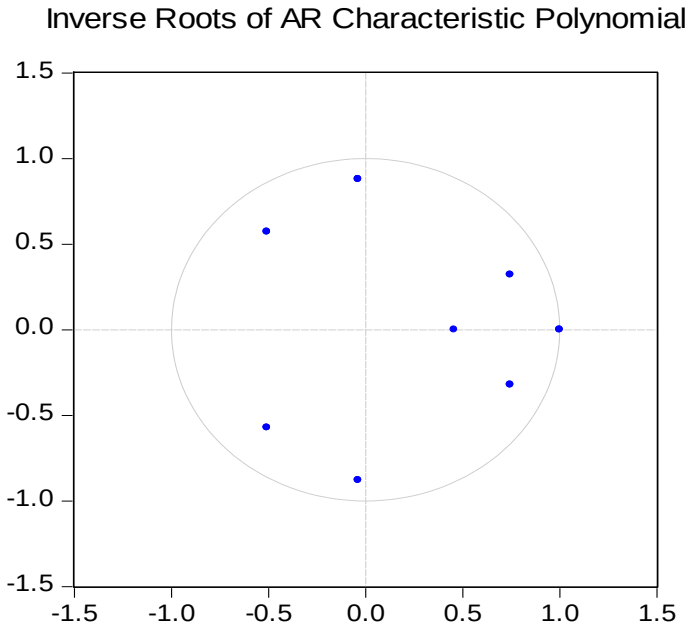
with the direction running direct from FDI to per capita GDP implying that FDI is a good predictor of per capita GDP. The Pairwise granger causality test is presented as follows.

Table 5.4: Pairwise Granger Causality Tests; [Model 1]

Null Hypothesis:	**F-Statistic**	**Prob.**
LNGDP does not Granger Cause LNFDI	1.79452	0.1962
LNFDI does not Granger Cause LNGDP	9.44478	0.0063

The stability of VAR model is tested using an inverse root of autoregressive characteristic polynomial. The result of the test shows that all roots of characteristic polynomial lie inside the unit circle. This suggests that the model under consideration satisfies the stability condition.The figure is presented below.

Figure 5.1: Inverse roots of AR characteristics polynomial; [Model 1]



5.2.1.4. Vector Error Correction Model (VECM)

Vector error correction is only applies to cointegrated series. Hence the result of the Johansen cointegration test which indicate the existence of onelong run relationship between per capita GDP and FDI; and optimal lag of three based on information criteria is used to estimate

VECM.The VEC estimation consists of two parts. The first part reports the result from the first step Johansen procedure. It used to drive the long run cointegration relationship. The second part reports results from the second step VAR in first differences, including the error correction terms estimated from the first step.

Long-runRelationship

Table 5.5: Vector Error Correction Long-run Relationship, Dependent Variable lnGDP; [Model 1]

Variables	Coefficient	Standard Error	T-statistics
LNFDI(-1)	-0.932191	0.29179	-3.19471
C	12.61058	*	*

As the above result indicates in the long run foreign direct investment has a negative sign and highly significant effect on per capita gross domestic product. A one percent increase in foreign direct investment leads to 0.93 percent decline in economic growth. This result is consistent with studies by Durham (2004), Lyroudi (2004), Carkovic & Levine (2005) and Lipsey (2006) that identified a negative correlation between economic growth and FDI.

Short-run Relationship

The short-run impact of FDI on per capita GDP can be analyzed by the error correction model. The letter D in front of the variable in VEC representation stands for difference. As table 5.6 below reveals the coefficient of error correction term is significant and negative as expected. This indicates that even though the actual per capita GDP may deviate from its long-run equilibrium value it would steadily converge to its equilibrium. In the short run when the per capita GDP in the previous year increase by one percent the per capita GDP today increased by 0.7 percent and FDI decrease to 0.02 percent. The coefficient of one period lag of per capita GDP is statically significant. The two and three period lag of per capita GDP does not found to have any significant effect in the short run. Even though the two and three period lag of FDI found to have a positive effect to per capita GDP it is not statistically significant. The vector error correction regression result is presented in the table below.

Table 5.6: Vector Error Correction Short-run Relationship, Dependent Variable lnGDP; [Model 1]

Variables	Coefficient	Standard Error	T-statistics
CointEq1	-0.065862	0.02986	-2.20577
D(LNGDP(-1))	0.701600	0.25426	2.75938
D(LNGDP(-2))	-0.200608	0.26999	-0.74302
D(LNGDP(-3))	0.370790	0.20626	1.79764
D(LNFDI(-1))	-0.022873	0.03173	-0.72084
D(LNFDI(-2))	0.005272	0.03080	0.17117
D(LNFDI(-3))	0.050773	0.03308	1.53471
C	0.006253	0.04343	0.14398

R-squared0.626898

Adj. R-squared0.389469

F-statistic 2.640363

5.2.2. Model 2

5.2.2.1. VAR Lag Length Selection Criteria

The second model to be estimated is the effect of other macroeconomic variables, including foreign direct investment on per capita gross domestic product. This model examines the effects of real effective exchange rate, external debt, gross capital formation, gross domestic saving and foreign direct investment on economic growth which measured by per capita gross domestic product. Similar to the previous model first the optimal lag order of the model is determined using different VAR lag order selection criteria.

Table 5.7: VAR Lag selection order selection criteria; [Model 2]

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-25.35664	NA	6.97e-07	2.850604	3.148161	2.920699
1	67.14367	126.1368*	4.70e-09*	-2.285788*	-0.202889*	-1.795119*

* indicates lag order selected by the criterion; each test at 5% level

According to Likelihood Ratio test statistics (LR), the Final Prediction Error (FPE), the Akaike Information Criterion (AIC), the Schwarz Information Criterion [SIC], and the Hannan Quinn Information Criterion (HQ) the selected order is lag one (1).

5.2.2.2. Johansen Cointegration Test

The null hypothesis of no cointegration against the presence of cointegration is checked using aJohansen cointegration test. The tables below present the trace and the maximum Eigen value test results.

Table 5.8: Unrestricted Cointegration Rank Test (Trace); [Model 2]

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.976012	194.8883	95.75366	0.0000
At most 1 *	0.874528	116.5542	69.81889	0.0000
At most 2 *	0.826075	72.96513	47.85613	0.0001
At most 3 *	0.577278	36.23334	29.79707	0.0079
At most 4 *	0.488130	18.15150	15.49471	0.0194
At most 5 *	0.176896	4.088130	3.841466	0.0432

Trace test indicates 6 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 5.9: Unrestricted Cointegration Rank Test (Maximum Eigen value); [Model 2]

Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.976012	78.33408	40.07757	0.0000
At most 1 *	0.874528	43.58909	33.87687	0.0026
At most 2 *	0.826075	36.73179	27.58434	0.0025
At most 3	0.577278	18.08184	21.13162	0.1268
At most 4	0.488130	14.06337	14.26460	0.0537
At most 5 *	0.176896	4.088130	3.841466	0.0432

Max-Eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The result of the Johansen cointegrating test reveals that the null hypothesis of no cointegrating vector is rejected. According to the Trace test there are six cointegrating equations while the Maximum Eigen value test indicates three cointegrating equations at 5 percent level of significance. Thus there is long run relationship among the variables in the model.

5.2.2.3. Vector Error Correction Model (VECM)

Long-run Relationship

Based on the Johansen cointegration test result in the previous section the model has to be estimated using vector error correction mechanism. The test result of a VECM in table 5.10 revealed that all variables included in the model are statistically significant. The long run impact of one period lagged foreign direct investment on per capita gross domestic product found to be negative; implying that a ten percent increase in previous year foreign direct investment leads to 0.84 percentdecline in the current year per capita gross domestic product. This result suggests that in the long run foreign direct investment does not promote economic growth. External debt, Gross capital formation and Goss domestic saving found to have significant, but wrong sign in the long run. In the long-run real effective exchange rate found to have negative significant effect on per capita gross domestic product.

Table 5.10: Vector Error Correction Long-run Relationship, Dependent Variable lnGDP; [Model 2]

Variables	Coefficient	Standard Error	T-statistics
LNFDI(-1)	-0.084629	0.00667	-12.6838
LNED(-1)	0.271008	0.02609	10.3870
LNGCF(-1)	-0.275437	0.04564	-6.03443
LNGDS(-1)	-0.319451	0.04923	-6.48882
LNREER(-1)	-1.129434	0.03634	-31.0810
C	8.570184	*	*

For both Model one and two foreign direct investments found to have negative significant effect on per capita gross domestic product in the long run.

Short-run Relationship

From the result of estimated error correction model presented in table 5.11 the one period lagged per capita GDP is positive and significant. This shows that per capita GDP in the previous year determines the per capita GDP of the current year. The coefficients of one period lag of foreign direct investment and external debt also found significant. However the coefficient of foreign direct investment is negative, implying that a one percent increase in foreign direct investment results in a 0.11 percent decline in per capita GDP. The coefficient of one period lag external debt also found negative. This reveals that the rise in the external debt in a previous period would hurt per capita GDP.

Table 5.11: Vector Error Correction Short-run Relationship, Dependent Variable lnGDP; [Model 2]

Variables	Coefficient	Standard Error	T-statistics
CointEq1	-0.544944	0.23418	-2.32699
D(LNGDP(-1))	0.843286	0.31695	2.66060
D(LNFDI(-1))	-0.117420	0.03057	-3.84130
D(LNED(-1))	-0.255144	0.08100	-3.15011
D(LNGCF(-1))	-1.072955	0.31786	-3.37555
D(LNGDS(-1))	0.343743	0.14160	2.42764
D(LNREER(-1))	-0.551044	0.22463	-2.45307
C	0.131813	0.02937	4.48758

R-squared 0.740469

Adj. R-squared0.600722

F-statistic5.298635

The one period lag of gross domestic saving has a positive significant effect on per capita gross domestic product.Accordingly one percent increase in one period lag of gross domestic saving results in 0.34 percent rise in per capita gross domestic product. Gross capital formation and real effective exchange rate found to have a significant effect on per capita gross domestic product. However there sign is negative, which is unexpected.

The coefficient of the error correction term for this model has significant negative value as expected. This shows that any short run deviation of per capita gross domestic product fromthe long run equilibriumis gradually converge to equilibrium. The error correction term of -0.544944 indicates that 54.5 percent of the deviation of per capita gross domestic product from its equilibrium value is adjusted every year.

As the results of both long run and short run estimate indicates foreign direct investment found to have a highly significant negative impact on the per capita gross domestic product of Ethiopia. The negative effect of foreign direct investment can arise from repatriation of profit and market stealing effect (Schoors et al., 2002). According to Schoors et al. (2002) market stealing occurs when the additional inflow of foreign direct investmentpushes out domestic firms from the market.

This result is consistent with studies results by Ayodele et al., (2013), Remla (2012), Hamadou (2011) and Falki (2009). Ayodele et al., (2013) examines the relationship between foreign direct investment and real gross domestic product, and found that foreign direct investment does not promote output in the long run. Remla (2012) also in his analysis of the impact of FDI on poverty reduction show that foreign direct investment has a negative impact on economic growth and does not reduce poverty. Similarly Hamadou's (2011) analysis on the impact of foreign direct investment flows in economic growth indicate that foreign direct investment has negative and highly significant effect on the economic growth both in the short run and long run. Falki (2009) also found a negative and insignificant relationship between foreign direct investment and economic growth.

Morisset and Pirnia (1999) argue that the use of tax incentives to attract foreign direct investment has negative impact on the economy of the host country. The forgoing of fiscal revenue accounted as the main negative impact of tax incentive. There are also indirect impacts which arise from thesuspicious behaviors from tax administrations and companies. They also suggested that the fiscal investment incentives which are provided in developing countries have not been effective in making up fundamental weaknesses (negative factors) in the investment climate.

Two possible reasons can be mentioned for the negative relationship among foreign direct investment and per capita gross domestic product in Ethiopia. The first is the tax incentive for foreign investors. The tax incentives that the government is providing for foreign investors canhave a significant negative impact on the revenue. The second negative impact might come from the misuse of tax incentives. The effect of misuse of tax incentive is similar to market stealing effect by Schoors et al. (2002). But here the negative impact is not come from the foreign direct investment itself, however when foreign investors import duty free raw materials and machineries using investment license and start to distribute them without making any value addition. As a result of this the domestic producer or distributor of similar product might push out from the market. The other thing is that when foreign investors use those imported raw material and machineries for the purpose other than it was aimed, the tax incentive fails to meet its target. As the impact of foreign direct investment also differs from sector to sector (Alfaro, 2003); the abuse of tax incentive can bring negative effect on economic growth.

Chapter Six

Conclusion and Policy Implication

6.1. Conclusion

The inflow of foreign direct investment has been increasing since 1992. This study tries to examine the impact of foreign direct investment on the economic growth of Ethiopia over the period 1981 to 2015. In order to assess the short-run and long-run impact of foreign direct investment in Ethiopia the cointegration and Vector Error Correction techniques are employed.

Before the regression unit roots test of the involved variables has been made and according to the Augmented Dickey Fuller (ADF) test all variables are integrated of order one, I(1). The cointegration test also reveals the existence of cointegrating vectors which implies that there is a long run relationship among the variables. The result of granger causality test indicates that there is a one way causal relationship between per capita gross domestic product and foreign direct investment. Based on the Vector Error Correction estimation the following conclusions are made.

Foreign direct investment is found to have a negative and significant effect on per capita gross domestic product both in the short run and long run. This might be due to the tax incentive provided to foreign investors which has direct impact on revenue, misuse of tax incentives and or market stealing effects. The use of raw materials and machineries which are imported using a tax incentive for the purpose other than its main target can also bring a negative relationship with per capita gross domestic product and foreign direct investment.

Real effective exchange rate is found to have negative significant effect on per capita gross domestic product both in the long run and short run. This might be due to the fact that domestic economy depends on foreign capital for investment and depreciation can increase the cost of importing this capital thus reduce economic growth (Fentahun, 2011).

The finding on the external debt and gross domestic saving shows mixed result in the long run and short run. In the short run external debt is found to have negative significant effect on per capita gross domestic product while gross domestic saving is found to have a positive

significanteffect in promoting economic growth. The coefficient of one period lagged per capita gross domestic product also revealed that the current per capita gross domestic product is determined by the previous year per capita gross domestic product.

6.2. Policy Implication

Considering the conclusions made on the impact of foreign direct investment on economic growth, the following policy implications are identified. Despite the fact that the government of Ethiopia is expanding various kinds of incentives for foreign investors, foreign direct investment fails to promote economic growth. Hence policy makers have to conduct impact assessment on the economic benefit of tax incentives for foreign investors. Since the tax incentives can have a direct negative impact on fiscal revenue, the government has to look at other incentive instruments for foreign investors.

Furthermore the government has to create a strong monitoring and evaluation mechanism on the use of incentives provided for foreign investors. So as to reduce the market sealing effect of foreign direct investment policy makers are also expected to design policies that can make domestic firms competitive enough. Since the influence of foreign direct investment on the economy depends on which sector the foreign direct investment flows are directed, the government has to identify areas where foreign direct investment can bring positive impact on overall economic growth.

Generally in light of the results obtained from the empirical analysis, there is a need for further research on the reasons behind this negative relationship among foreign direct investment and economic growth. There is also a need for assessing the revenue impact of tax incentives which provided for foreign investors.

Reference

Accolley, D. (2003): "*The Determinants and Impacts of Foreign Direct Investment",* Munich Personal RePEc Archive, Online athttp://mpra.ub.uni-muenchen.de/3084/

AfDB et al. (2012), "*African Economic Outlook 2012: Promoting Youth Employment"*, OECD Publications, Paris,http://dx.doi.org/10.1787/aeo-2012-en.

AfDB et al. (2015), *African Economic Outlook 2015: "Regional Development and Spatial Inclusion"*, OECD Publications, Paris,http://dx.doi.org/10.1787/aeo-2015-en.

Aghion, P. and Howitt, P.(2009): "*The Economics of Growth"*,Massachusetts Institute of Technology

Alfaro, L. (2003): "*Foreign Direct Investment and Growth: Does the Sector Matter?"*, Harvard Business School

Asmelash B. (2015): "*An Analysis of Foreign Direct Investment: The Case of Ethiopia: Co-integrated VAR approach".* Addis Ababa University

Carkovic, M and Levine, R., (2002). *"Does Foreign Direct Investment Accelerate Economic Growth?",* University of Minnesota, May 2002

Carp, L., (2012): "*Analysisof the relationship between FDI and economic growth – Literature Review Study"*,The USV Annals of Economics and Public Administration Volume 12, Issue 1(15), 2012

Denisia, V. (2010): "*Foreign Direct Investment Theories: An Overview of the Main FDI Theories*", *Volume 2, Issue 2, December 2010*

ERA (2002): "*Tracking Performance and Progress"*, Economic Commission for Africa, Addis Ababa, Ethiopia

Ethiopian Investment Climate Statement 2015:U.S. Department of State May 2015

Ethiopian Investment Guideline 2013

EY's attractiveness survey Africa 2015, *"Making choices",*EYGM Limited,online at www.ey.com/attractiveness

Fentahun, B. (2011): "*The Impact of Real Effective Exchange rate on the Economic Growth of Ethiopia".*Addis Ababa University

Ghose, K., (2004): *"Capital inflows and investment in developing countries*", 2004

Hymer, S., 1976 (1960 dissertation): "*The International Operations of Nation Firms: A Study of Foreign Direct Investment*", Cambridge, MLT Press.

IMF (2011):"*Balance of Payments and International Investment Position Manual",* 6thEdition, Washington, 2011, page100-101.

Kastrati, S. (2013): "*Impact of FDI on Economic growth: An Overview of the main Theories of FDI and Empirical Research",* European Scientific Journal March 2013 edition vol.9, No.7

Morisset J. P. and Pirnia N. (2009):*"How Tax Policy and Incentives Affect Foreign Direct Investment: A Review",* (Working Paper No 2509, World Bank, 1999), 20 March 2009.

Razin, A. (2002):*"FDI Contribution to Capital Flows and Investment in Capacity".* September 2002

Romer, P. (1993):*"Idea gaps and object gaps in economic development".* Journal of Monetary Economics 32, No.3 December

Ucak, A. (2015): "*Adam Smith: The Inspirer of Modern Growth Theories"*. World Conference on Technology, Innovation and Entrepreneurship, online at www.sciencedirect.com

UNCTAD (1998): *"*World Investment Report 1998: *Trends and Determinants"*, New York and Geneva 1998

UNCTAD (2014):"World Investment Report 2014: *Investing in the SDGs: An Action Plan"*, New York and Geneva 2014

UNCTAD (2015): "World Investment Report 2015: *Reforming International Investment Governance",* New York and Geneva 2015

Velde, D., (2006):*"Foreign Direct Investment and Development: An historical perspective",* 30 January 2006

Wilhelms, S. (1998):*"Foreign Direct Investment and its Determinants in Emerging Economies",* African Economic Policy Paper Discussion Paper Number9

Declaration

I, the undersigned, declare that this project is my original work, has not been presented for a degree in any other university, and that all sources of materials used for the project have been dully acknowledged.

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