Mekelle University

College of Business and Economics

Department of Management

FOREIGN DIRECT INVESTMENT AND ETHIOPIAN ECONOMY

(A TREND, DETERMINANT AND IMPACT ANALYSIS)

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A Thesis Submitted in Partial Fulfillment of the Requirement for the Award of Master of Business Administration Specializing in International Business

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May, 2013

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DECLARATION

I, Mr. Mitiku Geberekidan, have been a bona fide student of Masters of Business Administration (MBA) specializing in International Businesses in the College of Business and Economics (CBE), Mekelle University (MU), Mekelle since October, 2012. I do here by declare that the thesis entitled, "Foreign Direct Investment and Ethiopian Economy: A Trend, Determinant and Impact Analyses" for the Master's Degree in this University, is my own piece of original research work.

This thesis is submitted for the Master of Business Administrations (MBA) Degree specializing in International Businesses in the Department of Management, CBE, under the direct supervision and guidance of my Principal Advisor Abadi Afera (Assistant professor) and Co-advisor, Mr. Guesh Gebremeskel (MSc), CBE, MU, Mekelle. The manuscript of the thesis has been thoroughly scrutinized by them. I also assert that this thesis has not been submitted earlier for the award of any other degree or diploma anywhere else.

With Best Regards,

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CERTIFICATION

This is to certify that Mr. Mitiku Geberekidan has been a bona fide student of Master of Masters of Business Administration (MBA) specializing in International Businesses in the Department of Management, College of Business and Economics (CBE), Mekelle University (MU), Mekelle since October, 2012.

With regard to the thesis entitled, "Foreign Direct Investment and Ethiopian Economy: A Trend, Determinant and Impact Analyses" for the Master of Business Administration (MBA) specializing in International Businesses in the Department of Management, CBE, We certify that he has carried out the research work under our direct supervision and guidance. The manuscript of the thesis has been thoroughly scrutinized in view of the requirements of the regulations of the University.

This thesis does not contain any conjoint research work with us or with anyone else. The final copy of the thesis which is being submitted to the university office has been carefully read for its material and language and he has completed his research work to our entire satisfaction. To the best of our knowledge, the entire thesis comprises the candidate's own piece of original research work. Thus, the thesis is worthy of consideration for the award of the Master of Business Administration (MBA) specializing in International Businesses.

With high regards,

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ACKNOWLEDGMENT

Above all, I would like to offer my deepest thanks to almighty God and his mother saint Marry who is an eternal torch of guidance and knowledge for whole mankind. She prays, bless, protect and intercede for us sinners. AMEN!

I would like to express my profound and sincere gratitude to my advisor Abadi Afera (Assistant professor) not only for his indispensable and valuable guidance; but also for his genuine thinking in letting me to get additional a strong professional advice from the person who thing is best in relation to my study; Guesh Gebremeskel (MSc). As such my heartfelt acknowledgment and a deep rooted appreciation would also goes to this person who served as my co-advisor Mr. Guesh Gebremeskel (MSc) to his a profound brotherly advice in all aspects of my thesis work.

In addition, my deep rooted thankful goes to staffs of management departments; Yasin Ibrahim (PhD, Asst. prof.), Hailay G/tinsae (PhD, associated professor), Abebe Ejigu (Asst. prof.), Kahsu Mebrahtu (Asst. prof.), Teklay Tesfay (Asst. Prof.), Bihon Kasa (Asst. prof.), my external examiner Shimeles Zewde (Phd, Asst. prof.), and my internal examiner Tewelde Mezgebo (Asst. prof.), for taking their precious time in advising me with all valuables throughout my study. Especially I have no words to Mr. Tesfay Aregawi (Asst Prof) who critically advised me in setting the basic mail stones of my study at the early stage of my proposal development.

My gratitude also extended to my brother Tsegay Libelo and a PG student in Finance and investment Mr Geberehiwot H/giorgis who suffered with me in the hectic works of data collection of the whole days of may stay in Addis; instructors in the economics Department Mr Taddese Mezgebo (MSc.), Mr Amare Teklay (MSc.); and PG students in economics department Tsegabrihan G/medhin and Kahasay G/her who assisted me in different ways especially on model related aspects of the study; without the additional support of this people this study may not be as fruitful as it is. I would also like to extend my special thanks to all friends and colleagues of the CBE.

Finally, my warm thanks go to my son, Elshaday Mitiku and my family. These times were a perfect time to worry and carry about you. All this is done at the expense of your safety. Ela, I hope that you will understand that your dad is on the way of building our better future. I Love you my brilliant boy and my family. I thank you all.

Mitiku Gebrekidan

ABSTRACT

Taking the empirical debates and gaps, the main objectives of this study was to assess the trends and patterns of FDI, to investigate the Short Run (SR) and Long Run (LR) determinants and impacts of FDI on the Ethiopian economy through three basic channels which include real Gross Domestic Product Per capital (GDPP), Human Capital Development (HCD), and Domestic Investment (DI). The study used an Autoregressive Distributed Lag Model (ARDLM) with a Bound Test for Co-integration for analyzing the multivariate time series data which covers from 1992-2012; and Ordinary Least Square (OLS) regression estimations was employed in exploring the SR and LR relationship of the variables specified in 5 econometric equations which all satisfy the different goodness-fit-tests. In addition to this the study used a three stage sampling techniques (purposive, stratified and simple random sampling) and using scientific formula draw 93 FDIs as a sample size of the study. Then the primary data were collected from 76 FDIs through a five stage likerts scale type of questionnaire. Then the study took the triangulation effect of the two findings to strengthen the base of the conclusions it made. The study found that having an increasing trend, the pattern of FDI flow is highly volatile and is highly contracted in the periods of political turbulence mainly in the period of power transitions, in the period of border war and the 2005 national election. In the investigation to determinant the study found that the lagged FDI, DI, trade liberalization, economic growth, infrastructure (telecom and road networks) political stability attract FDI favorably. However the macroeconomic instability (inflation rate and exchange rate), the human capital, market size are unfavorable to attract FDI with some exception in LR and SR dynamics. In analyzing the impact the study found that; the economic power of the nation is not strong to reap the benefits of FDI in the SR, FDI has insignificant effect to HCD but SR negative effect and LR positive effect to both GDPP and DI. Doing on the HCD and creating a vertical integration among the FDIs and DIs, a due revision on the macroeconomic policy are few of the many recommendations forwarded by this study.

Key Words: ARDL model, DI, Determinant, Ethiopia FDI, GDPP, HCD, Impact, and Trend

List of acronyms

DI=Domestic Investment

DWAR=dummy variable for political stability

EXR=Exchange Rate

EIA=Ethiopian Investment Agency

FDI= Foreign Direct Investment

Ford= foreign debt

GDP=Gross Domestic Product

govex= government expenditure

GDPP= Real Gross Domestic Product Per capita

GDPP*= power of the economy to reap the benefits of FDI

HCD=Human Capital Development,

IR= Inflation Rate

IS= Infrastructure

LFDI=Lagged FDI

LDCs=Least Developing Countries

LLDCs=Land Locked Developing Countries

MES=Macroeconomic Stability

MES_Ford = the foreign debt side of the MES

MES_govex=government expenditure side of the MES

MES_EXR=exchange rate of the MES

MES_IR= the inflation rate side of the MES

MS=Market Size

MOFED=Ministry of Finance and Economic Development

MNCs=Multi National Companies

OECD=Organization for Economic Cooperation and Development

OP=Openness,

NEP=Net Export Performance

TNCs=Trans National Companies

Trans= transportation network (roads in Kms)

UNCTAD=United Nations Conference on Trade and Development

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CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Sustainable economic growth is greatly influenced by the rate of investment which in turn is mainly determined by the national savings level. Comparing to the developed world, the national savings level of nations in Africa is quite low. Now days, to close the gap between savings and the required investment level countries take Foreign Direct Investment (FDI) as an important alternative source of capital. One of the most prominent developments during the last two decades is the fabulous growth of FDI in the global economic landscape. This extraordinary growth of global FDI in 1990 around the world make FDI an important and essential component of development strategy in both developed and developing nations (Ikiara , 2003).

Nevertheless, the developmental role of FDI is highly debatable. The proponents of FDI point out that FDI fills savings, foreign exchange and domestic revenue gaps of developing economies. FDI can also provide management knowhow, entrepreneurial abilities, technological skills; increases export and integrate the country's economy into global economic network. On the contrary, the other group argues that the benefits that can be derived from FDI inflows are quite small compared to its adverse effect. The major "drawbacks" of FDI include stifling of infant domestic industries, loss of political sovereignty and deterioration of balance of payment due to the foreign investors' excessive capital good importation and profit repatriation. As a result of this, most developing countries doubted about the virtues of FDI (Solomon, 2008).

In recent times, however, most empirical studies conclude that FDI enhances factor productivity, the efficiency of resources use and national income of the host country (OECD, 2002). A study on 58 developing countries also concludes that FDI enhances private domestic investments (Douglas et al, 2003). FDI provides a win – win situation to the host and the home countries. The 'home' countries want to take the advantage of the vast markets opened by industrial growth. On the other hand the 'host' countries want to acquire technological and

managerial skills and supplement domestic savings and foreign exchange. As a result of this, in the present globalized world, many countries spend enormous resources and time to design policies that encourage the inflows of FDI, as appropriately designed policy plays important role in promoting FDI inflows. Besides, the 1990s official development assistance sharp decline would have forced developing countries to open their economy to foreign investors (Hooda, 2011).

Following the collapse of the left-oriented systems, most African countries have undertaken numerous policy measures to create hospitable investment climate for FDI. The major policy measures are: Liberalizing controls on foreign exchange & price, liberalizing investment regulations & privatization of public enterprises and creating a stable macroeconomic environment. The policy frameworks for FDI of African countries are on average not more restrictive than other developing nations. Despite their notable efforts, FDI flows to Africa are extremely small compared to the other developing nations. For instance, Africa‘s share in the total FDI flows to developing economies fell from 19 percent in the 1970s, to 11 percent in the 1980s to 8 percent in 2000-2006 (OECD, 2005).

Coming to Ethiopia it was in 1991, the country's transition to a market oriented economy started. Since then, the government has made a broad range of policy reforms, including liberalizing the foreign trade regime, decentralizing of political and economic power, devaluation of the national currency and deregulation of domestic price. In addition, the investment code has been amended several times in order to meet the demands of both domestic and foreign investors (Solomon, 2008). Since 1991, in addition to these policy amendments, other numerous macroeconomic reforms which include privatization of state owned enterprises, liberalization of trade policy, reduction of import tariff rates, elimination of non-tariff barriers, devaluation and deregulation of price & exchange rate controls (UNCTAD, 2002). However regardless of these reforms, the flow of FDI is seems to be high volatile, with not well known of factors for this volatility and its possible impact.

1.2. Statement of the Problem

The Ethiopian economy should have to grow at least at annual growth rate of 10% for more than two decades so that the country can attain the per capita income level achieved today by

middle income level countries. The current government of Ethiopia has realized the inadequacy of the domestic capital and opened several economic sectors to foreign investors. The government has also issued several investment incentives, including tax holidays, duty free importation of capital goods and export tax exemption to encourage foreign investment. Furthermore, Ethiopian Investment Authority (EIA) has been established to service investors and streamline the investment procedures (UNCTAD, 2002).

Despite all these reforms and amendments on macroeconomic situations of the country in order to attract FDI, different reporters, researchers, and authors report different and contradicting conclusions on the performance of attracting FDI to the developing countries in general and that of Ethiopia in particular. Different researchers use different variables in identifying the determinant factors of FDI. Is FDI positively or negatively affect economic development is also another issue in which researchers and authors are in differences and debates in their research findings.

First, reports towards the performance of FDI flow to Ethiopia showed that the flow is unhealthy. As the world investment report indicates, FDI flows to Africa declined from its highest value of $72 billion in 2008 to $59 billion in 2009 after almost a decade of growth (UNCTAD, 2010). While the total inflow around the world has decreased since 2002, and in particular flows in to developed countries, the total FDI inflows in to developing countries have increased, with Africa benefiting from a market increase $12,994 million in 2002 to $18,090 million in 2004. The report indicates that FDI inflows to Ethiopia increased from US $255 million in 2002 to $465 and $545 in 2003 and 2004 respectively (UNCTAD 2005).

Compared to many African countries, Ethiopia's performance in attracting FDI is very poor. For instance, Ethiopia accounted for only 1.56% of the total FDI flows coming to Africa in 2003-2006 while representing 9% of the population of Africa. Besides, Ethiopia's per capita inflows were only $ 5 in 2006, compared with $ 39 for Africa countries as a whole (Solomon, 2008). Over the past 18 years, the flow of has fluctuated between $545,257,100 in 2006 and $170,000 in 1992 (UNCTAD, 2011). This report shows that FDI flow to Ethiopia decreased almost by half in 2007 and continued constant up to 2010. Over the past 18 years, FDI flow to Ethiopia has fluctuated between Birr 80,083,808 in 2008 and Birr 87,658 in 1993 (EIA,

2011). Then all the above figures tell us the flow of FDI is inconsistent due to different factors. Then the first task of this paper is to assess the trends and patterns of FDI.

Testing the first problem statement of the study enabled the researcher to know either the flow of FDI is increasing, decreasing or indifferent. Then by taking the implication of the result of the first test, the second task of this study was to identify the short run and long run determinant factors that favorably and unfavorably affect to the flow of FDI for the period 1992-2012. So far, different determinant factors have been identified by different researchers and authors. As cited by Solomon (2008); Schneider and Frey (1985) research on 80 developing countries concludes that a country's level of development is the major determinant of FDI and the political instability in a country leads to a sharp decline in the flow of FDI. Noorbakhsh et al (2001) find that human capital is the chief determinant in export -oriented and labor-intensive industries. Root and Ahmed (1979) study the determinants of non-extractive FDI in 70 developing countries and find that urbanization, developed infrastructure and improved GDP per capita increase FDI inflows. Getinet & Hirut (2005) in their study used variables such as rate of real GDP, export orientation, liberalization, macroeconomic stability, and infrastructure in order to identify determinant of FDI in Ethiopia; and concluded that growth of real GDP, export orientation and liberalization promotes the inflow of FDI while macroeconomic instability and poor infrastructure deter the inflow of FDI.

Third, there are differences of believers and findings of different researchers and authors on the impact of FDI on Economic growth. FDI seems to have a somewhat smaller effect on growth In the least developed economies, which has been attributed to the presence of threshold externalities. Before being able to benefit from a foreign presence in their markets, developing countries need to have reached a certain level of development in human capital development, technology, infrastructure and health. Imperfect and underdeveloped financial markets may also prevent a country from reaping the full benefits of FDI (OECD, 2002). FDI in the form of mergers and acquisitions do not necessarily increase the capital stock in capital-scarce economies. Cross-border mergers and acquisitions merely represent a transfer of existing assets from domestic to foreign hands (Agosin and Mayer, 2000).

The most plausible explanation for the negative effects is that foreign firms reduce the productivity of domestic firms through competition effects They argue that multinationals have lower marginal costs due to some competitive advantage, which allows them to attract demand away from domestic firms, lead to reduce their production and move up their average cost curve (Aitken and Harrison, 1999). Seabra and Flach (2005) found that FDI can create balance of payments problems due to the repatriation of profits by foreign investors.

In reverse to the above criticisms and negative findings on the impact of FDI in economic growth, a number of other researchers also have a number of findings that assured FDI is an integral part of economic development. New FDI projects may invite complementary local private investments that provide inputs to, or use outputs of, the foreign firm. Local firms have an opportunity to improve their efficiency though interactive learning with foreign firms. FDI can also raise the quality of domestic human capital and improve the knowhow and managerial skills of local firms through the learning by watching effect. Moreover FDI stimulates the development and propagation of technological skills through MNCs, internal transfers and through linkages and spillovers among firms (Borensztein et al, 1998).

Hermes and Lensink (2000); summarized different channels through which positive externalities associated with FDI can occur namely: (i) competition channel which likely lead to increased productivity, efficiency and investment in human and/or physical capital. (ii) training channel through increased training of labor and management; (iii) linkages channel whereby foreign investment is often accompanied by technology transfer; such transfers may take place through transactions with foreign firms and (iv) domestic firms imitate the more advanced technologies used by foreign firms commonly termed as the demonstration channel.

As it can be seen from the above research findings, the greatest portions of debating and disagreements of idea might be with the knowledge of to what extent FDI truly has a positive impact on the economic growth of a given country. In fact some of the results assured that it has positive impact and some other results indicate there is a negative impact on the economic growth. As a result the researcher analyzed the impact of FDI on the Ethiopian economy added knowledge that is expected to narrow the gap of the debating issue.

1.3. Research Questions

The study was conducted with the following basic research questions.

1. Is the trends and patterns of FDI flow increasing or decreasing over the study period?
2. Is the flow of FDI to the country a smooth flow or full of accidental ups and downs?
3. What are the major factors that attract FDI in the country?
4. What are the factors that hinders from attracting FDI in to the country?
5. Does the economy have the required power to reap the benefits of FDI
6. Does FDI have a positive or negative influence to the economic growth of the country mainly through improvement of DI, HCD, and GDPP

1.4. Research Objectives and Research Hypothesis

1.4.1. General objectives

The general objective of this study is to assess the trend, to identify determinant factors and to evaluate the impact of FDI in the Ethiopian economy for the period 1992-2012.

1.4.2. Specific objectives

1. To assess the trends and patterns of FDI in Ethiopia
2. To identify the short run and long run determinants of FDI flows in Ethiopia
3. To evaluate the short run and long run effects of FDI on the Ethiopian economy

1.4.3. Research Hypothesis

The following hypotheses were tested in the study

1. Hypotheses for trend

   Ho: Flow of FDI does not showed an increasing trend over the period 1992-2012.

   H_1: Flow of FDI showed an increasing trend over the period 1992-2012.

2. Hypotheses for determinants

   H_o: LFDI, DI, MS, HCD, IS, MES, GDPP, OP, do not have a favorable effect on attracting FDI

   H_1: LFDI, DI, MS, HCD, IS, MES, GDPP, OP, do have a favorable effect on attracting FDI

   Ho: there is no difference in FDI flow due to difference in political stability (DWAR)

H1: there is a difference in FDI flow due to difference in political stability (DWAR)

3. Hypotheses for analyzing the power of the economy to reap the benefits of FDI

H_o: the power of the economy is not strong postive to reap the benefit from FDI

H_1: the power of the economy is strong postive to reap the benefit from FDI

4. Hypotheses for impact analysis

H_o: FDI flow do not have positive impact on on the real percapita GDP, HCD and DI of the nation

H_1: FDI flow do have positive impact on on the real percapita GDP, HCD and DI of the nation

1.5. Significance of the Study

The first significant of this study is that it narrows three important limitations of the imperials. One important limitation of most previous studies is that they focus on analyzing a single or two dimension of the subject. But this current study incorporates the three main dimensions (i.e. trend, determinant, and impact) of FDI which create an opportunity to have a comprehensive knowledge over the subject. The second most important limitation of international business studies in general and FDI studies in particular mainly focus on mere statistical analysis only. But this current study highly appreciates the significance of qualitative judgment which is retrieved from the human mind and perception which and take the triangulated effects of the two approach to strengthen the base of its findings. The third limitation is that the studies conducted in the Ethiopian case mainly used a single equation OLS estimation which is difficult to get unbiased result having small observations just less than 30. But this study used an ARDL model which enabled to get unbiased result having these small observations.

In each dimension there are conflicting ideas which are mostly sources of debate of policy makers and academicians. This study will add knowledge to one of these extremes. Government officials mainly the Ethiopian Investment Agency, EIA, will uses this organized information as an evidence to further decisions on FDI. Finally it can be taken as source of reference for further studies on the subject.

1.6. Definition of Key Terminologies and Concepts

1.6.1. Conceptual Definitions

- Foreign Direct Investment (FDI): it is the process whereby residents of one country (the source or home country) acquire ownership of assets for the purpose controlling of production, distribution and other activities a firm in other country (the host country) for getting new economic advantages abroad
- Host country: a country where give a permission of investment to those who are not nationalists; in our case Ethiopia.
- Home country: the country where the foreign investor is coming from.

1.6.2. Operational Definitions

- FDI flow: conceptually FDI flow means the total of inflow and outflow of foreign investment. But in this paper whenever you get "FDI flow" it means to indicate only the inflow part only.
- Trend: the meaning of this term in this paper is to analyze the cumulative growth of foreign investment from one year to another successive year within the study period.
- Impact: the meaning of this term in this paper is to identify the ratio of FDI in economic growth of the country.
- Economic growth: Real economic growth of a nation includes all products produced by the nationalists plus all products produced in the nation. But in this case whenever you get economic growth it means to GDP only.

1.7. Scope and Limitation of the Study

1.7.1. Scope of the Study

The scope of the study is delimited with its title, conceptually, geographically, duration and methodologically which is described as follows. The geographical scope of the study is delimited to the political boundary of the Federal Democratic Republic of Ethiopia, FDRE, declared in 1991. Areas and countries other than this boundary are not subject of this study. The duration that covered under this study was delimited to the time period between 1992-

2012only. Investment factors that are happened out of this time period are not subject of this study.

The conceptual Scope of the study; as it can be easily understood from the title of the research; the study has three main parts. These are to assess the trends of FDI flows, identifying the determinant factors of FDI, and evaluating the effect of FDI economic growth. In trend analysis the researcher will try to evaluate the linearity of increase or decrease over a given period of time by treating FDI as dependent variable and time mainly the year of investment as independent variable. In identifying the determinant factors of FDI flow; FDI was treated as dependent variable and the eight factors (lagged FDI, market size, openness, macroeconomic stability (proxied with inflation and exchange rates), infrastructure (proxied with telecom services per 100 persons and road transportation networks in Kms), human capital (proxied with secondary school enrollment), growth of domestic investment and political stability (a dummy variable which assumes 1 if war and instability were happened zero otherwise)) as independent variables. In evaluating the impact of FDI on the economic growth; the researcher took three dependent variables which include the GDPP*, GDPP, HCD, and DI and independent variables (lag of each dependent variable in each specification, FDI, DI, GDPP, HCD, (FDI*HCD), MS, MES_IR, MES_EXR, MES_govex, MES_Ford, OP, DWAR) as independent variable in four model specifications. The methodological scope of the study that the researcher were used includes; an Auto Regressive Distributive Lag (ARDL) model with Ordinary List Square (OLS) estimator for identifying the determinant factors to FDI flows and for evaluating impact of FDI to economic Growth.

1.7.2. Limitations of the Study

All studies are faced with various limitations and this study is no exception to the phenomena. The limitations of the study include:

1. The study used only eight main variables in analyzing determinant and impact of FDI which can limit the strength of the decision as compared to using more of variables.
2. In drawing the sample size, the researcher employees a 10% margin error. In case, the results may not be reliable as the one that can use 5% and 1% margin errors.
3. At various stages, the study may suffer due to inadequacy of time series data from related agencies.

CHAPTER-TWO

REVIEW OF LITERATURE

2.1. Introduction

Attracting foreign direct investment (FDI) has become an important policy element for developing countries to pursue growth. There has been less theoretical disagreement on FDI's potential positive impact on hosting country's economic development. FDI is often regarded as an amalgamation of capital, technology, as well as managerial and marketing skills. In fact, it is suggested that spillovers or the external effects from FDI are the most significant channels for the dissemination of modern technology. In case FDI is considered as a key ingredient for economic growth in developing countries.

Although though the theoretical controversies are somehow little, empirical studies have not been able to generate consistent evidence for significant and positive spillover effects from FDI. While many researchers find that there exist significant positive spillovers from foreign direct investment, some others find no or statistically insignificant spillovers effects. Therefore, this chapter reviews the trends, theories of determinants and impacts of FDI and empirical studies accompanying these theories.

2.2. Theoretical Review

2.2.1. Definitions of FDI and Main Concepts

The theoretical explanations of FDI largely stem from traditional theories of international trade that are based on the theory of comparative advantage and differences in factors endowments between countries. Multinational companies are usually attracted to a particular country by the comparative advantage that the country or region offers. FDI is the process whereby residents of one country (the source or home country) acquire ownership of assets for the purpose controlling of production, distribution and other activities a firm in other country (the host country) for getting new economic advantages abroad (Morgan et al, 1997)

FDI is not just only a capital movement. In addition to capital, a controlled subsidiary often receives direct input of managerial skills, technology and other tangible and intangible assets. Unlike portfolio investors, FDIs have substantial control over the management of foreign subsidiary. According to the IMF (1993) Balance of payment manual, an investment by a foreign investor is considered as FDI, if the direct investor holds a minimum of 10 percent of the share or voting power of the firm.

There are different types of FDIs like Greenfield investment, cross border merger and acquisition, and reinvested earnings. Greenfield investment refers to the establishment of a new firm that in turn enables to create productive assets in a host country. Usually, it is financed by capital coming from the investor's country. Selling of local productive assets to a foreign investor is referred as international or cross border merger and acquisition. Reinvested earnings refer part or all of the profit that is not repatriated to the investor's country but reinvested in the host country (UNCTAD, 1998).

FDI can also be categorized into market-seeking FDI which are attracted by the size and growth of national and regional markets, export- oriented which sells their product to non local markets, and government initiated FDI which are motivated to invest in specific sectors based on the incentives of the government (Accolley et al, 1997). In a similar direction, again based on their primary motives, FDI can also be classified into the following three groups: Market seeking, resource-seeking which are attracted by the low cost of resources and efficiency seeking which are attracted by the productivity of the resources mainly the labor(UNCTAD, 2007).

2.2.2. Theoretical Perspectives

This section now reviews the different positions that have been adopted towards FDIs. There are three main approaches to the analysis of FDI which are identified as Developmentalism, Economic Nationalism and dependency school.

The Developmentalism approach argued that developing countries with major obstacles to growth such as low level of savings and inadequate foreign exchange earnings, and considered FDI as essential for breaking out of this vicious circle (Jenkins, 1984). The most recent development of the neo-classical approach is the "internalization theory" which argued

that MNEs exist because imperfections of the market. By internalizing their operations firms bypass imperfections in external markets (Buckley & Casson, 1985).

The Economic Nationalism is developed during the 1960s by Hymer (1960) which viewed FDI should to be seen as part of the strategy of large oligopolistic firms and not simply as a resource flow through identifications of two major motives leading MNEs to control subsidiaries in foreign locations. These include to make use of specific advantages which the MNE has over firms in host countries; and To remove competition between the firms concerned and to eliminate conflict.

The dependency approach criticized the developmentalist assumptions about FDI's contributions in terms of additional foreign exchange, additional savings, and better technology, and management techniques. It notices three main mechanisms that link FDI to underdevelopment (Jenkins, 1987): *Drain of surplus* viewed as a vast "suction-pump" for obtaining resources from the periphery (dependent developing countries); *Creation of oligopolistic structures* in which Monopolistic firms will tend to repatriate their profits; and *Emergence of a dependent bourgeoisie* which FDI reduces the local bourgeoisie in developing countries to the subordinate status of a dependent bourgeoisie.

2.2.3. Determinants of FDI

The theories for determinants of FDI of FDI can be categories into two groups as micro and macro-level theories. The micro-level theories of determinants of FDI deals with the questions why companies prefer opening subsidiaries in foreign countries rather than exporting or licensing their products, how they choose their investment locations and why they invest where they do.

These theories include the *Early Classical Theory of FDI* which states interest rate differentials are the main reason for the firms to become a MNCs (Harrison et al, 2000), *The Product Life Cycle Theory of FDI* developed by Vernon in 1966 in which it states that a product first produced and sold in a home country until it saturate then leads to open subsidiary in other nation at maturity of the home country*; the Internalization Theory of FDI* developed by Krugman and Obstfeld in 2003 which states that the difficulty of marketing and

pricing know how forces companies to open a subsidiary in a foreign country instead of selling the technology; and *The Eclectic Theory of FDI* developed by John Dunning in 1980 which is called the *OLI paradigm* which looks the advantages of ownership(O), location(L) and internalization(I).

The macro-level determinants of FDI dealt with the host country's situations that affects the inflow of FDI, like market size, growth rate of the economic, GDP, infrastructure, natural resource, the political situation, availability of low labor cost and skilled manpower, inflation, exchange rate variability, foreign debt, fiscal deficit, geographical proximity, legal and regulatory framework, privatization, regional integration (access to regional markets), investment promotion strategy and incentive structure contract law, the socio-economic image, accessibility of investment fund, governance, human resource development, degree of openness, urbanization, coherent and stable macro & sector policies etc

2.2.4. The Economic impact of FDI: The Pro and Anti Views

Understanding the costs and benefits of FDI is imperative to formulate a sound policy. Even though, recently dominates the policy that favors FDI, there are two opponent views as to the role of FDI in economy. On the one hand, it is argued that FDI promote the host country development. In contrast, the other group argues that the costs of FDI surpass its benefits.

2.2.4.1. Pro-FDI Views

Economic growth of a given nation is determined on the level of investment which in turn largely depends on its saving levels. However, gross domestic savings are too low in the least developed countries (LDCs). FDI is an alternative source to fill the gap between savings and the required investment. In addition to not only financial capital, Foreign firms bring managerial techniques, entrepreneurial and technological skills that lack in LDCs which are highly expected be transferred to domestic firms through different forms. The profit-tax that may be collected from MNCs can also fill the government's budget deficits (Todaro, 1992).

The total amount of foreign exchange that can be obtained from export and net public foreign aid falls short of foreign exchange that is required by LDCs. FDI can help to fill this gap by reducing part or the entire deficit in the balance-of-payments. Moreover, multinational

companies manufacturing products that can be exported are able to generate net positive export earnings (Todaro, 1992). FDI can also play important role by creating employment opportunities and by integrating the host-country economy in to the world economy (OECD, 2002).

2.2.4.2. Anti-FDI Views

However, there is a group of scholars that strongly disagrees with the positive view on FDI that has been explained above. The first counter argument says that the gap between savings and investments cannot be closed, since MNCs increase income for peoples who have low income groups with low propensity to save. Foreign firms may also fail to reinvest the profit they generate in the host country; adversely affect the growth of DIs by importing the input and intermediate product from their subsidiaries in other countries. FDI might also limit the development of indigenous skills as the result of multinational companies' dominance over local enterprises (Todaro, 1992). Though the initial investment of FDIs possibly improves the current and the capital account of the host country, in the long run, the substantial import of intermediate and capital goods, repatriation of profit, interest, legalities and management fees may adversely affect the foreign exchange position of the host country (OECD, 2002).

FDIs contribute to close the gap between locally collected tax and targeted revenue. However, governments often enter in to exclusive agreements with foreign firms and provide tax holidays, tariff duty protections, and allowances. Due to these reasons, the taxes that can be collected become quite small. Moreover, these firms can significantly reduce the level of tax payment to the host country by transfer pricing techniques -a method used to reduce local profit level by paying artificially inflated prices to the intermediate products purchased from abroad subsidiaries (Thomas A. and Peter H. 2000).

2.3. Empirical Review

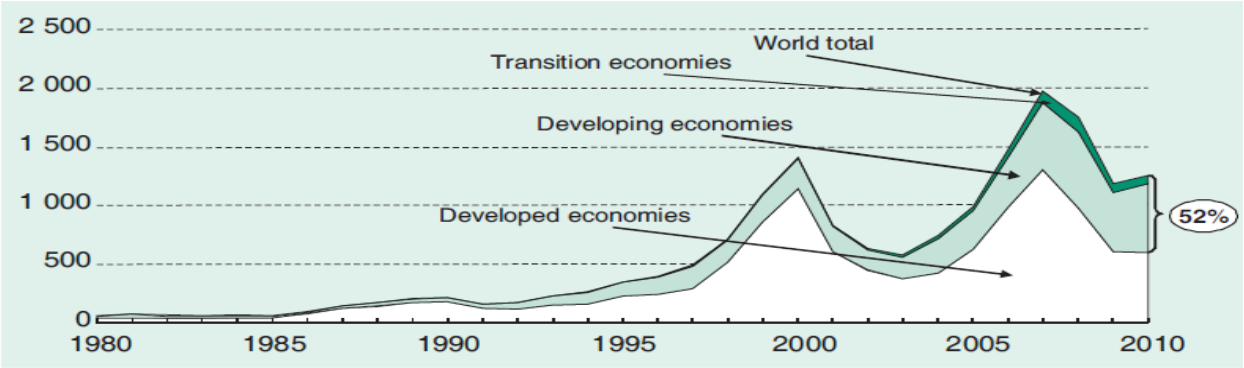
The comprehensive literature pertaining to empirical findings the trends of, the main determinants of and the rationale to what extent that FDI is necessary for sustained economic growth and development of any economy in this era of globalization are categorized under the following heads: (1). Global studies (2). Studies conducted in Africa (3). Studies conducted in Ethiopia

2.3.1. Global (Temporal) Studies

2.3.1.1. Trend Related Studies

As shown Global FDI inflows in 2010 reached an estimated $1,244 billion a small increase from 2009's level of $1,185 billion. However, there was an uneven pattern between regions and also between sub regions. FDI flows to develop and transition economies further reduced in 2010. In contrast, those to developing economies recovered strongly. FDI flows to developing economies rose by 12 per cent (to $574 billion) in 2010 (UNCTAD, 2011).

Figure 2.1. FDI flows, global and by group of economies, 1980–2010 (in Billions of dollars)



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

In addition to LDCs, LLDCs and Small Island developing States, flows to Africa continued to decrease, similar to South Asia. In contrast, major emerging regions, such as East and South-East Asia and Latin America experienced strong growth in FDI inflows (UNCTAD, 2011).

2.3.1.2. Determinant Related Studies

Even though many empirical studies were conducted globally to identify the factors that determine the flow of FDI, the factors which were identified as determinants of FDI greatly varied from study to study and from country to country (UNCTAD, 1998). Batra et al (2003) argue that the determinants of FDI to Africa are different from the determinants to the other parts of the world. Asiedu (2004) agrees with this argument and states that the lessons from East Asia and Latin America countries do not apply to African countries. The foreign investors generally collect information separating to *five adequate conditions* for investment which include competitiveness of human capital; adequacy cost of doing business; access to markets; the diversity of the market; and the extent of available state aid (Zbida, 2011).

Hooda (2011), conducted a study to analyze the determinants of FDI in Indian economy found that exchange rate, R&D expenditure, trade GDP, reserve GDP, and financial position of country have a positive effect in attracting FDI. According to Herzer et al, (2006), the impact level of FDI on growth seems to depend on economic and political conditions in the host country, such as the rate of per capita income, the human capital base, the level of openness in the economy, and the extend of the development of domestic financial markets

2.3.1.3. Economic Impact Related Studies

Since the middle of 1980s, the FDI becomes more important in the world economy. Their growth rate and importance have been over both of the world trade and the international financial transactions. Also this means, that FDI has become increasingly a leading power in the world economy, and dominant element of the world economic integration, by the other name globalization (UNCTAD, 2002).

By increasing capital stock, FDI can increase country's output and productivity through a more efficient use of existing resources and by absorbing unemployed resources (Zbida, 2011). Different types of FDI lead to varied types of spillovers, knowledge transfers and tangible and intangible capital flows (Hooda, 2011). Moreover FDI stimulates the development and propagation of technological skills through MNCs, internal transfers and through linkages and spillovers among firms (Borensztein et al, 1998). FDI also helps to increase local market competition, introducing modern job opportunities and encourage market access for the developed world (Noorbakhsh et al, 2001) all of which should ultimately contribute to economic growth in recipient countries.

A study conducted by OECD, (2000) on the impact of FDI on china's economy comes across with the following conclusions. The international effects of chains FDI includes; increases comparative advantages, building dynamic specializations, domestic firms have lagged behind, regional disparities have increased, positive impact on china's balance of payments. The domestic effect of the chains FDI includes, important source of capital, has created jobs, has upgraded skills, has paid higher wages, has raised factor productivity and increased technology transfer, has modified china's industrial structure, has increased domestic competition.

However, many have found that FDI has negative effects on the growth prospects of the recipient economy. FDI may not lead to growth rate because MNCs tend to operate in imperfectly competitive sectors. As a result, FDI may force out domestic savings and investment. Moreover, FDI may have a negative impact on the external balance because profit repatriation will tend to affect the capital account negatively. It is also at times associated with dominance investment, poor employment, income inequitably and greater external dependency (Ramirez, 2000).

Apparently, developing countries need to have reached a certain level of development in education, technology, infrastructure and health before being able to benefit from a foreign presence in their markets. Imperfect and underdeveloped financial markets may also prevent a country from reaping the full benefits of FDI. Weak financial intermediation hits domestic enterprises much harder than it does MNEs (OECD, 2009). As cited by Zbida (2011), two categories of empirical research presented as positive and negative effects, are organized below:

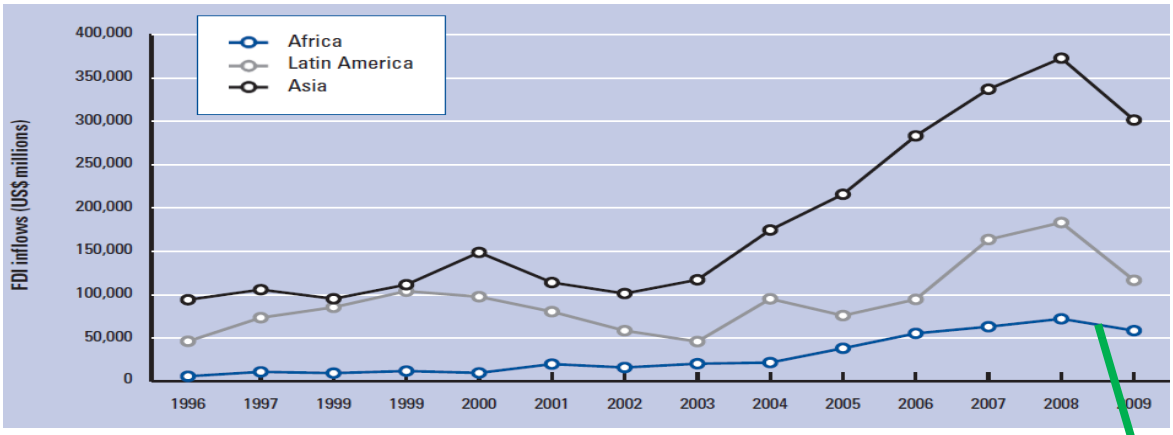
Empirical studies demonstrating the positive relationship	Unable to find a significant positive relationship analysis
[Gregorio Lee, 1998]: if the quality of human capital and capital absorption capabilities exceed, a certain level of foreign direct investment will significantly raise the pace of catching-up economy.	[De Mello 1999]: multi-country national on the basis of analyzing the data, you cannot find a clear positive link between FDI and economic growth.
[Hermes Lensink, 2000]: very important for developing countries - over the previous two elements - the financial market development is to achieve positive effects.	[Lipsey, 2002]: the structure of the host country of a significant effect, but the spillover is not clearly detectable
[Campos Kinoshita [2002]: the economies in transition, between 1990-1998 confirmed by examining the FDI and economic growth among a significant positive relationship.	[Hunya, 2002]: the acceding countries is highly dependent on the structural change in manufacturing FDI inflows the participation of foreign companies advantages in productivity, exports, investment and profit compared to the national ones, duality of individual economies. Technology transfer, there is not spillover.
[Xu, 2000][6]: FDI enhances factor productivity growth.	

2.3.2. Studies Conducted in Africa

2.3.2.1. Trend related Studies

During 2001–09, developed economies continued to account for most of the world FDI flows: they were the main source of outward FDI and received about 60 percent of total inflows during this period. Nevertheless, the long-term geographical pattern of the FDI flows has been changing, with more FDI going to developing countries, including countries in. In fact, in 2009, developing and transition countries received almost half of the world's FDI. Preliminary estimates indicate that in 2010—for the first time—developing and transition countries received more than 50 percent of world FDI inflows (Africa Competitiveness Report, ACR, 2011).

Figure 2.2. FDI flows into Africa, Asia, and Latin America, 1996 to 2009 (millions of US$)



Source: UNCTAD *FDI Statistics* database

Africa

African countries also experienced a rise rapidly in capital flows; they received about 8 percent of total capital flows and 10 percent of FDI going to developing countries during 2001–09. Indeed, after years of relatively slow growth, net capital inflows to Africa accelerated in the 2000s and surged between 2004 and 2007. Peaking at almost US$76 billion in 2007, the net capital inflows amounted to about 5 percent of Africa's GDP at that time. This share was close to those of both the Middle East and Latin America (about 6 percent of GDP), but notably below capital flows received by Central and Eastern Europe and the Commonwealth of Independent States countries (15–16 percent of GDP). At the same time,

since FDI accounted for the majority of their private capital inflows, African countries were mostly shielded from the sudden halt in capital flows (ACR, 2011)

2.3.2.2. Determinant Related Studies

Although the reasons for the increase in private capital flows to low-income countries varied, on the "domestic economic fundamentals/pull side" they included privatization and deregulation; improvements in general investment environment, including trade liberalization and cutting costs of doing business; and broader considerations such as political and macro - economic stability. On the "external/push side," private capital flows to low-income countries were closely related to the business cycle upswing and the heightened risk appetite of foreign investors (ACR, 2011).

Srinivasan, (2002) found that certain African countries have been able to attract FDI, not because of natural resource availabilities, rather through their significant improvement in the business environment and intentional image-enhancing campaigns. Although most African countries have undertaken substantial economic reform, Asiedu (2002) founds that the decline in African FDI as a ratio of total FDI is partly because improvements in policy environment have not been large relative to reforms in other regions.

2.3.2.3. Economic Impact Related Studies

The consensus in the literature appears to be that FDI spillovers depend on the host country's capacity to absorb the foreign technology and the type of investment climate (Aitken et.al. 1997). A survey data from Kenya, Tanzania, and Uganda firms suggested that foreign firms are better productive, bring better management skills, made big investment in infrastructure and in the development of their workers, and are more connected to globalized markets (Todd et al, 2004).

Most studies on FDI and growth are cross-country evidences, while the role of FDI in economic growth can be triggered to specific countries. Further, only a few of the country specific studies actually took conscious note of the endogenous nature of the relationship between FDI and growth in their analyses (Aitken et.al. 1997). Zhang (2001) found that the extent to which FDI contributes to growth depends on the economic and social quality of the

recipient country; and conclude that the impact FDI on the growth of a given economy is subject to country and period specific.

2.4. Over view of the Ethiopian Economy and FDI

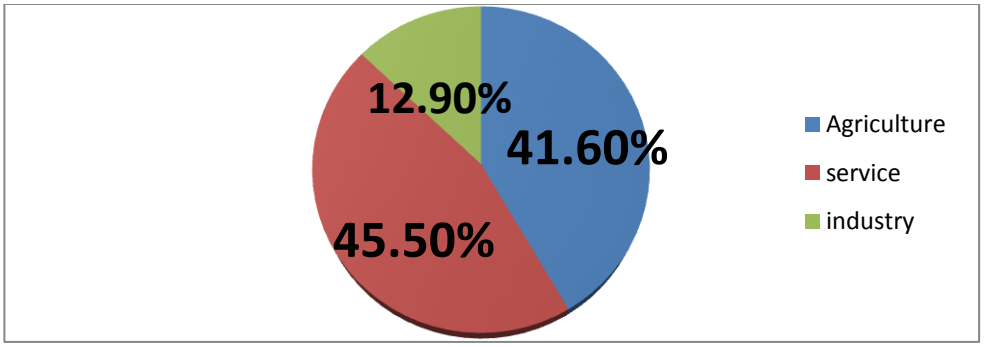
2.4.1. Over View of the Ethiopian economy

For the last hundred years several staggering facts and figures are have been reported about the socio- economic conditions of Ethiopia. Ethiopian Economic Association (2000) annual report indicated that about 89% of the population lives below 2 dollar a day poverty line. According to World Bank (2008) report, more than 84% of the population lives in rural area. Life expectancy at birth is 43 years, and only 22% of the population has access to improved water sources. The purchasing power of the people is one of the lowest in the world etc are very few of the many.

Numerous macroeconomic reforms have been implemented with the objective of achieving macroeconomic stabilization and growth since 1991. The macroeconomic reforms include privatization of state owned enterprises, liberalization of trade policy, reduction of import tariff rates, elimination of non-tariff barriers, devaluation and deregulation of price & exchange rate controls (UNCTAD, 2002).

Following these strategic reforms, the Ethiopian economy has shifted to a higher growth trajectory since 2003/04. This has been sustained, and during the last six years over all real GDP has grown rapidly at an average of 11% per annum. The structure of the economy can be decomposed into three main economic sectors: the agriculture sector, the industrial sector and the service sector. The performance of these three main economic sectors i.e. Agriculture, Industry and Service have registered an average annual growth rate of 8.4%, 10%, and 14.6% respectively. This account about 41.6%, 12.9% and 45.5% of the real GDP (GTP, 2010).

Figure2.3. The ratio of the three economic sectors to GDP



Sources: own construction (by taking the data from GTP,2010)

From the demand, GDP at a current market price has increases by about 29.6% per annum during the last five years. At the same time gross capital formation, total export and total import registered an average annual growth rate of 28%, 27.1% and 27.6% respectively.

Table 2.1. Percentage share of aggregate consumption to GDP at CMP

Item	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Total Consumption	94.1	95.4	91.3	94.8	93.6	94.4
Gross Capital Formation	23.8	25.2	22.1	22.4	22.7	22.3
Exports of Goods and Services	15.1	13.8	12.7	11.4	10.5	13.6
Imports of Goods and Services	35.5	36.5	32	30.8	28.7	33
Resource Balance	-20.4	-22.7	-19.3	-19.4	-18.2	-19.3
Gross Domestic Saving	5.9	4.6	8.7	5.3	6.7	5.5

Source: GTP, 2010

Although, export have increased for the last five years the trade balance did not improve as desired. The trade deficit widened during the period because of a significant increase in imports, an increase necessary to sustain the high economic growth level achieved (GTP, 2010)

Table 2. 2 Import and export trade as share of to GDP

Item	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Average
Export (merchandise)	6.9	6.6	6.1	5.5	4.5	4.0	5.4
Import (merchandise)	29.5	30.3	26.3	25.5	23.8	23.3	26.1
Trade balance	-22.6	-23.7	-20.2	-20.1	-20.0	-19.3	-20.9

Source: GTP, 2010

2.4.2. Determinant Related studies

The study with regard to determinant of FDI on the case Ethiopia is very limited. But as an initial point, there are some revised articles. The study conducted by Getnet and Hirut, (2005) was focusing on identifying the determinant factors to the FDI inflow in Ethiopia. It was a time series analyses covering for the period of 1974-2001. Secondary data were employed for the study and the data sources were IMF International Financial Statistics Year Books and the World Bank World Development Indicators. And the result of their study revealed that they evaluate six independent variables; of which Market Size, Export orientation, Liberalization, Growth rate of real GDP, Macroeconomic stability, positively related to FDI; whereas Infrastructure, Human capital are negatively related to FDI.

Another unpublished study conducted by Megabru, (2011) was focusing on identifying the determinant factors to the FDI inflow in Ethiopia. Secondary data were employed for the study and he tried to identify some variables and make conclusion as follows. Market size, Openness, Government expenditure, Human capital, and domestic investment has positive and statistically significant; Market growth and Inflation positive but statistically insignificant effect on FDI. On the other side Openness, Foreign debt, Telephone line per 1000 people, Lagged FDI has negative effect on FDI.

2.4.3. Impact Related Studies

It is serious problem to find previous study that identifies the impact of FDI in the Ethiopian economy. The only option that can be taken here is that to take some official reports to get some bird's eye view over the subject.

The positive and significant effect of economic growth on FDI emphasizes the crucial role of economic growth in stimulating investment by foreign as well as domestic investors. Ethiopia has had a incredible growth performance from the 1991 onwards. High rate of GDP growth signals a country's economic prospects and encourages foreign investors. Keeping up the growth momentum and ascertaining its sustainability is a key to attracting more FDI. In this regard, sustaining the growth performance of the economy through the development of favorable macroeconomic environment, building vital infrastructure, encouraging the quality of institutions as well as improving the quality of human capital are some of the important measures essential to attract FDI (Getnet and Hirut, 2005).

Some large Greenfield projects highlight the success of a number of land locked developing countries (LLDCs) in attracting FDI, thereby enhancing their productive capabilities and generating employment. For instance, Xinxiang Kuroda (China) invested $67 million in a project in the textiles industry in Ethiopia, creating about 1,100 jobs. Similarly, an Indian-funded project in the food industry, also in Ethiopia, is expected to create about 340 jobs (UNCTAD, 2011).

2.5. Description of Variables and Conceptual frame work

2.5.1. Description of the Variables

By considering the overall reviews of empirical and theory the main variables that can have great influence on FDI are estimated to be the following; and they are be tested in the main study.

a. Market size and growth: the size of the market and the growth of the market have proved to be the most prominent determinants of FDI. Foreign investors are highly attracted by large markets in order to utilize resources efficiently and exploit economies of scale.
b. Openness: the ratio of trade (imports + exports) to GDP is usually used as measure of openness of an economy. This ratio is additionally usually interpreted as a measure of trade restriction. The impact of openness on FDI depends on the kind of investment. When investments are market seeking, trade restrictions, will have a positive impact on FDI.
c. Macroeconomic stability: Inflation rate, government expenditure, employment level, exchange rate, and foreign debt are used as proxy variables of macroeconomic stability. Low inflation, high employment level, low foreign debt, stable government expenditure, have a positive impact on FDI
d. Infrastructures: A country with high level of infrastructure attracts more FDI. For this study, it covers three main dimensions (telecom services, transportation and electric power utilities).
e. Human capital: foreign investors are highly attracted with availability of high quality and low cost of labor.
f. Growth of domestic investment: when domestic investors are highly investing it gives confidence to foreigners to make more investment.

g. Lagged FDI: foreign investors are also interested in countries with an existing concentration of different foreign investors.

And by reviewing the above literature the possible economic impact of FDI is going to expressed by its effect on net export performance (the cumulative difference in export and import), by transferring new technology, by developing new human capital, by growth of domestic investment, by its ability to attract additional foreign investors, by its contribution to macroeconomic stability are some of the many. But they will be analyzed in detail in the main study.

2.1.1. Expected Signs

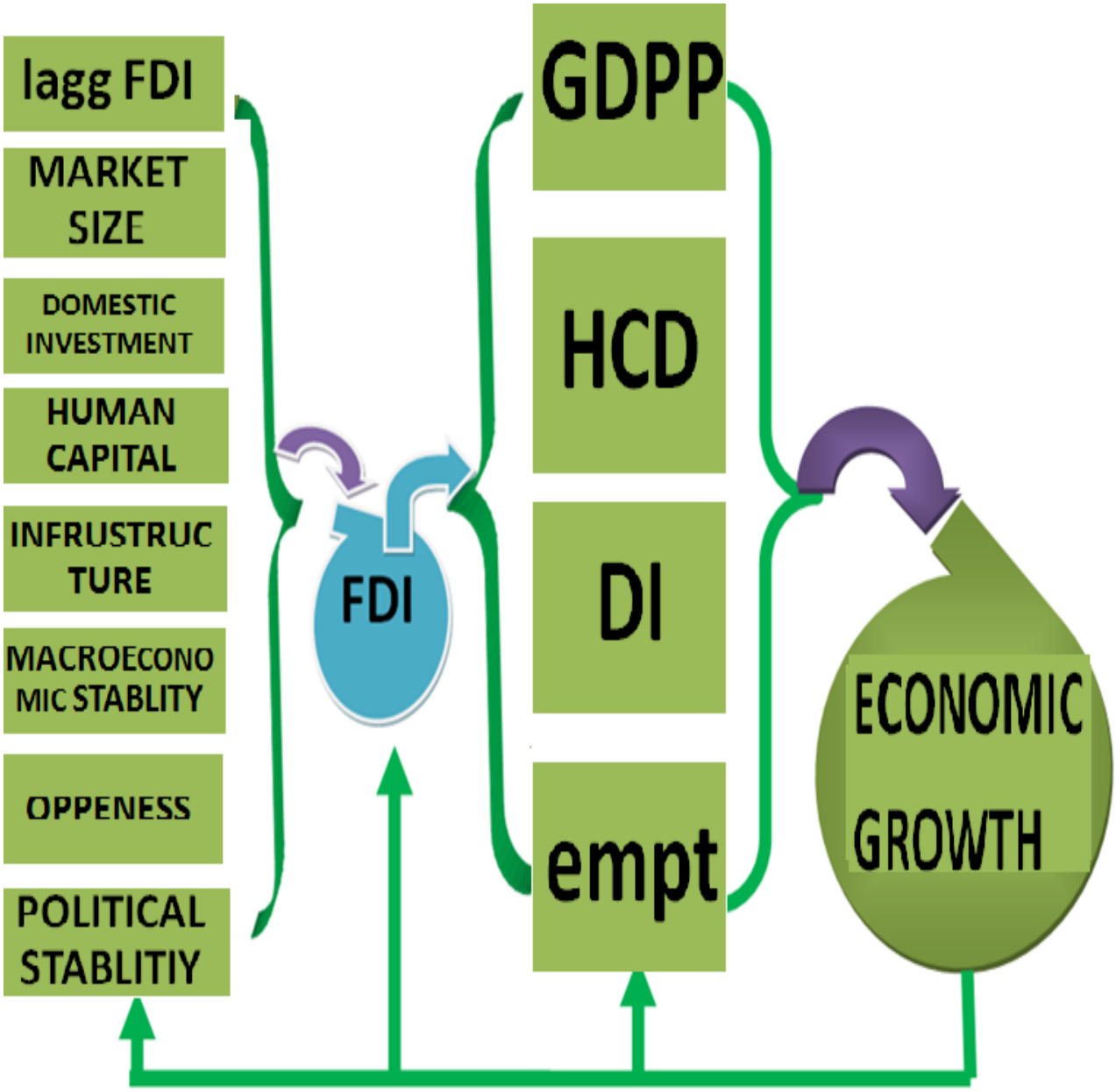
Table2.3. Expected signs of variables of the study

Variables		Abbreviations	Descriptions	Expected signs (SR/LR)
Market size		MS	The number of populations/consumers	+/+
Real GDP per capita		GDPP	The annual real GDP per capita	-/+
Lagged FDI		LFDI	Previous year FDI flow	+/-
Domestic investment		DI	Annual domestic investment	+/+
Human Capital Development		HCD	Annual secondary school enrollment	-/+
Infrastructure	Telecommunication	IS_Tele	Number of telephone per 100 peoples	-/+
	Power	IS_EPow	Annual production of electric energy	-/+
	Transportation	IS_Trans	Availability transportation facilities (road)	+/+
Macro Economic stability	Inflation rate,	MES_IR	The average increase in price of commodities	-/-
	government expenditure,	MES_govex	The amount gov't total expenses relative	+/+
	employment level,	MES_empl	The rate of adult employment	+/+
	exchange rate	MES_EXR	The rate of exchange of birr to foreign currency	+/-
	foreign debt	MES_Ford	The debt of the government relative to GDP	+/-
Openness		OP	Ratio of trade to GDP in current price and in current exchange rate	-/+
Net export performance		NEP	the difference b/n export and import	-/-
Political stability		DWAR	A dummy variable which assumes 1 is political instabilities and tribunals otherwise 0	-/+

2.1.2. Conceptual Frame Work

As a result of the literature and empirical reviewed above; the study has developed the following schematic representation of the conceptual framework.

Figure2.4. Conceptual frame work of FDI and Economy



Source: own construction (by taking the theoretical and empirical review)

CHAPTER-THREE

METHODOLOGIES OF THE STUDY

3.1. Research Strategies and Designs

International business research in general and that of FDI in particular favor quantitative methods over qualitative methods. Indeed, Andersen and Skaates (2004) found that only 10% of all published international business research used qualitative methods. Paradoxically, at the same time as qualitative research continues to be marginalized in practice, calls for more research of this kind are made at regular intervals (Marschan-Piekkari & Welch, 2004).

Even though there is limited experience using of primary data sources, the research strategy adopted for this research was basically both qualitative and quantitative approach. In trend analysis only quantitative analysis and in describing the determinant factors and impact of FDI in the economy, both qualitative and quantitative approaches were used and the triangulated effect of the findings of the two analyses is taken for conclusions. The research design that the researcher will use for this research is Descriptive Survey Design which entails the collection of data on more than one case (usually quite a lot more than one) within the given study period.

The general populations of this study are all the foreign investment projects that are registered under three categories (pre implementation, implementation, and operation) in the EIA data base. As the total foreign investment project 6,375 were then the general population of the study. The target populations for this study are the foreign are actually in operation within the study period. Therefore the target population of the study includes 1,350 foreign investors.

The researcher used both none probability and probability sampling techniques which were employed at three stage sampling techniques. First, purposive sampling technique was employed to select the best representative study area. Incase since 78.5% (5006/6375) of FDIs of the country are found in Addis Ababa, around Addis Ababa, and Oromia, then making the study in Addis Ababa and around Addis Ababa is believed to be highly representative. Second stratified sampling method was used. There are 5 stratum which include; Agriculture, Manufacturing, Services, Construction, Tour Operation, Transport and Communication and

Others. Then fourth, within each stratum, a simple random sampling technique was used to draw the individual samples with equitable representation of each stratum. Because, the investments projects within each cluster are equally relevant to the study.

To determine the sample size and representative of the target population, the study use statistical instrument formula. The mathematical formula is developed by Yamane (1976). $n = \frac{N}{1+Ne^2}$, Where N=total target population, n= sample size & e= margin error. The study assumes that the margin of error 10% and confidence level or error free of 90%. Using the above portrayed statistical formula, the sample size of study computed as follows.

$$n = \frac{N}{1+Ne^2} = \frac{1350}{1+1350(0.1)^2} = 93.103 \approx 93\ (i.e.\ duto\ round\ of\ decimal)$$

The proportional stratified sampling for each stratum will be determined by n /N = 93/1350= 0.0689 which means that 6.89% of each clusters as calculated in the above table.

Table3.1.1. Number of investment projects which are under operation within the study period

Stratum of investment	Number of FDI projects	Sample size @ n/N=0.0689
Agriculture	195	14
Manufacturing	530	36
Services (education, health, hotels)	130	9
Construction (Mining, real estate, all type of construction)	418	28
Tour Operation, Transport and Communication and Others	77	6
Total	1350	93

The study will consider one respondent from each organization. They will be the managing director of each organization. Because they are the one who can provide the detailed information on the subject matter that are necessary to conduct the study.

3.2. Data Type, Sources and Collection Procedures

This study used both qualitative and quantitative data types; and primary and secondary data sources. The primary data mainly focused on the determinant factors and impacts of FDI inflows through a qualitative assessment of the level of agreement of the respondents in consideration of the variables under investigation which are listed in the model specification

below. The secondary data were collected from various sources mainly from Ministry of Finance and Economic Development (MoFED), Ethiopian Investment Agency (EIA), IMF, WTO, UNCTAD, etc. It is a time series data which were collected for the period 1992 to 2012.

In order to collect the primary data, the data collection instrument that the researcher used was structured questionnaire. To make it easily manageable each question was developed in close ended.The next job was distributing, collecting and enumerating the collected data.

3.3. Methods and Tools of Data Analysis

The analysis of data was carried out using different data analysis tools. Both the qualitative and quantitative data were analyzed concurrently to arrive at dual edged sword conclusions. The primary data which were collected from the questionnaire respondents are mainly focusing on the analysis of the second and third objectives. For such reason a questionnaire of Likerts type with a five points of rating scale was prepared in which respondents are asked to rate (1) which is least important or least problem up to (5) which is most important or most problems.. With the help of STATA versions 11 descriptive statistics summaries such as, percentages and mean were drawn which were analyzed with the measurements and decision rules adopted from Vichea (2005); the interval for breaking the range distance in measuring the variables is going to be calculated by

$\frac{(n-1)}{n} = \frac{(5-1)}{5} = \frac{4}{5} = 0.8$, where n=numbers of rates in each the questionnaire

Meaning mean value of the variables falling within

- ✓ 4.20-5.00 are going to be taken as the most important or the most problem level
- ✓ 3.40-4.19 are going to be taken as the high important or the high problem level
- ✓ 2.60-3.39 are going to be taken as the medium important or the medium problem level
- ✓ 1.80-2.59 are going to be taken as the less important or the less problem level
- ✓ 1.00-1.79 are going to be taken as the least important or the less problem level

The time series data that are collected from different sources were focusing at analyzing all the three objectives. Different statistical regression tools will be used. In trend analysis the researcher evaluate the linearity of increase or decrease over the given period of time by treating FDI as dependent variable and Time mainly the year of investment as independent variable. For this simple Linear Regression method will be used. In analyzing the determinants and impacts; taking the characteristics of the data availed at hand; the researcher adopted an Auto-Regressive Distributive Lag (ARDL) Model with a Bound test for Co-integration from Pesaran (2001). After satisfying the data to the requirements of to the model and approach in use through different Goodness-Fit-Tests; the researcher use an Ordinary Least Square (OLS) estimator for analyzing the determinant and impact of FDI. (The rationales for selecting this model other than the other models are discussed in page 54 of this study). And the estimations will be carried out using the STATA program 11th version.

3.4. Model building

1. First simple linear regression was conducted by treating FDI as dependent variable and time as independent to look the average change of FDI over time. Then to compute each annual growth the following formula will be used.

   $AGR = \frac{X_2 - X1}{X_1}$, where; X_1=first value of variable X and X_2 = second value of variable X

2. To study the determinant factors of FDI, the following model was framed

   FDI = f [lagged FDI, HCD, MS, GDPP, MES_IR, MES_EXR, MES_Ford, MES_govex, IS_Tele, IS_Elpow, IS_Trans, OP, NEP, DWAR] ……..3.1

$$FDI_t = \beta_0 + \beta_1 lnFDI_{t-1} + \beta_2 \text{lnHCD}_t + \beta_3 \text{lnGDI}_t + \beta_4 \text{lnMS}_t + \beta_5 \text{lnGDPP}_t + \beta_6 \text{lnOP}_t + \beta_7 \text{lnMES\_IR}_t + \beta_8 \text{lnMES\_EXR}_t + \beta_{10} \text{lnMES\_Ford}_t + \beta_{11} \text{lnIS\_Tele}_t + \beta_{12} \text{lnIS\_Epow}_t + \beta_{13} \text{lnIS\_Trans}_t + \text{DWAR} + U_t \dots\dots\dots\dots\dots 3.2$$

3. To study the impact of FDI Ethiopian economy; first the power of the economy was measured, and then four specifications were developed which initials to measure through four channels of impact. These include its impact on GDPP, HCD, empt, and DI.

3.1. To measure the power of the economy to reap the benefits of FDI

$$\text{GDPP} *= f[\text{lagGDPP}, \text{FDI}, \text{DI}, \text{HCD}, \text{MS}, (\text{FDI} * \text{HCD}), \text{Tele}, \text{Elpow Trans}, \text{IR}, \text{EXR}, \text{govex}, \text{OP}, \text{DWAR}]$$

$$GDPP*_t = \beta_0 + \beta_1 lnGDP_{t-1} + \beta_2 lnFDI_t + \beta_3 \ln HCD_t + \beta_4 \ln DI_t + \beta_5 \ln FDI * HCD_t + \beta_6 \ln OP_t + \beta_7 \ln MES\_IR_t + \beta_8 \ln MES\_EXR_t + \beta_9 \ln MES_{Ford\,t} + \beta_{10} MES_{govex} + \beta_{11} \ln IS_{Tele\,t} + \beta_{12} \ln IS_{Elpow\,t} + \beta_{13} \ln IS_{Trans\,t} + \beta_{14} \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots 3.4$$

3.2.To measure the effect of FDI on Ethiopian economy through GDPP

GDPP = *f* [lagged GDP, FDI, HCD, MS, MES_IR, MES_EXR, MES_Ford, MES_govex, IS_Tele, IS_Elpow, IS_Trans, OP, NEP, DWAR]……3.3

$$GDPP_t = \beta_0 + \beta_1 lnGDP_{t-1} + \beta_2 lnFDI_t + \beta_3 \ln HCD_t + \beta_4 \ln DI_t + \beta_5 \ln MS_t + \beta_6 \ln OP_t + \beta_7 \ln MES\_IR_t + \beta_8 \ln MES\_EXR_t + \beta_9 \ln MES_{Ford\,t} + \beta_{10} MES_{govex} + \beta_{11} \ln IS_{Tele\,t} + \beta_{12} \ln IS_{Elpow\,t} + \beta_{13} \ln IS_{Trans\,t} + \beta_{14} \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots 3.4$$

3.3.To measure the effect of FDI on the Ethiopian economy through its effect HCD

HCD = *f* [laggedHCD, FDI, GDPP, MS, MES_IR, MES_EXR, MES_Ford, MES_govex, IS_Tele, IS_Elpow, IS_Trans, OP, NEP, DWAR] …….3.5

$$HCD_t = \beta_0 + \beta_1 \ln HCD_{t-1} + \beta_2 lnFDI_t + \beta_3 \ln DI_t + \beta_5 \ln MS_t + \beta_6 \ln GDPP_t + \beta_7 \ln OP_t + \beta_8 \ln MES\_IR_t + \beta_9 \ln MES\_EXR_t + \beta_{10} \ln MES_{Ford\,t} + \beta_{11} MES_{govex} + \beta_{12} \ln IS_{Tele\,t} + \beta_{13} \ln IS_{Elpow\,t} + \beta_{14} \ln IS_{Trans\,t} + \beta_{15} \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.6$$

3.4.To measure the effect of FDI on the Ethiopian economy through effect to DI

DI = f [lagged DI, FDI, HCD, MS, GDPP MES_IR, MES_EXR, MES_Ford, MES_govex, IS_Tele, IS_Elpow, IS_Trans, OP, NEP, DWAR] …….3.7

$$DI_t = \beta_0 + \beta_1 \ln DI_{t-1} + \beta_2 lnFDI_t + \beta_3 \ln HCD_t + +\beta_4 \ln MS_t + \beta_5 \ln GDPP_t + \beta_5 \ln OP_t + \beta_6 \ln MES\_IR_t + \beta_7 \ln MES\_EXR_t + \beta_8 \ln MES_{Ford\,t} + \beta_{11} MES_{govex} + \beta_9 \ln IS_{Tele\,t} + \beta_{10} \ln IS_{Elpow\,t} + \beta_{11} \ln IS_{Trans\,t} + \beta_{12} \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.8$$

3.5.To measure the effect of FDI on the Ethiopian economy through effect to empt

empt = f [lagged empt, FDI, HCD, MS, GDPP DI, MES_IR, MES_EXR, MES_Ford, MES_govex, IS_Tele, IS_Elpow, IS_Trans, OP, NEP, DWAR] …….3.9

$$empt_t = \beta_0 + \beta_1 lnempt_{t-1} + \beta_2 lnFDI_t + \beta_3 \ln HCD_t + \beta_4 \ln GDPP_t + \beta_4 \ln DI_t + \beta_5 \ln MS_t + \beta_6 \ln OP_t + \beta_7 \ln MES_{IR_t} + \beta_8 \ln MES_{EXR_t} + \beta_9 \ln MES_{Ford_t} + \beta_{10} MES_{govex} + \beta_{11} \ln IS_{Tele_t} + \beta_{12} \ln IS_{Elpow_t} + \beta_{13} \ln IS_{Trans_t} + \beta_{14} \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.10$$

Whereβ's are parameters of coefficients and U_t and V_t are the error term. The researcher was assumed that the error terms are identically, independently and normally distributed with zero mean. In the above specified models, both the dependent and independent variables are expressed in logarithms form. The use of the variables in logarithms has three advantages. First, it makes it relatively easy to interpret the slope parameters of the independent variables. The coefficients of the logged independent variables are the elasticity of the dependent variable with respect to a one percent change in the independent variables. Secondly, the use of logged values can reduce the problem of outliers. Thirdly, log transformation of both dependent and independent variables can linearism the non-linear relationship between the variables.

However since the model for employment impact didn't pass the diagnostics test, mainly the unit root test parallel with the ARDL model's requirements, the researcher analyzed only the first three impact model specification.

The incorporation of the lagged FDI, $LFDI_{t-1}$, in the equation (2) can have the possibility to violate the exogeneity condition and therefore, it will be assumed that this variable is contemporaneously exogenous. Despite this drawback for the model, $LFDI_{t-1}$ captures the dynamic nature of FDI and also mitigates the autocorrelation problem The data that the researcher is going to use is a Time Series Data. Such data are subject to different problems. Empirical work based on time series data assumes that the underlying time series is stationary. There for tests for stationary, co integration, normality, autocorrelations, multicollinearity, heteroscedasticity, model specification tests are conducted to best suit the specifications to the ARDL model.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

This aim of the study was to assess the trends and patterns of FDI flows, to identify the determinant factors and to evaluate the impact of FDI on the economy of the country. This chapter deals with the data analysis and interpretation. The study used both qualitative and quantitative tools of analysis. Accordingly, it is classified in to three main parts. The first part deals with collected primary data. The second part with the analysis and interpretation of the summary of descriptive statistics, correlation, preliminary tests, testing of hypothesis and regression results of an econometric analysis. And the third part brought the results of the first and the second part and interprets the triangulated effect of these two findings as follows here under.

4.1. QUALITATIVE ANALYSIS AND INTERPRETATION

To strengthen the conclusions and findings of this paper the study collects a primary data from the main actors of the study to measure their attitude towards the issues or the variables that are under consideration in this study. The questionnaire was developed and distributed to the sample developed for this study; which was 93 foreign enterprises managers. From the total distributed questionnaire 76 which account 81.7 percents were collected and the result of this questionnaire is organized in this section as follows.

4.1.1. SUMMERY OF RESPONDENTS

The main respondents of this study are purposely taken to be the managers of foreign investment projects hoping that they are owners who make the decisions through in-depth analysis of their projects for investment or they are employed managers who have a well organized idea about the reasons for decision of investments from the orientations of their employers. But these managers can be general managers, deputy general managers or delegated. And with regard to the foreign enterprises they can be Ethiopians or other nationalities. The summary of all these are revealed below.

Table4.1.1. General information of respondents of FDIs and DIs

variables	criteria	Foreign enterprise respondents	
		Freq.	Percent
Position of respondents	General manager	35	46.05
	Deputy general manger	31	40.79
	Delegated	10	13.16
	Total	76	100
Share of respondent	Wholly owner	16	21.05
	Manager with share	27	35.53
	Employed manager	33	43.42
	Total	76	100
Nationality of respondent	Ethiopian	19	25.00
	Not Ethiopian	57	75.00
	Total	76	100
Ownership of the enterprise	Wholly owned	36	47.37
	Joint venture	31	40.79
	Other	9	11.84
	Total	76	100

Source: own construction from a survey questionnaire, 2013

As it can be shown from the table 4.1.1 above; of the total respondents of the foreign enterprise 46.05 40.79, and 13.16 percents are general managers, deputy general managers and delegated respectively. If the respondents have some share they are expected to have valuable input up on the decision for investment. Then having a large proportion of respondents with share is much better to the reliability of the findings of the study. Then with this intention 21.05, 35.53 and 43.42 percents of managers are wholly owners, managers with shares and employed managers respectively. And this tells as the 56.58 percent of the respondents are found to be managers that have a crucial input up on the decision of the enterprise. This can be taken as a good base for the reliability and relevance of the findings and conclusions of the study. The other important finding is that, only 25 percent of the total surveyed enterprises' managers are found to be Ethiopian the rest are found to be expatriate managers. To this end the form of ownership of these enterprises is found to be 47.37, 40.79 and 11.84 percents of the enterprise are found to be a wholly owned, joint venture and other form of ownership. Therefore being the greater portion of the respondents are genral and deputy managers having their own shares and are expatriates enables the researcher to get reliable responses up on the questions.

4.1.2. DETERMINANT FACTORES OF FDI IN ETHIOPIA

4.1.2.1. Objectives of FDIs

When investors are looking in to overseas investment opportunities it can be due to different factors that can be broadly categories as a pull (because of the opportunities in host country is attractive) and push factors (because of the inconveniencies of their home country). Fitting with one or both of these general categories there are certain objectives that FDIs want to achieve by investing in overseas. When the Ethiopian FDIs are evaluated in line with this issue

Table4.1.2 Objectives of FDIS for investing in Ethiopia

Variable	Mean	Std. Dev.	Level of importance
To get improved market access	4.263158	.8542977	Most important
To get better row material	4.32	.8567695	Most important
To develop new product	2.131579	1.111661	Less important
To use new technology	2.526316	1.148607	Less important
To reduce risks	4.105263	.7585767	High important
To reduce cost of operation	4.473684	.553141	Most important
To consolidate different operations	2.184211	1.162876	Less important

Source: own construction from a survey questionnaire, 2013 n=76

Taking the decision rule stated in chapter three that the researcher adopted from Vichea, (2005) in to consideration, of the various reason that the FDIs invest in Ethiopia; to reduce cost of operation, to get better and improved row material, to get improved market access with a mean value of 4.47, 4.32 and 4.26 are the most important objectives that they want to achieve. Reduction of risks that can happen in their home country is also a second important objective with a mean of 4.10. In contrary, the issues of developing new product, using new technology, and consolidation of operations are not taken as an important objective of the FDIs in Ethiopia. These findings are mostly consistent with conclusions of Vichea, (2005) and the neoclassical theory developed by (Harrison et al, 2000) which states market size and growth, reduced costs and risks of operations are the main objectives for overseas investments.

Having these objectives are not enough to make an investment decisions in the overseas. There are certain requirements of the FDIs that a list of host country should satisfy. Of these,

the political stability, the policy issues and the trade liberalizations, economic environment, infrastructural facilities, macroeconomic stabilities, and the human capital are some of the most important variables the analyzed in this study and their result is organized as follows

4.1.2.2. The political stability

The role of political stability of a given nation is undiminished in attracting the eyes of the foreign investors. Back to before two decades this country was known for its civil war and continues political unrests. But for the last two decades the political situation is taken as relatively stable with some exceptional years of some political tribunals. Taking this truth in to account the study evaluated how this political situation is taken as an important factor by foreign investors.

Table4.1.3. Respondents level of agreement with the political stability of Ethiopia

Variable	Mean	Std. Dev.
polistab	4.526316	.6826162

Source: own construction from a survey questionnaire, 2013 n=76

Hypotheses testing 1.1

H_0: The political stablity do not positively affect FDI

H_1: The political stablity do positively affect FDI

As the descriptive statistics of the opinions from the respondents revealed in the table 4.1.3 above indicates, the political stability is recognized as the most important element that attract foreign investors at a mean value of 4.52 and standard deviations of 0.68. With this regard, the study found no evidence to reject the null hypotheses. To put it differently, the political stability is taken as the most important factor that attracts the eyes of FDIs. However this opposite with the finding of Vichea (2005) which indicates political risks do not negatively affect the decision of foreign investors; but consistent with the findings of Haile (2006), Solomon (2008), and Ambachew (2011) etc which indicates a country with high political stability attracts more FDI.

4.1.2.3. The Investment Policy and Trade Liberalization

Believing that FDI is an important factor for an economic development of a given nation, the government of Ethiopia developed different policy instruments to attract these foreign enterprises from different corners of the globe. Of these various policies a continues revision of the import and export policies, reducing of taxes and introducing of different incentives the most important policy issues that get look in this study for analyzing their level of importance in attracting FDIs. The variable in the table 4.1.3 below are taken in reference of the proclamations 789/2012 and Council of Ministers Regulations No. 84/2003, and the findings of this study on these issues are revealed as follows.

The limitation with this survey is that the proclamation of the 2003 is revised towards the end of 2012 which have some changes especially in the areas reserved for Ethiopians only. There for it is not known to which of the proclamation they are refereeing when they are responding to the questionnaire. But in the other aspects since the two proclamations did not have significant difference on the identified variables the opinion can be taken as a reliable opinion. With this notification tested its hypotheses by taking the descriptive results revealed in table 4.1.4 below.

Table4.1.4. Respondents level of agreement with the investment policy of Ethiopia

Variable	Mean	Std. Dev.	Level of importance
1. the quality of institutions to create linkage	3.172914	.6322385	Medium Important
2. Contract requirements with FDIs	3.328947	.7552158	Medium important
3. The minimum capital requirements	4.394737	.7673148	Most important
4. the requirement that other than critical technical and management areas should be Ethiopians	2.223684	1.228535	Medium
5. The taxation system of the country	1.868421	1.214821	Less important
6. The tax holidays provided by the government	3.934211	.8219574	High Important
7. The incentives other than the tax holidays	4.092105	.592793	High Important
8. The areas restricted for domestic investors only	2.986842	.5536165	Medium Important
9. The exporting policies and procedures	2.381579	1.648976	Less important
10. The import policies and procedures	2.407895	1.524709	Less important

Source: own construction from a survey questionnaire, 2013 n=76

Hypotheses testing 1.2a

H_0: The investment policy is not an important factor to attract FDIs

H_1: The investment policy is an important factor to attract FDIs

As it is shown form the table 4.1.4 above, from the taken important variables of the investment policy of Ethiopia except the taxation, The areas restricted for domestic investors only, and the import and export policies with a mean value 2.223684 and 2.381579 and 2.407895respectively which seems to have a less importance which are also found to be consistent with the findings of VIchea (2005); and the employment requirement, and the quality of institutions in creating linkage with DIs with a medium importance the rest are taken as an important variables of the investment policy in attracting FDIs. Then the study failed to reject the null hypotheses with the variables that indicate a less important and simultaneously failed to reject the alternative hypotheses with the variables that indicated as an important at the descriptive statistics.

Hypotheses testing 1.1b

H_o: The oppenness is not an important factor to attract FDIs

H_1: The oppenness is an important factor to attract FDIs

Taking the areas restricted for domestic investors only and the import and export procedures and policies as a measure of trade liberalization; the attitude of the investors towards these variables indicates that they are less important in attracting FDIs 2.986842, 2.381579 and 2.407895respectively. As a result the study failed to reject the null hypotheses. To put it differently, the trade liberalization measured by the level of openness which is expressed by the restrictions, import and export procedures and policies is not attractive to foreign investors. These findings are consistent with Megbar (2011) and Ambachew (2011) findings of their quantitative analysis over the variables.

According to the investment Proclamations of 7/1996, 37/1996, 35/1998, 36/1998 and 116/1998 certain areas are reserved for government included air transport , rail transport services, postal services, and telecommunications and also the economy reserves about 22 sectors of investment for domestic investors only the recent proclamation No 769/2012 and the regulation No 270/2012 as well assured areas restricted for government still to be restricted; and the areas reserved for domestic investors are reduced to 8 sectors. But still these restrictions are found to have a negative effect in attracting FDI.

4.1.3.4. The Economic Environment

Under the economic variable a number of different sub variables can be investigated. But taking the nature and scope of this study in to consideration only the market size, the domestic market growth, the growth in domestic investment, and the overall economic image of the country are taken as a target variables and their descriptive result is revealed below.

Table4.1.5. Respondents level of agreement with the economic environment of Ethiopia

Variable	Mean	Std. Dev.	Level of importance
The size of the domestic market	3.868421	.7544023	High Important
The growth of the domestic market	3.921053	.7791133	High Important
The growth of the domestic investment	4.473684	.553141	Most Important
The overall economic image of the nation	4.578947	.4970086	Most important

Source: own construction from a survey questionnaire, 2013 n=76

Hypotheses testing 1.3

H_0: The overall economic environment do not positively affect FDI

H_1: The over all economic enviromen do positively affect FDI

As the descriptive statistics of the opinions of the respondents for the economic variables revealed in the table 4.1.5 above indicates the size of the domestic market and the growth of the domestic market are important factors with a mean value of 3.868 and 3.921 and standard deviations of 0.754 and 0.779 respectively. And the growth of the domestic investment and the overall economic image of the nation are considered as the most important factors for attracting of FDIs. As a result, the study found no evidence to reject the alternative hypotheses. In case, the study found that the overall economic environment is also considered as an important factor in attracting of FDIs. These findings are mostly consistent with conclusions of Haile (2006) Vichea, (2005) and the neoclassical theory developed by (Harrison et al, 2000) which states market size and growth, reduced costs and risks of operations are the main objectives for overseas investments.

4.1.3.5. Availability of Infrastructural Facilities and Utilities

FDIs look in to an area with best infrastructural facilities and utilities. In be in line with this general truth, taking the capacity of the nation in to account, the government is undertaken a number construction to availed the necessary infrastructural facilities and utilities to all demanders of such facilities. Even though there are a number of infrastructural variables possible to be considered, taking the nature of the study only telecommunication facilities, internet facilities, electric power facilities and transportation facilities are taken as a proxies for the infrastructure. Then the opinion of the respondents on how well affect this facility to their decision is organized as follows in the table 4.1.6 below.

Table4.1.6 Respondents level of agreement with the infrastructure of Ethiopia

Variable	Mean	Std. Dev.	Level of Importance
The availabilities of telephone lines	3.223684	1.429207	Medium important
The availabilities of internet facilities	2.171053	1.135936	Less Important
The availability of electric power	1.960526	1.038471	Less Important
The availability of transportation networks	4.065789	.6394899	High Important

Source: own construction from a survey questionnaire, 2013 n=76

Hypotheses testing 1.4

H_o: The infrastructure do not positively affect FDI

H_1: The infrastructure do positively affect FDI

As the summarized result of the opinions of the respondents is revealed in table 4.1.6 above, despite the huge investment of the government and a dramatic change from time to time is shown in providing electric power and internet services, these variables are found to be less important in attracting of FDIs with a mean value of 1.961 and 2.171 with 1.038 and 1.136 possible deviation from the mean respectively. The availability of telephone line is also found to be a medium important at a mean value of 3.224 and standard deviation 1.229. As a result in relation to these two variables the study found no evidence to reject the alternative hypotheses. The finding over these sides of infrastructure is found to be parallel with Haile (2006), Megbar (2011) discussed in chapter 2. In contrary, the transportation network is the only variable that is found to be important by the respondents with mean values of 4.066 and a possible deviation of 0.639. As such the study found no evidence to reject the alternative

hypotheses with respect to transportation side of the infrastructure. In other words the transportation facilities play an important role in attracting FDIs which can be taken as an opposite with the findings of Haile (2006), Megbar (2011). But bear in mind that their proxy for infrastructure was only telephone lines.

4.1.3.6. The Macroeconomic Stabilities

Similar to the case of the infrastructure and other variables discussed above; even though there are a number of variables that comprise it; the macroeconomic stability is proxied by two variables which include exchange rate and availability of foreign currency reserve. And the attitude of the respondents on these issues is summarized as follows in table 4.1.7 below.

Table4.1.7 Respondents level of agreement with the macroeconomic stability of Ethiopia

Variable	Mean	Std. Dev.	Level of importance
The rate of exchange of foreign currency	4.197368	.7121748	High Important
The availability of foreign currency reserves	2.105263	.8575772	Less Important

Source: own construction from a survey questionnaire, 2013 n=76

Hypotheses testing 2.7

$$H_o: \text{The macro} - \text{economic stablity do not positively affect FDI}$$

$$H_1: \text{The macro} - \text{economic stablity do positively affect FDI}$$

As the result is shown from the table 4.1.7 above of the proxied variables the exchange rate is found to be a highly important instrument in attracting FDIs at a mean level of 4.197 and standard deviation of 0.712. In contrary the foreign exchange reserve is found to be less important in attracting FDIs at mean value of 2.105 and standard deviation of 0.857.

As a result the study found no evidence to reject the alternative hypotheses with respect the exchange rate side of the macroeconomic stability and in contrary to this the study found no evidence to reject the null hypotheses with foreign currency reserve side of the macroeconomic stability. Of the findings of this study with regard to foreign exchange reserve is consistent with the findings made by Haile (2006) and for both with the finding of Andria (2011).

4.1.3.7. The Human Capital

To this end the other variable of investigation in this section is the relevance of the human capital stock to attract FDIs. This variable is also proxied by three variables which include the availability of the labor, the skill of the labor and the cost of the labor.

Table4.1.8 Respondents level of agreement with the human capital of Ethiopia

Variable	Mean	Std. Dev.	Level of importance
Availability stock of labor	3.921053	1.354136	High Important
The availability the required skilled labor	2.868421	1.075076	Medium Important
The cost of labor	4.447368	.5512347	Most Important

Source: own construction from a survey questionnaire, 2013 n=76

Hypotheses testing 2.7

H_o: The stock of human capital do not positively affect FDI

H_1: The stock of human capital do positively affect FDI

As it is shown from the table 4.1.7 above, the availability of stock of labor and the cost of this labor are found to be an important and most important at a mean value of 3.921 and 4.447 with standard deviations of 1.354 and 0.551 respectively. But with its level it seems have some problem which is identified as a medium important with a mean value of 2.868 and standard deviation of 1.075. From this the study found no evidence to reject the alternative hypotheses with the availability and cost of the labor. In its reveres the study also had found no evidence to reject the null hypotheses with respect to the required level of skill. To put it differently the available stock of labor and its cost attracts the FDIs. But the skill requirement of this stock is not as such attractive.

To summarize in the qualitative analysis of this study found that to reduce cost of operations, to get a better row material, to reduce the potential risks in their home country, to get a marker access, are some of the main objectives that the FDIs invest here in Ethiopia. Except for the taxation system, the import/export policies, the employment requirements; the FDIs are largely agreed with other main pillars of investment policy of the nation. The political stability, the economic environment, the exchange rate side of the macroeconomic stability, the transport side of the infrastructure, the availability of stock and the cost of the labor have a positive effect in attracting the FDIs. In contrary, the level of trade liberalization measured

by the import and export, the foreign exchange reserve side of the macroeconomic stability, the telephone, the internet and the electric power supply sides of the infrastructure and the skill requirements of the labor of the nation are found to less important based on the opinions of the respondents.

4.1.4. IMPACT OF FDI IN THE ETHIOPIAN ECONOMY

By taking some rearrangements on the channels identified by Hermes and Lensink (2000), and then hybriding it with the study of (Todaro, 1992) which are discussed in chapter 1; this study undertook its investigation by taking three basic channels which include (1) its impact to the real GDP per capital; (2) its impact on the human capital development; and (3) its impact on the domestic investment.

4.1.4.1. The Role of FDI to fuel the growth of real GDP per capita

A number of studies indicated that FDI has been as an important fuel for the growth of a given economy by providing an improved balance of payments that lead to increase in the GDP and the real GDP per capita. By increasing capital stock, FDI can increase country's output and productivity through a more efficient use of existing resources and by absorbing unemployed resources (Zbida, 2011). Diverse types of FDI lead to diverse types of spillovers, skill transfers and physical capital flows the positively affect the GDP per capita as well (Hooda, 2011).

To be in line with this the study took three elements as a proxy that can have a positive effect on the real GDP per capita. These include the hard currency added to the economy, the additional investment in factor of productions that are not yet exploited by domestic investors, and the improvement in overall factor of production with a believe that these variables best constitute through which FDI can have a significant effect up on the real GDP per capita as the one channel of effect to the economy and their result is organized as follows.

Hypotheses testing 3.1

H_0: The FDIs do not positively affect real GDP per capita of Ethiopia

H_1: The FDIs do positively affect real GDP per capita of Ethiopia

Table4.1.9 Respondents level of agreement on FDI effect on the GDPP of Ethiopia

Variable	Mean	Std. Dev.	Level of importance
It is important sources of capital	4.552632	.5512347	Most important
It exploits the area where it was difficult for domestic investors	3.815789	.8901015	High Important
It improve the productivity of factor of production	4.197368	.6932001	High Important

Source: own construction from a survey questionnaire, 2013 n=76

As it is shown from the table 4.1.8 above, the summarized opinion of the respondents indicates that the FDIs are most important sources of capital, they are important in exploiting the investment area where domestic investors were incapable to exploit it and also important in improving productivity of factor of production with a mean values of 4.552, 3.815 and 4.197; and with standard deviation of 0.551, 0.890 and 0.693 respectively. From this the study found no evidence to reject the alternative hypotheses which states that FDI positively affect the GDPP. To put it differently, FDIs have an important effect in the improvement of GDPP. These findings are also parallel with the findings of (Zbida, 2011), (Hooda, 2011), (Borensztein et al, 1998), (Noorbakhsh, et al, 2001) etc discussed in chapter 2.

4.1.4.2. The Role of FDI in the Human Capital Development

The other channel for possible role of FDIs is its effect in the development of human capital of a given nation. FDIs are largely expected to come up with a large sum of employment opportunities. But more than this employment opportunity the FDIs transfer new skill and knowledge of doing business that can have a significant impact up on the economy.

To investigate if the FDIs in Ethiopia have such spillover effect over the human capital of the nation the study gathered an idea on five variables believing that these variables significantly constitute the human capital development process. These include extent skill improvements, extent of employment creation in improved jobs, the extent of introduction of a modern a modern industrial structure and their willingness to transfer technologies and the summary of the opinion of the respondents is organized as follows.

Table4.1.10. Respondents level of agreement on FDI effect on the HCD of Ethiopia

Variable	Mean	Std. Dev.	Level of importance
They significantly improve the skill of the labor	4.173333	.8756979	High Important
They pay an improved payment	3.684211	.7157379	High Important
They creates employment with improved jobs	3.960526	.5276562	High Important
They introduced them with a modern industrial structure	3.289474	.9065067	Medium Important
They transfer new technologies of doing business	3	1.070825	Medium Important

Source: own construction from a survey questionnaire, 2013 n=76

Hypotheses testing 3.2

H_0: The FDIs do not positively affect the human capital development of Ethiopia

H_1: The FDIs do positively affect the human capital development of Ethiopia

As the organized opinions of the respondents revealed in the table 4.1.8 above indicates, the FDIs significantly improve the skill of the labor, they are paying better salary that enabled him to stay longer to learn significantly, they creates employments with improved jobs with a mean values of 4.173, 3.684 and 3.960 with a possible deviations 0.875, 0.715 and 0.527 respectively. As a result the study found no evidence to reject the alternative hypotheses with regard to these three variables. To mean it differently, the FDIs play an important role on the HCD though improving skills, paying better salary and creating improved jobs. This finding is similar with the findings of (Zbida, 2011), (Hooda, 2011). On the other hand they are identified as a medium important in transferring of new technologies and modern organizational structures with mean values of 3.289 and 3.000 with a possible deviation of 0.906 and 1.070 respectively. As such the study found no evidence to reject the null hypotheses with these two proxies for HCD.

4.1.4.3. The Role of FDI in Domestic Investment

The other most important channel through which the FDIs can have an impact upon the economy is through its effect on the domestic investment. Especially if the FDIs are investing in similar areas where the DIs are also doing ideally the effect will be very serious even though it is difficult to know the direction of the effect. But this study assumes that if there is aback ward, a forward and vertical integrations, if there is knowledge sharing agreements, if

the FDIs use local innovations, if the FDIs provide specialized products to DIs, if the competitive positions of the FDIs is not as such very strong that adversely affect the DIs existence the direction of the effect is expected to be positive. As a result the first task of this paper in this sub title was investigating whether the FDIs are participating in investment areas where the DIs are doing their business and then evaluating their interactions in terms of the above possible integrations between the FDIs and DIs. Then the result of the study in line with the above assumption is organized as follows.

Table4.1.11. Availability of domestic firm similar to the foreign firm

Response	Freq.	Percent
there are a large number of similar domestic firms	29	38.16
there are similar domestic firms, but they are insignificant in terms number of firms	12	15.79
there are similar domestic firms, but they are insignificant in terms market share they have	25	32.89
No, there is no domestic firm similar to your enterprise	10	13.16
Total	76	100.00

Source: own construction from a survey questionnaire, 2013 n=76

Of the enterprises participated in the survey except the 13.16 percent the rest are doing their business in an area of investment which is similar with the DIs with some differences in size, in number and share of the market they have. From this can infer that there is a suitable ground for creating integrations and connections in between the FDIs and DIs.

Table4.1.12. The possible effects of FDIs in the domestic investment

Variable	Mean	Std. Dev.	Level of importance
The extent of FDIs contribute to improvement of DIs	3.763158	.9503462	High Important
The extent of FDIs have a strong competitive position over the DI	3.776316	.6653056	High Important
The extent of FDIs use local innovations	3.157895	1.233452	Medium Important
The extent of FDIs create a forward integration with DIs	2.407895	1.213014	Medium Important
The extent of FDIs create backward integration with DIs	2.526316	1.17727	Medium Important
The extent of FDIs provide specialized products to DIs	2.894737	1.172791	Medium Important
The extent of FDIs form a knowledge sharing agreement with DIs	2.684211	1.213376	Medium Important

Source: own construction from a survey questionnaire, 2013 n=76

Hypotheses testing 3.3

H_o: The FDIs do not positively affect the domestic investment of Ethiopia

H_1: The FDIs do positively affect the domestic investment of Ethiopia

As it is shown from the table 4.1.21 above, in general when the respondents are asked whether the FDIs are contributing to the development of the DIs they indicate that the FDIs play a highly important role in the development of the DIs 3.763and standard deviation of.9503. But at the same time they indicate that the competitive positions of the FDIs are much stronger than the DIs at a mean value of 3.776316and standard deviation of.665. In addition to this the rest variables that are listed in the table 4.1.21 are found to be a medium important. Then taking these variables in to consideration the study has no any evidence to reject the null hypotheses. To put it differently the FDIs do not have a positive effect on the DIs of Ethiopia.

To summaries the opinion of the respondent on the role of FDI in the economic development of Ethiopia through the three main channels discussed above; through the increasing of real GDP per capita and through the human capital seems to be FDI undoubtedly playing an important role in their in the economic development of the nation. But the effect of FDIs to the Ethiopian economy through the channel of DIs seems to be adverse in the nation.

4.2. ANALYSIS AND INTERPRETATION OF THE DESCRIPTIVE STATISTICS

4.2.1. DESCRPITVE SUMMRY OF KEY VARIABLES

A national data is collected on the targeted dependent and independent variables that covered for the period of 1992-2012. The descriptive summary of these variables' which includes the mean, std. dev., min/max values of these variables for that period is illustrated in table 4.1.1 below.

Table4.2.1. Summary of the descriptive statistics of the study variables using time series data from Ethiopia, 1992-2012

Variable	Mean	Std. Dev.	Min	Max
Year	2002	6.204837	1992	2012
FDI	1.84e+10	2.61e+10	8.77e+07	6.88e+10
DI	2.24e+10	2.46e+10	9.33e+08	7.89e+10
GDP	8.94e+10	4.15e+10	4.50e+10	1.84e+11
GGDP	6.894762	6.05637	-8.67	13.14
MS	6.96e+07	1.15e+07	5.17e+07	8.89e+07
GDPP	1085.157	412.7453	3.13	1830.5
HCD	2020867	1319016	468169	4521193
Tele	2.49415	4.505121	.2455834	18.782
Elpow	2.54e+09	1.14e+09	1.24e+09	4.50e+09
Trans	34930.19	11849.25	18081	63083
IR	9.033333	10.10823	-6.4	29.4
Govex	3.08e+10	3.17e+10	4.21e+09	1.24e+11
Empt	77.1619	2.304881	74.4	80.3
EXR	9.262005	3.856271	3.6932	17.9078
Ford	7.12e+09	2.60e+09	2.28e+09	1.04e+10
NEP	-2.89e+07	3.63e+07	-1.37e+08	-1531874
OP	51.75863	79.83768	4.639932	370.798
DWAR	.2380952	.4364358	0	1

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

As shown in table 4.2.1 above, the study had 21 observations and 18 variables for analysis (0f which DWAR is a dummy variable for political stability). The annual capital flow of FDI ranges between Birr 18.4bln and 68.8bln indicating the minimum and the maximum capital flows, in 1993 and 2011 respectively. The average capital of FDI is Birr 18.4 billion and each observation is deviated from this average by the value of Birr 26.1bln over the given study period. The domestic investment (DI) ranges between a minimum value of Birr 933mln in 1992 and maximum value of Birr78.9bln in 2009. This variable has a mean value of Birr 22.4bln with a deviation of Birr 24.6bln from the mean over the study period. The GDP and its growth rate (GGDP) range from minimum values of Birr 45bln and -8.67% respectively in

1992 to maximum value of Birr 184bln in 2012 and 13.14 in 1993 respectively. These two variables have a mean value of Birr 89.4bln and 6.89% with a deviation of Birr 41500000000 and 6.05% respectively. The MS proxied by the total population of the country ranges from its minimum value of 51.7mln in 1992 to its maximum value 88.9mln in 2012 and mean 69.6mln with standard deviation 11.5mln. The real per capital GDP ranges from it minimum value of birr765.916 in1992 to its maximum value 1830.5 in 2012 and mean of 1085.157 that can be deviate with 412.7453 from each observation. The HCD proxied by the total of secondary school enrolment has a values of 468169 and 4521193 minimum and maximum which are observed in 1997 and 2012 respectively; a mean value 2020867 with a deviation of 1319016.

The infrastructure proxied by three sub variables which include Tele (measured by all type telecom users per 100 peoples which has a minimum (in 1993), maximum (in 2012), mean and standard deviation of 0.25, 18.78, 2.5 and 4.5 respectively), annual electric power production of different sources which has a minimum (in 1992), maximum (in 2012), mean and standard deviation of 12.5bln, 45bln, 25.5bln and 11.5bln watt respectively and construction of all type annual road in Km which has a minimum (in 1992), maximum (in 2012), mean and standard deviation of 18081Km, 63083Km, 34930Km and 11894.25Km respectively.

The other important variable of this study is the macroeconomic stability which had proxied by five possible variables including govex which has a minimum (in 1992), maximum (in 2012), mean and standard deviation of 4.21bln, 124bln, 31.7bln and 30.8bln respectively; Empt which has a minimum (in 1997, 1998 and 2000), maximum (in 2012), mean and standard deviation of 74.4, 80.3, 77.16 and 2.3 percents respectively; IR which has a minimum (in 1997), maximum (in 2009), mean and standard deviation of -6.4, 29.4, 9.03 and 10.11 percents respectively; EXR which has a minimum (in 1992), maximum (in 2012), mean and standard deviation of 3.6932, 17.9078, 9.262005 and 3.856271 Birr per US$ respectively; and Ford which has a minimum (in 1992), maximum (in 2006), mean and standard deviation of 2.28bln, 10.4bln, 7.12bln and 2.6bln US$ respectively. The other variables are NEP (which has a minimum (in 1992), maximum (in 2006), mean and standard deviation of Birr -137mln, -1.5mln, -28.9and 36.3mln respectively) and the OP (which has a minimum (in 1992),

maximum (in 2006), mean and standard deviation of 4.64, 370.8, 51.75 and 79.84 percents respectively).

4.2.2. GOODNESS OF FIT TEST

The aim of the goodness of fit test is to measure the validity and reliability of the variables of the specified models understudy. For that reason Unit Root Test, Bound Test, Autocorrelation, Normality, Multcollinearity, Heteroscedacity, and Model Specification test were made before running the regression analysis of the model.

The unit root test was conducted using ADF and Phillip Perron tests in which their results indicates the data series are smaller than the critical values at level and their first difference which leads to rearrange the models with these level and difference; the Bound test for co-integration assured that the models have short run and long run relations which then leads to rearrange the models to accommodate this short run and long run relations. Though the Durbin-Watson d-statistic table is illogical to use due to the lag variables introduced while the co-integration test, using the instances for decision and the Durbin Watson alternative test for autocorrelation assured that the residuals of the models have no a serial correlations. Using the Skewness/Kurtosis tests plus two graphical examinations i.e. the kerner density and the normal probability plot for normality the residuals are confirmed to be normally distributed along the theoretical lines.

A test that cause to overthrow about 5 variables, In testing the multicollinearity of the explanatory variables in both the short run and long run equations of the five model specifications the mean VIF is found to be less than 10 with one exception which is treated with its tolerance rate. the graphical tests as well as the numerical tests for heteroscedasticity of the five model specifications shows that the residuals of the equations are constant in which both the cases confirm that the model specifications are well fitted. The link test assured that the model specifications have no errors that can occur due to omission of relevant variables or else due to addition of irrelevant variables that are included in the specified models**.**

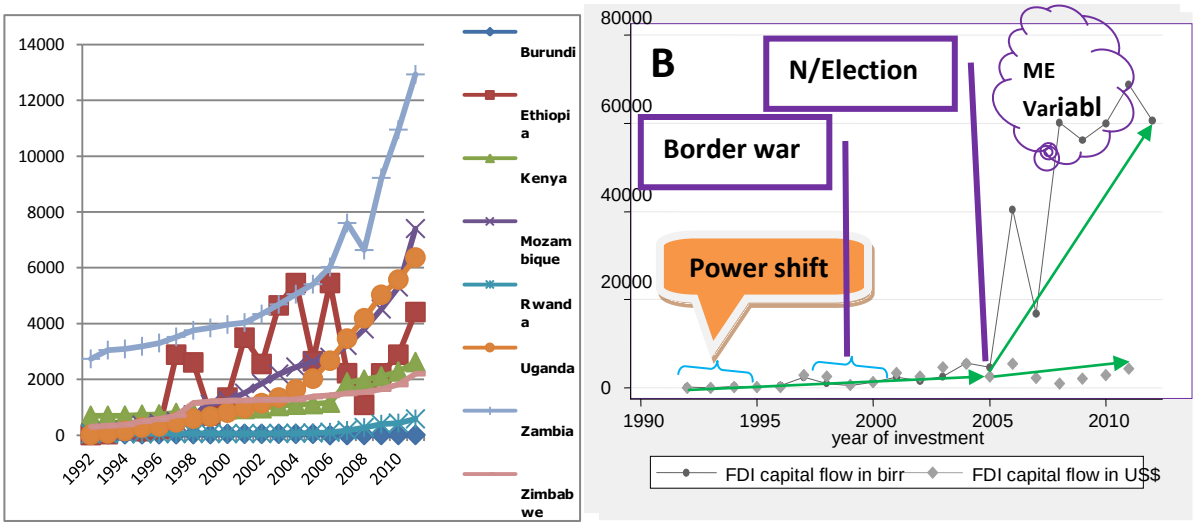
(For more details of these tests please refer to the appendix part of this thesis)

4.2.3. ESTIMATION RESULTS AND INTERPRETATIONS

4.2.3.1. Assessments of Performance Trends and patterns of FDI flows in Ethiopia

Since it mobilizes the former idle resources and creates value, investment is regarded as one of the greatest engines in economic growth and prosperity of nations. As a developing country, Ethiopia seeks a huge amount of investment that can utilize the available resources of the nation. In addition to promoting the domestic investment, the country is always in search to attract foreign investors. For that matter various policies have been designed and implemented with the intention of attracting both the foreign and domestic investors. The aim of these policy reforms is that in order to insure a healthy and consistent increase the flow of FDI to the nation.

Figure 4.2. 1FDI flows to Ethiopia in comparing with 7 sub-Saharan economies from 19992-2012



Source: (UNCTAD data base, 2013 and for figure B EIA measured in Birr)

However as it can be shown from the figure above which compares the flow of 8 sub-Saharan countries indicates that, unlike to the other sub-Saharan countries, the flow of FDI is quite low and a full of accidental ups and downs which indicates the existence of un healthy flows. In addition to that as the result is depicted in the figure 4.2.3 B above the highest investment of the nation is registered in 2011 and followed by 2008, 2010 and 2012. From the study period years in 1992 up to 1995, 1998 up to200, and 2005 were registered a lowest FDI flow. The

special identifiable occasions that were occurred in these periods were include the political power shift, the Ethio-Eritrea border war and the national election respectively.

From the 2005 onwards the trend shows a general increase with the familiar problem of accidental ups and downs. Within this period even the significant change in EXR leads to pattern in different slopes the trend seems increasing in both the measurements of Birr and $US. Within this an increasing trend an accidental down were happened 2007, 2009 and somehow in 2012. From this, the study can conclude that the flow of FDI in to the country is not smooth and healthy. To this end the identified occasions in the years before 2005 of the accidental falls indicates political instability and turbulence and after 2005, macroeconomic instability seems to be major players for deterioration of the smooth flow of investment which are found to be consistent with the findings of Ambachew, (2011).

Taking the data from the NBE, The annual increase in FDI is computed with the formula $AGR = \frac{X_2 - X1}{X_1}$, where; X1 = first value of variable X and X2 = second value of variable

And as the result is shown the figure below, the same replica to the flow the annual rate of increase in FDI is also a full of accidental ups and downs. With the highest rate of growth registered in 2006 (with 776% rate of increase), flowed by a slight increases in 1997 (344%), 1994 (259%), 2008(255%), 1996 (231%), and somehow 2004 (114%) where the years in which better growth rate had been registered in relative to their previous years of investment. In contrary years like 1998(-60.57%), 2007(58.12%), 1999(-44.70%), 2002(-34.73%) and 2005(19. 21%) were registered a below zero (negative) annual growth rates. The rest years registered a full of accidental ups and downs of flow which lay in between these figures.

In the above figure, since the FDI flow to Ethiopia is quite low and invisible when compared with the illustrated other 7 sub-Saharan countries, to make it visible the volatility of the flow, the data for Ethiopia is expressed in $100,000; whereas for the other economies it is expressed in $1,000,000

Though the flow of FDI to the nation was characterized with frequent fluctuations and volatilities plus though it was encountered with a positive and negative annual increase rates; through the whole study period its relation to wards time i.e. Year is positive.

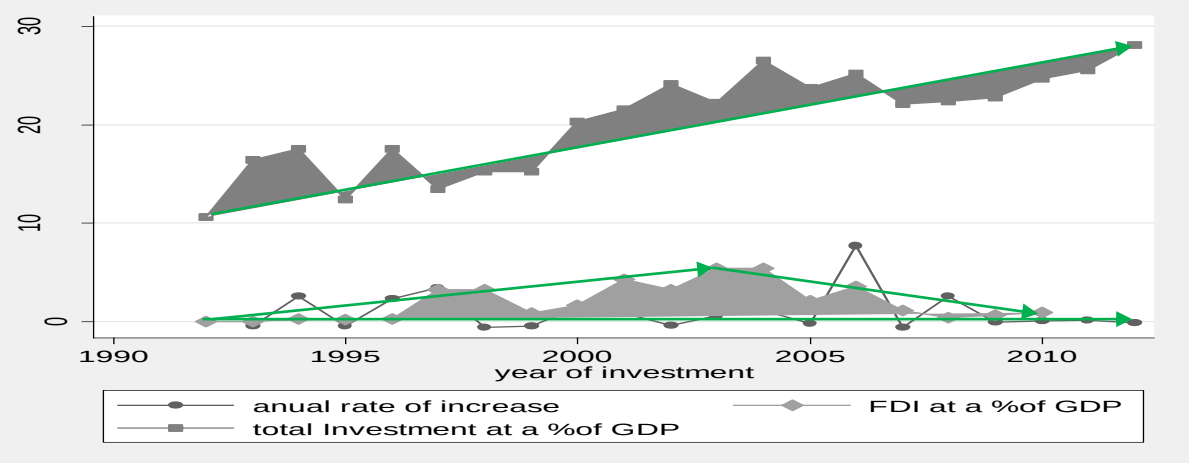
Table4.2.2. OLS Estimation for the FDI flows using time series data from Ethiopia, 1992-2012

FDI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Year	3.51e+09	5.34e+08	6.56	0.000	2.39e+09	4.63e+09
_cons	-7.00e+12	1.07e+12	-6.55	0.000	-9.24e+12	-4.76e+12

Source: EIA data bases, 2013

As the regression result depicted above in table 4.2.11 shows that there is a positive relations between FDI and year of investment with a coefficient of birr 3.51bln with a standard deviation of birr 534mln. To put it differently on average the flow of FDI to Ethiopia increases with birr 3.51bln each year that can have possibility of plus or minus of birr 534mln.

Figure4.2.2 Comparison of contributions of FDI and total investment to GDP annual growth rate in FDI in Ethiopia, 1992-2012



Source: (UNCTAD and EIA data bases, 2013)

Even though somewhat similar ups and downs are also observed in its pattern, the total investment as a percent of GDP shows a linear increase throughout the study period with a maximum share of 28.08, 26.51, 25.52 and 24.67 percents registered in 2012, 2006, 2011 and 2010; and a minimum share of 10.62, 12.39, 13.43 15.24 and 15.25 in the years of 1992, 1995, 1997, 1998, and 1999 respectively. However unlike the total investment as percentage of GDP, the pattern of FDI as a percentage of GDP shows somewhat an increasing trend only up to 2004. At the same time this trend indicates that the highest share of FDI to GDP is registered to be 5.43 in 2003 followed by 5.42 and 4.28 in 2004 and 2001 respectively. However from 2004 onwards the share of FDI to GDP is continuously declining.

4.2.3.2. Determinant factors of FDI in Ethiopia

One of the objectives that this study examined is that the determinants of Foreign Direct Investment (FDI) in Ethiopia. The study shows various major variables either hamper or encourage investment in Ethiopia. They are the previous year FDI, the domestic investment, the market size proxied by the total population, the human capital development proxied by secondary school enrollments, infrastructure proxied by two variables which include number of telecom users per 100 persons and the transportation networks in Kms, macroeconomic stabilities proxied by two variables which include inflation and exchange rates, trade liberalization proxied by Trade openness, political stability proxied by war a dummy variable which assumes value of 1 if there is war and political unrest and value of zero otherwise. Taking the FDI as dependent variable and the other as independent variables a correlation and regression analysis are conducted as their results are revealed below.

4.2.3.2.1. Correlation Analysis and interpretations

To examine the relationship among the dependent and independent variables in to consideration a correlation analysis was undertaken using Pearson correlation coefficient calculations. The calculation showed that the DI, HC, the Transportation side of the infrastructure, and the political stability seems to be positively correlated with 7.51, 2.28, 4.20 and 14.24 percents level of correlation respectively; whereas, the lagged FDI, the telecom side of the infrastructure, the IR and EXR sides of the MES and the trade liberalization found to be negatively correlated to FDI with 22, 6.24, 3.21, 12.97 and 8.92 percents level of correlation respectively and all are significant at 10 percent level of significant. MS seems negatively correlated at 1.5 percent level of correlation but it is statistically insignificant. For the impact analysis model specifications the FDI seems to have a positively correlated with HCD and DI, but negative to GDPP. 15.17, 9.6 and 43.72 percents level of correlation respectively and statistically significant at 10 percent (for more see appendix C).

Moreover, pair-wise correlation matrix is one method of detecting multicollinearity among explanatory variables. If the correlation among two regressors is in excess of 0.8, we suspect that multicollinearity poses serious challenge to our estimates (Gujarati, 2003). Thus, according to the Tables in appendix, the maximum correlation coefficient for all the regressors is below 50% except for the correlation between Tele and MS; HCD and GDPP in which it indicates a

possibility of multicollinearity in the determinant with 0.78 and 97. 49 and in the specification of impact FDI to DI between Tele and MS with 0.93 seems to have a potential multicollinearity problem which are effectively treated in the regression analysis through preparing different specifications. The good thing here is that all the rest coefficients indicates that all the specifications are free from the potential problem of multicollinearity as they are far below the o.8.

4.2.3.2.2. Regression analysis and interpretations

Taking the nature of data and the input from the unitary test the study decided to take the new ARDL testing instrument named as bounds testing approach developed by Pesaran and Shin (1999). This approach tests for the existence of a short run and long run co-integration relationship among the independent variables that can be applied regardless of whether the targeted variables are a combination of stationary series at a level and at first difference. As its result the short run and long run dynamic estimations are revealed as follows.

4.2.3.2.3. The short run Dynamics

The fact that the variables in our model are co-integrated provides support for the use of an error correction model mechanism (ECM) representation in order to investigate the short run dynamics. When the GGDP is included in the regression multicollinearity problem happens to treat this two different specifications are prepared in which in the first specification excluding the GGDP and including MS; where as in the second specification GGDP is included and MS is excluded to control the multicollinearity problem. Estimation results, still based on the Schwartz Bayesian criteria, are presented in Table 4.1.12 below.

The short run regressions results of the independent variables explain the variability of the dependent variable to the extent of 97.29 and 94.95 percent in specification 1 and specification 2 respectively. Meaning only the remaining 2.7 and 5.05 percent respectively of variability in foreign direct investment is explained by other factors that are not included in the regression. This is suggesting that such error correction model fits the data reasonably well. More importantly, the error correction coefficient has the expected negative sign and is

highly significant. This helps reinforce the finding of a long run relationship among the variables in the model.

Table4.2.3Short Run OLS Estimation for the determinants of FDI flows using time series data from Ethiopia, 1992-2012

The Short Run Dynamics		
Variables	Specification 1	Specification 2
	Coef. (Std. Err)	Coef. (Std. Err.)
laglnFDID1	1.83e+10* (1.12e+09)	2.28e+10* (1.84e+09)
lnDID1	7.22e+10** (7.56e+09)	2.89e+10*** (9.73e+09)
lnMSD1	-4.99e+12** (1.07e+12)	
lnHCDD1	-9.69e+10*** (2.98e+10)	6.99e+09 (4.37e+10)
lnTeleD1	-4.81e+10*** (1.37e+10)	-3.80e+09 (8.85e+09)
lnEXRD1	1.29e+11** (2.26e+10)	1.50e+11** (3.24e+10)
IRD1	-7.54e+08*** (2.16e+08)	4.10e+08 (2.93e+08)
lnTransD1	9.47e+10 (4.29e+10)	-3.19e+10 (4.24e+10)
OPD1	1.68e+08* (1.58e+07)	1.26e+08** (2.15e+07)
lnGGDPD1		1.01e+10*** (3.08e+09)
DWAR	-1.19e+10** (2.58e+09)	-1.02e+10*** (3.49e+09)
lagECMF	-28.55634* (2.509008)	25.62896** (3.260502)
_cons	1.25e+11** (3.05e+10)	-1.99e+10 (7.50e+09)
Diagnostics test	F(11, 2) = 43.42** R-squared = 0.9958 Adj R-squared = 0.9729 durbinalt= 0.3200 swilk ECM= 0.99435 Mean VIF= 6.68 hettest= 0.4509 _hat= 0.0000 _hatsq= 0.369	F(11, 2) = 23.22** R-squared = 0.9922 Adj R-squared = 0.9495 estat bgodfrey= 0.7679 swilk ECM= 0.99435 Mean VIF= 4.48 hetttest = 0.9243 _hat=0.000 _hatsq= 0.128

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

***significant at 10 percent, **significant at 5 percent, * significant at 1 percent.

Hypothesis Test 4.1

H_o: lagged FDI do not positively affect FDI

H_1: lagged FDI positively affect FDI

The previous year investments made by foreign firms are expected to have their own positive and negative influence in attracting additional foreign investors. As a result it is repeatedly tested by researchers as a triggering variable with diversified findings. As it is revealed in the table 4.2.12 below, this study found that the lagged FDI has the expected positive and statistically significant at 1 percent in both the specifications in attracting FDI. As a result the study is failed to reject the alternative hypotheses. To put it differently, the study is forced to accept the alternative hypotheses which states that lagged FDI positively affects on FDI. Though this finding is parallel with many empirical findings like vicea (2005) and Andreia et al (2011), it is opposite with the finding of the study made by Megbar (2011). But the study made by Megbar (2011) used a simple OLS estimation that cannot enabled to differentiate its effect in the long run and short run.

Hypotheses testing 4.2

H_o: The domestic investment do not positively affect FDI

H_1: The domestic investment do positively affect FDI

Table 4.2.12 shows that the domestic investment has positive and statistically significant effect on FDI at 5 and 10 percent level of significance in the regressions of specifications 1 and 2 respectively. As a result the study failed to accept the null hypotheses which states that the DI do not positively affect FDI flows. Simultaneously the study also failed to reject the alternative hypotheses which states that DI do have positive influence to FDI flows. In other words the study found that DI has a positive influence in attracting FDI in to the nation. Parallel to this finding, in his study of determinants of FDI in Ethiopia, Megbar, (2011) found that the steadily increasing of domestic investment over past years in Ethiopia highly builds the confidence of foreign investors and which makes Ethiopia an interesting country for foreign direct investment. These findings are also consistent with the studies of Vichea (2005), Haile (2006) and Andreia et al (2011)

Hypotheses testing 4.3

H_o: The market size do not positively affect FDI

H_1: The market size do positively affect FDI

The MS which is proxied by the number of population of the country was included only in the first specification to detect the multicollinearity that happened when it is regressed to gather with GDPP. The result of this regression is unexpectedly negative and significant at 5 percent. Therefore the study failed to accept the alternative hypotheses. To put it differently the MS negatively affect FDI flows.

Parallel to this finding, studies made by Edwards (1990) and Asidu (2002) showed that there is no significant impact of MS on FDI inflows. In contrary to this study also studies made by Megbar (2011) and Haile (2006) found that MS is the significant determinant of FDI. But these peoples use GGDP and GDPP respectively as a proxy for MS.

Hypotheses testing 4.4

H_o: The human capital do not positively affect FDI

H_1: The human capital do positively affect FDI

When an economy has high number of skilled manpower which are expected to be much more than productive than unskilled labor are good attractive forces to foreign investors. But when such kind of labor is not available in market with the required quality and quantity it adversely affects the FDI flow. An indication of this the test result for this variable states unexpected negatively related and statistically significant at 10 percent in the first specification where as positive but insignificant in the second specification. As a result of this the study failed to accept the alterative hypothesis. Meaning the effect of schooling is insignificant. Parallel to this finding studies made by Andria et al (2011), and Haile (2006) found that schooling is insignificant in attracting FDI. But Megbar (2011) found that the variable is positive and statistically significant.

Hypotheses testing 4.5

H_o: The infrustructure do not positively affect FDI

H_1: The infrustructure do positively affect FDI

In the two regressions the variable infrastructure is decomposed in to two sub variables the telecom services and the road transportation networks. The telecom side of the infrastructure is found to be negative in both specifications; but statistically significant at 10 percent in the first specification and statistically insignificant in the second specification. The road transportation side of the infrastructure found to be statistically insignificant in both specifications; but negative relation in the first and positive relation in the second specifications. These results can be taken as indication of the poor telecommunication facility which is negatively affects FDI inflow into the country; and the road transportation network even if it is not significant, it has a positive contribution in attracting FDI. But to make a conclusive decision up on the variable with the telecom side the study failed to accept the alternative hypotheses. This finding is similar with the findings of Megbar (2011), Haile (2006), Solomon (2008) etc.

Hypotheses testing 4.6

H_0: The economic growth do not positively affect FDI

H_1: The economic growth do positively affect FDI

As revealed in the table 4.2.12 of the second specification above, the regression result for economic growth proxied by the real growth rate of the gross domestic product (GGDP) is positive and significant at 10 percent. Other things remaining constant each percent increase in the real GGDP has the ability to attract 10.1 billion birr through foreign investment. As a result the study is failed to reject the alternative hypotheses. To put it differently the economic growth of the country has a significant positive impact in attracting FDI. This variable is used as a proxy for market growth and market size in different studies such as Haile (2008), Andria et al (2011), Megbar (2011) etc in which their finding is similar with the current study.

Hypotheses testing 4.7

H_0: The macro − economic stablity do not positively affect FDI

H_1: The macro − economic stablity do positively affect FDI

In this study the macroeconomic stability is proxied in by two sub-variables which include the inflation and the exchange rates. And the regression result for the inflation side of the macroeconomic stability indicates that negative relation and statistically significant at 10

percent in the first specification; whereas positive but statistically insignificant in the second specification. From this perspective, the study has not found any evidence to reject the null hypotheses. This can be a result of the extreme ups and extreme downs in price of products of the country adversely affect the decision of investors to make investment. Keeping other things remain constant, a 1percent increase in price of goods and services leads foreign capital flow to decrease by 7.54.billion birr in the form of investment.

In both the two specifications, the exchange rate side of the macroeconomic stability is found to be positive and significant at 5 percent. In this case the study has no any evidence to reject the alternative hypotheses. The devaluation of the domestic currency enabled the foreign investors to make significant investment having some few initial capitals. This lead to increase sum total flow of foreign capital in the form of investment. Keeping other things remain constant a 1 percent increase in the exchange rate leads to 1.29 billion birr increase in the foreign capital flow in the form of investment. This finding is similar with the study made by Andria et al (2011),

Hypotheses testing 4.8

H_o: The trade liberalization do not positively affect FDI

H_1: The trade liberalization do positively affect FDI

The regression result for trade liberalization proxied by trade openness which is measured as the ratio of imports and exports to GDP is found to be positive and statistically significant at 1percent and 5 percent in the first and second specifications respectively. As a result of this the study found no evidence to reject the alternative hypotheses. To mean it differently, the trade openness of Ethiopia is promoting to foreign investors. This finding is parallel with the findings of Francis et al (2010), Andria et al (2011), etc. but in contrary with the finding of Megbar, (2011)

Hypotheses testing 4.9

H_o: The political stablity do not positively affect FDI

H_1: The political stablity do positively affect FDI

The political instability proxied by a dummy variable war which assumes a value of 1 whenever there is war and political instability and a value of 0 otherwise. The result of the regression for this variable shows a negative relation and statistically significant at 1 percent and 5percent significance in the first and second specifications respectively. This finding is similar to the finding of Ambachew (2011).

4.2.3.2.4. The long run dynamics

As a result of the ARDL model bound test for co-integration the second important point to be addressed is to identify the long run relationship between the variables. All the way of analysis are the same as it done in the short run except for its different in identifying the elasticity or coefficients and magnitude of the variables. To estimate the long run elasticity described, the coefficient of one lagged explanatory variable multiplied by a negative sign should be divided to the coefficient of one lagged dependent variable (Bardsen, 1989). In a similar fashion to the short run dynamics; When the GGDP and MS variables are regressed in one model specification a multicollinearity problem happens. To treat this two different specifications are prepared in which in the first specification excluding the GGDP and including MS; where as in the second specification GGDP is included and MS is excluded to control the multicollinearity problem. Estimation results, still based on the Schwartz Bayesian criteria, are presented in Table 4.2.13.

The long run regressions results of the independent variables explain the variability of the dependent variable to the extent of 73.70 and 96.90 percent in specification 1 and specification 2 respectively. Meaning only the remaining 26.3 and 3.10 percent respectively of variability in foreign direct investment is explained by other factors that are not included in the regression. This is suggesting that such error correction model fits the data reasonably well.

As it can be shown from the long run OLS regression results revealed in table 4.2.13 above, in both the two model specifications, the study found that, the domestic investment, the telecom and road transport side of the infrastructure, and the political instability of the nation have a positive and statistically significant in attracting FDI. The lagged FDI, and the inflation and

exchange rate dimensions of the macroeconomic stability, are found to be negative and statistically significant in both specifications.

Table4.2.4 Long Run OLS Estimation for determinants of FDI flows using time series data from Ethiopia, 1992-2012

The Long Run Dynamics				
Variables	The computed coefficients	Specification 1 Coef. (Std. Err)	The computed coefficients	Specification 2 Coef. (Std. Err.)
laglnFDI		-1.676535*		-1.166507*
		(.310358)		(.1315112)
laglnDI	1.05137	1.762665*	0.67686	1.134774**
		(.45258)		(.3061675)
laglnMS	-14.3125	-23.99541		
		(14.4507)		
laglnHCD	1.06588	1.786989***		-5.647595*
		(.8070033)	-3.368611	(.9710925)
laglnTele	0.72547	1.21627***	1.56904	2.630546**
		(.6174871)		(.4983309)
laglnEXR	-0.561778	-.9418404	-2.821223	-4.729879**
		(1.727668)		(1.147636)
laglnIR	-0.355428	-.5958873**	-0.190267	-.3189901**
		(.2374854)		(.0871084)
laglnTrans	7.53861	12.63875***	7.22475	12.11255**
		(5.811157)		(2.222103)
laglnOP	-0.326754	-.5478142	-0.416939	-.6990125
		(.3299208)		(.2928498)
laglnGGDP			0.6144	1.030061**
				(.1792163)
lagDWAR	0.6499	1.089583***	0.99349	1.665625*
		(.4783371)		(.2058987)
_cons	165.3	277.1309	-20.52509	-34.41104**
		(197.0207)		(8.159582)
Diagnostics Test		F(10, 6) = 5.48** R-squared = 0.9014 Adj R-squared =0.7370 Durbinalt=0.1829 swilk ECM= 0.99435 1/VIF= 0.076625 hettest=0.0853 (imtest, white=0.3856) _hat=0.000 _hatsq=0.929		F(10, 3) =41.69** R-squared =0.9929 Adj R squ=0.9690 Durbinalt=0.6116 swilk ECM=0.99435 1/VIF=0.873415 hettest=0.3050 _hat=0.000 _hatsq=0.279

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

***significant at 10 percent, **significant at 5 percent, * significant at 1 percent.

In addition to this the trade liberalization have a negative relation but statistically insignificant in both specifications. The HCD is found to be positive and statistically significant in the first specification but negative and statistically significant in the second specification. The GGDP is found to be positive and statistically significant in the second specification. The MS is found to be negative but statistically insignificant in the first specification. Assuming these variables are independent hypotheses to be tested, the detailed test analysis for these variables is discussed below.

Hypothesis Test 5.1

H_o: lagged FDI do not positively affect FDI

H_1: lagged FDI positively affect FDI

As it is revealed in the table 4.2.13 above, this study found that the lagged FDI has unexpected expected negative and statistically significant at 1 percent in both the specifications in attracting FDI. As a result the study is failed to accept the alternative hypotheses. To put it differently, the long run effect of the lagged FDI is negative.

Hypotheses testing 5.2

H_o: The domestic investment do not positively affect FDI

H_1: The domestic investment do positively affect FDI

Table 4.2.13 shows that the domestic investment has positive and statistically significant effect on FDI at 1 and 5 percent level of significance in the regressions of specifications 1 and 2 respectively. As a in the case of the short run relation the study failed to reject the alternative hypotheses which states that DI do have positive influence to FDI flows. In other words the study found that DI has a positive influence in attracting FDI in to the nation both in the short run and the long run.

Hypotheses testing 5.3

H_o: The market size do not positively affect FDI

H_1: The market size do positively affect FDI

The MS which is proxied by the number of population of the country was included only in the first specification to detect the multicollinearity that happened when it is regressed to gather

with GDPP. Similar to the short run the result of the long run regression is also unexpectedly negative and but unlike to that of short run the long run relation is statistically insignificant. Therefore the study failed to accept the alternative hypotheses. To put it differently the MS negatively affect FDI flows even though it is statistically insignificant.

Hypotheses testing 5.4

H_o: The human capital do not positively affect FDI

H_1: The human capital do positively affect FDI

As the result is revealed in the table 4.2.13above; similar to the case of short run, the human capital is found to be the expected positive and statistically significant at 10 percent in the first specification where as negative but statistically insignificant in the second specification. This shows that at one side it is strong negative at the other side it is insignificant positive. As a result of this the study failed to reject the alterative hypothesis and the null hypotheses with the first specification with the second specification. Meaning the effect of schooling is significant when the model is specified with the inclusion of MS and negative when the model is specified without MS. But since the qualitative analysis as well except for its cost and availabilities identified as important factors the skill of the human capital is found to be less important. From this the study no can be in a position to conclude that schooling still have a negative effect in attracting FDI.

Hypotheses testing 5.5

H_o: The infrustructure do not positively affect FDI

H_1: The infrustructure do positively affect FDI

In the two regressions the variable infrastructure is decomposed in to two sub variables the telecom services and the road transportation networks. And the two proxies are found be positive and statistically significant both at 10 percent in the first and at 5 percent at the second specifications. In case the study has no any evidence to reject the alternative hypotheses as it has strong positive long run relation of infrastructure and FDI.

The road transportation side of the infrastructure found to be statistically insignificant in both specifications of the long run and short run specification. This can lead to a conclusion of the

fact that the huge investment made by the government on road construction is creating a significant positive impact upon the attraction of the foreign investors. But this is not exactly the same for the telecom infrastructure which can be taken as indication of the poor telecommunication facility which has a short run negatively affects on FDI flow into the country.

Hypotheses testing 5.6

H_o: The economic growth do not positively affect FDI

H_1: The economic growth do positively affect FDI

As revealed in the table 4.2.13 of the second specification above, the long run regression result for economic growth proxied by the real growth rate of the gross domestic product (GGDP) is positive and significant at 5 percent which is almost similar to the short run effect. As a result the study is failed to reject the alternative hypotheses. To put it differently the economic growth of the country has a significant positive impact in attracting FDI.

Hypotheses testing 5.7

H_o: The macro − economic stablity do not positively affect FDI

H_1: The macro − economic stablity do positively affect FDI

In this study the macroeconomic stability is proxied in by two sub-variables which include the inflation and the exchange rates. And the long run regression result for both the proxied variables of the macroeconomic stability indicates that negative relation and statistically significant at 5 percent in both the specification except statistically insignificant for the EXR in the first specification. From this perspective, the study has not found any evidence to reject the null hypotheses. This finding is similar with the study made by Andria et al (2011),

Hypotheses testing 5.8

H_o: The trade liberalization do not positively affect FDI

H_1: The trade liberalization do positively affect FDI

The regression result for trade liberalization proxied by trade openness which is measured as the ratio of imports and exports to GDP is found to be positive and statistically significant at 1percent and 5 percent in the first and second specifications respectively. As a result of this

the study found no evidence to reject the alternative hypotheses. To mean it differently, the trade openness of Ethiopia is promoting to foreign investors. This finding is parallel with the findings of Francis et al (2010), Andria et al (2011), etc. but in contrary with the finding of Megbar,(2011)

Hypotheses testing 5.9

H_o: The political stablity do not positively affect FDI

H_1: The political stablity do positively affect FDI

The political instability proxied by a dummy variable war which assumes a value of 1 whenever there is war and political instability and a value of 0 otherwise. Unlike to the short run regressions, the result of the long run regression for this variable shows a positive relation and statistically significant at 10 and 1 percent significance in the first and second specifications respectively. As a result the study found no any evidence to reject the alternative hypotheses. To put it differently the long run effect of the political situation of the country has strongly attracts foreign investors.

4.2.3.3. Impact of FDI in the Ethiopian Economy

The second objective of this investigation is to estimate the possible effects of FDI on economic growth, by taking three basic channel of the many through which FDI may be beneficial for growth as identified in many literatures. In particular, this study examines the effect of FDI on the GDP per capita of the nation; whether FDI interacts with the stock of human capital development to affect the economic growth; and also tests whether the level of FDI has an effect on the domestic investment of the country. For that matter three model specifications are prepared and tested as their result is revealed below. In dealing with the regresson results, the analysis and interpretation focus only on the independent variables (GDPP, HCD and DI) and the explanatory variable (FDI). Since the only role of the other dependent variables is balance the result of FDI; the study didn't make analysis and interpretation on the control variables with some exceptions in DI specification.

4.2.3.3.1. The power of the economy to reap the benefits of the FDI

Studies like Mounir, (2009), Neguyen et al, (2006) E. Borensztein et al (1997), etc indicate that the impact of FDI on economic growth is highly dependent on the absorptive capacity of the human stock of the host country. Then in dealing with this issue the studies recommend that the absorptive capacity of the human stock should be determined for effective decision. Specifically E. Borensztein et al (1997), develops a proxy for the absorptive power of the economy. He recommends that to take the product of FDI and human capital stock as one independent variable with the regressers. Accordingly this model can be specified.

$$\mathbf{GDPP} = f[\mathbf{lagGDPP}, \mathbf{FDI}, \mathbf{DI}, \mathbf{HCD}, \mathbf{MS}, (\mathbf{FDI} * \mathbf{HCD}), \mathbf{Tele}, \mathbf{IR}, \mathbf{EXR}, \mathbf{govex}, \mathbf{OP}, \mathbf{DWAR}]$$

The variable (FDI $*$ HCD), has a very important implication in this specification first it measures the interaction between FDI and HCD second it addresses the role of HCD on the impact of FDI and third it is taken as a measure of the absorptive power of the economy Neguyen et al, (2006) E. Borensztein et al (1997). As a result regression result for this is illustrated in table 4.2.14 in the columns with a title specification 2 in both the short run and the long run dynamics.

Assuring that all specifications satisfy the requirements of the diagnostics testes as shown from the table 4.2.14 below, the short run regressions results of the independent variables explain the variability of the dependent variable to the extent of 99.64 and 99.98 percent in the first and second specifications respectively. Meaning only the remaining 0.06 and 0.02 percent of variability in the impact of FDI to GDPP is explained by other factors that are not included in the regression of the short run. In addition to this the long run results of the independent variable explains the variability of the dependent variable to the extent of 91.41 and 83.81 percent to mean that only the remaining 8.59 and 6.19 percent of variability in the impact of FDI to GDPP is explained by other factors that are not included in the long run regression of the first and second specifications respectively. This is suggesting that such error correction model fits the data reasonably well. More importantly, the error correction coefficient has the expected negative sign and significant at 10 percent. This helps to reinforce the finding of a long run relationship among the variables in the model.

Table4.2.5 The Short Run and Long Run OLS Estimation of FDI flows' impact on GDPP using time series data from Ethiopia, 1992-2012

The Short Run dynamics			The Long Run Dynamics				
Variables	Specifi…1	Specifi...2	Variables	Specification 1		Specification 2	
	Coef. (Std. Err)	Coef. (Std. Err)		Computed coefficient	Coef. (Std. Err)	Computed coefficient	Coef. (Std. Err)
laglnGDPPD1	-18.60265** (.7424001)	-9.308862* (.1767013)	laglnGDPP		-36.88477** (8.522676)		6816.534** (2505.895)
lnFDID1	-1.073343** (.0473175)	-.7553461* (.010182)	laglnFDI	0.00959	.3537305 (.3121249)	0.01914	-130.4685 (113.3961)
lnDID1	-3.493459*** (.3080298)	.2905401** (.0576985)	laglnDI	0.060558	2.233652** (.7968921)	0.16596	-1131.271** (330.1939)
lnHCDD1	80.20302** (3.296585)	27.25374* (.3645803)	laglnHCD	-0.21476	-7.921397** (1.911824)	-0.49318	3361.791** (931.6168)
lnFDIHCDD1		-1.521282* (.0156673)	laglnFDIHCD			0.086839	-591.9439** (166.2351)
lnTele	-8.877324*** (.7391356)	-.3661889* (.0104039)	laglnTele	0.229408	8.461644** (1.874159)	0.216665	-1476.903*** (542.1553)
lnIRD1	.1090904** (.0084489)	-.0551779* (.0014289)	laglnIR	216251	7976368** (.2508137)	-0.00845	57.60626 (94.12958)
lnOPD1	-2.241557** (.1232744)	-1.228756* (.0248282)	laglnOP	-0.04058	. -1.49676** (.6200699)	-0.051	347.643*** (125.3755)
lngovexD1	32.29642** (1.099071)	21.75629* (.1698516)	Laglngovex	0.054136	1.996782 (4.016591)	0.525226	-3580.219** (1061.649)
DWAR	-3.148796** (.1491415)	-1.204947* (.0359495)	lagDWAR	0.044213	1.630772** (.4569564)	0.02864	-195.2251 (201.103)
lnEXRD1	24.49533** (1.004069)		laglnEXR	0.387604	14.2967* (3.02187)	-0.12236	834.09 (854.4804)
lnMSD1	159.0207 (28.69939)		laglnMS	-0.97756	-36.0571*** (16.08166)	-1.72967	11790.33** (4291.427)
lagECMG	-7.89e-10*** (7.06e-11)	-1.68e-09* (1.84e-11)	laglnFord	-0.12172	-4.489627* (.6200699)		
_cons	-15.04378 ** (.8980206)	-4.905747* (.0488224)	_cons	26.82798	989.5439** (277.2307)	28.94973	-197336.8*** (74079.43)
F(12,1) = 298.49**	F(11, 2) = 5039.78			F(12, 4) = 15.18*		F(12, 3) = 7.47	
R-squared = 0.9997	R-squared = 1.0000			R-squared = 0.9785		R-squared = 0.9676	
Adj R-squ = 0.9964	AdjR-squared= 0.9998			Adj R-squared = 0.9141		Adj R-squared = 0.8381	
Root MSE = .0931	Root MSE = .02367			Root MSE = .41039		Root MSE = 105.06	
Durbinalt= 0.4729	Durbinalt= 0.9310			Durbinalt= 0.0660**		Durbinalt= 0.2881	
swilk ECM= 0.99435	swilk ECM= 0.99435			swilk ECM= 0.99435		swilk ECM= 0.99435	
1/VIF=0.0473815	VIF=5.07			1/VIF=0.057338		1/VIF=0.023265	
hettest=0.1116	hettest=0.4417			hettest=0.7246		hettest=0.9174	
_hat=0.000	_hat=0.000			_hat=0.000		_hat=0.000	
_hatsq= 0.873	_hatsq= 0.941			_hatsq= 0.267		_hatsq= 0.028*	

Diagnostics Tests

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

***significant at 10 percent, **significant at 5 percent, * significant at 1 percent

The short run regression result of the control variable showed that DI, HCD, the IR and govex side of the macroeconomic stability, MS all are found to have a significant positive (except for MS positive but insignificant) impact upon the GDPP of the nation; whereas the lagGDPP, the telecom side of the infrastructure, the trade liberalization of the nation, and the political instability have a significant negative effect on the GDPP of the nation. Whereas in the long

run regression result on the control variable indicate that except lagGDPP, Ford, HCD, OP, MS, GDPP which showed a significant negative (except govex statistically insignificant) relation to GDPP the rest variable showed a positive and statistically significant relation to real GDPP of the nation. But since the aim of this study is not to make an investigation on the relation between the GDPP with the control variables; it is not necessary to have a detailed analysis of the control variables. The highlighted implication of these variables is summarized as follows. Within this summary over the control the researcher proceed with testing and interpretation of the main hypotheses of this objective

Hypotheses Test 6.1

H_o: the power of the economy is strong postive to reap the benefit from FDI

H_1: the power of the economy is not strong postive to reap the benefit from FDI

As illustrated in the table 4.2.14 above; the regression results indicate that the proxy for the power of the economy ($FDI * HCD$) is negatively related and statistically significant at 1 percent in the short run. However, in the long run the relation between these two variables is positive and statistically significant at 5 percent. As a result the study found no evidence to reject the null hypotheses in the long run and to reject the alternative hypotheses in the short run. To put it differently; the economic power of the nation is not as such strong to reap the benefits of FDI in the short run. However, in the long run the economy is power full enough to take the advantages of FDI.

4.2.3.3.2. Impact FDI on Real Per-Capita of Gross Domestic Product (GDPP)

Mounir, (2009), in his study the relationship between Trade, FDI and Economic growth in Tunisia with ARDL model, using a granger causality test; assured that there is no significant positive impact of FDI to the Tunisian economic growth through GDPP channel.

E. Borensztein et al (1997), in their study with a titled "how does FDI affect economic growth" using a panel data of 69 developing countries found that the economic impact of FDI is highly determined by the quality and absorptive capacity of the human capital of the nation. Their finding indicate FDI has a significant positive impact on countries with such type of

human capital and significant negative with countries which do not have such type of human capital. The finding of Andria et al (2011) is also parallel with this study

On the other hand the study made by Blin and Ouattara (2002) with a title Foreign Direct Investment and Economic Growth in Mauritius: Evidence from Bounds Test Co-integration found that the long run effect of FDI on GDPP and private domestic investment is positive and statistically significant in Mauritius; which is also parallel with the prior finding of Zhang (2001).

Looking at the long run effects in which the absorptive power of the HCD is controlled a 1% increase in FDI leads to increase by 1.914 % in the GDPP. In this regard the effect of the domestic investment in GDPP seems much more significant than the FDI. As it is shown from the table 4.2.22 above, a 1% increase in the DI leads to increase by 16.596 % in the GDPP.

Hypotheses Test 6.2

H_o: FDI flow do not have positive impact on on the real percapita GDP of the nation

H_1: FDI flow do have positive impact on on the real percapita GDP of the nation

As shown from the short run dynamics regression result of the explanatory variable (lnFDID1) and the control variables (all the independent variable other than lnFDID1) illustrated above in table 4.2.14, the study found that the short run effect of FDI to GDPP is negative and significant at 5 and 1 percent in the first and second specifications respectively. Whereas the long run dynamics illustrated in the same table indicates that the long run effect of FDI to GDPP is positive but statistically insignificant in both the two specifications.

As a result in the short run the study have no any evidence to reject the null hypotheses which states that FDI flow do not have a positive impact in the real GDPP. To put it differently in the short run FDI flow in to the country has a negative effect on the national per capita. These finding is consistent with Mounir, (2009), E. Borensztein et al (1997), and Andria et al (2011). However, in the long run the study has no any evidence to reject the alternative hypotheses. In other words, in the long run the effect of FDI in the real GDPP positive but statistical insignificant which is consistent with Blin and Ouattara (2002), and Zhang (2001). Taking these findings also as additional input; the study can infer that the reason that the short

run effect of FDI is negative in the GNPP of Ethiopia the low absorptive capacity of the lobar that the nation have hinders from getting the expected benefit of FDI.

4.2.3.3.3. Impact of FDI on Human Capital Development (HCD)

The other channel for possible impact of FDI tested in this study is the FDI's impact on HCD. It is most likely assumed that a foreign firm that decides to invest in another country enjoys lower costs than its domestic competitors deriving from having efficient and advanced technologies, new capital goods, advanced management systems etc which requires the greater participation of domestic labor and other inputs. The to achieve the full benefit of this better developments one thing the host country should have the required quality and quantity of human capital and the other side these foreign firms should have to create a backward and a forward integration with the domestic firms that facilitate effective transfer of technologies and management systems so that the host country can reap the full benefit of the HCD. Hence, the model specification tried to test whether the level of schooling positively related to the FDI flow (which is tested quantitatively in this section) and the level of integration between FDIs and DIs qualitatively in the previous section of qualitative cross sectional analysis)

. As it is shown from the table 4.2.15 below, the short run and long run regressions results of the independent variables explain the variability of the dependent variable to the extent of 99.94 and 95.17 percent respectively. Meaning only the remaining 0.06 and 4.83 percent of variability in the impact of FDI to HCD is explained by other factors that are not included in the regression of the short run and long run model specifications respectively. This is suggesting that such error correction model fits the data reasonably well. More importantly, the error correction coefficient has the expected negative sign and significant at 10 percent. This helps to reinforce the finding of a long run relationship among the variables in the model.

The short run regression result for the control variable indicates that the lagHCD, real GDPP, Tele and OP have a strong positive impact on the HCD. However the DI, the IR sides of the macroeconomic stability and the political instability have a negative effect on the dependent variable. In the long run except the lagHCD, the IR and govex side of the macroeconomic stability and the trade liberalization (OP) which have a negative and statistically significant (except OP which is statistically insignificant); the other control variables are found to have a

positive and statistically significant effect on HCD. But taking the objective of the study in to consideration it is valueless to have detailed discussion on these issues.

Table4.2.6 the Short Run and Long Run OLS Estimation of FDI flows' impact on HCD using time series data from Ethiopia, 1992-2012

The Short Run dynamics		The Long Run Dynamics		
Variables	Coef. (Std. Err)	Variables	Computed coefficient	Coef. (Std. Err)
laglnHCDD1	.1939688** (.0050398)	laglnHCD		-.6705052* (.0683558)
lnGDPPD1	1.606778* (.0243143)	laglnGDPP	0.222386	.1491107* (.0135342)
FDID1	-1.41e-12** (3.77e-14)	laglnFDI	0.019891	.0133369 (.0288237)
lnDID1	-.0252096*** (.003901)	laglnDI	0.019891	.0133369** (.0341885)
TeleD1	.0032911*** (.0004225)	laglnTele	0.244285	.1637944** (.0590198)
		laglnTrans	2.712432	1.8187* (.3774969)
lnIRD1	-.0000661 (.0009034)	lagIR	-0.00655	-.0043917*** (.0023603)
lnOPD1	.0740689** (.0021782)	Laglngovex	-0.77169	-.5174243* (.1468755)
Lngovex	-.0257501** (.0010969)	laglnOP	-0.05064	-.0339555 (.0234898)
DWAR	-.0472164** (.0031635)	lagDWAR	0.232171	.1556718* (.0372614)
lagECMG	7.06e-11** (1.97e-12)			
_cons	.5643613** (.0252448)	_cons	-0.4944	-.3314964 (1.46695)
Diagnostics Tests	F(10, 1) = 1739.27** R-squared = 0.9999 Adj R-squared = 0.9994 Root MSE = .00128 Durbinalt= 0.2881 swilk ECM= 0.99435 VIF= 8.63 hettest=0.0701** _hat=0.000 _hatsq= 0.322			F(10, 9) = 38.40* R-squared = 0.9771 Adj R-squared = 0.9517 Root MSE = .05392 Durbinalt= 0.2437 swilk ECM= 0.99435 1/VIF= .0179721 hettest=0.8125 _hat=0.000 _hatsq= 0.840

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013
***significant at 10 percent, **significant at 5 percent, * significant at 1 percent

Hypotheses Test 6.3

H_o: FDI flow do not have positive impact on the human capital development of the nation

H_1: FDI flow do have positive impact on the human capital development of the nation

As shown from the regression results of the short run and the long run dynamics of the explanatory variable (FDI), and the control variables (all independent variables except FDI) illustrated in table 4.2.15 above; the study found that in the short run FDI has a 5 percent statistically significant negative effect on the HCD. However the study found the long run effect of FDI on HCD is positive but statistically insignificant as illustrated in the same table above. In fact the study found no evidence to reject the null hypotheses. At the same time the study found no evidence to reject the alternative hypotheses. To mean it differently, the short run effect of FDI in the HCD this nation is negative but in the long run it has a positive but insignificant effect on it.

4.2.3.3.4. Impact of FDI on Domestic Investment (DI)

The other important channel of FDI impact in a given nation is the spillover effect that created on the domestic firms of the host country. Literatures indicate that the FDI has a positive influence in different directions to the domestic investment which can include technological knowhow transfer, improving the balance of payment of the nation which in turn have a positive effect, developing employees and management systems, etc. in this regarded the flow of FDI in to the economy through improving DI is measured and discussed as follows.

As it is shown from the table 4.2.16 below, the short run and long run regressions results of the independent variables explain the variability of the dependent variable to the extent of 95.66 and 93.18 percent respectively. Meaning only the remaining 4.54 and 6.82 percent of variability in the impact of FDI to HCD is explained by other factors that are not included in the regression of the short run and long run model specifications respectively. This is suggesting that such error correction model fits the data reasonably well. More importantly, the error correction coefficient has the expected negative sign and significant at 10 percent. This helps to reinforce the finding of a long run relationship among the variables in the model. The short run dynamics regression result indicates, except the telecom side of the infrastructure, the trade liberalization, the political instability and the unexpected lagDI which have a significant negative effect on the domestic investment, the rest control variables have a significant positive effect on the domestic investment. The long run dynamics regression result showed that the unexpected signs of the lagGDP, the MS, and the expected sign of the

IR, the EXR and govex have a negative relation to GDP and the rest have a positive effect on the DI.

Table4.2.7 The Short Run and Long Run OLS Estimation of FDI flows' impact on DI using time series data from Ethiopia, 1992-2012

The Short Run dynamics		The Long Run Dynamics		
Variables	Coef. (Std. Err)	Variables	Computed coefficient	Coef. (Std. Err)
laglnDID1	-.3564609**	laglnDI		-.1340397
	(.0704685)			(.1660957)
lnFDID1	-.0938632***	laglnFDI	1.054185	.1413027***
	(.0282178)			(.0707117)
lnHCDD1	5.79616**	laglnHCD	5.886828	.7890686**
	(1.025603)			(.2577605)
		laglnGDP	-51.8596	-6.951249*
				(1.189141)
MSD1	3.41e-06**	laglnMS	-36.9469	-4.952354**
	(6.80e-07)			(4.6475)
lnTele	-.5071027**	laglnTele	11.19559	1.500653**
	(.0647096)			(.264095)
		laglnTrans	34.00633	4.558198
				(1.927933)
IRD1	.0060049	lagIR	-0.13247	-.0177557
	(.0048105)			(.0069723)
lnEXRD1	.2450501	laglnEXR	-7.1952	-.9644418
	(.7479083)			(.862292)
lnOPD1	-.1909791***	laglnOP	0.594	.0796196
	(.0558443)			(.0778543)
lngovexD1	2.435194**	Laglngovex	-0.76129	-.1020425
	(.4519548)			(.6055741)
DWAR	-.2259279***	lagDWAR	3.293143	.4414119**
	(.0761474)			(.1743809)
lagECMG	-2.59e-11			
	(4.86e-11)			
_cons	-7.084135**	_cons	1567.08	210.051**
	(1.189148)			(80.4548)
Diagnostics Tests	F(11, 2) = 27.06* R-squared = 0.9933 Adj R-squared = 0.9566 Root MSE = .06794 Durbinalt= 0.8180 swilk ECM= 0.99435 VIF= 9.34 hettest= 0.4849 _hat=0.000 _hatsq= 0.063**			F(12, 7) = 22.63* R-squared = 0.9749 Adj R-squared = 0.9318 Root MSE = .11189 Durbinalt= 0.2010 swilk ECM= 0.99435 VIF= 0.035872 hettest= 0.4194 _hat=0.000 _hatsq= 0.355

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

***significant at 10 percent, **significant at 5 percent, * significant at 1 percent

Hypotheses Test 6.4

H_o: FDI flow do not have positive impact on the domestic investment of the nation

H_1: FDI flow do have positive impact on the domestic investment of the nation

As the regression result is revealed in the table 4.2.16 above, the short run the effects of FDI on domestic investment is negative and significant at 10 percent. However the long run effect of FDI in domestic investment is positive and significant at 10 percent. In case the study found no evidence to reject the null hypotheses in the short run and the alternative hypotheses in the long run. To put it differently, the impact of FDI to DI is negative in the short run where as positive in the long run.

As per the findings of this study the reason why the impact of FDI to DI is negative in the short run and positive in the long run is mainly related to the quality and quantity human capital stock of the nation. As illustrated in table 4.2.16 above for testing the power of the economy to reap the benefits of FDI, the study found that the capacity of the human capital stock of the nation is not capable enough to reap the benefits of FDI. This is also one reason for the short run negative impact of FDI on DI. The human capital with the DI is not strong enough to absorb the benefits from FDI. As the long run regression result in the table 4.2.16 above indicates the reason that the long run effect of FDI to DI is strong positive is due to the fact that the long run absorptive capacity of the human capital is also expected to be strong positive.

Some policies introduce by the government to attract FDI have negative impact on DI that can be taken as indirect negative effect of FDI in the DI. Eg. Take the one of the control variable EXR. One of the various reasons that the value of the domestic currency is continuously depreciated is to attract foreign investors. As the regression result is revealed in the tables 4.1.20 and 4.2.21, in the analysis on determinant factors of FDI, the study found that the effect of EXR in attracting FDI is positive in the short run and negative in the long run. In the short run

In dealing with the determinants of FDI, in the short run EXR have a positive effect; however in the long run it has a negative effect. When this model is treated by taking DI as dependent variables in both the short run and long run the effect of EXR to the DI is found to be negative. This tells as in one hand some policies which are introduced to favor FDI negatively affect the DI; in the other hand the policies benefit neither the FDI nor the DI.

Keeping other things remain constant a 1 percent increase in the exchange rate leads to 129 billion birr increase in the foreign capital flow in the form of investment. On the contrary the impact of EXR to the domestic investment is negative in both the short run and the long run. In the regression in table 4.2.20; if FDI is treated as independent variable and DI as dependent variable the effect of EXR shows strong negative. And in similar fashion of the previous finding the conclusion will be keeping other things constant every percent increase in EXR leads to decrees of Birr 89.2 bln from the domestic investment. Then the net effect in the short run will be (**birr − 89. 2, bln domestic loss + 129bln birr foreign gain = 39. 8bln a net gaine to the economy**) then even though the net effect to the economy is positive, other things remained constant the EXR policy of the nation adversely affects the domestic investors which can be taken as indirect negative effect of FDI to DI. But most importantly in the long run in both specifications, the EXR has strong negative effect to both the FDI and the DI.

4.3. Triangulating the Effects and Findings of the Quantitative and Qualitative Analysis

4.3.1. Short Run Determinants of FDI in Ethiopia

In the quantitative analysis for determinants, the study found that in the short run the lagged FDI, has a positive effect in attracting FDIs and since this variable were not included in the questionnaire the study takes the finding of the qualitative analysis as an input for its conclusion, as such lagged FDI has a positive short run effect on FDI attraction.

In the quantitative analysis the domestic investment is found to be a positive influence in attracting FDI. Parallel to this finding the qualitative analysis also found that it has a positive impact in attracting FDI. As such the study is now in a position to conclude that the domestic investment has a crucial role in attracting the eyes of FDIs.

In the quantitative analysis the market size surprisingly is found to be negatively affecting the FDIs; however, in the qualitative analysis it is found to have a positive effect upon the decision of the foreign investors. Even though it is difficult to make decision upon these two extremes, since the theory supports that FDIs are highly attracted with a host countries large

MS, and since the country is a second populous country in Africa it is difficult to say that FDIs are negatively affected with this MS (but this conclusion is attached to the long run effect).

In the two specifications of the quantitative analysis the HCD of the nation is found to have an opposite result in which the one indicates positive (with statistically insignificant) and the second specification strong negative. In the qualitative analysis in dealing with the availability of the fitting skill required found to be a medium importance to mean that it is not have significant role in attracting FDIs. Then taking these two inputs the study is in a position to conclude that the level of the HCD is not a significant force of attraction to FDIs. But the qualitative analysis also showed that the total stock of the labor force and the cost of this labor are found to have a strong attraction force to FDIs.

The infrastructure which is proxied by four variables (the availabilities of telephone line, internet, electric power, and transportation network) in the qualitative analysis; except for the transportation networks the rest are found to be less important in attracting FDI. And due to multicollinearity problem this variable is proxied by two variables (telecom and transport networks); and the result in the two specification is found to be negative for telecom and positive for the transportation networks in the second specifications only. Then these results are decomposed in to one above all type of the transportation network plays a significant role in attracting FDI.

The economic growth which is porxied the growth rate of the GDP in the quantitative analysis and the economic image in the qualitative analysis in both situations the study found that they play a significant role in attracting FDI.

The macroeconomic stability which is proxied by inflation rate, and exchange rate, in the quantitative analysis is found that the inflation has a negative effect where as the exchange rate has a positive effect. The exchange rate which is also analyzed as one variable of macroeconomic stability in the qualitative analysis has found to have a positive effect in attracting FDIs. The foreign currency reserve which is only analyzed in the qualitative analysis if found to have a negative effect in attracting FDI. From these the study concludes

that the inflation and the foreign currency reserve sides of the macroeconomic stability have a negative effect in FDI; whereas the exchange rate has a positive effect in attracting FDI.

In the quantitative analysis the trade liberalization proxied by openness which is measured in turn by the ratio of imports and exports to GDP is found to have a strong positive effect. However in the qualitative analysis proxied by the import and export procedures and policies on restrictions of some investment area is found to have a less importance in attracting FDIs. Taking these two extreme inputs it is difficult to make conclusion on this variable. Then taking these two scenarios the volume of import and export as a percentage of GDP has a positive effect; however the import/export procedures and the restrictions have a negative effect in attracting of FDI.

Another contradictions created in the two categories of finding is with respect to political stability. In the quantitative analysis it is found that the political stabilities have negative effects. However in the qualitative analysis it is found that the political stability of the nation found to play an important role in attracting FDIs. But both seem reasonable. Because the quantitative analysis tells us about the short run effects; it is logical to say that the political quarrels and tribunals happened in a given year adversely affects the investment flow of that year. Then from this stand point the quantitative analysis is right. In the same replica it is expected the attitude of the respondent largely didn't look at these specific few years of political quarrels and tribunals; rather their mind is expected to look at the big picture of the sum whole the system. Then this is also right with this assumption. Therefore the study conclude that even though the few years of political quarrels negatively affect the FDI flow to the country the whole political system of the country has a positive influence in attracting FDIs.

4.3.2. The Long Run Determinants of FDI in Ethiopia

Besides the identification of the short run effects the study also undertook an investigation over the long run relation between the dependent and explanatory variables under consideration. Then in a similar fashion to the short run effects, the study triangulates the findings of the long run quantitative analysis to the findings of the qualitative analysis and made a decision upon the final conclusion of this study as follows.

Similar to the case of the short run effect, the long run effect of lagged FDI is undertaken in the quantitative analysis only. In fact, this result is as well taken as the final conclusion of the study. Then the study concludes that the long run effect of the lagged FDI is negative. Theoretically this may not seem right but there are situations that can lead to previous investments can negatively affect the subsequent years of investment. For instance if the FDIs are attracted by the market size of the nation and if the previous investments have the capacity to satisfy the existed demand, then other subsequent investors are not interred to make investments in such a saturated markets. The qualitative analysis of this study also supports this truth. It states that the market size of the nation plays a significant role in attracting FDI. Then FDIs who are seeking such market size logically looks in to a market where such investment is not yet done.

In both the qualitative and quantitative analysis the domestic investment is recognized as a best catalyst of FDIs. The increase in domestic investment is taken as a reason to increase the confidence of the foreign investors in a number of directions which include assurance for the existence of healthy investment climate; the DIs can be taken as assurance of availabilities established plants to create a backward and forward integration and etc. this is largely consistent with the majority of empirical findings discussed in chapter two. As such the study concludes that the DI is a strong instrument in attracting FDI.

In the quantitative analysis, similar to the short run effect the MS is found to have a negative effect but statistically insignificant. In the qualitative effect it was found as an important element in attracting FDI. Then taking this insignificancy of the negative and positive effect revealed in the qualitative analysis, the study is in a position to conclude that the MS of the nation have a positive effect in attracting FDI.

The HCD in the quantitative analysis in the first specification is found to have a strong positive and the second specification is found to have a weak negative effect. However in the qualitative analysis the available stock of labor and the cost of this labor are found to have a positive effect. But the skill requirement which was the proxy for the qualitative analysis is found to have a less important. From this the study can conclude that that the labor stock and its cost are found to have a positive effect in attracting FDI however. With the level of skill requirement of the human capital is insignificant in attracting FDI.

Unlike the short run analysis in which the telecom were found to have a negative effect in both specifications, the two proxies telecom and transportation networks are found to have a positive effect in the two long run specifications. However, as discussed earlier the qualitative analysis for the infrastructure except for the transportation networks the rest (telephone, internet, electric power) are found to play less importance. But it is logical and empirically supporting that the current investments made on these utilities have a significant positive effect in attracting FDI in the long run. And the study is well in a position to conclude the transport side of the infrastructure is found to have a positive effect in attracting FDI.

The economic growth which is proxied by the GDP growth rate in the quantitative analysis; and by the economic image in the qualitative analysis in both cases it is found to have a positive effect in attracting FDI. As a result the study found that the economic growth of the country is playing a significant role in attracting the FDIs.

In the long run analysis for the macro economic analysis the quantitative result indicates the proxied variables, the inflation and the exchange rates are found to have a negative effect. This can be taken the result of rapid ups and downs in these variables adversely affect the confidence of the investors up on their investment. Over time this leads to decrease the investment flow in to the country. The qualitative analyses on the macroeconomic stability other than the exchange rate were indicated as less important role players in attracting FDIs. Even for the exchange rate the reason why the respondents agree with the exchange rate is because they are asked to look in to the valuation level of the US$ in terms of Birr. They are not asked to look in to its fluctuations. As such the fluctuations in exchange rate as well is qualitatively can be inferred to have a negative effect in attracting FDI. Therefore from all these scenarios, the study concludes that the level of macroeconomic stability of the nation have a negative effect in attracting FDI.

The trade liberalization proxied by the level of openness in both specifications of the quantitative analysis is found to have a strong positive effect. In contrary, the qualitative analysis of this study indicates as a less important in attracting FDI through its looking in to the restrictions of the government, the import and export procedures and policies. Looking at the implications of the two findings is important. Since the long run relation between the real imports and exports relative to GDP in relation to the FDI flow shows a positive trend it is

logical to infer the openness and the FDI are positively related. But whenever there are restrictions, it means that the economy of the nation is linked to the rest of the world only with specific sectors. As such this has a negative effect in attracting FDI. Therefore even though the restrictions in the investment Proclamations of 7/1996,37/1996, 35/1998, 36/1998 and 116/1998 are significantly reduced in the recent proclamation 769/2012, still the un repealed restrictions will have to continue as adversely affecting FDI.

The political stability in both specifications of the quantitative and qualitative analysis is found to have a positive effect in attracting FDI. As such the study is with a strong evidence to conclude that the political stability of the nation plays a significant role in attracting FDI.

4.3.3. The Impact of FDI in the Ethiopian Economy

The so far discussions of this paper focused on the macro economic variables that favorably and unfavorably affect the FDI flows in the nation. Then ones the FDI interred in to the economy it have to be measured its possible impact upon the economy. In dealing with this issue the study tried to look the economic impact of FDI through three possible channels of effect with a short run and long run model specifications.

The first task in dealing with the impact of FDI was to know the absorptive power of the economy to reap the benefits from FDI. And it found that the power of the economy in the short run is negative but it is found to be positive in the long run. Then since there is no additional qualitative analysis on this issue the study takes these findings as a conclusive mark. Then even though the economy didn't create the required power to reap the benefits of FDI short run, since its long run effect is positive, the study concludes that the power of the economy to reap the benefits of FDI is strong in the long run.

The first wing where the economic impact of FDI investigated was through its impact on the GDPP. The quantitative analysis found that the short run impact of FDI in the GDPP is negative. This is because of the absorptive power of the economy in the short run is negative too. Since the human capital of the nation is not found at the required level of capability to extract the benefits of the FDI, in the short run, then with such situation it is un thinkable to get a short run positive impact. This shows a consistency of results of the study. The long run quantitative analysis found that FDI has a positive effect in the GDPP which is also consistent

with the finding of the power of the economy. In the qualitative analysis also through the proxied variables FDI found to have a positive impact upon the GDPP. Then the study concludes that since the short run power of the economy to reap the benefits of FDI is weak the short run impact of FDI in the GDPP is also negative. However parallel to the change in the power of the economy to reap the benefits of FDI the long run effects of FDI on GDPP is also found to be positive.

The other dimension through which FDI will have an impact up on the economy which is investigated in this study is it impact up on the HCD. The short run quantitative analysis of impact of FDI in the HCD is found to be negative. This is also due to lack of absorptive power of the human capital of the nation. Another fact of this is that it is unfamiliar to see an immediate change in the human capital development process. The finding of qualitative analyses which is largely parallel with finding the long run qualitative analysis indicates the long run effect of FDI is positive in the HCD. This is also due to the improvement in the HC and the economy as well will have the FDI also have a positive impact on the long run HCD process.

The third and the last dimension through which FDI will have an impact up on the economy which is investigated in this study as well is it impact up on the development of DI. Taking the proxies of the qualitative analyses to the impact of FDI upon the DI; the except for two proxies of the seven which identified to have appositive effect the rest five proxy found to have a negative effect. In addition to that the short run quantitative analysis also indicates that the FDIs has a negative effect on the DIs. Few of the many reasons that can lead to such negative effect is that (1) the stiff competitions from the FDI can have an adverse effect as their short run capacity didn't permit to take a retaliation action. (2) The policies developed to attract FDI can indirectly attack the DIs. For instance this study found that the exchange rate adversely affects the performance of the DIs. The other adverse effect of the exchange rate is also it does not meet its long run objective as well as it is shown in the previous discussion of the study which was found that the EXR has a negative effect in attracting FDI. Therefore this EXR; it negatively affect the DIs and FDIs (mainly in the long run). But similar to the previous findings as well the long run effect of FDI to DI is found to be positive

CHAPTER FIVE

CONCLUSIONS AND POLICY IMPLICATIONS

So far, using the ARDL model's Bound test for co-integrations for the quantitative analysis, and a 5 rank likert's type modeled questionnaire for qualitative analysis, and through triangulating these two findings the study assess the trends and patterns of FDI flow (only quantitative), identifies the short run and long run determinants of FDI and analysis the possible short run and long run impacts of FDI in to the Ethiopian economy. As such as an output to the triangulated effects and previous findings the following conclusions are drawn and some policy implications are forwarded which are organized as follows.

5.1. CONCLUSIONS:

The flow of FDI to Ethiopia is not only quite low but also highly characterized with very high volatility even when it is compared to the sub-Saharan countries which are thought to be found largely in similar socioeconomic conditions. With this behavior of high volatility and frequent accidental ups and downs the average flow showed an increasing trend over the study period. And even though it shows an increasing trend its share to GDP have never been more than 5.43 percent and from 2004 onwards this percentage share showed a continuous decreasing trend mainly due to the insignificancy increase of its flow in relation to the surpassing increase to GDP of the nation.

In the short run the macroeconomic variables which include lagged FDI, domestic investment, the available stock and cost of the human capital, the road transport network side of the infrastructure, the growth of the economy, the exchange rate side of the macroeconomic stability, the openness side of the trade liberalization measured by the import and export as a percentage of GDP, are found to have a strong positive effect in attracting FDI. However the MS, the skill level of the human capital, the telecom and electric power of sides of the infrastructure, the inflation and foreign currency reserve sides of the macroeconomic stability, trade liberalization measured by the import and export procedures and the restrictive policies, political instabilities affect FDIs unfavorably.

In the long run the domestic investment, market size, the economic image, the telecom and road transportation network sides of the infrastructure, the growth rate of the economy, the openness side of the trade liberalization measured by the import and export as a percentage of GDP, the political stability of the nation have a favorable effect to FDIs. Whereas the lagged FDI, the inflation, exchange rate and foreign exchange reserve sides of the macroeconomic stability, trade liberalization measured by the import and export procedures and the restrictive policies, affects FDI unfavorably.

As a same replica of the economic power of the nation to reap the benefits of FDI is negative in the short run and positive in the long run; the impact of FDI to the economy through its effect to the improvements of real GDP per capita, human capital development, and domestic investment is negative in the short run and positive in the long run.

5.2. POLICY IMPLICATIONS

Taking the findings and conclusion drawn from the triangulated effects of the two analyses the study forwards the following policy implications (recommendations) which are triggered to different stakeholders. Since the subject under study was mainly an issue of policy the recommendations are mainly forwarded to government. But some few points are also recommended to the FDIs and researchers of the area as well.

5.2.1. For the Government

Appreciating the overall endeavors and efforts of the government in the creation of the new Ethiopia; the study forwards the following remedial issues that the government better have to take in to consideration in making decisions with the subject under consideration of this study. These includes

- As the findings and conclusions of the study indicates the most important catalyst in attracting FDI in all the different specifications of the quantitative and the qualitative analysis found is the domestic investment. As such more than anything the government should have to give a due attention to the development of the DI; since this investment has a striking power in attracting FDI. For that matter any macroeconomic policy designed in order to attract FDI should have to be simultaneously checked their effect to the DI as

well and it should be to the best of interest of the DI. The reason that this recommendation is forwarded is that because of the implication found in the one of the macroeconomic policies i.e. the exchange rate policy. Even though one of the many reasons for devaluation of the currency of the nation is to attract FDI; it has a negative effect to both.

- The other problem area found in this study was the unfitting capability of the human capital of the nation. Even though the government's effort in developing the human capital through schooling is undiminished and highly appreciable, but the quality of human capital that the nation had have is not as per the requirement of the FDI which is largely assured in both the qualitative and quantitative analyses. Then the government is highly advised to have a look for solving this gap. Two strategies are forwarded by this study for solving the problem. The first is that creating an industry school relation at least starting from the secondary schools and TVETs will have a significant role in solving the problem. Second the education and training programs of the nation should have to be opened based on an integrated demand and market analysis. For that matter the investors and other stake holders should have to be participated and significantly incorporated their say and requirements in the development of the curriculum.

- The other result of this study is that of the proxy variables to infrastructure; the telephone line, the internet, and the electric power are largely identified to have a negative effect in attracting FDI. This finding seems surprising when it is laterally compared to the efforts and dramatic achievements of the nation on the identified proxy variables. However it is not logical to say the finding is wrong. Rather it is to mean that still the availabilities of these utilities are not as per the demand of the FDIs. Even though the study didn't investigate the root cause for this mismatch of availabilities and demand, the study can make a logical infer. This mismatch is happened either due to the frequent ON and OFF behavior of the utilities or due to shortage of the supply of the utilities. If the case is due to a shortage of supply then since the government is doing significant construction on these utilities no additional recommendation is necessary. How ever since the root cause of the problem is highly expected to be with the ON and OFF behavior of the utilities and since this case is directly triggered to the human capital and management of each sector; the

government should take a serious measure for correction of the frequent ON and OFF behavior of the utilities.

- The other important finding of this study was the macroeconomic instabilities mainly the inflation and the exchange rates of the nation adversely affect the flow of FDI. Studies indicate that of the different reasons, depreciation of domestic currency takes a lion's share in promoting inflation. In the essence of attracting FDIs and getting foreign currency the value of Birr is found to be continuously depreciating. Then at one side the exchange rate of the nation is negatively affecting both the FDIs and DIs. At the other side, the exchange rate policy of the nation plays a significant role in the inflation problem of the nation. Therefore taking these truth in to account even though the scope and the investigations of the study didn't permit to determine the optimum level of the exchange rate, keeping other things remained constant, it seriously advices the government to reduce the exchange rate and appreciate the value of its domestic currency. But bear in mind that, it does not mean that appreciation the currency will promote FDI. But since the current value do have a negative long run effect in attracting FDI plus since it has short run and long run negative effect to DI plus since it is a source for other problems like facilitating the inflation; appreciating it is an indispensable choice to solve many connected problems.

- The other recommendation goes to the issue of trade liberalization. Of course the long run effect of the openness measured by the real imports and exports as a ratio of GDP shows a positive effect. However the short run effect of this openness found in the quantitative analysis and the import and export procedures of the nation found in the qualitative analysis indicates that they do have a negative effect in attracting FDI. As such the government should have to look in to its systems of import and export to reap the short run benefits as well.

- In dealing with the impact analysis the study found that in the long run the power of the economy to reap the economic benefit of FDI is positive and at the same time its long run effect in increasing the GDPP, HCD and DI is positive. However the economy is not in a position to reap the benefits of FDI in the short run. Its effect to the identified three channels also seems to be negative. But the root cause triggered to two issues. The

problem is directly related to the HCD of the nation. Since the human capital didn't accumulate to take the advantage of the FDIs the nation's benefit from FDI makes insignificant. Then proper application of recommendation 2 stated above is highly expected to solve the problem. The second source for the problem is lack of integration and coordination between the FDIs and DIs in the form of backward and forward integration. If the FDIs and DIs are working to gather in such integration it makes the learning process so easy and to reap greater benefits from FDI in the short run as well. There for the government should have to establish an institution which facilitate such integration through an organized study based mediations and propagations between the FDIs and DIs.

5.2.2. For the Foreign Investors

- The FDIs should have to know that working to gather with investors who better know the natural situations of the country will have much more benefit than doing in isolation. Therefore this study strongly advice them to be willing enough in working to gather with the DIs and to form a forward and back ward integrations with projects of the domestic investments.

- Of course the skill of the human capital of the nation may not be as per the demand of the foreign enterprises. However these enterprises are also highly expected to take their part in solving the problem. At one side designing a training and development program triggering in solving their organizational specific gaps as part of their organizational management system and at the other side take enough initiation to participate and make ideal contribution in the national education and training curriculum developments

5.2.3. For the Researchers Interested in this Area

- In making analysis of the macroeconomic policy in general and in dealing with the variables of FDI in particular researchers are strongly interested in it quantitative analysis only. How ever since the quantitative analysis cannot give us the full picture of the problem the researcher strongly advice them to focus mainly to the qualitative analysis so that a clear picture of the problem will be identified and a solution with clear evidence will be forwarded.

5.3. Further research areas

1. As it was identified in the chapter three of this study, more than 78.5% (5006/6375) of FDIs, and 70.45% (38,359/54448) of DIs of the country are found in Addis Ababa, around Addis Ababa. This tells there is a clear in equitable distribution of investment in the country. The likely hood to have a negative effect on the overall economic development to be negative seems very high as it is expected to have a negative effect to both (i.e. to the area where a very high concentration is availed can have a problem of carrying of over capacity that lead to reduce overall efficiency and to the area where low concentration creates under utilization of resources) which can have a strong negative commutative effect up on the economic development of the nation.

2. On contrary to the first one, when investment projects are concentrated in one area in the essence of clustering studies indicated that the efficiency of these projects will significantly increased, well, it is shown that the 78.5% (5006/6375) of FDIs, and 70.45% (38,359/54448) of DIs of the country are found in Addis Ababa, around Addis Ababa. But, first are these project are organized with the concept of clustering, if it is are these projects really reap the benefits of clustering…….? Should be investigated and analyzed.

3. Whey inventors are more interested in Addis and around Addis….? Is it because this area is central access to the whole nation; is it because this area is much more nearest to the port that nation is using or is it because lack of appropriate information on investment opportunities of the nation……?

4. There are contractual agreements that are developed by the investment policy of the nation. Even though the FDI are strongly expected to act accordingly, the researcher observed as they are not applied as signed. Of these the contractual agreement related to employment restriction is one of the contractual agreements not seriously applied. What so ever the case improper applications of these contractual agreements are believed to have a negative effect in the development of the nation. Then assessment over these issues and investigating their economic implications benefits to the decision of the government (see appened picture of the organizational chart of Huajian Shoe Company).

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APPENDIX

APPENDIX A- DIAGONOSTICS TEST

APPENDIX A1-TEST FOR STATIONARY

With dealing of descriptive statistics which have a time series data nature, the first task is conforming that the data have a stationary behavior over the observations. A time series data is said to be stationary if its mean and covariance are independent. This is to mean that there should not be a serial correlation across time. But if there is a correlation across time the data is said to be non-stationary. To determine whether the data is stationary or not we can use the popular form of checking the stationary property of the variables is the Augmented Dickey Fuller (ADF) unit root test. As a result of this test the following decision rule is formulated.

If |t*| > |ADF| critical value, ==> not reject null hypothesis, i.e., unit root exists.
If |t*| < |ADF| critical value, ==> reject null hypothesis, i.e., unit root does not exist.
Where: - t* is ADF-test Statistics, i.e., t-calculated - ADF critical value is value of ADF at standard level of significances, i.e., at 1%, 5% and 10% significance levels.

As shown from the table 4.2.2 below, variables lnGGDP, lnMS, lnMG, lnTele, and NEP, are found to be stationary at level (0) in both the Augmented Dickey Fuller (ADF) and Phillips Perron (PP) unit root test. There for the null hypotheses for these variables is failed to accept. But the researcher failed to reject the null hypotheses for the other variables. That means the other variables are non stationary which actually are required to be stationary. These variables need further test. For that matter a first difference of these variables is taken to make them stationary.

As the result of the first difference test depicted in the table 4.2.2; variables lnFDI, lnDI, lnHCD, lnIR, lnElpow, lnempt, Govex, lnEXR, lnFord, and lnOP becomes stationary at their first difference of the ADF and PP tests. Therefore the null hypotheses for these variables are also failed to accept. However, the variable empt, neither we test at level nor at the first difference, is still found to be non stationary. The study failed to reject the null hypothesis for this variable.

Table4.2.8. Augmented Dickey Fuller (ADF) and Phillips Perron unit root test using time series data from Ethiopia, 1992-2012

Variables	Null-Hypotheses	Level		first difference		Phillips Perron	
		ADF-Test	Prob [1]	ADF-Test	Prob[1]	PP-Test	Prob[1]
lnFDI	FDI *has unit root*	-0.957	0.7687	-7.280 (-3.750)*	0.0000	-8.297(1) (-3.750)*	0.0000
lnDI	DI *has unit root*	-0.983	0.7595	-6.036 (-3.750)*	0.0000	-5.551(1) (-3.750)*	0.0000
GDP	GDP has unit root	6.258 (-3.750)*	1.0000				
GGDP	GGDP *has unit root*	-4.707 (-3.750)**	0.0001			-4.617 (0) (-3.750)*	0.0000
lnMS	MS *has unit root*	-9.671 (-3.750)*	0.0000			-6.402(0) (-3.750)*	0.0000
lnGDPP	GDPP *has unit root*	-4.070 (-3.750)*	0.0011			-4.077(0) (-3.750)*	0.0011
lnHCD	HCD *has unit root*	1.823	0.9984	-6.521 (-3.750)*	0.0000	-6.838(1) (-3.750)*	0.0000
lnTele	Tele *has unit root*	7.255 (-3.750)*	1.0000			5.998(0) (-3.750)*	1.0000
lnElpow	Elpow *has unit root*	1.643	0.9980	-3.616 (-3.000)**	0.0055	-3.672(1) (-3.000)**	0.0045
lnTrans	Trans *has unit root*	0.177	1.0000	-3.329 (-3.000)**	0.0136	-3.463(1) (-3.000)**	0.0090
lnIR	IR *has unit root*	-1.975	0.2976	-4.176 (-3.750)*	0.0007	-4.168(1) (-3.750)*	0.0007
Govex	govex *has unit root*	0.803	0.9917	-3.250 (-3.000)**	0.0172	-3.175(1) (-3.000)**	0.0215
lnEmpt	empt *has unit root*	0.122	0.9685	-1.994	0.2891	-2.049	0.2656
lnEXR	EXR *has unit root*	-1.215	0.6673	-3.542 (-3.000)**	0.0070	-3.388 (-3.000)**	0.0114
lnFord	Ford *has unit root*	-1.613	0.4763	-3.653 (-3.000)**	0.0048	-3.671(1) (-3.000)**	0.0045
NEP	NEP *has unit root*	4.256 (-3.750)*	1.0000			7.826 (-3.750)*	1.0000
lnOP	OP *has unit root*	-1.585	0.4909	-4.166 (-3.750)*	0.0008	-4.136(1) (-3.750)*	0.0008

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013 *significant at 1% critical value **significant at 5% critical value ***significant at 10% critical value and [1]MacKinnon approximate p-value for Z (t) (0) significant at level (1) significant at first difference

Since the study undertake a bound test for co-integration and since this method assume that the data has to be stationary either at their level or at their difference only, the study didn't conduct the second ADF and PP test for the variables to make them stationary. Therefore the study is forced to reject the variable empt from its analysis. The other case is variables Govex and NEP are not taken their logarithmic effect. The reason for that is since the country has all in all a negative trade balance; if we change this variable in to log the result becomes nil. For the Govex when the study take the log form it will not be stationary in its level and first

difference. Therefore for these two variables the original data is taken. Now all the variables of the study become stationary.

As the result of the stationary test, the estimation models need to be adjusted with the differenced variables. In case the first model for analyzing determinant was specified as follows

$$FDI_t = \beta_0 + \beta_1 lnFDI_{t-1} + \beta_2 \ln HCD_t + \beta_3 \ln GDI_t + \beta_4 \ln MS_t + \beta_5 \ln MG_t + \beta_6 \ln OP_t + \beta_7 \ln MES\_IR_t + \beta_8 \ln MES\_EXR_t + \beta_{10} \ln MES\_Ford_t + \beta_{11} \ln IS\_Tele_t + \beta_{12} \ln IS\_Epow_t + \beta_{13} \ln IS\_Trans_t + +U_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.1$$

Now, this is adjusted to:

$$\triangle_1 FDI_t = \beta_0 + \beta FDI_{t-1} + \beta_1 MS_t + \beta_2 \triangle MG_t + \beta_3 \triangle OP_t + \beta_4 \triangle MES\_IR_t + \beta_5 \triangle MES\_EXR_t + \beta_7 \triangle MES_{Ford_t} + \triangle MES_{govex} + \beta_8 IS_{Tele_t} + \beta_9 \triangle IS\_Elpow_t + \beta_{10} IS\_Trans_t + \beta_{11} \triangle HCD_t + \beta_{12} \triangle DI_t + U_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.2$$

Where $\triangle$ refers to the first change

The second set of models for analyzing the impact of FDI on economic growth was specified as follows

$$GDPP*_t = \beta_0 + \beta_1 lnGDP_{t-1} + \beta_2 lnFDI_t + \beta_3 \ln HCD_t + \beta_4 \ln DI_t + \beta_5 \ln FDI * HCD_t + \beta_6 \ln OP_t + \beta_7 \ln MES\_IR_t + \beta_8 \ln MES\_EXR_t + \beta_9 \ln MES_{Ford_t} + \beta_{10} MES_{govex} + \beta_{11} \ln IS_{Tele_t} + \beta_{12} \ln IS_{Elpow_t} + \beta_{13} \ln IS_{Trans_t} + \beta_{14} \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots 4.3.0$$

$$GDPP_t = \beta_0 + \beta_1 lnGDP_{t-1} + \beta_2 lnFDI_t + \beta_3 \ln HCD_t + \beta_4 \ln DI_t + \beta_5 \ln MS_t + \beta_6 \ln MG_t + \beta_7 \ln OP_t + \beta_8 \ln MES\_IR_t + \beta_9 \ln MES\_EXR_t + \beta_{10} \ln MES_{Ford_t} + \beta_{11} MES_{govex} + \beta_{13} \ln IS_{Tele_t} + \beta_{14} \ln IS_{Elpow_t} + \beta_{14} \ln IS_{Trans_t} + \beta_{15} \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots 4.3.1$$

$$HCD_t = \beta_0 + \beta_1 \ln HCD_{t-1} + \beta_2 lnFDI_t + \beta_3 \ln DI_t + \beta_5 \ln MS_t + \beta_6 \ln GDPP_t + \beta_7 \ln OP_t + \beta_8 \ln MES\_IR_t + \beta_9 \ln MES\_EXR_t + \beta_{10} \ln MES_{Ford_t} + \beta_{11} MES_{govex} + \beta_{12} \ln IS_{Tele_t} + \beta_{13} \ln IS_{Elpow_t} + \beta_{14} \ln IS_{Trans_t} + \beta_{15} \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots 4.3.2$$

$$DI_t = \beta_0 + \beta_1 \ln DI_{t-1} + \beta_2 lnFDI_t + \beta_3 \ln HCD_t + +\beta_4 \ln MS_t + \beta_5 \ln GDPP_t + \beta_5 \ln OP_t + \beta_6 \ln MES\_IR_t + \beta_7 \ln MES\_EXR_t + \beta_8 \ln MES_{Ford_t} + \beta_{11} MES_{govex} + \beta_9 \ln IS_{Tele_t} + \beta_{10} \ln IS_{Elpow_t} + \beta_{11} \ln IS_{Trans_t} + \beta_{12} \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots 4.3.3$$

There for these set of equations are also adjusted to:

$$\triangle GDPP*_t = \beta_0 + \beta_1 \triangle lnGDP_{t-1} + \beta_2 \triangle lnFDI_t + \beta_3 \triangle \ln HCD_t + \beta_4 \triangle \ln DI_t + \beta_5 \triangle \ln FDI * HCD_t + \beta_6 \triangle \ln OP_t + \beta_7 \triangle \ln MES\_IR_t + \beta_8 \triangle \ln MES\_EXR_t + \beta_9 \triangle \ln MES_{Ford\,t} + \beta_{10} \triangle MES_{govex} + \beta_{11} \triangle \ln IS_{Tele\,t} + \beta_{12} \triangle \ln IS_{Elpow\,t} + \beta_{13} \triangle \ln IS_{Trans\,t} + \beta_{14} \triangle \ln NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots 4.4.0$$

$$\triangle GDPP_t = \beta_0 + \beta_1 \triangle GDPP_{t-1} + \beta_2 \triangle FDI_t + \beta_3 MS_t + \beta_4 \triangle OP_t + \beta_5 \triangle MES\_IR_t + \beta_6 \triangle MES\_EXR_t + \beta_7 \triangle MES_{Ford\,t} + \beta_8 \triangle MES\_govex_t + \beta_9 IS_{Tele\,t} + \beta_{10} \triangle IS_{Elpow\,t} + \beta_{11} IS_{Trans\,t} + \beta_{12} \triangle HCD_t + \beta_{13} \triangle DI_t + \beta_{14} NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.4.1$$

$$\triangle HCD_t = \beta_0 + \beta_1 \triangle HCD_{t-1} + \beta_2 \triangle FDI_t + \beta_3 MS_t + \beta_4 \triangle OP_t + \beta_5 \triangle MES\_IR_t + \beta_6 \triangle MES\_EXR_t + \beta_7 \triangle MES_{Ford\,t} + \beta_8 \triangle MES\_govex_t + \beta_9 IS_{Tele\,t} + \beta_{10} \triangle IS_{Elpow\,t} + \beta_{11} IS_{Trans\,t} + \beta_{12} \triangle GDPP_t + \beta_{13} \triangle DI_t + \beta_{14} NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.4.$$

$$\triangle DI_t = \beta_0 + \beta_1 \triangle DI_{t-1} + \beta_2 \triangle FDI_t + \beta_3 MS_t + \beta_4 \triangle OP_t + \beta_5 \triangle MES\_IR_t + \beta_6 \triangle MES\_EXR_t + \beta_7 \triangle MES_{Ford\,t} + \beta_8 \triangle MES\_govex_t + \beta_9 IS_{Tele\,t} + \beta_{10} \triangle IS_{Elpow\,t} + \beta_{11} IS_{Trans\,t} + \beta_{12} \triangle HCD_t + \beta_{13} \triangle GDPP_t + \beta_{14} NEP_t + DWAR + V_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.4.3$$

Where $\triangle$ refers to the first difference:

Furthermore, Mitra & Ghosh (2010) suggests that the error term of the models should be stationary. In case the error terms of the two models specified (U_t and V_t) are tested using the ADF and PP test for stationary as depicted in the table 4.2.3 below.

Table4.2.9. ADF Unit Root Test of the error terms using time series data from Ethiopia, 1992-2012

Variables	Null hypotheses	ADF-Test stat	Prob*	Critical value 1%	5%	10%
U_t	Ut has unit root	-3.635	0.0051	-3.750	-3.000	-2.630
V_t	Vt has unit root	-3.469	0.0088	-3.750	-3.000	-2.630

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013 *MacKinnon approximate p-value for Z (t)

As shown from the table 4.2.3 above, the absolute value of the ADF test of the two error terms is greater than the absolute value of the 5% critical value. This means that it does not indicate that the two error terms have unit root test. There for, the researcher failed to accept the null hypotheses. There for the series of the two error terms are stationary at 5% significant level.

APPENDIX A2: BOUND TEST FOR CO-INTEGRATION.

As sought in the unit root test for stationary some of the variables are stationary at their level and some are stationary at their first difference. This case requires to test whether the variables have a long run relation or not; i.e. conducting the co-integration test. To test for co integration among the variables for analyzing the determinant of FDI and the impact of FDI in the economy i.e. the GDP, there are different co-integration tests that are used by different researchers. Of these testing instruments, the two steps Engle and Granger (1987) approach and the Johansen test (Johansen, 1988) method are some of the different instruments that are repeatedly used by different researchers. The major advantage of the Johansen method is that it allows estimation of multiple co-integrating vectors where they exist. However, the application has its own pre request that the targeted independent variables are all expected to be stationary at their first difference of the ADF and PP tests. Meaning, estimations that are under taken with the presence of a combination of different level stationary series under the Johansen procedure may lead to biased results. The other problem associated with these instruments is that, the Engle–Granger method and the Johansen procedures are not reliable for relatively small samples (Narayan, 2004).

Pesaran and Shin (1999) develop a new ARDL testing instrument named as bounds testing approach. This approach tests for the existence of a co-integration relationship among the independent variables that can be applied regardless of whether the targeted variables are a combination of stationary series at a level and at first difference. This approach reconstructs the ARDL model through overcoming the problems associated with the presence of a combination of stationary variables at different level which are not possible in Engle and Granger and the Johansen approaches (Narayan, 2004). The second advantage with this approach is that, unlike to the Engle–Granger method and the Johansen procedures; the bound test can give us reliable estimates of studies with small observation, which is the current study too (Narayan, 2004 and Harris, 2003). Third, it reduces serial correlations and endogeneity problems and provides unbiased estimates of the long run and short run model and valid t-statistics (Harris, 2003). Fourth, in its estimation, bound test can use OLS to identify the long run and short run effects simultaneously (Narayan, 2004 and Harris, 2003). Then ARDL model specification as follows.

$$Y_t = \beta_0 + \sum_{i=o}^{p} \beta_i Y_{t-1-i} + \sum_{i=0}^{p} \beta_j X_{i,t-i} + \varphi_t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.5$$

Where $\beta_0$is constant, Y_t is endogenous variable, $X_{i,t}$ the i^{th} at period tth independent variables, p is the maximum lag number to be used, β_i and β_j are coefficients of the independent variables, and φ_t is the white noise error. Then if we substitute the equations of this study i.e. equations 4.2 and equations 4.4 in to the equation 4.5 the resulting new equation will be as follows.

The equation of 4.2 i.e. for the determinants of FDI become

$$FDI_t = \beta_0 + \sum_{i=1}^{p} \beta_1 \triangle ln FDI_{t-i} + \sum_{i=1}^{p} \beta_2 \triangle ln \text{HCD}_{t-i} + \sum_{i=1}^{p} \beta_3 \triangle ln \text{DI}_{t-i} + \sum_{i=1}^{p} \beta_4 \triangle ln \text{MS}_{t-i} + \sum_{i=1}^{p} \beta_6 \triangle ln \text{OP}_{t-i} + \sum_{i=1}^{p} \beta_7 \triangle ln \text{MES\_IR}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_8 \triangle ln \text{MES\_EXR}_{t-i} + \sum_{i=1}^{p} \beta_{10} \triangle ln \text{MES\_Ford}_{t-i} + \sum_{i=1}^{p} \beta_{12} \triangle ln MES\_govex_{t-i} + \sum_{i=1}^{p} \beta_{11} \triangle ln \text{IS\_Tele}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_{13} \triangle ln \text{IS\_Trans}_{t-i} + \text{DWAR} + \text{Ut} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.6$$

And the equation of 4.4 i.e. for the impact of FDI become

$$\triangle \text{GDPP}*_t = \beta_0 + \sum_{i=1}^{p} \beta_1 \triangle ln GDPP_{t-1} + \sum_{i=1}^{p} \beta_1 \triangle ln FDI_{t-i} + \sum_{i=1}^{p} \beta_2 \triangle ln \text{HCD}_{t-i} + \sum_{i=1}^{p} \beta_3 \triangle ln \text{DI}_{t-i} + \sum_{i=1}^{p} \beta_4 \triangle ln \text{FDI} * \text{HCD}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_6 \triangle ln \text{OP}_{t-i} + \sum_{i=1}^{p} \beta_7 \triangle ln \text{MES\_IR}_{t-i} + \sum_{i=1}^{p} \beta_8 \triangle ln \text{MES\_EXR}_{t-i} + \sum_{i=1}^{p} \beta_{10} \triangle ln \text{MES\_Ford}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_{12} \triangle ln MES\_govex_{t-i} + \sum_{i=1}^{p} \beta_{11} \triangle ln \text{IS\_Tele}_{t-i} + \sum_{i=1}^{p} \beta_{13} \triangle ln \text{IS\_Trans}_{t-i} + \text{DWAR} + \text{Vt} \ldots\ldots\ldots\ldots\ldots 4.7.0$$

$$\triangle \text{GDPP}_t = \beta_0 + \sum_{i=1}^{p} \beta_1 \triangle ln GDPP_{t-1} + \sum_{i=1}^{p} \beta_1 \triangle ln FDI_{t-i} + \sum_{i=1}^{p} \beta_2 \triangle ln \text{HCD}_{t-i} + \sum_{i=1}^{p} \beta_3 \triangle ln \text{DI}_{t-i} + \sum_{i=1}^{p} \beta_4 \triangle ln \text{MS}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_6 \triangle ln \text{OP}_{t-i} + \sum_{i=1}^{p} \beta_7 \triangle ln \text{MES\_IR}_{t-i} + \sum_{i=1}^{p} \beta_8 \triangle ln \text{MES\_EXR}_{t-i} + \sum_{i=1}^{p} \beta_{10} \triangle ln \text{MES\_Ford}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_{12} \triangle ln MES\_govex_{t-i} + \sum_{i=1}^{p} \beta_{11} \triangle ln \text{IS\_Tele}_{t-i} + \sum_{i=1}^{p} \beta_{13} \triangle ln \text{IS\_Trans}_{t-i} + \text{DWAR} + \text{Vt} \ldots\ldots\ldots\ldots\ldots 4.7.1$$

$$\triangle \text{HCD}_t = \beta_0 + \sum_{i=1}^{p} \beta_1 \triangle ln HCD_{t-1} + \sum_{i=1}^{p} \beta_1 \triangle ln FDI_{t-i} + \sum_{i=1}^{p} \beta_3 \triangle ln \text{DI}_{t-i} + \sum_{i=1}^{p} \beta_4 \triangle ln \text{MS}_{t-i} + \sum_{i=1}^{p} \beta_5 \triangle ln \text{GDPP}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_6 \triangle ln \text{OP}_{t-i} + \sum_{i=1}^{p} \beta_7 \triangle ln \text{MES\_IR}_{t-i} + \sum_{i=1}^{p} \beta_8 \triangle ln \text{MES\_EXR}_{t-i} + \sum_{i=1}^{p} \beta_{10} \triangle ln \text{MES\_Ford}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_{12} \triangle ln MES\_govex_{t-i} + \sum_{i=1}^{p} \beta_{11} \triangle ln \text{IS\_Tele}_{t-i} + \sum_{i=1}^{p} \beta_{13} \triangle ln \text{IS\_Trans}_{t-i} + \text{DWAR} + \text{Vt} \ldots\ldots\ldots\ldots 4.7.2$$

$$\triangle \mathrm{DI}_t = \beta_0 + \sum_{i=1}^{p} \beta_3 \triangle ln\mathrm{DI}_{t-1} + \sum_{i=1}^{p} \beta_1 \triangle lnFDI_{t-i} + \sum_{i=1}^{p} \beta_2 \triangle ln\mathrm{HCD}_{t-i} + \sum_{i=1}^{p} \beta_4 \triangle ln\mathrm{MS}_{t-i} + \sum_{i=1}^{p} \beta_5 \triangle ln\mathrm{GDPP}_{t-i} + \sum_{i=1}^{p} \beta_6 \triangle ln\mathrm{OP}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_7 \triangle ln\mathrm{MES\_IR}_{t-i} + \sum_{i=1}^{p} \beta_8 \triangle lnMES\_EXR_{t-i} + \sum_{i=1}^{p} \beta_{12} \triangle lnMES\_govex_{t-i} + \sum_{i=1}^{p} \beta_{10} \triangle ln\mathrm{MES\_Ford}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_{11} \triangle ln\mathrm{IS\_Tele}_{t-i} + \sum_{i=1}^{p} \beta_{13} \triangle ln\mathrm{IS\_Trans}_{t-i} + \mathrm{DWAR} + \mathrm{Vt} \ldots\ldots\ldots\ldots\ldots\ldots 4.7.3$$

Then the dependent variables of the equations 4.6 and 4.7 i.e. the FDI and the GDP respectively must take their first deference. However, the independent variables can take either their level or their first deference values. Therefore, equations 4.6 and 4.7 can be rearranged in terms of the level, the first difference, the lagged and the logged values. In addition to that in order to separate the short run and the long run effects, a Vector Error Correction Model (VECM), is included in the equation. VECM is the residual obtained from the dependent variables of the two equations; i.e. the FDI and the GDP (pesaran et al, 2001). By incorporating all these issues the models are again adjusted as follows. The first model for analyzing determinant is specified as follows

$$\triangle_1 FDI_t = \beta_0 + \sum_{i=1}^{p} \beta_1 \triangle lnFDI_{t-1} + \sum_{i=1}^{p} \beta_2 \triangle ln\mathrm{HCD}_{t-i} + \sum_{i=1}^{p} \beta_3 \triangle ln\mathrm{DI}_{t-i} + \sum_{i=1}^{p} \beta_4 \triangle ln\mathrm{MS}_{t-i} + \sum_{i=1}^{p} \beta_5 \triangle ln\mathrm{GDPP}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_6 \triangle ln\mathrm{OP}_{t-i} + \sum_{i=1}^{p} \beta_7 \triangle ln\mathrm{MES\_IR}_{t-i} + \sum_{i=1}^{p} \beta_8 \triangle ln\mathrm{MES\_EXR}_{t-i} + \sum_{i=1}^{p} \beta_{10} \triangle ln\mathrm{MES\_Ford}_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_{12} \triangle ln\mathrm{MES\_govex}_{t-i} + \sum_{i=1}^{p} \beta_{11} \triangle ln\mathrm{IS\_Tele}_{t-i} + \sum_{i=1}^{p} \beta_{13} \triangle ln\mathrm{IS\_Trans}_{t-i} + \mathrm{DWAR} + \delta_1 FDI_{t-1}$$
$$+ \delta_2 \mathrm{HCD}_{t-1} + \delta_3 \mathrm{DI}_{t-1} + \delta_4 \mathrm{MS}_{t-1} + \delta_5 \mathrm{GDPP}_{t-1} + \delta_6 \beta_6 \mathrm{OP}_{t-1} + \delta_7 \mathrm{MES\_IR}_t + \delta_8 \mathrm{MES\_EXR}_{t-1}$$
$$+ \delta_9 \mathrm{MES}_{\mathrm{Ford}\,t-1} + \delta_{10} \mathrm{MES\_govex}_{t-i} + \delta_{11} \mathrm{IS}_{\mathrm{Tele}\,t-1} + \delta_{13} \mathrm{IS}_{\mathrm{Elpow}\,t-1} + \delta_{14} \mathrm{IS}_{\mathrm{Trans}\,t-1} + +\mathrm{DWAR}$$
$$+ \gamma \mathrm{ECM}_{t-1} + \mathrm{U}_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.8$$

Where $\triangle$.is the first difference of a variable

$\beta_1 - \beta_{13}$, Stands for the short run coefficients of the explanatory variable

$\delta_1 - \delta_{13}$, Stands for the long run coefficients of the explanatory variable

ECM, stands to Error Correction Model

γ, stands to the percentage speed of the adjustment process of the ECM

The model for analyzing impact was specified as follows

$$\triangle \text{GDPP}*_{t} = \beta_0 + \sum_{i=1}^{p}\beta_1 \triangle lnGDPP_{t-i} + \sum_{i=1}^{p}\beta_2 \triangle lnFDI_{t-i} + \sum_{i=1}^{p}\beta_3 \triangle ln\text{HCD}_{t-i} + \sum_{i=1}^{p}\beta_4 \triangle ln\text{DI}_{t-i} + \sum_{i=1}^{p}\beta_5 \triangle ln\text{MS}_{t-i}{}_1$$
$$+ \sum_{i=1}^{p}\beta_6 \triangle ln\text{FDI} * \text{HCD}_{t-i} + \sum_{i=1}^{p}\beta_7 \triangle ln\text{OP}_{t-i} + \sum_{i=1}^{p}\beta_8 \triangle ln\text{MES\_IR}_{t-i} + \sum_{i=1}^{p}\beta_9 \triangle ln\text{MES\_EXR}_{t-i}$$
$$+ \sum_{i=1}^{p}\beta_{10} \triangle ln\text{MES\_Ford}_{t-i} + \sum_{i=1}^{p}\beta_{11} \triangle ln\text{IS\_Tele}_{t-i} + \sum_{i=1}^{p}\beta_{12} \triangle ln\text{IS\_Elpow}_{t-i} + \sum_{i=1}^{p}\beta_{13} \triangle ln\text{IS\_Trans}_{t-i} + \text{DWAR}$$
$$+ \delta_1 FDI_{t-1} + \delta_2 \text{HCD}_{t-1} + \delta_3 \text{GDI}_{t-1} + \delta_4 \text{MS}_{t-1} + \delta_5 \text{MG}_{t-1} + \delta_6 \beta_6 \text{OP}_{t-1} + \delta_7 \text{MES\_IR}_{t} + \delta_8 \text{MES\_EXR}_{t-1}$$
$$+ \delta_{10} \text{MES}_{\text{Ford}\,t-1} + \delta_{11} \text{IS}_{\text{Tele}\,t-1} + \delta_{12} \text{IS}_{\text{Elpow}\,t-1} + \delta_{13} \text{IS}_{\text{Trans}\,t-1} + \text{DWAR}$$
$$+ \gamma\text{ECM}_{t-1+}\text{U}_{t} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots .4.9.0$$

$$\triangle \text{GDPP}_{t} = \beta_0 + \sum_{i=1}^{p}\beta_1 \triangle lnGDPP_{t-i} + \sum_{i=1}^{p}\beta_2 \triangle lnFDI_{t-i} + \sum_{i=1}^{p}\beta_3 \triangle ln\text{HCD}_{t-i} + \sum_{i=1}^{p}\beta_4 \triangle ln\text{DI}_{t-i} + \sum_{i=1}^{p}\beta_5 \triangle ln\text{MS}_{t-i}{}_1$$
$$+ \sum_{i=1}^{p}\beta_7 \triangle ln\text{OP}_{t-i} + \sum_{i=1}^{p}\beta_8 \triangle ln\text{MES\_IR}_{t-i} + \sum_{i=1}^{p}\beta_9 \triangle ln\text{MES\_EXR}_{t-i} + \sum_{i=1}^{p}\beta_{10} \triangle ln\text{MES\_Ford}_{t-i}$$
$$+ \sum_{i=1}^{p}\beta_{11} \triangle ln\text{IS\_Tele}_{t-i} + \sum_{i=1}^{p}\beta_{12} \triangle ln\text{IS\_Elpow}_{t-i} + \sum_{i=1}^{p}\beta_{13} \triangle ln\text{IS\_Trans}_{t-i} + \text{DWAR} + \delta_1 FDI_{t-1}$$
$$+ \delta_2 \text{HCD}_{t-1} + \delta_3 \text{GDI}_{t-1} + \delta_4 \text{MS}_{t-1} + \delta_6 \beta_6 \text{OP}_{t-1} + \delta_7 \text{MES\_IR}_{t} + \delta_8 \text{MES\_EXR}_{t-1} + \delta_{10} \text{MES}_{\text{Ford}\,t-1}$$
$$+ \delta_{11} \text{IS}_{\text{Tele}\,t-1} + \delta_{12} \text{IS}_{\text{Elpow}\,t-1} + \delta_{13} \text{IS}_{\text{Trans}\,t-1} + \text{DWAR} + \gamma\text{ECM}_{t-1+}\text{U}_{t} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots .4.9.1$$

$$\triangle \text{HCD}_{t} = \beta_0 + \sum_{i=1}^{p}\beta_1 \triangle lnHCD_{t-i} + \sum_{i=1}^{p}\beta_1 \triangle lnFDI_{t-i} + \sum_{i=1}^{p}\beta_3 \triangle ln\text{DI}_{t-i} + \sum_{i=1}^{p}\beta_4 \triangle ln\text{MS}_{t-i}{}_1 + \sum_{i=1}^{p}\beta_5 \triangle ln\text{GDPP}_{t-i}$$
$$+ \sum_{i=1}^{p}\beta_6 \triangle ln\text{OP}_{t-i} + \sum_{i=1}^{p}\beta_7 \triangle ln\text{MES\_IR}_{t-i} + \sum_{i=1}^{p}\beta_8 \triangle ln\text{MES\_EXR}_{t-i} + \sum_{i=1}^{p}\beta_{10} \triangle ln\text{MES\_Ford}_{t-i}$$
$$+ \sum_{i=1}^{p}\beta_{12} \triangle lnMES\_govex_{t-i} + \sum_{i=1}^{p}\beta_{11} \triangle ln\text{IS\_Tele}_{t-i} + \sum_{i=1}^{p}\beta_{13} \triangle ln\text{IS\_Trans}_{t-i} + \text{DWAR}$$
$$+ \delta_2 \text{HCD}_{t-1} + \delta_1 FDI_{t-1} + \delta_3 \text{GDI}_{t-1} + \delta_4 \text{MS}_{t-1} + \delta_5 \text{MG}_{t-1} + \delta_6 \beta_6 \text{OP}_{t-1} + \delta_7 \text{MES\_IR}_{t}$$
$$+ \delta_8 \text{MES\_EXR}_{t-1} + \delta_{10} \text{MES}_{\text{Ford}\,t-1} + \delta_{11} MES_{govex_{t-i}} + \delta_{12} \text{IS}_{\text{Tele}\,t-1} + \delta_{13} \text{IS}_{\text{Elpow}\,t-1} + \delta_{14} \text{IS}_{\text{Trans}\,t-1}$$
$$+ \text{DWAR} + \gamma\text{ECM}_{t-1} + \text{Vt} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ 4.9.2$$

$$\triangle \text{DI}_{t} = \beta_0 + \sum_{i=1}^{p}\beta_3 \triangle ln\text{DI}_{t-i} + \sum_{i=1}^{p}\beta_1 \triangle lnFDI_{t-i} + \sum_{i=1}^{p}\beta_2 \triangle ln\text{HCD}_{t-i} + \sum_{i=1}^{p}\beta_4 \triangle ln\text{MS}_{t-i}{}_1 + \sum_{i=1}^{p}\beta_5 \triangle ln\text{GDPP}_{t-i}$$
$$+ \sum_{i=1}^{p}\beta_6 \triangle ln\text{OP}_{t-i} + \sum_{i=1}^{p}\beta_7 \triangle ln\text{MES\_IR}_{t-i} + \sum_{i=1}^{p}\beta_8 \triangle lnMES\_EXR_{t-i} + \sum_{i=1}^{p}\beta_{12} \triangle lnMES\_govex_{t-i}$$
$$+ \sum_{i=1}^{p}\beta_{10} \triangle ln\text{MES\_Ford}_{t-i} + \sum_{i=1}^{p}\beta_{11} \triangle ln\text{IS\_Tele}_{t-i} + \sum_{i=1}^{p}\beta_{13} \triangle ln\text{IS\_Trans}_{t-i} + \text{DWAR} + \delta_1 FDI_{t-1}$$
$$+ \delta_2 \text{HCD}_{t-1} + \delta_3 \text{GDI}_{t-1} + \delta_4 \text{MS}_{t-1} + \delta_6\ \text{OP}_{t-1} + \delta_7 \text{MES\_IR}_{t} + \delta_8 \text{MES\_EXR}_{t-1} + \delta_{10} \text{MES}_{\text{Ford}\,t-1}$$
$$+ \delta_{11} MES_{govex_{t-i}} + \delta_{12} \text{IS}_{\text{Tele}\,t-1} + \delta_{13} \text{IS}_{\text{Elpow}\,t-1} + \delta_{14} \text{IS}_{\text{Trans}\,t-1} + \text{DWAR} + \gamma\text{ECM}_{t-1} + \text{Vt} \ldots 4.9.3$$

Where, $\triangle$.is the first difference of a variable

β_2, Stands for the short run coefficients of the explanatory variable

$\beta_1 \& \beta_3 - \beta_{13}$, Stands for the short run coefficients of the control variable

δ_2, Stands for the long run coefficients of the explanatory variable

$\delta_1 \& \delta_2 - \delta_{13}$, Stands for the long run coefficients of the control variable

ECM stands to Error Correction Model

γ, stands to the percentage speed of the adjustment process of the ECM

Now, it is possible to test for co-integration with the help of ARDL model of the bound test instrument. The bounds test is mainly based on the joint F-statistic which its asymptotic distribution is non-standard under the null hypothesis of no co-integration. The first step in the ARDL bounds approach is to estimate the two equations i.e. equations 4.2 and equations 4.4 by Ordinary Least Squares (OLS). The estimation of the two equations tests for the existence of a long-run relationship among the variables is achieved by conducting an F-test for the joint significance of the coefficients of the variables by equating to zero. That is, the null and alternative hypotheses for the co-integration of the two equations are developed as follows.

For the determinants

$$H_o: \delta FDI = \delta lagFDI = \delta HCD = \delta DI = \delta MS = \delta MG = \delta OP = \delta MES_{IR} = \delta MES_{EXR} = \delta MES_{Empt} = \delta MES_{Ford} = \delta IS_{Tele} = \delta IS_{ElPow} = \delta IS_{Trans} = 0 \dots \dots \dots \dots \text{(no cointegration)}$$

$$H_1: \delta FDI \neq \delta lagFDI \neq \delta HCD \neq \delta DI \neq \delta MS \neq \delta MG \neq \delta OP \neq \delta MES_{IR} \neq \delta MES_{EXR} \neq \delta MES_{Empt} \neq \delta MES_{Ford} \neq \delta IS_{Tele} \neq \delta IS_{ElPow} \neq \delta IS_{Trans} = 0 \dots \dots \dots \text{(cointegration exist)}$$

For the impact

The power of the economy to reap the benefits of FDI

$$H_o: \delta GDPP *= \delta FDI * HCD = \delta FDI = \delta HCD = \delta DI = \delta MS = \delta GDPP = \delta OP = \delta MES\_IR = \delta MES\_EXR = \delta MES\_Empt = \delta MES\_Ford = \delta IS\_Tele = \delta IS\_ElPow = \delta IS\_Trans$$

$$H_1: \delta GDPP *= \delta FDI * HCD \neq \delta FDI \neq \delta HCD \neq \delta DI \neq \delta MS \neq \delta GDPP \neq \delta OP \neq \delta MES\_IR \neq \delta MES\_EXR \neq \delta MES\_Empt \neq \delta MES\_Ford \neq \delta IS\_Tele \neq \delta IS\_ElPow \neq \delta IS\_Trans$$

The impact of FDI on GDPP

$$H_o: \delta GDPP = \delta FDI = \delta HCD = \delta DI = \delta MS = \delta GDPP = \delta OP = \delta MES\_IR = \delta MES\_EXR = \delta MES\_Empt = \delta MES\_Ford = \delta IS\_Tele = \delta IS\_ElPow = \delta IS\_Trans$$

$$H_1: \delta GDPP = \delta FDI \neq \delta HCD \neq \delta DI \neq \delta MS \neq \delta GDPP \neq \delta OP \neq \delta MES\_IR \neq \delta MES\_EXR \neq \delta MES\_Empt \neq \delta MES\_Ford \neq \delta IS\_Tele \neq \delta IS\_ElPow \neq \delta IS\_Trans$$

The impact of FDI on HCD

H_o: δHCD = δFDI = δDI = δMS = δMG = δOP = δMES_IR = δMES_EXR = δMES_Empt = δMES_Ford = δIS_Tele = δIS_ElPow = δIS_Trans

H_1: δHCD = δFDI ≠ δDI ≠ δMS ≠ δMG ≠ δOP ≠ δMES_IR ≠ δMES_EXR ≠ δMES_Empt ≠ δMES_Ford ≠ δIS_Tele ≠ δIS_ElPow ≠ δIS_Trans

The Impact of FDI on DI

H_o: δDI = δFDI = δHCD = δMS = δMG = δOP = δMES_IR = δMES_EXR = δMES_Empt = δMES_Ford = δIS_Tele = δIS_ElPow = δIS_Trans

H_1: δDI = δFDI ≠ δHCD ≠ δMS ≠ δMG ≠ δOP ≠ δMES_IR ≠ δMES_EXR ≠ δMES_Empt ≠ δMES_Ford ≠ δIS_Tele ≠ δIS_ElPow ≠ δIS_Trans

Two asymptotic critical value bounds provide a test for co-integration when the independent variables are *I* (*d*) with $0 \leq d \leq 1$. The lower bound assumes that all the regresses are *I*(0) i.e. are at level , and the upper bound assumes that they are *I* (1) i.e. at first level. Then, the ARDL bound test has these three possible decision rules.

Decision Rule1: if the F-statistics lied above the upper bound of the critical value for a given significance level, the study failed to accept the null hypotheses of no co-integration.

Decision Rule2: if the F-statistics lied below the lower bound of the critical value for a given significance level, the study failed to reject the null hypotheses of no integration.

Decision Rule3: if the F-statistics lied in between the lower and the upper bound of the critical value for a given significance level, then the decision will be indifference. The study will neither accept nor reject the null hypotheses.

As it is shown from the table 4.2.4 below the value of the F-test is much greater than the upper bounds of the critical value at 1% significant level for all the four equations. In case the study failed to accept the null hypotheses of no long run co-integration on the explanatory variables of the four model specifications. At the same time the study is failed to reject the alternative hypotheses of that long run co-integration exist on the explanatory variables of the four equations. Therefore, the study is in a well position to estimate the long run as well as the short run relations of the variables in the four equations of the model specifications.

Table4.2.10. Bound test for co-integration for analysis using time series data from Ethiopia, 1992-2012

Test	K(level of the rank) and F values	Critical values 1%		5%		10%	
		Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound
FDI determinants	K=5,F=14.53	3.41	4.68	2.62	3.79	2.26	3.35
The GDPP*	K=4, F= 18.19	3.74	5.06	2.86	4.01	2.45	3.52
FDI impact on GDPP	K=5, F=476.2	3.41	4.68	2.62	3.79	2.26	3.35
FDI impact on DI	K=3, F=43.42	4.29	5.61	3.23	4.35	2.72	3.77
FDI impact on HCD	K=4, F=23.21	3.74	5.06	2.86	4.01	2.45	3.52

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

APPENDIX A3: TEST FOR AUTO-CORRELATION

In using the OLS model, the other most important assumption need to be tested is that, the residuals associated with one observation are not correlated with the residuals of any other observation (H_o: there is no serial correlation and H_1: there is serial correlation). In order to test whether this assumption is violated or not, the study used a testing instrument of Durbin-Watson d statistic. The Durbin-Watson statistic ranges in value from 0 to 4. A value near 2 indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation. Now taking these instances of decision rules in to consideration, the Durbin Watson d-statistic test for auto correlation conducted as its result is depicted in the table 4.2.5 below.

Table4.2.11. The Durbin Watson d-statistic test for auto correlation

Durbin-Watson d-statistic

1. determinant (K=13, n=17) = 2.01087 $\underset{\sim}{}$ 2
2. GDPP* (K=12, n=20)= 1.9924 $\underset{\sim}{}$ 2
3. Impact-GDPP (K=10, n=20) = 2.224686 $\underset{\sim}{}$ 2
4. Impact-DI (K=10, n=20)= 2.153328$\underset{\sim}{}$ 2
5. Impact-HCD (K=10, n=20)= 2.297742$\underset{\sim}{}$ 2

Where K is both the dependent and the independent variables,
n is the number of observations minus one degree of freedom

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

Taking the result shown from the table 4.2.5 above and the instance for decision rule of the approach in to consideration, the study can conclude there is no autocorrelation problem. To be specific, the result of the test should have to be checked with the lower and upper limits

and the decision rules of d-statistics from Durbin-Watson table and its decision rules. But the conventional Durbin-Watson tables are also not applicable when a lagged dependent variable appears among the regresses. Durbin has proposed alternative test procedures for this case as follows. As shown from the Durbin Watson alternative tests for autocorrelation in the table 4.2.6 below, in both the four equations, the residual of the observation is not correlated with the residual of the other observations. Form this, in both cases the study can conclude that it failed to accept the alternative hypotheses which states the existence of serial correlation.

Table4.2.12. Durbin Watson alternative test for autocorrelation for all specifications

Model Specifications	Lags(p)	Chi2	Df	Prob>ch2	Decision
Determinant	1	1.619	1	0.2032	Ho: no serial correlation
GDPP*	1	1.129	1	0.2881	Ho: no serial correlation
Impact-GDPP	1	o.198	1	0.6567	Ho: no serial correlation
Impact-HCD	1	3.822	1	0.0567	Ho: no serial correlation*
Impact-DI	1	0.799	1	0.3713	Ho: no serial correlation

*Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013 * at 5% and 1% critical values*

APPENDIX A4: TEST FOR NORMALITY

In order to undertake OLS regression, the residuals must be identically (when the residuals have the same distribution) and independently (the value of the error associated with one observation provides no information about the value of the error of any other observation) distributed. Normality is not required in order to obtain unbiased estimates of the regression coefficients; rather to assured that the p-values for the t-tests and F-test will be valid so that a valid hypothesis testing will be conducted.

The test of normal distribution can be done either numerically with the help of Skewnes /Kurtosis tests for Normality or graphically with the help of histogram and dot plot tests. The decision rule behind the Skewnes/Kurtosis tests for Normality states that if the p-value of the error term is greater than at the chosen level of significances, i.e., 1%, or 5 %, or 10 % indicates that, the error terms are normally distributed. Graphically, the closer they cleave to straight diagonal line, the more normal the distribution is said to be (Gujarati, 2004). As shown from the table 4.2.8 above, the result of Skewnes /Kurtosis tests for normality in both the two residuals, the p-value (0.0711) is greater than 0.05.As a result we conclude that the error terms of the specified models are found to be normally distributed.

Table 4.2.13 Skewness/Kurtosis tests for Normality

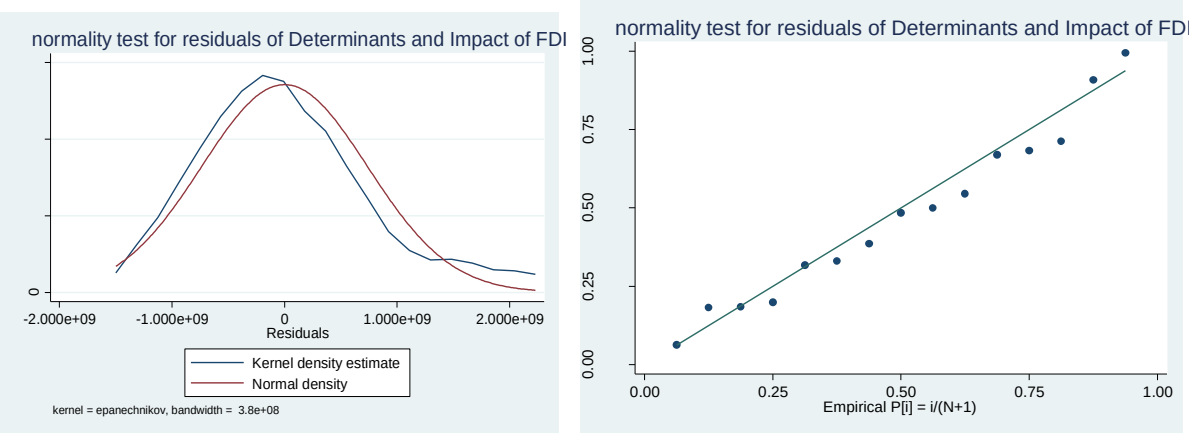
Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	joint adj chi2(2)	joint Prob>chi2
ECMG	15	0.0716	0.1370	5.29	0.0711
ECMF	15	0.0716	0.1370	5.29	0.0711

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

We can further support this with graphical approach as illustrated below. As it is illustrated in the figure 4.2.1 above, the normality test of the residuals found much closer to the two theoretical lines (the bell shaped line of the kerner density test and the diagonal line of the normal probability plot); indicating the data is normally distributed.

Figure 4.2.3. Nomality test for residuals



Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

APPENDIX A5: TEST FOR MULTI COLLINEARITY

The other assumption of the OLS is that there is no multicollinearity among the regressors included in the regression model. The term multicollinearity indicates that more than two variables are near perfect linear combinations of one another. The effect of multicollinearity is that in regressing model estimates of the coefficients of the regressors become unstable and the standard errors for the coefficients can get wildly inflated (Gujarati, 2004).

To test the existence or not-existence of multicollinearity problem, Variable Inflation Factor (VIF*)* technique is employed. The variance inflation factor, VIF, is a measure of the reciprocal

of the complement of the inter-correlation among the predictors. VIF=1/ (1-r^2), Where r^2 is the multiple correlations between the predictor variable and other predictors. A decision rule for multicollinearity test of the model states a variable whose VIF values are greater than 10 indicate the possible problem of multicollinearity. Tolerance, defined as 1/VIF is used by many researchers to check on the degree of co-linearity. . It means that the variable could be considered as a linear combination of other independent variables (Gujarati, 2004). Now taking the decision rules in to consideration, a VIF test is conducted for the four equations specified as their result is depicted below.

As it is depicted in the table 4.2.8; the mean value inflation factors (mean VIF) of all the equations are below 10 with two exceptions in which the long run determinants and power of the economy to reap the benefits of FDI taken their tolerance rate. The decision rule states that, if the inverse of the mean VIF i.e. $\frac{1}{meanVIF}$ is not more than 0.1 taken as a tolerance rate. To state it differently; it means that the variable could be considered as a linear combination of other independent variables (Gujarati, 2004). The other exception here is that, the Impact-HCD version its mean VIF is 10.29. This is taken as approximately equal to 10. Then taking all these assumptions in to account, the study conclude that there is no multicollinearity problem with all the equations specified.

Table4.2.14.Test for multicollinearity of regressors in the model specifications

Model specifications for		Mean VIF	1/VIF	Decision
Determinant	Short Run	6.68		No multicollinearity
	Long Run		0.076625	No multicollinearity
GDPP*	Short Run	5.07		No multicollinearity
	Long Run		0.023265	No multicollinearity
Impact-GDPP	Short Run	4.97		No multicollinearity
	Long Run	8.95		No multicollinearity
Impact-HCD	Short Run	8.33		No multicollinearity
	Long Run	10.29		No multicollinearity
Impact-DI	Short Run	9.34		No multicollinearity
	Long Run	9.99		No multicollinearity

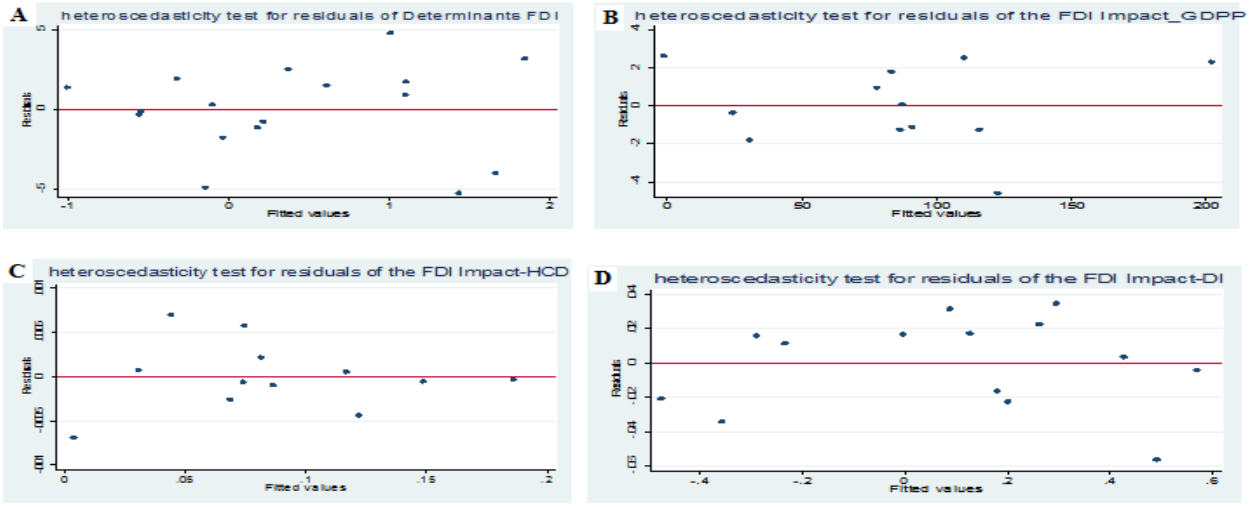
Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013;

APPENDIX A6: TEST FOR HETROSCEDASTICITY

The other important assumption for the OLS regression is the homogeneity of variance of the residuals. If the model is well-fitted, there should be no pattern to the residuals plotted against

the fitted values. If the variance of the residuals is non-constant then the error variance is said to be heteroscedastic. It is possible to use the visual inspection through graphical method such as plotting the residuals versus fitted (predicted) values; and/or numeric computational methods such as Cameron & Trivedi's decomposition of IM-test and Breusch-Pagan / Cook-Weisberg test for detecting heteroscedasticity. In using these and other tests for heteroscedasticity, there are decision rules behind these tests as stated below. The decision rule for graphical method is that; if the plotted residuals versus fitted values are observing a constant variance or identifiable systematic patterns, the problem of heteroscedasticity would possibly be existed in the model.

Figure4.2.4.Heteroscedasticity test for the four model specifications



Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

As it is shown in the above set of graphs, the distributions of residuals for all the four model specifications have not had identifiable systematic patterns. In the graph 4.2.2 C, the last three fitted values lied much nearest to the line which seems systematic pattern that can be taken a little bit threat of heteroscedasticity problem. But in between the three fitted values there is another fourth fitted values which brocks this systematic pattern. This can be further supported by two statistical tests i.e. Cameron & Trivedi's decomposition of IM-test and Breusch-Pagan / Cook-Weisberg test as depicted in the table 4.2.9 below.

The decision rule for Breush-Pagan/Cook-Weisberg test for heteroscedasticity states that, if the p-value of the Breush-Pagan test is lower than any of the chosen significance levels, i.e., 1%, 5% and 10% it indicates possible problem of heteroscedasticity; whereas if the p-value of

the Breush-Pagan test is greater than any of the chosen significance levels, i.e., 1%, 5% and 10% indicate no possible problem of heteroscedasticity. This decision rule is also similar to Cameron & Trivedi's decomposition of IM-test (Gujarati, 2003).

Taking the decision rules of Breush-Pagan/Cook-Weisberg test and Cameron & Trivedi's decomposition of IM-test for heteroscedasticity stated above in to consideration, all the p-values (i.e. the values under prob>chi2) of the two sets of tests are greater than the three critical values (1%, 5% and 10%) in all the four equations except for the FDI Impact-HCD of Breush-Pagan/Cook-Weisberg test which is significant only at 1% and 5%. Taking this input the study concludes that the residuals of all the four equations have no problem of heteroscedasticity.

Table4.2.15.Test for heteroscedasticity of residuals for the four equations

Equations for test	Breusch-Pagan / Cook-Weisberg test for heteroscedasticity		Cameron & Trivedi's decomposition of IM-test	
	chi2(1)	Prob>chi2	chi2(1)	Prob>chi2
Determinants of FDI	2.96	0.0853	17.00	0.3856
GDPP*	0.59	0.4414	14.00	0.3738
FDI Impact-GDPP	0.56	0.4546	12.00	0.3636
FDI Impact-DI	0.49	0.4849	14.00	0.3738
FDI Impact-HCD	3.28	0.0701	12.00	0.3636

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013

To summarize the graphical tests as well as the numerical tests of the four model specifications shows that there is no pattern to the residuals plotted against the fitted values; and the variance of the residuals of the equations are constant in which both the cases confirm that the model specifications are well fitted.

APPENDIX A7: TEST FOR MODEL SPECIFICATIONS

A model specification test helps to identify errors that can occur in one extreme when one or more relevant variables are omitted from the specified model or else on the other extreme when one or more irrelevant variables are included in the model specified. An inflated error term occurred when relevant variables are omitted from the model. On the other hand, the common variance they share with included variables may be wrongly attributed to them if irrelevant variables are included in the model. Both cases significantly affect the coefficients of the regressors.

Different instruments are used to test validity of model specifications. Of these the link test is one of the commonly used test instruments. Incase this study also used this instrument to test the validity of the four model specified. The link test for specification of the model creates two new variables of predictions (_hat and _hatsq). The decision rule behind these two variables states that the variable _hat's P-value is expected to be statistically significant but the variable (_hatsq) should be statistically insignificant (p-Value>significant level) which tells the model is specified correctly(Adnew,2010).

As it is revealed in the table 4.2.10 below, for all the models specified the p-values for _hat are all insignificant and the p-values for _hatsq are all insignificant. Then taking the decision rule of the link test, the study concluded that the models specified are all can provide valid results.

Table4.2.16. Test for Model Specifications

Models	link test	Coef.	Std. dev.	p>|t|
Determinants-FDI	_hat	1.009882	.1398849	0.000
	_hatsq	-.0102736	.1127262	0.929
GDPP*	_hat	.99511244	.0640288	0.000
	_hatsq	-.0008637	.0113377	0.941
Impact of FDI-GDPP	_hat	1.081882	.3654079	0.009
	_hatsq	-.0001175	.0004461	0.795
Impact of FDI-HCD	_hat	.9954751	.0725435	0.000
	_hatsq	-.0904085	.1230436	0.472
Impact of FDI-DI	_hat	1.126599	.2692327	0.001
	_hatsq	-.1013493	.1911113	0.603

Source: Meta data of Ethiopia from NB, EIA, IMF and WB, 2013;

Appendix B. Macroeconomic Variables-Ethiopia

Year	FDI	DI	GDP	GGDP	MS	MG	FDI*HCD	HCD(2nd)	Tele/100	Elpow	Trans (Km)
1992	1.54E+05	9.33E+08	45,042,167,818.0	-8.67	51686000	765.916	1.81E+14	775211	0.266188	1.24E+09	18081
1993	8.77E+04	4.16E+09	50,097,770,037.1	13.14	53456000	839.516	3.12E+14	712489	0.245583	1.38E+09	18366
1994	3.15E+05	3.16E+09	50,478,158,202.3	3.19	55230000	840.88	3.61E+14	714622	0.247612	1.45E+09	21534
1995	1.67E+05	4.86E+09	52,804,038,864.2	6.13	56983000	864.899	3.24E+14	747146	0.249147	1.53E+09	23673
1996	5.55E+05	5.61E+09	59,194,879,404.8	12.43	58704000	950.003	1.84E+15	810604	0.249748	1.6E+09	24889
1997	2.46E+06	3.79E+09	61,888,374,553.8	3.13	60402000	956.009	3.65E+15	889650	0.254771	1.61E+09	26550
1998	9.71E+05	4.27E+09	59,748,152,530.4	-3.46	62089000	892.41	6.46E+14	468169	0.263785	1.65E+09	27737
1999	5.37E+05	4.07E+09	62,832,596,715.7	5.2	63788000	921.128	1.72E+15	1056379	0.273664	1.64E+09	28662
2000	1.34E+06	4.86E+09	66,648,332,629.2	5.9	65515000	950.006	3.47E+15	1186963	0.327616	1.67E+09	31554
2001	2.52E+06	6.76E+09	72,181,097,319.4	7.4	67272000	994.31	2.19E+15	1486806	0.396035	2.01E+09	32871
2002	1.64E+06	7.25E+09	73,274,436,071.9	1.6	69059000	985.132	5.71E+15	1695955	0.499519	2.04E+09	33297
2003	2.67E+06	8.83E+09	71,690,915,194.5	-2.1	70881000	940.705	1.29E+16	1785655	0.657833	2.3E+09	33856
2004	5.72E+06	1.65E+10	81,421,065,833.8	11.7	72746000	1025.79	3.16E+16	2053593	0.750267	2.54E+09	36496
2005	4.62E+06	2.19E+10	91,044,093,514.6	12.6	74661000	1128.463	4.76E+16	2382129	1.037682	2.85E+09	37018
2006	4.04E+07	3.86E+10	100,908,384,190.5	11.5	76628000	1230.034	1.35E+17	2869032	1.594539	3.27E+09	39477
2007	1.69E+07	5.95E+10	112,468,464,000.0	11.8	78646000	1344.593	2.99E+17	3238978	2.405521	3.55E+09	42429
2008	6.02E+07	7.01E+10	124,602,539,000.0	11.2	80713000	1462.498	2.53E+17	3467133	3.058708	3.78E+09	44359
2009	5.61E+07	7.89E+10	135,557,497,000.0	9.9	82812000	1574.835	1.97E+17	3574877	4.04149	4.11E+09	46812
2010	5.99E+07	4.8E+10	152,404,600,000.0	10.4	84799000	1664.697	2.31E+17	3853280	6.661932	4.31E+09	48793
2011	6.88E+07	3.85E+10	169,641,500,000.00	10.7	86834000	1751.853	2.86E+17	4148337	10.11351	4.4E+09	53997
2012	6.07E+07	3.89E+10	184,061,030,000.00	11.1	88918000	1830.544	2.74E+17	4521193	18.782	4.5E+09	63083

Year	IR	Govex	govex_GDP	empt	EXR	Ford	Ford_GDP	export	import	NEP	OP
1992	21.9	4.21E+09	0.09	75.7	3.6932	9.36E+09	0.21	1.81E+09	2.79E+08	-1531874	0.046399
1993	7.7	5.22E+09	0.1	75.9	5.1067	9.72E+09	0.19	3.13E+09	8.29E+08	-2298120	0.078949
1994	3.3	7.09E+09	0.14	75.7	5.8562	1.01E+10	0.2	4.74E+09	1.44E+09	-3300992	0.122422
1995	13.4	8.37E+09	0.16	75.7	6.3123	1.03E+10	0.2	6.55E+09	2.73E+09	-3814521	0.175707
1996	0.9	1.02E+10	0.17	74.6	6.4956	1.01E+10	0.17	7.71E+09	2.54E+09	-5169495	0.173106
1997	-6.4	1.00E+10	0.16	74.4	6.8804	1.01E+10	0.16	8.51E+09	3.74E+09	-4766371	0.197841
1998	1	1.09E+10	0.18	74.4	7.5008	1.04E+10	0.17	9.34E+09	4.14E+09	-5196877	0.225614
1999	1.1	1.47E+10	0.23	74.5	8.148	5.56E+09	0.09	1.17E+10	3.64E+09	-8064658	0.24413
2000	4.2	1.75E+10	0.26	74.4	8.3278	5.49E+09	0.08	1.31E+10	3.96E+09	-9158080	0.256176
2001	-1.4	1.57E+10	0.22	75.3	8.5425	5.74E+09	0.08	1.30E+10	3.87E+09	-9101094	0.233223
2002	-5.5	1.77E+10	0.24	76.1	8.5809	6.54E+09	0.09	1.45E+10	9.24E+08	-1.10E+07	0.046399
2003	4.6	2.05E+10	0.29	77.2	8.6197	7.29E+09	0.1	1.05E+11	9.24E+08	-1.20E+07	0.046399
2004	5.6	2.05E+10	0.25	78.2	8.6518	6.66E+09	0.08	2.23E+10	5.18E+09	-1.70E+07	0.337435
2005	7.2	2.48E+10	0.27	79.2	8.681	6.21E+09	0.07	3.14E+10	7.33E+09	-2.40E+07	0.42579
2006	8.4	2.93E+10	0.29	80.1	8.7943	2.28E+09	0.02	3.99E+10	8.69E+09	-3.10E+07	0.481186
2007	19.2	3.56E+10	0.32	80	9.2441	2.62E+09	0.02	4.51E+10	1.05E+10	-3.50E+07	0.494219
2008	20.8	4.69E+10	0.38	79.9	10.4205	2.88E+09	0.02	6.31E+10	1.36E+10	-5.00E+07	0.616187
2009	29.4	5.78E+10	0.43	79.7	12.89	5.03E+09	0.04	8.47E+10	1.52E+10	-6.90E+07	0.736921
2010	10.1	7.13E+10	0.47	79.6	16.118	7.15E+09	0.05	1.09E+11	2.61E+10	-8.30E+07	0.88627
2011	19.4	9.38E+10	0.55	79.5	17.7305	7.56E+09	0.04	5.85E+11	4.45E+10	-8.50E+07	3.70798
2012	24.8	1.24E+11	0.68	80.3	17.9078	8.40E+09	0.05	1.92E+11	5.45E+10	-1.40E+08	1.336958

Appendix C: Flow of FDI to sub-Sahara African countries (in millons US$, except Ethiopia in 100,000 US$)

YEAR	Burundi	Ethiopia	Kenya	Mozambique	Rwanda	Uganda	Zambia	Zimbabwe
1992	31.48837	0.17	692.73	72.6	42.749	9.97005	2734.8	298.85
1993	31.88837	3.5	694.73	104.6	48.589	64.53505	3049.2	336.85
1994	31.88847	17.21	699.03	139.6	48.59	152.68705	3089.2	377.85
1995	33.68847	14.14	732.03	356.48229	50.59	277.19605	3186.2	495.55
1996	33.68857	21.93	742.577	428.98229	52.81	317.20305	3303.3	576.45
1997	33.68867	288.49	795.577	493.38229	55.4	458.703815	3520.3	711.55
1998	35.68867	260.67	806.577	728.28229	62.5	591.337085	3758.3	1155.85
1999	35.11606321	69.98	820.399	1110.031064	59	666.8529487	3844.3	1214.85
2000	46.79930929	134.64	931.304	1249.231064	55.2	807.1	3966	1238.05
2001	46.7970211	349.4	936.606	1504.631064	57	962.3	4037.7	1241.85
2002	46.79703185	255	964.226	1851.884906	57	1146.948059	4341.1	1267.75
2003	46.7898271	465	1045.966	2188.631306	62	1349.140653	4688.1	1271.55
2004	46.83451781	545.1	1092.03	2441.5	69	1644.557133	5052.1	1280.25
2005	47.41921797	265.1116755	1113.241	2630	77	2024.365473	5409	1383.05
2006	0.717228446	545.2571022	1163.916	2789	103.23	2668.627973	6024.8	1423.05
2007	1.125462243	222.000573	1892.968	3216.3	170.37	3460.933754	7603.9	1491.95
2008	4.70048098	108.537544	1988.551	3807.9	273.72	4189.794655	6634.1	1543.55
2009	5.066233239	221.4595814	2104.812	4522.088986	392.39	5031.365458	9221.4	1648.55
2010	5.837728195	288.2715683	2282.876	5310.881499	434.72	5575.238185	10950.7	1814.45
2011	7.4917	441.237	2618.126	7404.347158	583	6367.498311	12931.7	2201.45

Sources: UNICTAD database, 2013

Appendix D: correlation coefficients

pwcorr lnFDID1 laglnFDI laglnDI laglnMS laglnHCD laglnTele laglnEXR laglnIR laglnTrans laglnOP lagDWAR, star (0.10)

	lnFDID1	laglnFDI	laglnDI	laglnMS	laglnHCD	laglnTele	laglnEXR	laglnIR	laglnTele	laglnOP	lagDWAR
lnFDID1	1.0000										
LaglnFDI	-0.2200	1.0000									
LaglnDI	0.0751*	0.9162*	1.0000								
LaglnMS	-0.0157	0.9576*	0.9273*	1.0000							
LaglnHCD	0.0228*	0.9155*	0.9081*	0.9425*	1.0000						
LaglnTele	-0.0624*	0.9172*	0.9012*	0.9176*	0.9286*	1.0000					
LaglnEXR	-0.0321*	0.8712*	0.8225*	0.9287*	0.8182*	0.8621*	1.0000				
LaglnIR	-0.1297*	0.4603*	0.4944*	0.4156*	0.6082*	0.6190*	0.2662	1.0000			
LaglnTrans	-0.0420*	0.9536*	0.9047*	0.9933*	0.9168*	0.8959*	0.9458*	0.3774	1.0000		
LaglnOP	-0.0892*	0.7777*	0.7523*	0.7524*	0.6744*	0.7893*	0.7992*	0.3339	0.7748*	1.0000	
LagDWAR	0.1424*	-0.3294	-0.4153*	-0.2672	-0.3541	-0.3336	-0.2870	-0.3509	-0.2620	-0.1375	1.0000

pwcorr lnGDPPD1 laglnGDPPD1 lnFDID1 lnDID1 lnHCDD1 lnMSD1 lnTeleD1 IRD1 lnEXRD1 lngovexD1 lnOPD1 DWAR lagECMG, star (0.10)

	lnGDPPD1	laglnG..	lnFDID1	lnDID1	lnHCDD1	lnMSD1	lnTeleD1	IRD1	lnEXRD1	lngo~xD1	lnOPD1	DWAR	lagECMG
lnGDPPD1	1.0000												
laglnGDPPD1	-0.5135*	1.0000											
lnFDID1	-0.4372*	0.0674	1.0000										
lnDID1	0.2019	-0.0953	-0.1724	1.0000									
lnHCDD1	-0.4914*	0.9749*	0.1278	-0.1059	1.0000								
lnMSD1	-0.0583	-0.0406	0.0214	0.4099*	-0.1830	1.0000							
lnTeleD1	0.0238	0.0111	-0.0063	-0.2647	0.1021	-0.8323*	1.0000						
IRD1	0.2712	-0.1479	-0.2561	0.0199	-0.0969	-0.2966	0.2468	1.0000					
lnEXRD1	0.0574	0.0021	-0.2371	0.1833	-0.2090	0.3646	-0.2125	-0.3904*	1.0000				
lngovexD1	0.1571	0.3213	-0.1436	-0.1301	0.1593	0.0243	0.2240	0.1172	0.3386	1.0000			
lnOPD1	-0.0062	-0.0144	0.1674	0.1777	-0.0507	0.1002	-0.2115	0.0847	0.2111	-0.0565	1.0000		
DWAR	0.3867*	-0.0197	-0.2925	-0.0642	0.0440	-0.0586	-0.1814	0.1716	-0.1778	0.0838	-0.0322	1.0000	
lagECMG	-0.1059	-0.2248	-0.1945	-0.1568	0.0208	-0.2348	0.3729	-0.0525	-0.2427	0.1406	-0.6023*	-0.1375	1.0000

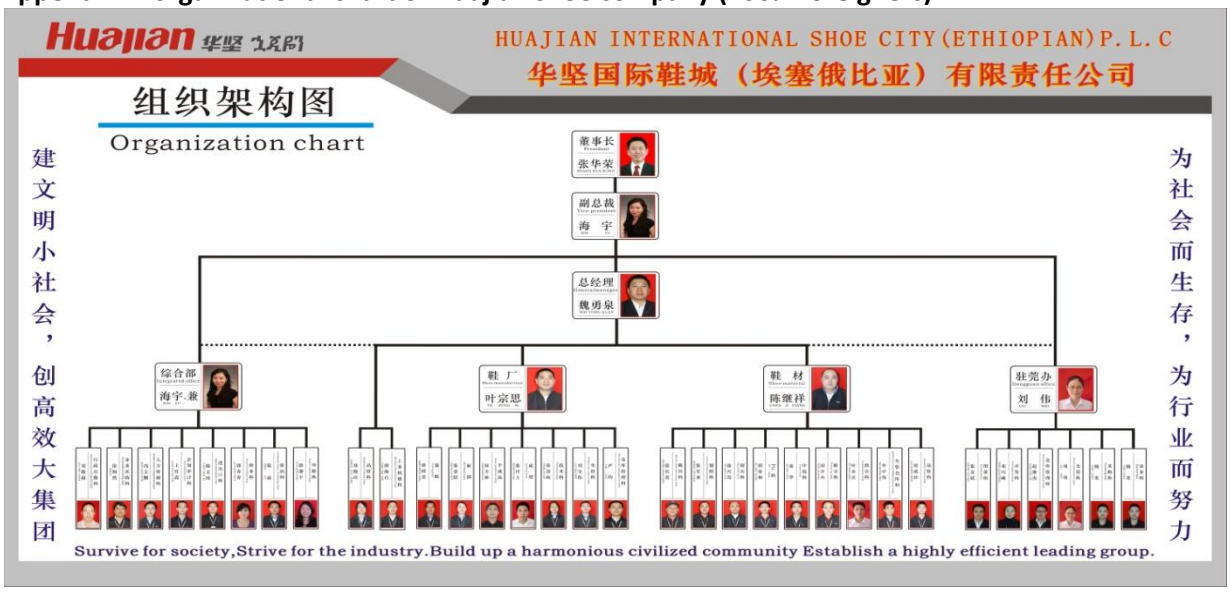
pwcorr HCDD1 lnHCDD1 lnGDPPD1 lnFDID1 lnDID1 lnMSD1 lnTele IRD1 lngovexD1 lnOPD1 DWAR lagECMG, star (0.10)

	HCDD1	lnHCDD1	lnGDPPD1	lnFDID1	lnDID1	lnMSD1	lnTele	IRD1	lngo~xD1	lnOPD1	DWAR	lagECM
HCDD1	1.0000											
lnHCDD1	0.8484*	1.0000										
lnGDPPD1	-0.3656	-0.4914*	1.0000									
lnFDID1	0.1517	0.1278	-0.4372*	1.0000								
lnDID1	-0.0987	-0.1059	0.2019	-0.1724	1.0000							
lnMSD1	-0.5268*	-0.1830	-0.0583	0.0214	0.4099*	1.0000						
lnTele	0.4441*	0.0273	0.0142	-0.0557	-0.2567	-0.7493*	1.0000					
IRD1	0.0292	-0.0969	0.2712	-0.2561	0.0199	-0.2966	0.2346	1.0000				
lngovexD1	0.1815	0.1593	0.1571	-0.1436	-0.1301	0.0243	0.3762	0.1172	1.0000			
lnOPD1	-0.0560	-0.0507	-0.0062	0.1674	0.1777	0.1002	-0.0067	0.0847	-0.0565	1.0000		
DWAR	-0.0720	0.0440	0.3867*	-0.2925	-0.0642	-0.0586	-0.3487	0.1716	0.0838	-0.0322	1.0000	
lagECMG	0.2408	0.0208	-0.1059	-0.1945	-0.1568	-0.2348	0.2880	-0.0525	0.1406	-0.6023*	0.2495	1.0000

pwcorr DID1 laglnDID1 lnFDID1 lnHCDD1 MSD1 lnTele IRD1 lnEXRD1 lnOPD1 lngovexD1 DWAR ECMG, star (0.10)

	DID1	laglnDID1	lnFDID1	lnHCDD1	MSD1	lnTele	IRD1	lnEXRD1	lnOPD1	lngovexD1	DWAR	ECM
DID1	1.0000											
laglnDID1	0.2429	1.0000										
lnFDID1	0.0968	0.3504	1.0000									
lnHCDD1	0.0433	0.1719	0.1278	1.0000								
MSD1	0.1251	-0.0291	0.0041	0.0210	1.0000							
lnTele	-0.1293	-0.2391	-0.0557	0.0273	0.9349*	1.0000						
IRD1	0.5020*	-0.3417	-0.2561	-0.0969	0.2914	0.2346	1.0000					
lnEXRD1	-0.3115	0.0724	-0.2371	-0.2090	0.1380	0.0708	-0.3904*	1.0000				
lnOPD1	-0.0183	-0.0566	0.1674	-0.0507	0.0555	-0.0067	0.0847	0.2111	1.0000			
lngovexD1	-0.0806	0.1727	-0.1436	0.1593	0.4013*	0.3762	0.1172	0.3386	-0.0565	1.0000		
DWAR	-0.0139	-0.1452	-0.2925	0.0440	-0.3699	-0.3487	0.1716	-0.1778	-0.0322	0.0838	1.0000	
ECMG	0.0425	-0.0944	0.0000	-0.0000	0.0000	0.0000	0.2041	0.0000	0.7535*	-0.2038	-0.1323	1.0000

Appendix E: organizational chart of Huajian shoe company (100% foreigners).



Appendix F: Questionnaire

Questionnaire to be filled by top management (director general, deputy director general) of FDIs
Foreign Direct Investment and Ethiopian Economy: Trend, Determinants and Impact Analysis

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Dear respondents
I am a student of Master of Business Administration in International Business in Mekelle University. This questionnaire is designed for conducting research on trends, determinants and impact of foreign Direct Investment, FDI in the Ethiopian economy mainly for two reasons (i.e. for the partial fulfillment of the requirement of MBA degree; and for providing possible implications and recommendations on the subject to the government body.

The researcher wants to forward a great appreciation for your cooperation to look up the questionnaire seriously, intentionally and giving your precious and indispensable time to answer the questions. Be sure that all your answers information will be kept highly confidential.

I thank you in advance

1. General information on your enterprise

S.No	Item	Response				
1.	Position of respondent	a)General manager/managing director b) deputy GM/MD c)Delegated				
2	Nationality of respondent	a) Ethiopian b) not Ethiopian				
3.	Name of your enterprise					
4	Home country of the enterprise					
5	What is the principal area of activity (business Type)? Make X for your answer	Agriculture	Manufacturing	Mining	Education	Health
		Hotel	Tour &transport	Real estate &machinery	Construction	Other
6.	Year of establishment					
7	Owner ship	a) Wholly owned b) joint venture c) other				

2. Questions for analyzing determinant factors

a. Within the following table there are list of objectives that a given investor wants to achieve through overseas investment. Please rate the importance of the listed objectives (1) is least important through (5) is the most important to your decision in investing here.

R.No.		*Least important* → *Most important*				
		1	*2*	*3*	*4*	*5*
2.1	To get improved market access					
2.2	To get better source of raw materials					
2.3	To develop new product lines					
2.4	To develop new technologies					
2.5	To reduce risk					
2.6	To reduce operating costs					
2.7	To consolidate operations					
2.8	To improve productivity					
2.9	To get improved labor force access					

b. Take the overall condition in the country evaluate to what extent they affecting the decision of FDIs.

S/N	Question item	To a very great extent (5)	To great extent (4)	To moderate extent (3)	To low extent (2)	To very low extent (1)
Economic environments						
2.10	To what extent do you think that the economic environment in Ethiopia is attractive to foreign investors?					
2.11	To what extent does the current economic image of Ethiopia strong to attract foreign investors					
2.12	To what extent does Ethiopian market size attract foreign investors					
Policy related issue						
2.13	To what extent does the quality of institutions influence linkage formation of foreign with domestic investors					
2.14	To what extent the Ethiopian investment policy frameworks positively influence foreign investors?					
2.15	To what extent does the requirement to sign a contract with the Ethiopian government positively influence foreign investor's decision?					
2.16	To what extent does the restriction *on minimum capital requirement ($200,000) for a single investment project* has positive influence on foreign investors decision					
2.17	To what extent does the requirement that; *other than the top management positions the firm's employees must be Ethiopian citizens* accepted by foreign investors?					
2.18	To what extent do tax benefits (tax horizon) positively influence the decision of foreign investors?					
2.19	To what extent the available grants and incentives of the government attract foreign investors					
2.20	As a foreign investor to what extent did you agree with the investment areas exclusively reserved for only Ethiopian nationals?					

c. *The following alternatives are variables that can have an influence to your investment decision that can range from strong positive to strong negative or in between. Take your own enterprise in to consideration, and evaluate them how they are affecting*.

S/N			Strong positive (5)	Positive (4)	Neither positive nor negative (3)	Negative (2)	Strong negative (1)
2.21	Economic image of the country						
2.22	Political Stability						
2.23	The size of Domestic Market						
2.24	The growth of Domestic Market						
2.25	The growth in domestic investment						
2.26	Regional Integration (Access to Regional Markets)						
2.27	Geographical Proximity						
2.28	Availability Natural Resources						
2.29	Level of Infrastructure	Telephone					
		Internet					
		Power					
		Transportation (road)					
2.30	Labor	Level of human development					
		Skilled of labor					
		Cost of labor					
2.31	Legal and Regulatory Framework						
2.32	Inflation rate (increase in price of goods &s)						
2.33	Foreign Exchange	Rate of change of Birr to your home land currency					
		Availability of foreign exchange reserve					
2.34	Availability of Foreign Debt in the country						
2.35	Fiscal Deficit of the government						
2.36	The export policy of the country						
2.37	The import policy of the country						

3. Questions for analyzing Impact of FDI

a. The following questions are related to determinants factors that positively or negatively affect the decision of investors to invest here in Ethiopia. Please read the questions provide answer based on mode of questions.

3.1. Are there any other domestic firms engaged in a similar business activity in relation to your business enterprise?

a) Yes there are a large number of similar domestic firms

b) Yes there are similar domestic firms, but they are insignificant in terms number of firms

c) Yes there are similar domestic firms, but they are insignificant in terms market share they have

d) No, there is no domestic firm similar to your enterprise

3.2. Are there any other foreign firms engaged in a similar business activity in relation to your business enterprise?

a) Yes there are a large number of similar domestic firms

b) Yes there are similar domestic firms, but they are insignificant in terms number of firms

c) Yes there are similar domestic firms, but they are insignificant in terms market share they have

d) No, there is no domestic firm similar to your enterprise

3.3. How do you evaluate the rate of capability of your enterprise in relation to similar domestic enterprises in terms of the following variables?

S/N	*Question item*	*Very high (5)*	*High (4)*	*Moderate (3)*	*Low (2)*	*Very low (1)*
1	Access to market					
2	Share of your market					
3	Price of your product					
4	Reliability of your product					
5	Level of technology					
6	Sophistication of the technology					

3.4. To what extent do you agree on the following possible impacts of your enterprise to the Ethiopian economy

S/N	*Question item*	*To Very high extent (5)*	*To high extent (4)*	*To moderate extent (3)*	*To low extent (2)*	*To Very low extent (1)*
1	It is an important source of capital					
2	has increased domestic competition					
3	It has significantly upgraded skill					
4	has paid higher wages					
5	has created jobs					
6	introduced a modified industrial structure					
7	it exploits economic advantage which is difficult for domestic firms					
8	Significantly raises factor productivity					
	increased technology significant transfer					

3.5. *The following alternatives are variables in which one foreign firm can have a positive or negative impact that can range from strong positive to strong negative or in between. Take your own enterprise in to consideration, and evaluate them how they are affecting*.

S/N	Question item	To a very great extent (5)	To great extent (4)	To moderate extent (3)	To low extent (2)	To very low extent (1)
1.	To what extent of foreign enterprises in Ethiopia contribute to the upgrading of local firms?					
2	To what extent foreign enterprises have strong competitive positions relative to their Ethiopian competitors?					
3	To what extent your enterprises use the local innovation?					
4	To what extent do the affiliates form forward linkages with Ethiopian firms for the marketing or distribution of products and/or services?					
5	To what extent does your enterprise use source specialized products and services from Ethiopian firms?					
6	To what extent does your enterprise provide specialized products and services to Ethiopian firms?					
7	To what extent does your enterprise form knowledge agreements with Ethiopian licensees and/or franchisees for the production or marketing of products/components or services?					
8	To what extent does your enterprise form collaborative agreements (e.g., strategic alliances, technology agreements, or management contracts) with Ethiopian firms?					

Please try to list ideas to be incorporated or comment on the questionnaire to make the study better

1. _____
   _____
2. _____
   _____
3. _____
   _____

Thank you very much for all your dedication