ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTEMENT OF ECONOMICS

DETERMINANT OF FOREIGN DIRECT INVESTIMENT IN ETHIOPIA

BY: ADDISU BAYU DIRIBA

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTERS OF SCIENCE IN ECONOMICS (*ECONOMIC POLICY ANALYSIS*)

JUNE 2021

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ADVISOR: GIRMA E. (PhD)

Name and Signature of the Board of Examiners for Approval:

Examiner_____ Signature _____date _____

Examiner_____ Signature _____date _____

Advisor_____ Signature _____date _____

Declaration:

This thesis is my original work, which has not been summited and presented for masters in any other university and that all source of materials used for the thesis have been properly acknowledged.

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ADDISU BAYU DIRIBA

JUNE 2021

The thesis has been submitted for examination with my approval as university advisor.

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GIRMA. E (PhD)

JUNE 2021

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Abbreviations and Acronyms

ADF	Augmented Dickey-Fuller
ARDL	Autoregressive Distributed Lag
CSA	Central Statistics Authority
CSA	Country specific advantage
ECM	Error correction model
FDI	Foreign direct investment
FSA	Firm specific advantage
GDP	Gross Domestic Product
GFCF	Gross fixed capital formation
IMF	International monetary fund
INF	Inflation Rate
MNC	Multinational Company
MNE	Multinational enterprises
NBE	National bank of Ethiopia
OLI	Ownership location industrialization
REER	Real effective exchange rate
UNCTAD	United Nations Conference on trade and Development
WB	World Bank

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Abstract

This paper examines the determinant of foreign direct investment in Ethiopia. The study applies the ARDL model in order to make an appropriate analysis of the effects of the variables on foreign direct investment by using time series data covering a period of 1984-2019, which was collected from Word Bank and Nation Bank of Ethiopia. GDP growth rate, gross fixed capital formation, trade openness, inflation rate, real effective exchange rate and labour growth rate are the variables used in the study. According to the empirical finding of the study in the long run gross capital formation and trade openness affects FDI positively while inflation rate affect FDI inflows negatively. In addition, real effective exchange rate and labour force growth rate has positive impact on FDI inflows. While GDP growth rate has positive effect on FDI inflows in Ethiopia in the long run but not statistically significant. In the short run GDP growth rate and trade openness has a negative effect on FDI inflows and they are statistically not significant while gross capital formation and real effective exchange rate has a positive effect on FDI and statistically significant and inflation rate has negative impact on FDI and statically significant.

The study suggests that the government should have facilitate infrastructure development, government needs strong monetary and fiscal policy in order to reduce inflation rate and, adopt outward looking growth strategy.

Key words: Foreign direct investment, ARDL

CHAPTER ONE

1. INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Foreign direct investment is a prerequisite for economic growth and development. The magnitude and quality of foreign investment are necessary in sustaining growth of world economies. Global outward and inward FDI continue to be high due to various trade and economic agreements between developing and developed countries (UNCTAD, 2013).

Foreign direct investment is investment in a business by an investor from another country for which the foreign investor has control over the company purchased (UNCTAD, 2013). Businesses involved in foreign direct investment are called multinational enterprises (MNE). MNE's make their investment in the form of new foreign enterprise, called green field investment, or the acquisition of foreign firms (brown field investment). Apart from growth, FDI has been commended for increases in employment, efficiency, product quality and long run aggregate supply. Negative implications have also been spelt out on the host country. FDIs have been blamed for suffocating local industries through monopolistic behavior and even unemployment in the long-run (UNCTAD, 2006).

Theories on FDI have been distinguished on firm and country level. With subsequent studying, and classification anomalies, theories on FDI motives have also been added to the theoretical body of literature (Choe, 2003). Again, empirical literature has reviewed varying evidence on the implications of FDI on growth and its determinant. Evidence has been mixed depending on the country under consideration, determinants of FDIs and the methodology utilized in the study. Even though more studies that are recent confirmed the positive effect of FDI on growth, highly-skilled workforce and better institutions are a prerequisite.

In the standard neoclassical model of growth, increase in capital stock and labour force will contribute to high growth. More apparently, the endogenous growth model suggests FDIs contribute to growth through spillovers benefits such as technical and managerial knowhow, access to foreign markets and the increase in capital stock (UNCTAD, 2006).

Many developing countries including Ethiopia they are seeking foreign direct investment by taking some measurement including political reform, economic reform and other measurement in order to improve their investment environment. In Ethiopia, the gap between investment and saving has remained wide due to low level of income and domestic saving (Getinet & Hirut , 2005).

To narrow this gap over the past decades, market oriented policy reform in Ethiopia has placed a major emphasis to attract FDI. The country has issued and subsequently revised its investment proclamations and codes. The issue is whether these measures have been successful in drawing meaningful amounts of FDI and what actual contributions these investments have provided to the economy. However, the vast literature showed us still that Ethiopia's inward FDI to output ratio is very small. Purposely, it is very important to know the prerequisite for FDI to be attracted to the host country. Therefore, this study intended to find mainly the relevant variable used to attract foreign direct investments not only due to Ethiopia's need to attract FDI, but its importance to know its relationship with economic growth.

1.2 STATEMENT OF PROBLEM

According to (Ayanwale, 2007), many countries in the world especially, developing countries, see FDI as an important element for economic development. Foreign direct investment was seen as a combination of technology, capital management and marketing. Due to this reason, many countries in the world including African countries are improving their business climate in order to attract FDI. Ethiopia, where about 29.2 percent of the populations live below the poverty line (CSA, 2019), was not excluded from those countries seeking to attract FDI. As a country, there is a shortage of financial, human capital and physical more than necessity. To do so, this needs capital inflows from outside sources; one of those forms is FDI.

Almost all countries in the world including Ethiopia, are leaving their gates open for foreign investors. Countries in order to attract foreign direct investment they can identify the basic factors that determine inflows of the FDI in the countries, and they adjust their political, social and economic environment, in order to maximize the benefit of FDI inflows and minimize its cost. The features of FDI encourages many researchers to conduct study on determinant of FDI in developing countries.

For instance, (Getinet & Hirut , 2005), conduct a research on determinants of foreign direct

investment in Ethiopia over the period 1974-2001 they include the variable like growth rate of real GDP, export orientation, liberalization, macroeconomic instability and infrastructure in their analysis. They found that economic growth, export orientation (openness) and liberalization have a significant positive impact on FDI, while macroeconomic instability and low-level physical infrastructure have a negative impact on the foreign direct investments.

(Mohapatra, 2014), conduct study on determinant of foreign direct investment inflows in Ethiopia on time series data covering a period of 1992 to 2012. He includes variables such as trade openness, official exchange rate, gross capital formation, gross national expenditure, transport services, inflation, external debt and market size.

Against the finding of (Getinet & Hirut , 2005), a recent paper done by (Amanuel, 2014), examined the determinants of foreign direct investment in Ethiopia on Time-series data covering a period of (1990-2011). He also included market size, level of trade openness, inflation rate, infrastructure, and human capital. He found that market size, infrastructure, and human capital have an insignificant effect on FDI. Trade openness and inflation rate has a significant effect on the flow of foreign direct investments in Ethiopia.

There is a disagreement among research scholars to find relevant factor determining foreign direct investments even in Ethiopia for instance mentioned above while (Getinet & Hirut , 2005) showed as economic growth has significant impact on FDI and (Amanuel, 2014),showed economic growth has insignificant impact on FDI. (Mohapatra, 2014), showed that market size has no significant impact on FDI inflows in Ethiopia. Therefore, this paper mainly intended to not only clarify such contradiction created among researchers, but also by using a recent data from 1984 to 2019, identifying a factor determine foreign direct investments and answer the question “what are the most significant factor that determine foreign direct investments in Ethiopia”? , “By what extent do they affect FDI”?

1.3. OBJECTIVES OF THE STUDY

1.3.1 General Objective of the Study

The general objective of the study is to evaluate the factors that determine FDI inflow in to Ethiopia.

1.3.2 Specific objectives of the study

The specific objectives include:

- To show the economic performance of FDI inflows in Ethiopia
- To assess trends of the foreign direct investment in Ethiopia
- To identify the determinant of FDI inflows in Ethiopia
- Examine the basic determinants of foreign direct investment inflows in Ethiopia
- To put forth some policy implications

1.4 RESEARCH QUESTIONS

- ✓ What are the most significant factors determining foreign direct investments in Ethiopia?
    - Which of these factors is the most significant and determining FDI in Ethiopia
    - What are the relation between these factors and FDI in Ethiopia?
    - Which methodology and methods are best to handle the situation of FDI in Ethiopia?
    - Is there any statistical significance on factors determining FDI in Ethiopia?

1.5 HYPOTHESIS OF THE STUDY

The hypothesis that tested under this study is:

FDI inflow into our country is highly elastic to the availability of adequate infrastructure, trade openness, market size, macroeconomic stability and human capital.

1.6 SIGNIFICANCE OF THE STUDY

Foreign direct investment plays a great role in economic growth, development of a country, and poverty reduction. So the result of this research would be expected to provide the following advantages: The research gives some of the high lights which helps to generate information that

policy makers can make use to design proper and effective policy by taking into consideration factors used to attract foreign direct investment inflows to Ethiopia. In addition, this study is also significant for those who are interested in research works in the area of foreign direct investment inflows in Ethiopia context and served as reference for further analysis concerning the study area.

1.7 LIMITATIONS OF THE STUDY

While undertaking this investigation, the researcher encounters a number of limitations such as, unavailability of data for some variables; the data used in the study is limited, between a year of 1984-2019, due to unavailability of data for some variables such as political instability, corruption index and data for labour cost, For instance, the data for foreign direct investment in flows available from 1984 and in addition, some of the data differ from institution to institution.

CHAPTER TWO

REVIEW OF THE LITERATURE

2.1THEORETICAL LITERATURE

This chapter deals with the macroeconomic and microeconomic theory of FDI. At macro level, the neoclassical growth theory discussed in connection with economic growth and at micro level Product life cycle theory, Dunning's eclectic theory, and Hymer's industrial organization theory discussed.

2.1.1 MACROECONOMIC THEORY OF FDI

2.1.1.1 Neoclassical Growth Theory

It is important to investigate the relationship between economic growth and foreign direct investment, the precondition for FDI is to promote economic growth and identify the mechanism through which economic growth can be achieved. Neoclassical growth theory is one of the approaches.

(Solow, 1956), tried to explain the growth model and he explored the key variables that give the steady growth model. In his model, he expresses the factors that affect the FDI in the growth rates. According to him in addition to Endogenous, growth theory, the flows of the FDI can contribute directly or indirectly to the economic development of the economy.

In the same way (Wang, 1990), identifies the direct effects of the FDI activity to the home country and indirect effects, the direct effect is by stepping up production and transferring knowledge to local suppliers and the indirect effects is upgrading the quality of the workers.

In addition, other attempts are also made to illustrate the basic set of determinants controlling the motivations for cross-border investment. Early evidence expressed by (Mundell, 1957), attempt to explain FDI in terms of relative factor costs and relative factor endowments.

He concludes that in the presence of the trade barriers, migration and if there is existence of the large difference between capital poor and capital rich countries, the incentive for capital flows are large. The geographical location of the new investment, suggests that FDI does not target the countries where GDP and wages are low.

He said, according to IMF, the intra-European FDI flow account for 4.5% of European GDP in 1995; evidences suggest that more explanatory variables that affect FDI can be included to the

general equilibrium model.

Many researchers incorporated additional variables, which affect cross-border investment, such as market size, cultural and language difference, exchange rate stability, government and geographical factors. Recent empirical studies show that variables like financial incentives and political instability can be included in the model.

2.1.2 MICROECONOMIC THEORY OF FDI

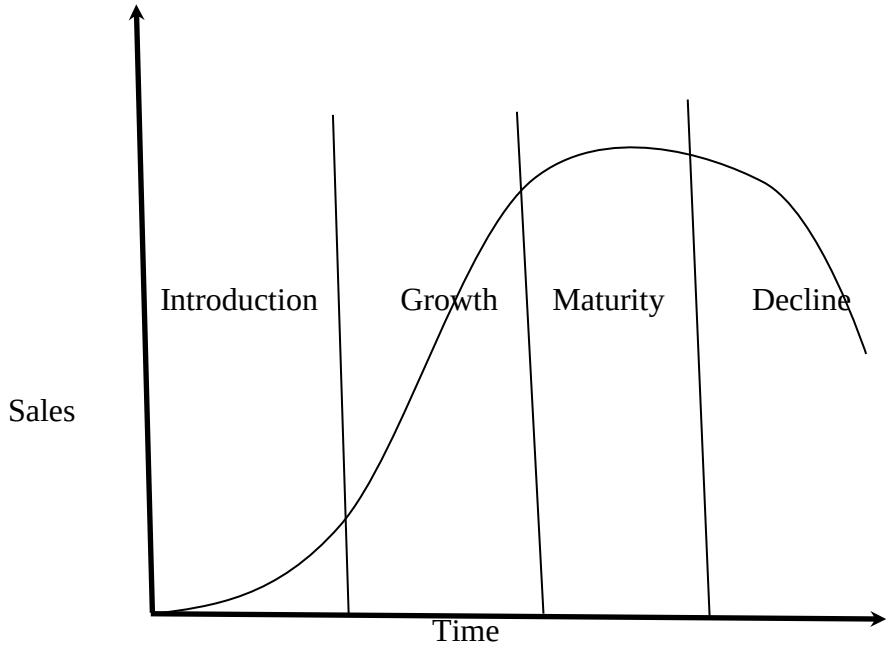
2.1.2.1 Product life cycle theory

The product life cycle theory was developed by (Vernon, 1966), in response to the failure of the Heckscher-Ohlin model to explain the observed pattern of international trade. According to product life cycle theory, each product has a certain life cycle in the market i.e. each product begins with development and ends with decline.

Product life cycle introduces four stage of production such as:

- Introduction
- Growth
- Maturity
- Decline

According (Vernon, 1966) the duration of the stages varies across the stages due to differences in demand, cost of production and revenues.



Graph 2.1 Reymond Vernon product life cycle

Introduction: Once a company develops a product successfully, its second step is to introduce its product to its target group; its target group may be a host country or home country. Some MNC sells only in the home market for the purpose of the introduction of their product. As the product is introduced in the market for the first time, the competition from different angles is very small. At this stage, the information about a product is not reached on the attention of the world and customers are not knowledgeable of the product due to low demand and low profit. In order to attract the attention of the customer company, invest a huge amount on promotional activities and different marketing activities, this in turn leads a company large cost.

Growth Stage: There is a rapid increase in demand, sales and profits under the growth stage. Because of promotional and marketing activities under the introduction stage, the new product among peoples it leads to increased demand, sales and profit. Moreover, under this stage as a product became widely known and popular among peoples, competition started to become strong. In addition, foreign competitors start to enter the market. As competition increases in the company's start to adopt different strategies, in order to gain competitive advantage.

Maturity stage: once the product reaches the maturity stage**s** the main aim of the companies will be to maintain the market share they have already built up. Because of that, the product is widely accepted and sell will be at peak, there is no further growth in this maturity stage. Another feature of this stage is that there is an intense competition, the existence of the large competitors, would force the company to reduce the price of the product, which in turn result declines the profit.

Decline stage: At this, stage no longer profitable for the company to continue with the production of the same products. According to Vernon companies demand, sales and profit decrease at this stage.

Therefore, the new product is first produced in the home countries and sold in the home countries at this stage. The product is not standardized. According to (Vernon, 1966), the product became standardized when the demand for product increases and the product is exported to the other countries, after the home countries are saturated. Therefore, the MNC open subsidiaries in the foreign countries due to high competition from rivalry firms and search for low cost of production. According to him firm engaged in FDI due to search for low cost of production in other countries.

Therefore, Foreign Direct Investment is the stage in production life cycle that follows the maturity stage of production (Dunning J. , 1993).According to him firm produce new product in the home market, and undertake FDI in order to produce a product for foreign market. Vernon product life cycle is important to this study, because it points out how foreign direct investment is passing through this product life cycle.

2.1.2.2 The Eclectic Theory

This theory was developed by (Dunning, 1973), according to him, firms choose to undertake two types of investment. These are Foreign Portfolio Investment and Foreign Direct Investment. Foreign portfolio investment is an investment that is financed by foreign money but operated by domestic residents. FDI is defined as the acquisition of foreign assets for the purpose of control (Dunning, 1973).

The eclectic theory is introduces three advantages, those are

- Ownership advantage,
- Location advantage and
- Internalization advantage.

If three of the advantages present the company can engage himself in FDI or MNC, but if one or more of this advantage absent the company can look another way. According to (Dunning and Rugman, 1985) in order to engage in a specific country; company needs to look at these three advantages. These three advantages have raised a question, which foreign investors seek to answer.

Ownership refers to the resource that the company owns that gives it a competitive advantage in a foreign market. Ownership advantage raises a question why a foreign firm needs to go abroad. Foreign firms are one or more advantages that make them overcome the operating cost of foreign countries. Therefore, this specific advantage makes it firm to go abroad. This ownership advantage includes:

- Economies of scale
- Better knowledge(skill)
- Technological capabilities
- Unique brand names and so on

Location addresses a question of location. According to (Dunning and Rugman, 1985) a decision of a firm to move from its home country to abroad is based on firm specific advantage

(ownership advantage) and also with a factor which avail in a foreign country such as: land, cheap raw materials, low cost of skilled labour, lower rental and tax rates. These are important factors in determining a profit of MNC.

Internalization: represents the internalization advantages on how firm to go abroad. The MNE have several options to choose from in their entry mode in a foreign country. Choices range from the arm's length transactions (market) to the hierarchy (wholly owned subsidiary). The MNE can choose internalization if the market does exist or functions poorly, that is transaction costs of the external route are high. Under the firm specific advantage, an MNE operating a plant in a foreign country can be faced with a number of additional costs in relation to their local counterparts (local competitor). These costs according to (Dunning and Rugman, 1985) comprises of;

i. Cultural, legal, institutional and language differences
ii. Lack of knowledge about local market conditions
iii. The increased expense of communicating and operating at a distance

Eclectic theory points out that for a foreign firm to compete in foreign countries, it must have some kind of unique advantage, which can help a firm to overcome the operating cost in host countries. This advantage, which helps firm, is called FSA (ownership advantage). (Dunning and Rugman, 1985), identifies three main types of ownership advantages, these are included: monopolistic advantage, knowledge (innovative skill) and economies of scale.

(Dunning, 1997),exerts ownership advantage changes over time, with the growth of MNE and firm must use a foreign factor in addition to its ownership advantage ,in order to gain more profit. He also identifies three types of country specific advantage: political, social and economic advantages. Political advantages are the government policies that affect the inflows of the FDI. Social advantages include the attitudes towards foreigners, difference in culture and language difference. As well as economic advantage is the availability of the natural resource that means in terms of quantity, and quality, market size, and different infrastructure like: road, telecommunication and availability of better financial institutions. If there is a high market for production, lower cost of production, high availability of natural resources in the host countries, political stability and the culture and the location of the host countries are close to the home countries the CSA can attract the MNE.

The eclectic theory exerts that special skill (unique skill) which firm has an asset, which helps to

generate a foreign firm a profit. This profit can be gained through licensing the FSA to another firm, exporting its product using firm specific advantage, which helps to set up subsidiaries abroad. However in order to set up subsidiaries a broad (Dunning, 1997), identifies different challenges as follows:

- Market failure
- Inadequate information about price, cost and benefit
- Transaction cost under risk, uncertainty, moral hazard and adverse selection.
- Unnecessary government regulation in terms of taxes, tariffs and others

(Dunning J. H., 1994), argued that FDI in developing countries shift from resource seeking FDI and marketing seeking FDI to more efficiency seeking FDI. These due to MNC are set up their subsidiaries to low cost in developing. However, FDI in these developing countries still depends on assessing on natural resources and regional markets. Like other microeconomic theory eclectic has its own weakness. It has been suggested that OLI framework are independent of each other, this notion raised much critics from international trade scholars. This understanding is very difficult, because it is difficult to separate these OLI frameworks, they work together, and this OLI variable can influence each other.

(Kojima, 1982), claimed that the explanatory variables identified by the eclectic theory under each pillar are so numerous that its predictive value is almost zero. Furthermore (Kojima, 1982), argued that the eclectic theory insufficiently allows for differences in the strategic response of firms to any given configuration of OLI variables. The theory has been viewed in static or comparatively static terms. In this regard, it offers less guidance to the dynamics of the international process of firms and countries.

Generally, the eclectic theory is relevant to this study as it tries to identify the determinant of MNC to invest abroad. For example in case of location advantage, foreign investors have an advantage of choosing the location. Most of the time location is preferred if it is close to seas or waters and ports, for transportation purposes. In addition, foreign investors also ownership advantage likes:

- Economies of scale
- Better knowledge(skill)
- Technological capabilities
- Unique brand names and so on

2.1.2.3 Industrial Organization Theory

According to (Hymer, 1960), the decision to invest abroad is not depend on country capital availability which was suggested by the (Dunning, 1973), rather Hymer argue that the decision to invest abroad depends on individual or companies aspects. This Hymer theory focuses mainly on two main points. Firstly, the firms become MNEs, because they have possessed a comparative advantage. Secondly, the competitive structure of some industries will encourage firms to internalize. This theory also trading the comparative advantage within each other is a key requirement for an individual firm in a given industry to invest in overseas and become MNEs. (Hymer, 1960), develops four assumptions under this FDI theory, which listed as follows:

- Post war, FDI was a two-way approach that means it flows from developed countries to developed countries. Another theory of FDI, argued that capital flows are only one-way.
- Countries can be engaged either inflows FDI or outward FDI.
- The level of FDI varies across countries.
- Due to local financing of foreign subsidiaries, it was not believable that capital was moved from country to country.

(Hymer, 1960), exerts that the firm investment abroad in order to dominate the market, raise profit and create more conflict –removing oligopolies. He also believed that MNEs were investing in foreign countries, faced with certain additional cost, in comparison to domestic firms. They face challenges like cultural difficulties, language, Institutional, Communication, and transportation cost. These firms that wish to invest through FDI, in foreign market must have a specific advantage in order to gain advantage over the domestic firm in the foreign market. This advantage includes better technology, research and development capabilities, superior managerial skill, and market skill.

Generally, Hymer theory concludes that the specific advantage of a firm's competitive conditions has a positive influence on FDI. However some scholars criticized, Hymer theory among them (Yamin, 2000), stated that Hymer discuss how and why firm go abroad ,but he ignore how firm can operate efficiently in foreign market by using it specific advantage. Hymer believed that the main objective of the firm is to gain a profit and expansion. However, (Yamin, 2000), exerts that firm can employ and develop their subsidiaries for the purpose of internal efficiency. Hymer also argues that only oligopolies firms can invest abroad, but this is not a case nowadays.

The industrial organization theory is important to this study, because it points out why foreign investors decided to invest abroad depending on individual and industries aspects. Therefore, firm that want to invest abroad must have a specific advantage over local firms through better technology, research and development capabilities, superior managerial skill, and market skill.

2.2 EMPIRICAL LITERATURE REVIEW

In order to see significant determinants of FDI empirically in Ethiopia's economy, it is better to find accurate model, to see how estimated results support theoretical arguments about relevant and important determinant that can capture this necessary. Being so, study-investigating determinants of FDI would focus on either developed country analysis or developing country specifically. Hence, it was reviewed in both developed and developing economies individually and in Ethiopia specifically.

2.2.1 Studies on Developed Countries

(Rave, 2005), studies on the impact of FDI on the Korean firm industry. The studies examined that the factor that brought FDI into the Korean car industry and the impact of this factor on the car industry, especially on carmakers and suppliers. This study found the investment on the car industry has been lagging for a year, but currently it has been increased. Variables such as trade union and labour market flexibility have been a significant negative impact on economic growth and employment creation.

(Udomkerdmongkoland Morrissey, 2008), examined the impact of the exchange rate on US FDI, using the panel data for the period of 1990-2002. In their studies, three variables are considered in order to see the effect of the exchange rate on US FDI. The first one is the value of the local currency; it means that higher local currency implies those cheaper currencies, which attract FDI. The second real effective exchange rate, proxy for expected exchange rate, which implies an increase the exchange rate, can be explained by devaluation and decreasing exchange rate .The third is volatility of local currency, which discourages FDI. The results of this study show that negative relationship between the expectation of the local currency depression and FDI, inflows. Cheaper local currency attracts FDI, volatile exchange rate discourages FDI.

Went H (2010), examined how intellectual property rights (IPRs), protection may affect FDI flow to China with other macroeconomic variables for a period of 1989-2006. The result shows that sources countries, with higher export ratio, lower borrowing cost, high IPRs protections and

depreciation of exchange rate firms want to invest more in china.

(Feath, 2006), examined the determinant of FDI flows in Australia using quarterly data for a period Q3/1985/Q2/2002. In her studies, she explained FDI flows using factor cost, transport cost, risk factor, and policy factor. It was found that FDI in Australia was driven by long-term consideration and the determinant of the FDI in Australia was not fully explained by any single theory. In addition, the results of the studies show that FDI inflows increase in domestic investment, economic growth and it decreases the growth of the export.

2.2.2 Studies on developing countries

(Obowana, 2001), examined that the determinant of FDI and its impacts on economic growth of Uganda. He mention that variables like low inflation rate, liberation of exchange rate and higher economic growth, these are the variables which used to attract FDI in Uganda, but according to him the importance of this variables are depend on investment which under taken by a foreign firms. The survey approach was used by collecting data from domestic firms and foreign investors about their decision making to investing in Uganda. The studies show that the consideration for foreign firms depends on macroeconomic stability and government institutions. So according to him, the increase in FDI in Uganda is due to better macroeconomic variables and policy reforms by the government.

(Borensztein, 1998), examined the effect of FDI on economic growth using a data that FDI flows from industrial countries to developing countries for a period of 19970-1979 and 1980-1989. They found out that FDI is the important engine for the transfer of technology and FDI contributes more for economic growth than the domestic investment, which contributes less in comparison to the foreign direct investment.

(Onyeiwu and Shretha, 2004), they considered the determinant of foreign direct investment in Africa. They used the fixed and random effect model to explain the determinant of FDI can affect FDI flows in Africa based up on the panel data for 29 African countries from a period 1975-1999. The paper mentions some of the variables, which is significant for inflow of FDI in Africa. Variables such as inflation, economic growth, openness, international reserve and natural resources. Some variables like conventional wisdom, political rights and infrastructure are found to be insignificant to attract FDI in Africa.

(Sahoo, 2006), examined determinant of FDI in south Asia, he uses panel cointegration and the results show that FDI and its determinant have long run equilibrium in south Asia. Determinants of FDI in south Asia are market size, labour force growth with infrastructure and openness. South Asia needs to maintain growth momentum to improve market size, improve infrastructure and more open trade policies in order to attract FDI.

2.2.3 Studies on Ethiopia

(Getinet & Hirut , 2005), they examined the determinant of FDI in Ethiopia for a period of 1974-2001. Their studies consider both theoretical and empirical studies, in order to consider the determinant of FDI in Ethiopia. The result of their studies show that export orientation, growth rate of real GDP, and trade liberation have a positive impact , on FDI in Ethiopia , and in contrary to low infrastructure macroeconomic instability have a negative impact on inflows FDI in Ethiopia. In their studies, they conclude that better infrastructure, better environment and trade liberation are important to attract FDI in Ethiopia.

(Amanuel, 2014), examined the determinant of FDI in Ethiopia on time series data from 1990-2011. He includes five variables on his studies; those variables are such as market size, trade openness, inflation rate, infrastructure and human capital. He found out that human capital, infrastructure, and market have insignificant effects on FDI in Ethiopia. Openness and inflation rate has a significant effect on FDI in Ethiopia.

(Rozina, 2016), examined the determinant of foreign direct investment in Ethiopia for a period of 1981-2014.the studies give about both theoretical and empirical studies on developing countries in order to establish the determinant of FDI in Ethiopia. The studies considers variables like, growth rate of real GDP, liberalization, macroeconomic stability , real effective exchange rate, adult illiteracy rate and infrastructure . the result of the studies show the variables like the growth rate of real GDP and liberation have positive impact on FDI , variables like macroeconomic stability , real effective exchange rate adult illiteracy rate and poor infrastructure have negative impact on FDI inflows in Ethiopia.

(Mohapatra, 2014), examined the determinant of inflows of FDI in Ethiopia for a period of 1992-2012. According to his studies, variables like GDP, gross capital formation infrastructure availability, trade openness, export, import external debt and cost of starting business are important determinant of the FDI inflows in Ethiopia.

(Dejene.M, 2016), he examined the determinant of foreign direct investment in Ethiopia time series evidence from 1991-2013. His studies revealed that GDP growth rate, GDP per capita, inflation gross capital formation, literacy rate, labour force growth rate, telephone line per 1000 and official exchange rate are the variables that determined the foreign direct investment in Ethiopia, contrary to that export of goods and services, and energy consumption per capita in transport sector are the variables which are insignificant to determine the foreign direct investment in Ethiopia.

(Dejene.G, 2015), examined the economic impact of foreign direct investment on the economic growth of Ethiopia using time series data from 1974-2015. His proxies' economic growth by real GDP per capita and foreign direct investment by foreign direct investment inflows to Ethiopia. He includes variables such as inflation, gross domestic saving, trade openness and government consumption. His study revealed that there is a long run relationship between economic growth and foreign direct investment in Ethiopia.

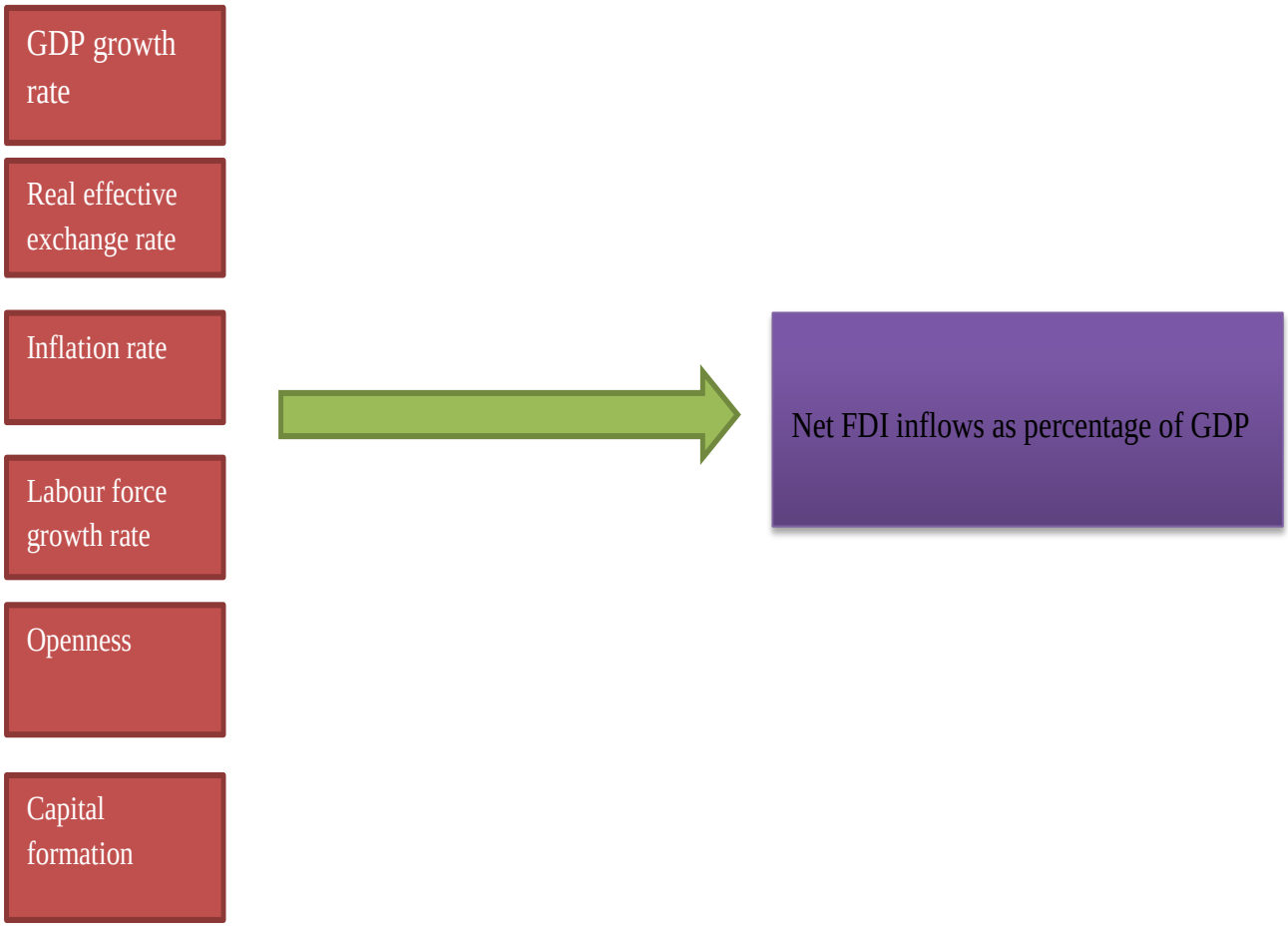
To summarize this section, there has been various studies conducted on determinant of foreign direct investment, using different methods and methodologies, but there is no specific agreement among scholar to find the relevant factor that determines foreign direct investment .This due to difference economic, political, social, difference in natural resources and other factor in the countries, which MNC invests. Therefore, the studies used recent data and large time series data for 35 years, in order to give more accurate analysis compared to other studies.

2.3 Conceptual framework of the study

After I revived both theoretical literature and empirical literature, conceptual framework of the study was developed. Conceptual framework is an abstract representation of the study and used to give comprehensive on the field of the study. The purpose of this section is to provide a brief and generalized literature reviewed above, from the above theoretical literature and empirical literature there are different factor that determine FDI are identified, such as market size, human capital, infrastructure, economic development, labour cost and macroeconomic stability. This study identified the flowing variables such as GDP growth rate, inflation rate, gross fixed capital formation, real effective exchange rate, trade openness, and labour force growth rate as determinant of FDI. Moreover, these variables are expected to affect FDI directly or indirectly. For instance variable like are growth rate of real gross domestic product, trade openness, real

effective exchange rate, capital formation, and human capital has a direct effect on foreign direct investment and inflation rate is an indirect effect on foreign direct investment.

Figure 2. 1Conceptual framework of the study



CHAPTER THREE

3. Overview of foreign direct investment inflows trends and its performance

3. 1 overview of Ethiopian Economy

Ethiopian economy mainly depends on agricultural products, which accounts 40% of GDP. Around 80% of Ethiopian population is engaged in the agricultural sector. Most of Ethiopian peoples are they live subsistence life and they are subject to rain- feeding farming activities. The most exported commodities are the agricultural product. Coffee is one of the agricultural products, which earns foreign exchange (CSA, 2019)

In order to see the performance of FDI inflows to Ethiopia two regimes was viewed. The first one is the pre-1991 periods, which discourage the investment sector and practice command economic system. The second period is post 1991, which totally removes the command economic system by replacing it with a market economic system.

3.2 Pre -1991 period

This pre-1991 period was marked with the introduction of socialist economic system in 1974.In 1975 the land reform proclamation was approved, with the aim of transfer land from all privately owned to state owned. In this pre-1991 period, both economic performance and investment performance were very less because of internal political instability and external problems. There is a drought in all parts of the region, civil war; war within a neighboring country, there is also ineffective public spending, which contributes about half of the country budget. In addition, other failure such as inefficient running of state enterprise, ineffective use of agricultural technology, bias in government offices and the closeness of the economy leads a negative contribution of the policy (Alemayehu. G and Degefe, 2005).

The investment environment as a general and FDI inflows as specific was discouraging during this period, because of political instability, drought in all parts of the country and civil war. The government in order to attract FDI inflows declared Joint venture proclamation in 1983. The Joint venture proclamation that was declared in 1983 was proved some incentives for investors, such as tariff protection, income tax free, import and export tax-free. Unfortunately, the joint venture proclamations failed to attract the foreign investors. Moreover, the government revised the proclamation of 1983, by giving different sectors for investors. However, the problem of

internal and external political instability and the civil war in the country leads the Derg regime to overthrow from the power on May 28 1991.

3.3 Post -1991 period

The post -1991 periods began with coming to power of the EPRDF in 1991. After EPRDF/TPLF came to power in 1991, a lot of reform was taken by the government in order to change the economic system from command to free market economic system. The reform was taken with the objective of to change state owned investment to private and planned to integrate the country economy with world economy, poverty reduction, reducing macroeconomic imbalance and improving different infrastructure (MoFED, 2002).

The new government takes some measures to promote the private sector and export sector. Some of this measurement listed as follows:

- Devaluating national currency
- Liberalization of foreign exchange rate
- Eliminating all taxes on exported goods, except for coffee product
- reduction of import tariffs
- offering enough incentive for export sector

The main objective of the government is to increase the role of the private sector in the economy. In 1994, the Ethiopian private agency was launched with the aim of transferring state owned to privately owned enterprises. The reform taken by the government was bringing a lot of positive change, it increased the economic growth, increased GDP per capita, inflation rate was declined, and the investment was increased (MoFED, 2002)

FDI inflows play a great role in economic development and the government gives some incentives such as reduction of import duties, tax holiday in order to attract foreign investor.so the FDI inflows after 1991 dramatically increased. So generally, the performance for FDI inflows to Ethiopia during the Derg regime is poor due to the problem of political instability, civil war and drought. However, the performance of FDI inflows after 1991 is good until recent year, because the government takes different measures to attract foreign investors.

3.4 Institutional and regulatory framework of FDI in Ethiopia

3.4.1 The FDI institutional framework

The Ethiopian investment authority was launched for the purpose of conducting, facilitating, and promoting the FDI in the country. There some of the function of the Ethiopian investment authority, which listed as follows:

- giving information which required by foreign investors
- approving and giving a license for foreign investors
- giving registration service
- issuing work permission for foreign investors
- approving and also registering the agreement on technology between foreign firms and local firms
- monitoring the application of license project
- facilitating about the land for foreign investor accordance with a government laws

The establishment of the Ethiopian investment authority played a great role in the attraction of FDI, by providing different support for investors. Not only Ethiopian investment authority was played a role in the attraction of the FDI , but also there is some of government institution played their own role in the attraction of FDI, such as ministry of finance , ministry of trade, ministry of mining , ministry of tourism, ministry of foreign affairs and revenue and custom authority (UNCTAD, 2002).

in addition to the institution like: ministry of finance , ministry of trade, ministry of mining , ministry of tourism, ministry of foreign affairs and revenue and custom authority , financial institution also played a role in attraction of FDI. There is a growth of financial institutions like bank and insurance, so the growth of this institution can help in the attraction of the FDI. However this financial sector does not free from problem , but they have a problems like poor service they can deliver, and they are not familiar with newly technology (UNCTAD, 2002).

3.4.2 The FDI regulatory framework

Currently the Ethiopian government encourages foreign direct investment to come and invest in Ethiopia in the area, which is permitted for foreign investors. According to proclamation no.1180/2020, any investor can be engaged in any investment activity except the investment area, which is allowed for government and domestic investments. Areas, which reserved for

foreign investors, government and domestic investors, listed some business as follows:

Areas permitted for government

- electric supply and transmission
- postal service
- air transport

Areas permitted for domestic investors

- export and import areas
- areas of hotels
- construction companies, except for grade 1 contractor
- areas of trades such as wholesaler, retailer and broker
- road transport

Areas permitted for foreign investors

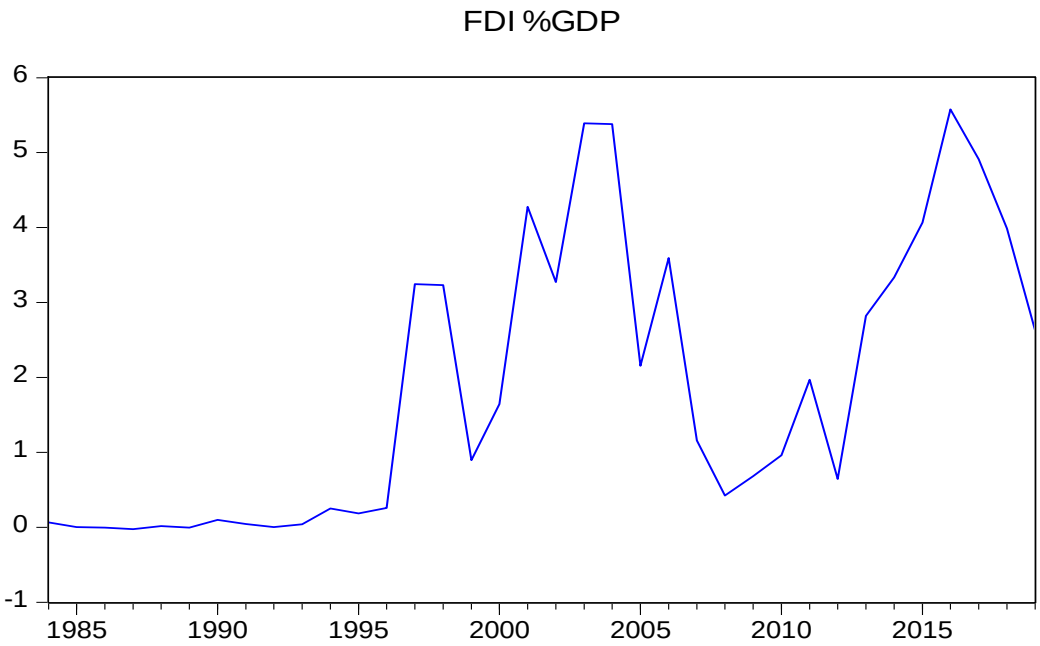
- agricultural sector
- manufacturing sector such as: production of chemicals, beverages, metallic, nonmetallic, and leather production
- education
- health sector
- tourism and hotel and mining and other (UNCTAD, 2004).

The investment declared legislation in Ethiopia gives different incentives for foreign investors and domestic investors, in order to encourage them. The main aim of this incentive is to attract both domestic and foreign investors. These incentives are exemption of taxes on exported goods except for coffee, exemption of import tariffs, tax holidays and the reduction on imported capital goods.

3.5 Tends of Foreign direct investment in Ethiopia

As discussed above when the Derg regime comes to power, the regime replaces a liberal economic system, which encourages some investment by command economic system , which discourages the investment sector in general and FDI inflows in particular. After 1991 EPRDF, replace the command economic system by a free market economic system, which gives high emphases to the private sector. Moreover, the government by taking different measures to attract FDI and giving different incentives for foreign investors.

Figure 3.1 1 trends of foreign direct investment as a percentage of GDP



Source: Authors based on world development indicator data, 2020

Let us see Pre -1991 the trend of FDI inflows and Post -1991 FDI inflows in Ethiopia. When we see first the trend for Post -1991 period of the FDI inflows almost approach to zero, even negative for some period.in period between 1980 -1985, the economy of the country affected badly due to drought in all part of the country. Therefore, during a period of Post-1991 the FDI inflows were very poor because of different problems in the country. The trend for Post-1991 periods shows us the FDI inflows in the country increase gradually. When we see the above trend FDI inflows from 1991 -1998 were increased, due to the government giving great attention in order to attract FDI inflows. However, FDI inflows during a year 1998-2000, were falling because of the Ethio- Eritrean war. From 2008 -2010 falls again due to the collapse of world commodity price, then after it increases. After 2010 to 2016 FDI increased due to economic and overall growth in the country

CHAPTER FOUR

Research Methods and Data Collection

4.1. Data Type and Source

The study depends on time series secondary data, which was collected from domestic and international sources. From a domestic source, National Bank of Ethiopia (NBE) and from external source World Bank (WB), International Monetary Fund (IMF) and UNCTAD was used. The data for real effective exchange rate, inflation rate, gross fixed capital formation and GDP growth rate were obtained from National Bank of Ethiopia while the data for foreign direct investment percentage of GDP, trade openness, and labour force were obtained from UNCTAD.

4.2. Study design and Sample determination

To estimate the model and examine the statistical significance of the explanatory variables on FDI, bound tests for cointegration and error correction model were employed using time-series data. The time period for this study is from 1984-2019. It is selected based on the availability of the data. The variables that are included in the model to carry out this study are growth rate of real gross domestic product, trade openness, real effective exchange rate, inflation, capital formation, and human capital.

4.3. Model specification

Based on different empirical literature reviews, there is no general agreement as to which variable has the most significant impact on FDI. One specific objective of the studies is to determine the most important factors that can influence investor decisions i.e. attract FDI into the country.

The researcher specifies the following econometric model for the determinants of FDI in Ethiopia following (Getinet & Hirut , 2005).

The general form of the model to be estimated has the following form:

$$FDI = f(GRGDP, REER, HC, INF, CF, OPEN) \text{.....(1)}$$

Where

FDI … Net FDI inflows as percentage of GDP

GR GDP …growth rate of Real Gross Domestic Product

REER…Real Effective Exchange Rate

INF … Inflation rate

HC … human capital (labour force growth rate)

CF…...capital formation

OPEN…..Trade openness

The then linear regression equation that will be estimated in this study specified as:

$$FDI_t = \beta_0 + \beta_1 GRGDP_t + \beta_2 HU_t + \beta_3 INF_t + \beta_4 OPEN_t + \beta_5 lREER_t + \beta_6 CF_t + \varepsilon_t .....(2)$$

Where: β's are the elasticity of each explanatory variable, and ε is error term and other variables are as explained before.

4.4 Description of the variables

Foreign direct investment is an investment by investors from other countries for which it has control over it. Foreign direct investment is a long-term investment, happens when a firm controls 10% of voting interest. Also for which residents of one country control over the company a cross border investment exists in other countries.

Market size: Real GDP growth rate used to represent a country's economic record of accomplishment and as an indicator of profitable investment opportunities. It is also included to allow for a systematic relation between cross-border financial activity and the level of development. The economic growth of the country encourages the market demand, in turn the domestic market demand attracts FDI, which we call it marketing seeking. Multinational Corporations are attracted by domestic market size. Therefore, Real GDP growth rate proxy by market size and expected to affect FDI positively.

Gross fixed capital formation: Gross capital formation is the proxy for infrastructure because it takes into account the entire potential infrastructure, like ports, roads; railway and telecommunications. The well-developed infrastructure leads to reducing the cost of doing business for foreign investors, which increase the return for foreign investors (Morisset, J., & Neso, L. O. , 2002). If in the host countries high infrastructure development is available, it increases FDI inflows to the country, so gross capital formation is expected to affect FDI positively.

Trade openness is the ratio of exports plus imports to GDP and expected to have an effect on FDI. Openness assumed to have a positive influence on the inflow of FDI since they facilitate a free trade and investment in conjunction with the repatriation of dividends and profits to home countries (Nabende, 2002).

Human capital: The level of human capital is measured by the labour force growth rate. Some studies such as (Alemayehu.G, 2012), (Reiter, S. L., & Steensma, H. K. , 2010), (Markusen, 2001), and (Rodriguez, X. A., & Pallas, J. , 2008) have shown that improvement in human capital positively related to FDI inflows. According to (Lewis, 1999), human capital is the most determinant of the FDI in developing countries. Hence, the variables are expected to affect FDI positively.

Real effective exchange rate and **consumer price** used as proxy for Macroeconomic stability: there is a widespread perception that macroeconomic stability shows the strength of an economy and provides a degree of certainty of being able to operate profitably (Balasubramanyam, V. N., & Sapsford, D. R., 2001).Low inflation and stable exchange rates expected to have a positive impact on FDI.

4.5 Data processing and Analysis

4.4.1. Unit root test

There is a universal agreement among scholars that time series data on most economic variables are not stationary. According to (Gujarati, 2004), a regression of non-stationary variables give spurious or inconsistent regression, which gives very high R^2 due to time trend and small value of Durbin Watson, that may lead to invalid statistical inferences. One of the symptoms of the spurious regression (nonsense regression) is that the R squared is greater than the Durbin Watson statistics.

In exploring determinants of FDI, the first step is examining the statistical properties of time series data. Particularly, to find the order of integration of order d, written I (d) if it needs differencing d times to achieve stationary. Augmented Dickey-Fuller (ADF) test is performed to check the order of integration i.e. whether the variable is stationary at level or first difference.

4.4.2 Cointegration test

The concept of Cointegration is functional to a wide variety of economic models. If there is equilibrium relationship between among non-stationary variable, in the long run variables does not move together. These linkages among the stochastic trends necessitates that the variables are co integrated. The classical regression model assumes that the dependent and independent variables are stationary over time. However, most economic variables exhibit long run trend movement and only become stationary after difference. Applying the classical regression techniques to the levels of variables leads to a spurious regression, particularly when the variables involved exhibit consistent trends, either upward or downwards, over time. The empirical literature for unit root shows that almost all macro variables are non-stationary in level while they are stationary in difference.

To take care of the non-stationary of the variables confirm whether there exists a long run equilibrium relationship, the Cointegration concept was used. This concept basically refers to the condition that even if individual series are non-stationary (i.e. are I (1) series), if there exists a linear combination of these I(1) series in the regression equation and is stationary, then the regression is not a spurious regression. From economic theory, a group of variables may lie together by the same theory. In empirical work, this relationship can be revealed by Cointegration analysis. A principal feature of cointegrating variables is that their time paths are influenced by the extent of any deviation from the long-run equilibrium.

Moreover, in the case where variables are stationary at differences, it is possible to estimate the model by first difference. However, this gives only the short run dynamics in which case valuable information concerning the long run equilibrium properties of the data could be lost. In order to obtain both the short run and long run relationship one can appeal to what is known as Cointegration. Cointegration among the variables reflects the presence of long run relationships in the system. In general, we need to test for Cointegration because differencing the variables to attain stationary generates a model that does not show the long run behavior of the variables. Hence, testing for Cointegration is the same as testing for long run relationships (Gujarati, 1995). There are different methods that used to examine the relationship between long run and short run of the variables, such as Engle and Granger(1987), Johansen and Juselius(1990). This methods requires that the variables under study should be I(1). But sometimes some variables under investigation are I(1), in which the above methodical procedures does not work. In this study,

Bound test for a cointegration approach is used, which developed by Pesarn and Shin (1999). Therefore, in this study bound test for cointegration preferred to other because of it has an advantage over them, which listed below as follows:

Bound test for cointegration does not require the pre- test of the variables for stationary test or unit root test, because it is applicable for the variable I(0) and I(1). In bound test cointegration both dependent and independent variables are enter in the model with their own lags, unlike Johansen cointegration test which assume the same lags for all variables. Another advantage of the bound test for cointegration it is more efficient in small sample size.

4.4.3 Short run error correction mechanism

After we develop the bound test for cointegration, the next step is to develop the error correction model. Under the cointegration test, we have discussed how the long run relationship between the variables of interest is determined. However, economic variables have short run behavior that can be captured through dynamic modeling. A class of models that represents the concept of correction has been developed and is referred to as the Error Correction Model (ECM). If there is a long run relationship among the variables, an error correction model can be formulated that portray both the dynamic and long run interaction between the variables. In the previous section, we show that if two variables that are non-stationary in levels have a stationary linear combination then the two variables are co integrated the Granger representation theorem can express their relationship expressed as ECM (Gujarati, 2004).Cointegration means the presence of error correcting representation. That is, any deviation from the equilibrium point will revert to its long run path.

The representation of ECM follows:

$$\Delta FDI_t = \alpha_0 + \alpha_1 \sum_{i=1}^{p} \Delta FDI_{t-i} + \alpha_2 \sum_{i=1}^{q} \Delta GRGDP_{t-i} + \alpha_3 \sum_{i=1}^{q} \Delta REER_{t-i} + \alpha_4 \sum_{i=1}^{q} \Delta INF_{t-i} +$$
$$\alpha_5 \sum_{i=1}^{q} \Delta GFCF_{t-i} + \alpha_6 \sum_{i=1}^{q} \Delta OPEN_{t-i} + \alpha_7 \sum_{i=1}^{q} \Delta GRLF_{t-i} + \lambda ECM_{t-1} + \nu_T \ldots\ldots\ldots\ldots (3)$$

Where

α_0, α_s -are constant, coefficient of difference explanatory variables

λ -Coefficient of error correction model and it is a negative value that shows the speed of adjustment, which means any shock in short run, converges to its long run equilibrium

ECM_{t-1} -Error correction by one lag period

The result of the error correction model indicates the speed of adjustment back to long run equilibrium after a short run shock.

4.4.4 Diagnostic test

Several diagnostic tests are vital to ensure the goodness of fit of the model. Before we run an ARDL model there are some diagnostic estimation tests that are important to run. These tests are Jarque-Bera test for normality of residual, Breusch –Pagan- Godfrey for the presence of heteroscedasticity of the residuals and stability of the model, serial correlation, multicollinearity and functional form.

4.4.4.1 Autocorrelation

The term autocorrelation is defined as a correlation of a series in time series data. Serial correlation is a time series problem. It happens; when error terms correlate with each other in different time. Classical linear regression models assume that such autocorrelation among the disturbance term does not exist (Gujarati, 2004). If the assumption of classical linear regression model does not satisfy that, if error term in a particular time correlated with error term in other time we can say that there is autocorrelation of error term.

4.4.4.2 Heteroskedasticity

Heteroskedasticity refers to the distribution of error terms. When the distribution of error term are not the same for all observation, or if the assumption of classical linear regression model which known as homoscedasticity is violated we can say it error terms has a problem of heteroscedasticity.

4.4.4.3 Multicollinearity

It is a situation where the explanatory variables are highly intercorrelated and referred to as Multicollinearity. This makes it difficult to disentangle the separate effects of each of the explanatory variables on the explain variable (Maddala, 1984). Therefore, the study uses VIF (variance-inflation factor) to identify whether the explanatory variables are collinear or not.

4.4.4.4 Normality

Another assumption classical linear regression model is that disturbance terms are normally distributed. The study uses the Jarque Bera test, in order to identify whether data series are normally distributed or not.

4.4.4.5 Stability Test

It is important to test the stability of the model before further analysis, because it affects the validity of the result. The stability of the model can be checked using cumulative sum of squares of recursive residuals (CUSMSQ) and cumulative sum of recursive residuals (CUSUM).

If the cumulative sum of squares of recursive residuals (CUSMSQ)and cumulative sum of recursive residuals (CUSUM) goes outside the two critical line we reject the null hypothesis of correct specification of the model and we conclude the model has does not satisfy stability condition and vice versa.

CHAPTER FIVE

RESULTS AND DISCUSSION

5.1 Unit root test/stationary test of the variables

Most time series data contains unit root problems and regression results of this data are spurious. It is important to check whether the series follows stationary series process or not. Because the estimation results using non-stationary series gives us what known as spurious or fake regression. The researcher use Augmented Dickey Fuller test to identify whether variables are stationary or not.

Table 5. 1: Augmented Dickey-Fuller test

At level						
Variables	**With Constant**		**With Constant and trend**		**Without Constant and trend**	
	t-statistic and prob*	t-critical at 5%	t-statistic and prob*	t-critical at 5%	t-statistic and prob*	t-critical at 5%
FDI%GDP	(-2.243) 0.195	(-2.948)	(-2.838) 0.1938	(-3.544)	(-1.383) 0.1698	(-1.950)
GDP growth rate	(-4.188) *** 0.0024	(-2.954)	(-5.817) *** 0.0002	(-3.548)	(-0.812) 0.3564	(-1.951)
GFCF	(-2.575) 0.107	(-2.851)	(-3.897)** 0.023	(-3.552)	(-1.726)* 0.079	(-1.950)
Inflation	(-1.855) 0.3483	(-2.954)	(-2.053) 0.5515	(-3.552)	(-0.965) 0.2921	(-1.951)
Openness	(-1.526) 0.5089	(-2.948)	(-1.042) 0.9245	(-3.544)	(-0.222) 0.5988	(-1.950)
REER	(-2.447) 0.1368	(-2.948)	(-2.357) 0.3941	(-3.544	(-0.885) 0.3254	(-1.950)
LFGR	(-9.089) *** 0.0000	(-2.948)	(-9.172) *** 0.0000	(-3.544)	(-1.283) 0.1797	(-1.951)
At first difference						
Variables	**With Constant**		**With Constant and trend**		**Without Constant and trend**	
	t-statistic and prob*	t-critical at 5%	t-statistic and prob*	t-critical at 5%	t-statistic and prob*	t-critical at 5%
FDI%GDP	(-6.800)* ** 0.0000	(-2.951)	(-6.695) *** 0.0000	(-3.548)	(-6.873) *** 0.0000	(-1.951)
GDP growth rate	(-5.661) *** 0.0000	(-2.948)	(-5.669) *** 0.0000	-3.544	(-4.567) *** 0.0000	(-1.951)

GFCF	(-9.409) *** 0.0000	(-2.957)	(-13.107) *** 0.0000	(-3.557)	(-8.229) *** 0.0000	(-1.951)
Inflation	(-8.194) *** 0.0000	(-2.954)	(-8.056) *** 0.0000	(-3.552)	(-8.323) *** 0.0000	(-1.951)
Openness	(-5.679) *** 0.0000	(-2.951)	(-5.855) *** 0.0002	(-3.548)	(-5.746) *** 0.0000	(-1.951)
REER	(-7.245) *** 0.0000	(-2.951)	(-7.327) *** 0.0000	(-3.548)	(-7.346) *** 0.0000	(-1.951)
LFGR	(-6.373) *** 0.0000	(-2.957)	(-6.260) *** 0.0001	(-3.557	(-6.476) *** 0.0000	(-1.951)

Source: Eview 9 own computation

*, **, and *** indicates a variable that is significant at 1%, 5% and 10% respectively.

The above result of the Augmented Dickey Fuller test revealed that, all variables, except Real GDP growth rate, gross fixed capital formation and Labour force growth rate are not stationary in their level, but they are stationary at first difference. Some variables are I(0) and others I(1), this shows that there is different order of integration among variables, so when series are integrated of different order the use of Johansen Cointegration approach does not appropriate ,It is better to use ARDL bound test for Cointegration (Pesaran, M. H., Shin, Y., & Smith, R. J, 2001).

5.2 Bound test for Cointegration

The first step in the ARDL approach is to test the presence of the long run relationship between the variables. The Cointegration is done using a bound test by considering F-statistic. The bound test assumes that the variables are integrated of order zero or integrated of order one.

Ho: No Cointegration

H1: There is Cointegration

Decision criteria for bound test: If the calculated F-statistic is greater than the critical value of upper bound I(1), we conclude that there is a cointegration. In that case there is long run cointegration or the rejection of the null hypothesis of no cointegration equation, while if the calculated F-statistic is lower than critical value of lower bound I(0), we conclude that there is no cointegration. If there is no long run cointegration or we fail to reject the null hypothesis of no cointegration equation and if the calculated F-statistic lies between upper bound I(1), and lower bound I(0), we conclude that the test is inconclusive.

Table 5. 2: Bound test for Cointegration

ARDL Bounds Test			
Null Hypothesis: No long-run relationships exist			
Test Statistic	Value	K	
F-statistic	6.168420	6	
Critical Value Bounds			
Significance	I0 Bound	I1 Bound	
10%	2.12	3.23	
5%	2.45	3.61	
2.5%	2.75	3.99	
1%	3.15	4.43	

Source: Eview 9 result

The calculated F-statistic is **6.16**, which is above the upper and lower bound test. The critical value of the upper bound test is **4.43** at 1% significance level. That means the null hypothesis of no Cointegration can be rejected, which implies FDI is cointegrated with other explanatory variables. Therefore, there exists a long run relationship between the variables.

5.3 Diagnostic Tests

5.3.1 Serial Correlation

Serial correlation is a time series problem. It happens when error terms correlate with each other at different times. One of the classical linear regression models assumption is cov (ui, uj) = zero, for i is not equal to j. This assumption is violated when error terms are correlated. The study used Breusch-Godfrey test to check whether errors term correlated or not (Gujarati, 2003).

The hypothesis developed as follows:

Ho: No serial correlation among error terms

H1: Serial correlation among error terms

If the p- value is greater than 5% level of significance we fail to reject the null hypothesis of no serial correlation among error terms, rather we are forced to accept it and reject the alternative hypothesis of there is serial correlation among error terms.

Table 5. 3: ***Breusch-Godfrey Serial Correlation LM Test***

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.556006	Prob. F(2,18)	0.5830
Obs*R-squared	1.978253	Prob. Chi-Square(2)	0.3719

Source: Eview 9 result

The above result shows that the probability value is greater than 5% level of significance, so we fail to reject the null hypothesis. P-value is about 37.1%, which is greater than the 5% level of significance. Therefore, the model has no problem with serial correlation; we can use the ARDL model.

5.3.2 Heteroscedasticity test

One of the classical linear regression model assumptions is that error terms have equal /constant variance across all explanatory variables. If an error, term has no equal variance it leads to a problem of heteroscedasticity. The study used Breusch-Pagan test to check whether error terms are constant variance or not. The hypothesis developed as follows:

Ho: Residual are homoscedastic

H1: Residual are heteroscedastic

If the p-value is greater than 5% we accept the null hypothesis of residual are homoscedastic and we reject the alternative hypothesis of residual are heteroscedastic.

Table 5. 4: Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.737790	Prob. F(13,20)	0.7092
Obs*R-squared	11.02025	Prob. Chi-Square(13)	0.6091
Scaled explained SS	2.934859	Prob. Chi-Square(13)	0.9982

Source: Eview 9 result

The result from the above table shows that the probability value of R-squared is about 60.9%, which is greater than 5%, so we fail to reject the null hypothesis that residuals are homoscedastic. Therefore, there is no problem of Heteroscedasticity.

5.3.3 Test for Multicollinearity

An important assumption for the multiple regression models is that independent variables are not perfectly multicolinear. Regressors should not be a linear function of another. When multicollinearity is present, standard errors may be inflated. The variable with highest VIF will be dropped to avoid a division by zero in the time series procedure (Stock, J. H., & W Watson, M, 2003). To detect multicollinearity, the paper used VIF or Variance Inflation Factor .The larger the mean value of VIF, the more some variable occurred. If the mean VIF exceeds 10, that variable is highly collinear.

Table 5. 5 Multicollinearity Test

Variable	VIF	1/VIF
Reer	2.50	0.400063
Openness	2.41	0.414523
Inflation	1.43	0.699284
gdp growth rate	1.09	0.914296
Gfcf	1.04	0.958648
Labour force growth rate	1.02	0.981972
Mean VIF	1.58	

Source: own computation

In order to solve the problem of multicollinearity the researcher dropped GDP per capita, because of that the variable has perfect collinear with GDP growth rate and both of them which measures market size. Then after mean VIF (1.58) shows that, there is no multicollinearity among variables. If the Mean of VIF value were greater than 10, then we would say there is a problem of multicollinearity. However, it is by far less than 10 implying there is no problem of multicollinearity in this estimation.

5.3.4 Normality test

The violation of the normality assumption is not a serious issue like that of the serial correlation and heteroscedasticity. To test the normality of the error term, the study used the Jarque-Bera test.

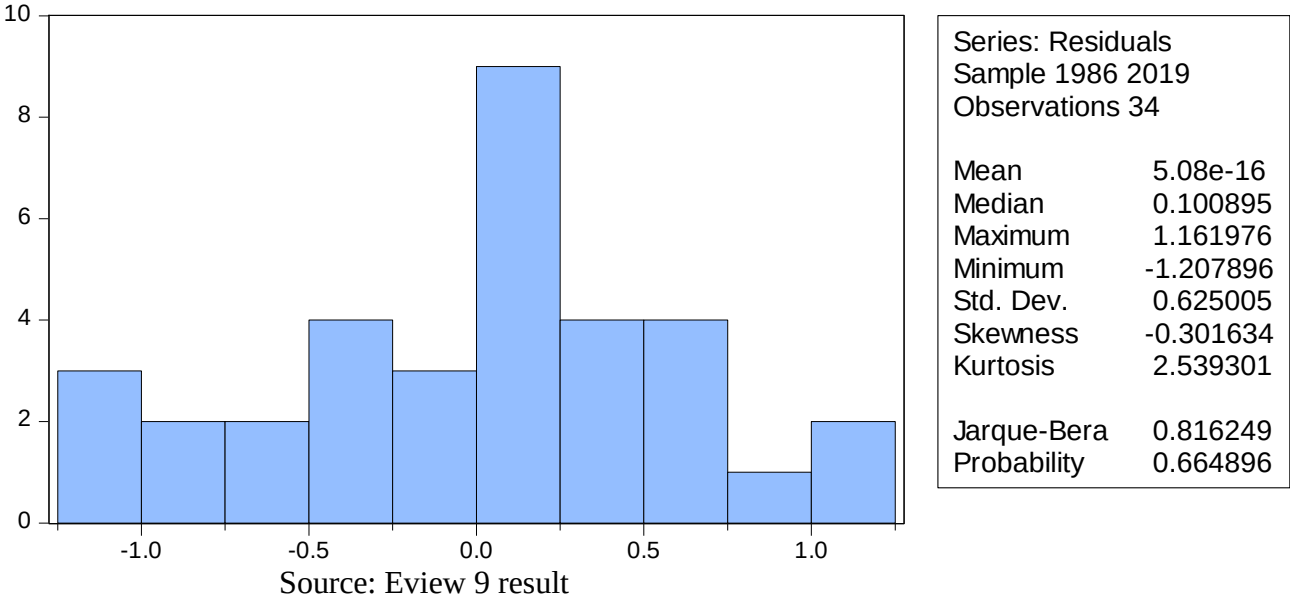
Hypothesis developed as follows:

Ho: Error terms are normally distributed

H1: Error terms are not normally distributed

Decision rule: If the P-value is greater than 5% level of significance, we fail to reject the null hypothesis of error terms being normally distributed and we reject the alternative hypothesis of error terms not normally distributed.

Figure 5. 1 normality test



Source: Eview 9 result

The above result revealed that residuals are normally distributed, because the P-value of the Jarque-Bera test is about 66.4%, which is greater than the 5% level of significance.

5.3.5 Ramsey RESSET Test

Ramsey RESSET test represents regression specification error test. Ramsey RESSET test examines whether a model has an omitted variable or not. If the p- value is, greater than 5% the model is free from specification error.

Table 5. 6 Ramsey RESET Test

Ramsey RESET Test			
Omitted Variables: Squares of fitted values			
	Value	Df	Probability
t-statistic	1.181299	19	0.2521
F-statistic	1.395468	(1, 19)	0.2521

Source: Eview 9 result

The above result revealed that the p- value 25.2% is greater than the 5% level of significance so we fail to reject the null hypothesis that the model has omitted variables. Therefore, the model is free from model specification error.

5.3.5 Stability test

It is important to test stability of the model before further analysis, because it affects validity of the result. The study used the graph plot of Cumulative Sum (CUSUM) and Cumulative Sum Square (CUSUMSQ) within 5% critical line, to test the stability of the model. If the Cumulative Sum (CUSUM) and Cumulative Sum Square (CUSUMSQ) remain in two critical line we fail to reject the null hypothesis of correct specification of the model and if the Cumulative Sum (CUSUM) and Cumulative Sum Square (CUSUMSQ) goes outside the two critical line we reject the null hypothesis of correct specification of the model and we conclude the model has does not satisfy stability condition.

Figure 5. 2Cumulative sum (CUSUM) graph at 5% significance level

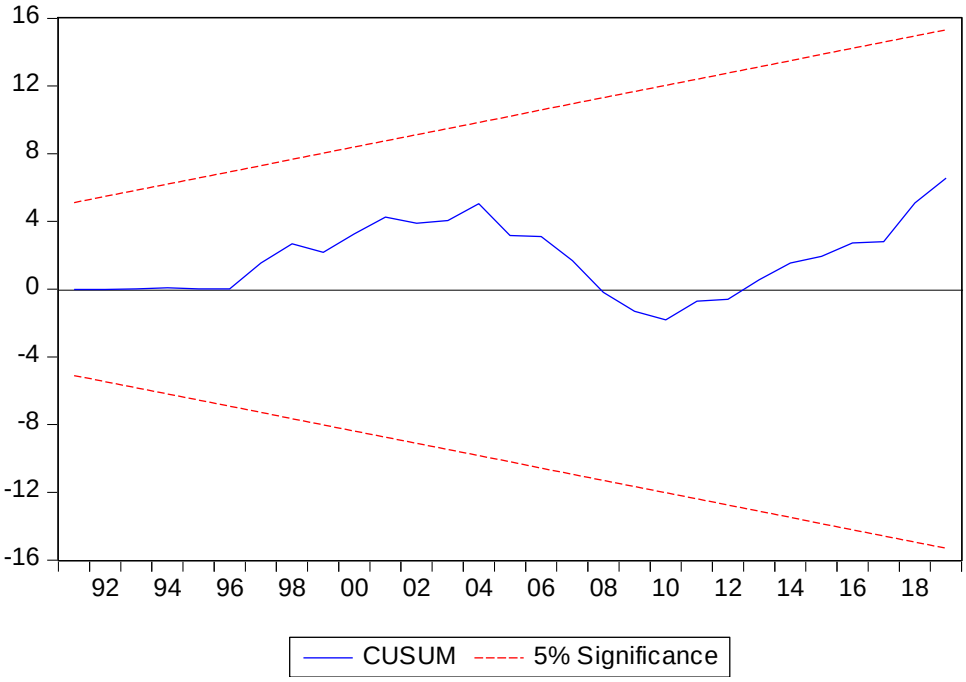
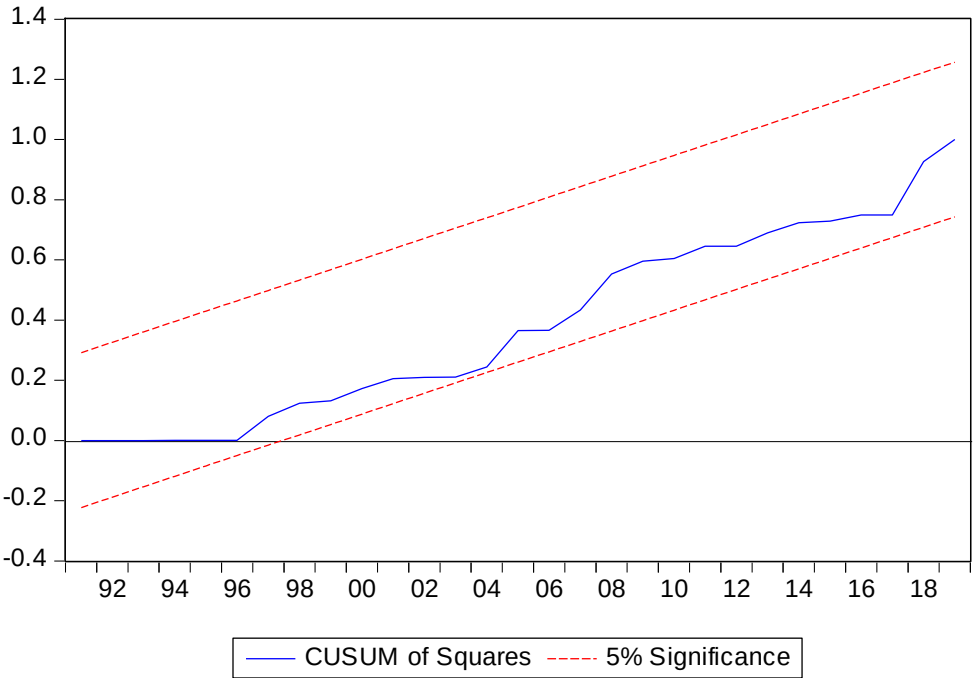


Figure 5. 3 Cumulative sum Square (CUSUMSQ) graph at 5% significance level



Source: Eview 9 result

The above two graphs i.e Cumulative sum and Cumulative sum Square show that all dots are in the boundary of 5% critical line. The plot of Cumulative sum and Cumulative sum Square remained between the 5% critical bound which proves the stability of the model, so the model satisfies the stability condition.

5.4 Long Run of Model Estimation using ARDL Approach (2, 1, 1, 1, 1, 1, 0)

Table 5.7 Long Run of Model Estimation

Long Run Coefficients Target variable FDI%GDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP_GROWTH_RATE	1.920006	2.390597	0.803149	0.4313
GFCF	0.000008	0.000002	4.568272	0.0002
INFLATION	-0.164910	0.044388	-3.715160	0.0014
LABOUR FORCE GROWTH RATE	0.414967	0.240291	1.726933	0.0996
OPENNESS	0.129651	0.036790	3.524110	0.0021
REER	0.013050	0.007173	1.819430	0.0838
C	-5.243358	2.124446	-2.468106	0.0227

Source: author computation based on NBE and World Bank data using Eview 9

The above long run result revealed that all the variables significantly affect the foreign direct investment in Ethiopia except GDP growth rate, which is insignificant to affect the foreign direct investment in Ethiopia. In the long run all variables are the expected sign. In the long run GDP growth rate, gross fixed capital formation, labour force growth rate, openness of trade and real effective exchange rate affect positively foreign direct investment in Ethiopia and inflation affect negatively foreign direct investment in Ethiopia. Variables like; gross fixed capital formation, labour force growth rate, openness of trade, real effective exchange rate and inflation significantly affect foreign direct investment in Ethiopia and GDP growth rate insignificant to affect FDI in Ethiopia in. The long run model written as follows with statically significant variables and p- values in parenthesis:

$$FDI\%GDP_t = \underset{}{-5.243} + \underset{(0.0002)}{0.000008}GFCF_t - \underset{(0.0014)}{0.1649}INFLATION_t + \underset{(0.0996)}{0.414}LFgrowth\ rate_t + \underset{(0.0021)}{0.129}OPPPNESS_t + \underset{(0.0838)}{0.013}REER_t$$

Market size variables is RGDP growth rate has a positive sign, but not significant to explain the foreign direct investment inflows in Ethiopia. Market size is not an important determinant to measure FDI inflows in Ethiopia.

Gross fixed capital formation measures infrastructure development. It includes all types of infrastructure with expected positive sign and significant at 1% level of significance. The coefficient gross fixed capital formation is very small because of the dependent variable i.e. FDI measured in percentage of GDP. Gross fixed capital formation is the most determinant variable that measures FDI inflows to Ethiopia. The study is consistent with findings of (Kumar,1994; Asidu 2002; Mody and wheeler 1992).

Inflation used to measure macroeconomic stability. It has found to be expected negative sign and significant at 1% level of significance. One percent increase changes in inflation rate cause to changes FDI inflows in Ethiopia decreases by 0.16 percent. The find implies that macroeconomic stability is the most important determinant of FDI inflows in Ethiopia. The study is consistent with findings of (Amanuel, 2014), (Hirut and Getinet, 2006), (Nadu, 2009), and (Balasublamanyam, 2001).

Openness measured as a ratio of import plus export to gross domestic product. It was found to be an expected positive sign and significant at 1%. Given that other things remains constant, one percent increase in trade openness causes inflows foreign direct investment in Ethiopia to increase by 0.12 percent. Trade openness is the most important determinant of foreign direct investment inflows in Ethiopia. The result is also consistent with findings in (Hirut and Getinet, 2006), (Asidu, 2011), (Singh and Jun 1995) and (Edwards, 1990).

Labour force is a human capital indicator variable. Labour force growth used to measure availability of adequate and skilled labour force. The coefficient of the labour force growth rate is significant at 10% level of significance and it is with expected positive sign. Other things remain constant one percent increase changes the labour force growth rate cause changes FDI inflows in Ethiopia increase by 0.00996 percent. Increase in labour force leads to decrease in cost of labour, which means that, increase in labour force reduces the cost of doing business, which in turn increases FDI inflows. The result is also consistent with findings in (Lewis, 1999; Nunnenkamp, 2000).

Real effective exchange rate: one of the variables, which represent to measure the macroeconomic stability and its represent a nation nominal effective exchange rate adjusted for inflation rate in home country. Coefficient of real effective exchange rate is significant at 10% level of significance with positive sign. One percent depreciation of real effective exchange rates would increase FDI inflows by 0.0838 percent. Increase real effective exchange rate means that

the deprecation of local currency, which leads, increases the flows of the FDI in the country. The study is consistent with findings of (Djulius, 2007), (Buch, C. M., & Kleinert, J., 2008), and (Freidin, 2018).

5.5 Error correction result model ARDL Approach (2, 1, 1, 1, 1, 1, 0)

Table 5. 8 *Error correction result model*

Error correction model				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI__GDP(-1))	-0.276367	0.138874	-1.990062	0.0604
D(GDP_GROWTH_RATE)	-0.823518	0.931243	-0.884321	0.3870
D(GFCF)	0.000003	0.000001	1.995531	0.0598
D(INFLATION)	-0.053271	0.017819	-2.989523	0.0072
D(LABOUR FORCE GROWTH RATE)	0.035668	0.071723	0.497298	0.6244
D(OPPNESS)	-0.013256	0.030800	-0.430384	0.6715
D(REER)	0.007648	0.004082	1.873731	0.0757
CointEq(-1)	-0.586072	0.128871	-4.547736	0.0002

Source: based on NBE and World Bank data using Eview 9

Error correction term highly significant, shows that the presence of stable long run relationship (Benejee et al, 2003). The above result shows that error correction term highly significant. The estimated coefficient is about – 0.586 with prob* 0.0002, which is statistically significant. Error correction coefficient gives the speed of adjustments within which the model will restore its equilibrium following any disturbance. From the above result, the coefficient of error term is negative and statically significant which is -0.586 indicating that there is a convergence from the short dynamics towards long run equilibrium or a deviation by an explanatory variables that would be converted by the speed of 58.6% in the long run per year or 58.6% disequilibrium from previous year shock converges to long run equilibrium in the current year.

The error correction model written as follows with statically significant variables and p- values in parenthesis:

D(FDI_GDP=-0.276D(FDI_GDP(-1))+0.000D(GFCF)-0.053D(INFLATION)+0.007D(REER)
(0.0757) (0.0604) (0.0598) (0.0072)

According to the above result, FDI is affected by its own lag, gross fixed capital formation, inflation rate and real effective exchange rate. GDP growth rate, labour force growth rate and trade openness does not affect significantly FDI inflows in Ethiopian in short run, which is there porb* is greater than 5% . Lag of FDI and inflation rate affect negatively while gross fixed capital formation and real effective exchange rate affect positively FDI inflows in Ethiopia in the short run. Lag of FDI, gross fixed capital formation and real effective exchange rate significantly affect FDI inflows in short at 10% level of significance while inflation rate significantly affect at 5% level of significance.

CHAPTER SIX

CONCLUSION AND POLICY IMPLICATION

6.1 CONCLUSION

This study examined the determinant of FDI inflows in Ethiopia in short run and long run using time series data from 1984-2019. I reviewed both theoretical and empirical explanation related to the determinant of FDI, in the context of developed countries, developing countries, and Ethiopia. Stationary test was under taken before estimation using ADF test, variables are I(0) and I(1), which shows different order of integration among variables, and forced us to use ARDL bound test for cointegration. The result of the study shows that long run association between FDI inflows to Ethiopia and its determinants i.e. GDP growth rate, gross capital formation, labour force growth rate, trade openness, inflation and real effective exchange rate.

Empirical analysis of the study show that in the long run gross capital formation and trade openness has affects FDI positively while inflation rate has affect negatively FDI inflows and statistically significant at 5% . In addition, real effective exchange rate and labour force growth rate has affect FDI inflows positively and statistically significant at 10% while GDP growth rate has positive effect on FDI inflows in Ethiopia in the long run but not statistically significant.
In the short run GDP growth rate and trade openness has a negative effect on FDI inflows and they are statistically not significant while gross capital formation and real effective exchange rate has a positive effect on FDI and statistically significant at 10% and inflation rate has negative impact on FDI and statically significant at 5%.

6.2 POLICY IMPLICATION

The researcher recommends the following policy implication:

- Positive and significant impact gross fixed capital formation indicates that the importance of available infrastructure development which leads the reduction of cost of doing business. Therefore, the concerned body especially government should facilitate infrastructure development such as, telecommunication, road transport, electricity and other in order to increase the FDI inflows to the country, since it has a significant impact on the attraction of FDI.

- Positive and significance of the trade openness revealed that as country economy became more openness it increases FDI inflows, increase the welfare of people, and capital inflows to the country. Currently in Ethiopia, the export is very small in comparison to import so the government should have to increase the export sector and regarding trade openness; the government should give a more outward looking growth strategy.
- Negative coefficient and significance of the inflation rate indicate that the importance of macroeconomic stability and policy environment that strengthen the economy of the country and builds the confidence for investors. Therefore, the government needs strong monetary and fiscal policy in order to reduce inflation rate because high inflation rate leads to reduce the business benefit, which in return reduce the FDI inflows to the country.

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Appendixes

Appendix: 1 Augmented Dickey-Fuller test

At level						
Variables	**With Constant**		**With Constant and trend**		**Without Constant and trend**	
	t-statistic and prob*	t-critical at 5%	t-statistic and prob*	t-critical at 5%	t-statistic and prob*	t-critical at 5%
FDI%GDP	(-2.243) 0.195	(-2.948)	(-2.838) 0.1938	(-3.544)	(-1.383) 0.1698	(-1.950)
GDP growth rate	(-4.188) *** 0.0024	(-2.954)	(-5.817) *** 0.0002	(-3.548)	(-0.812) 0.3564	(-1.951)
GFCF	(-2.575) 0.107	(-2.851)	(-3.897)** 0.023	(-3.552)	(-1.726)* 0.079	(-1.950)
Inflation	(-1.855) 0.3483	(-2.954)	(-2.053) 0.5515	(-3.552)	(-0.965) 0.2921	(-1.951)
Openness	(-1.526) 0.5089	(-2.948)	(-1.042) 0.9245	(-3.544)	(-0.222) 0.5988	(-1.950)
REER	(-2.447) 0.1368	(-2.948)	(-2.357) 0.3941	(-3.544	(-0.885) 0.3254	(-1.950)
LFGR	(-9.089) *** 0.0000	(-2.948)	(-9.172) *** 0.0000	(-3.544)	(-1.283) 0.1797	(-1.951)
At first difference						
Variables	**With Constant**		**With Constant and trend**		**Without Constant and trend**	
	t-statistic and prob*	t-critical at 5%	t-statistic and prob*	t-critical at 5%	t-statistic and prob*	t-critical at 5%
FDI%GDP	(-6.800)* ** 0.0000	(-2.951)	(-6.695) *** 0.0000	(-3.548)	(-6.873) *** 0.0000	(-1.951)
GDP growth rate	(-5.661) *** 0.0000	(-2.948)	(-5.669) *** 0.0000	-3.544	(-4.567) *** 0.0000	(-1.951)
GFCF	(-9.409) *** 0.0000	(-2.957)	(-13.107) *** 0.0000	(-3.557)	(-8.229) *** 0.0000	(-1.951)
Inflation	(-8.194) *** 0.0000	(-2.954)	(-8.056) *** 0.0000	(-3.552)	(-8.323) *** 0.0000	(-1.951)
Openness	(-5.679) *** 0.0000	(-2.951)	(-5.855) *** 0.0002	(-3.548)	(-5.746) *** 0.0000	(-1.951)
REER	(-7.245) *** 0.0000	(-2.951)	(-7.327) *** 0.0000	(-3.548)	(-7.346) *** 0.0000	(-1.951)
LFGR	(-6.373) *** 0.0000	(-2.957)	(-6.260) *** 0.0001	(-3.557	(-6.476) *** 0.0000	(-1.951)

Appendix: 2 Bound test for cointegration

ARDL Bounds Test

Date: 05/08/21 Time: 04:24

Sample: 1984 2019

Included observations: 34

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	6.168420	6

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Appendix:3 Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.556006	Prob. F(2,18)	0.5830
Obs*R-squared	1.978253	Prob. Chi-Square(2)	0.3719

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 05/08/21 Time: 04:28

Sample: 1984 2019

Included observations: 34

Presample missing value lagged residuals set to zero.

Appendix :4 Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.737790	Prob. F(13,20)	0.7092
Obs*R-squared	11.02025	Prob. Chi-Square(13)	0.6091
Scaled explained SS	2.934859	Prob. Chi-Square(13)	0.9982

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

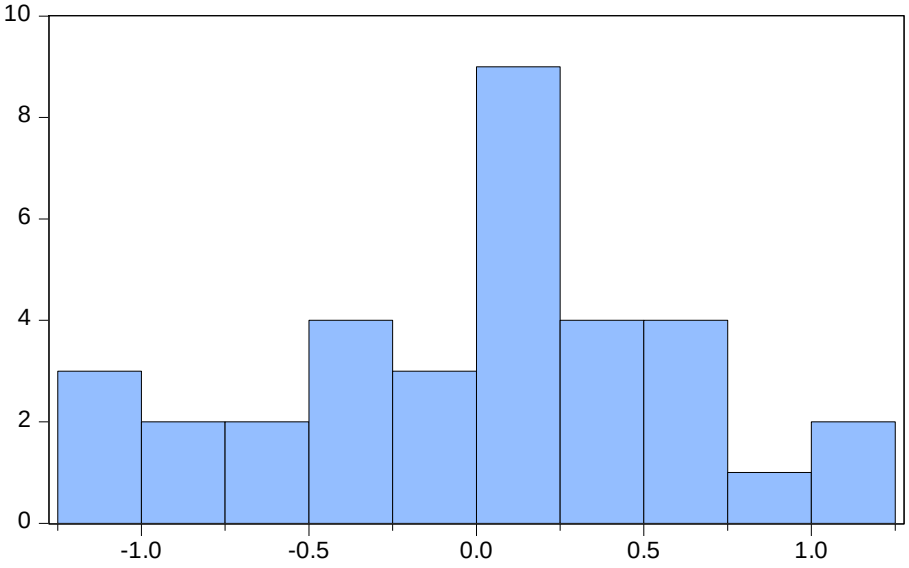
Date: 05/08/21 Time: 04:30

Sample: 1984 2019

Appendix 5: Multicollinearity Test

VIF		
Variable	VIF	1/VIF
Reer	2.50	0.400063
Openness	2.41	0.414523
Inflation	1.43	0.699284
gdp growth rate	1.09	0.914296
Gfcf	1.04	0.958648
Labour force growth rate	1.02	0.981972
Mean VIF	1.58	

Appendix: 6 normality test



Series: Residuals
Sample 1986 2019
Observations 34

Mean	5.08e-16
Median	0.100895
Maximum	1.161976
Minimum	-1.207896
Std. Dev.	0.625005
Skewness	-0.301634
Kurtosis	2.539301
Jarque-Bera	0.816249
Probability	0.664896

Appendix:7 Ramsey RESET Test

Ramsey RESET Test

Equation: UNTITLED

Specification: FDI__GDP FDI__GDP(-1) FDI__GDP(-2) GDP_GROWTH_RATE GDP_GROWTH_RATE(-1) GFCF_IN_MILLION GFCF_IN_MILLION(-1) INFLATION INFLATION(-1) LABOURFORCEGROWTHRATE LABOURFORCEGROWTHRATE(-1) OPPNESS OPPNESS(-1) REER C

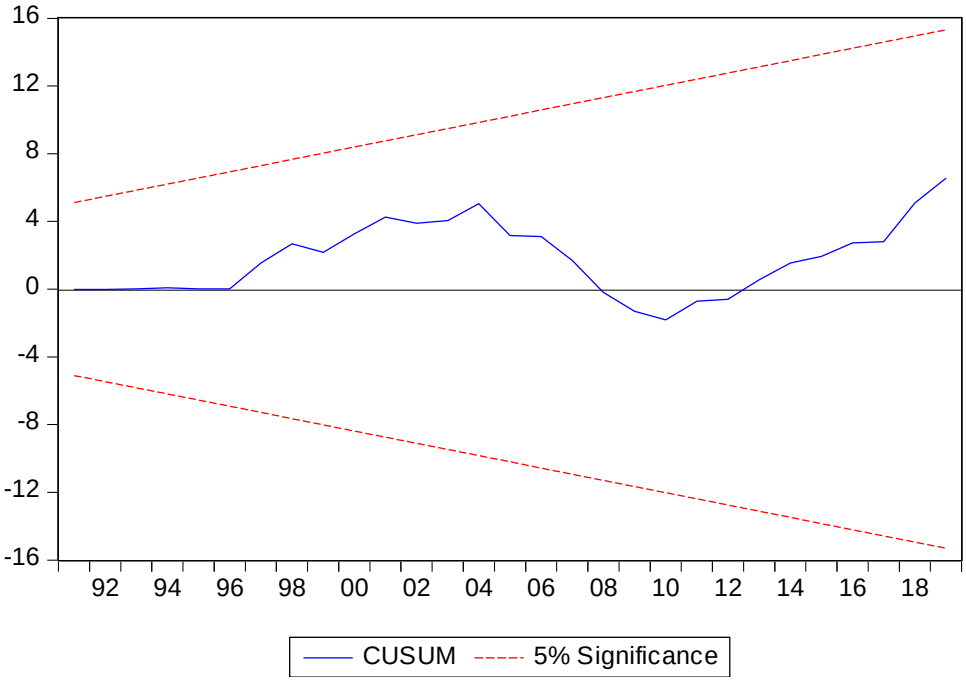
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	1.181299	19	0.2521
F-statistic	1.395468	(1, 19)	0.2521

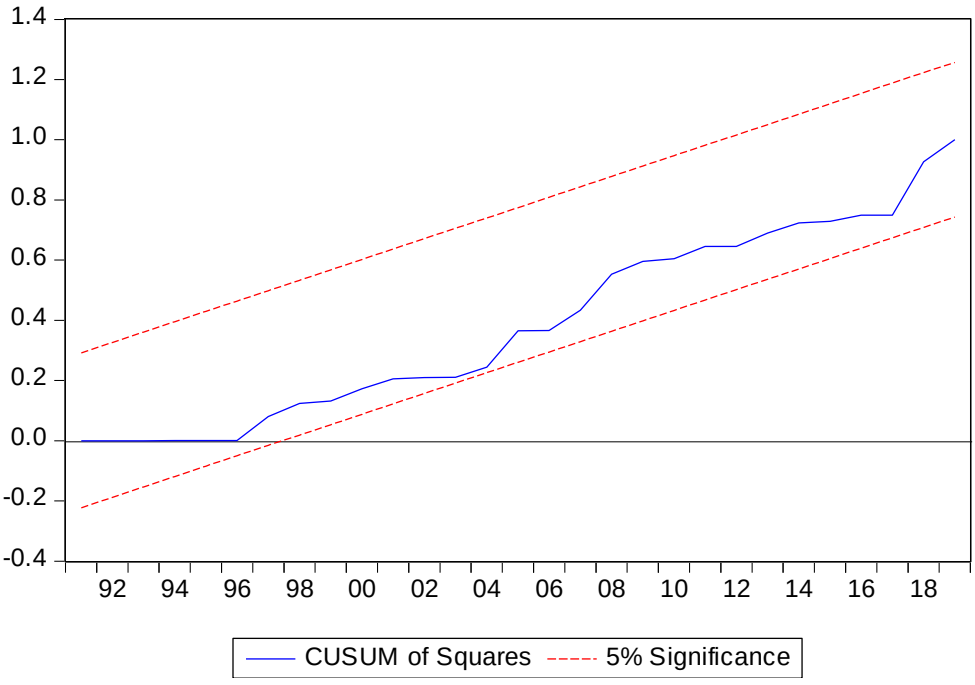
F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.881998	1	0.881998
Restricted SSR	12.89085	20	0.644542
Unrestricted SSR	12.00885	19	0.632045

Appendix: 8 CUSUM Stability



Appendix: 9 CUSUMSQ stability



Appendix 10: Autoregressive Distributive lag (ARDL) Estimation

Dependent Variable: FDI__GDP
Method: ARDL
Date: 05/08/21 Time: 08:55
Sample (adjusted): 1986 2019
Included observations: 34 after adjustments
Maximum dependent lags: 2 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (2 lags, automatic): GDP_GROWTH_RATE
GFCF_IN_MILLION INFLATION LABOURFORCEGROWTHRATE
OPPNESS REER
Fixed regressors: C
Number of models evalulated: 1458
Selected Model: ARDL(2, 1, 1, 1, 1, 1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
FDI__GDP(-1)	0.137561	0.169096	0.813512	0.4255
FDI__GDP(-2)	0.276367	0.138874	1.990062	0.0604
GDP_GROWTH_RATE	-0.823518	0.931243	-0.884321	0.3870
GDP_GROWTH_RATE(-1)	1.948779	0.869902	2.240227	0.0366
GFCF_IN_MILLION	2.59E-06	1.30E-06	1.995531	0.0598
GFCF_IN_MILLION(-1)	2.22E-06	1.44E-06	1.537883	0.1397
INFLATION	-0.053271	0.017819	-2.989523	0.0072
INFLATION(-1)	-0.043378	0.021476	-2.019823	0.0570
LABOURFORCEGROWTHRATE	0.035668	0.071723	0.497298	0.6244
LABOURFORCEGROWTHRATE(-1)	0.207533	0.058725	3.533967	0.0021
OPPNESS	-0.013256	0.030800	-0.430384	0.6715
OPPNESS(-1)	0.089240	0.031108	2.868724	0.0095
REER	0.007648	0.004082	1.873731	0.0757
C	-3.072984	1.122347	-2.737998	0.0127

R-squared	0.890401	Mean dependent var	1.973859
Adjusted R-squared	0.819161	S.D. dependent var	1.887906
S.E. of regression	0.802834	Akaike info criterion	2.691563
Sum squared resid	12.89085	Schwarz criterion	3.320065
Log likelihood	-31.75658	Hannan-Quinn criter.	2.905900
F-statistic	12.49871	Durbin-Watson stat	1.678602
Prob(F-statistic)	0.000001		

Appendix :11 Long Run of Model Estimation and Error correction result model

ARDL Cointegrating And Long Run Form

Dependent Variable: FDI__GDP

Selected Model: ARDL(2, 1, 1, 1, 1, 1, 0)

Date: 05/08/21 Time: 04:38

Sample: 1984 2019

Included observations: 34

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI__GDP(-1))	-0.276367	0.138874	-1.990062	0.0604
D(GDP_GROWTH_RATE)	-0.823518	0.931243	-0.884321	0.3870
D(GFCF_IN_MILLION)	0.000003	0.000001	1.995531	0.0598
D(INFLATION)	-0.053271	0.017819	-2.989523	0.0072
D(LABOURFORCEGROWTHRATE)	0.035668	0.071723	0.497298	0.6244
D(OPPNESS)	-0.013256	0.030800	-0.430384	0.6715
D(REER)	0.007648	0.004082	1.873731	0.0757
CointEq(-1)	-0.586072	0.128871	-4.547736	0.0002

Cointeq = FDI__GDP - (1.9200*GDP_GROWTH_RATE + 0.0000
*GFCF_IN_MILLION -0.1649*INFLATION + 0.4150*LABOURFORCEGRO
WTHRATE + 0.1297*OPPNESS + 0.0131*REER -5.2434)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP_GROWTH_RATE	1.920006	2.390597	0.803149	0.4313
GFCF_IN_MILLION	0.000008	0.000002	4.568272	0.0002
INFLATION	-0.164910	0.044388	-3.715160	0.0014
LABOURFORCEGROWTH RATE	0.414967	0.240291	1.726933	0.0996
OPPNESS	0.129651	0.036790	3.524110	0.0021
REER	0.013050	0.007173	1.819430	0.0838
C	-5.243358	2.124446	-2.468106	0.0227